



North Fair Oaks Community Council
San Mateo County Coordinated
Departmental Response



DATE: February 23, 2026
NFOCC MEETING DATE: February 26, 2026
VOTE REQUIRED: Majority

TO: Members, North Fair Oaks Community Council

FROM: Planning Staff

SUBJECT: Consideration of a Use Permit Renewal and Amendment, pursuant to Section 8.280.030 of the San Mateo County Zoning Regulations, to permit a new 9,260-square-foot K-8 primary school called Synapse School Campus No. 2 with a maximum of 140 students within an existing indoor recreation facility, SportsHouse, located at 3151 Edison Way in the unincorporated area of North Fair Oaks (PLN2011-00070). The project includes an amendment to the Use Permit conditions of approval for existing Synapse School Campus No. 1 (PLN2014-00295), located at 3375 Edison Way, to align traffic monitoring and reporting requirements across both campuses.

County File Numbers: PLN2011-00070, PLN2014-00295 (Synapse School Campus No. 1)

PROPOSAL

The applicant seeks an amendment to the SportsHouse Use Permit (PLN2011-00070) to add a new K-8 primary school (Synapse School Campus No. 2) serving a maximum of 140 students and 15 staff members located at 3151 Edison Way in the unincorporated community of North Fair Oaks. The existing 70,667-square-foot SportsHouse building will become a mixed-use building with both indoor recreation and institutional uses. The SportsHouse currently contains a mix of indoor recreation, restaurant use, and offices for staff. The Project Site is situated across the street (5th Avenue) and west of the existing Synapse School Campus No. 1, which currently, and will continue to, operate under a separate use permit (PLN 2014-00295) that allows for a maximum of 310 pre-kindergarten through 8th grade students. The SportsHouse Use Permit will also be renewed concurrently with this amendment.

The Synapse School Campus No. 2 project will involve the renovation and conversion of a 9,260-square-foot portion of the existing SportsHouse building, currently used as office space, for school use. The converted space would include five new classrooms and an art room (totaling 6,162 square feet) as well as office space and a teacher room (totaling 918 square feet). The remaining 2,180 square feet would be devoted to a custodial room, an electrical room, corridors, and two gender neutral restrooms. In addition to this converted

space, two of the existing SportsHouse building restrooms and associated corridors (totaling 1,225 square feet) adjacent to the converted school use space would be used exclusively by Synapse School Campus No. 2 during school hours. The Project also includes conversion of an approximately 5,000-square-foot portion of the Project Site to accommodate outdoor classroom and gathering spaces, as well as shade and play structures, additional pedestrian pathways, landscaping, and a bio-retention area. In addition, a 510-square-foot portion of the recreational space in the existing SportsHouse building will be converted to office space for use by SportsHouse staff.

The Project will also involve minor onsite circulation and parking improvements, including a new onsite access gate, designated shuttle pick-up and drop-off areas, and pedestrian walkways. With the conversion of parking for outdoor classrooms and gathering space, the number of onsite vehicular parking spaces will be reduced from 125 to 107 spaces and the total number of bicycle parking spaces will increase from 12 to 26 spaces. Six of the 107 spaces will include new electric vehicle (EV) charging stations and five EV ready spaces will be installed. Twelve of the onsite vehicle spaces will be dedicated to Synapse School No. 2 and the remaining 95 onsite vehicle spaces will be available for Synapse School use during the school day when SportsHouse is not in operation and therefore parking demand will not overlap. Synapse School Campus No. 2 students will be picked up and dropped off on the grounds of the Project Site by shuttles and passenger vehicles during the weekday hours of 8:00 a.m. to 9:00 a.m. and 2:45 p.m. to 4:00 p.m.

Both the proposed Synapse School Campus No. 2 and existing Synapse School Campus No. 1 will use the SportsHouse recreational facilities for physical education, and Synapse School Campus No. 2 will utilize the grounds and facilities of the existing Synapse School Campus No. 1 for special classes and activities twice a week. All travel between the two campuses will be on foot, supervised by staff and restricted to the hours of 10:00 a.m. and 2:00 p.m. to avoid peak traffic hours, and a trained crossing guard will be utilized for all planned crossings during school hours. The Project also includes the construction of 290 linear feet of sidewalk along the Project site frontage within the public right-of-way between 5th Avenue and 6th Avenue and a pedestrian walkway between the two school locations to ensure a safe route to school during pick-up and drop-off, and throughout the course of the school day. The sidewalk will be installed in coordination with the County Department of Public Works' planned 5th Avenue and Edison crosswalk and intersection improvements to be installed during the summer of 2026.

Synapse School Campus No.1 Use Permit Amendments

The project conditions of approval for Synapse School Campus No. 1 will be amended to align with the proposed Project with regard to traffic monitoring and reporting requirements that span both campuses. See discussion in Section C below for additional details.

RECOMMENDATION

That the North Fair Oaks Community Council provide a recommendation to the Zoning Hearing Officer on the proposed Use Permit Renewal and Amendment, as described in the Proposal Section above.

BACKGROUND

Report Prepared By: Kanoa Kelley, Project Planner; kkelley@smcgov.org

Applicant: Synapse School, c/o Jim Eagen

Owner: Marcus and Sara Maita Family Trust, Wood Family Trust; 3355 Edison Partners

Location: 3151 Edison Way; 3355 Edison Way, North Fair Oaks

Size: 3.58 acres; 1.9 acres

Existing Zoning: Commercial Mixed Use-3 (CMU-3); Light Industrial/Edison/North Fair Oaks (M-1/Edison/NFO)

General Plan Designation: Commercial Mixed-Use; Industrial Mixed-Use

Sphere-of-Influence: Redwood City

Existing Land Use: SportsHouse indoor recreation facility open to the public;

Water Supply: Continued water service to be provided by the California Water Service Company

Sewage Disposal: Continued sewer service to be provided by the Fair Oaks Sewer Maintenance District (being a function of the County Department of Public Works)

Flood Zone: Zone X (areas of minimal flood), pursuant to Federal Emergency Management Agency, Flood Insurance Rate Map, Community Panel 06081C0302E, effective October 16, 2012.

Environmental Evaluation: An Initial Study and Mitigated Negative Declaration was prepared by staff and issued for public review on February 4, 2026. The review period

ended on February 24, 2026. Mitigation measures have been included as recommended conditions of approval in Attachment A.

Setting: The project site is located within the densely developed urban community of North Fair Oaks. The project parcels are among a row of developed parcels zoned Commercial Mixed Use-3 (CMU-3). Surrounding uses include the Southern Pacific Railroad Tracks to the north, with residential development beyond; a multi-tenant building to the east, with office, research, and technology businesses; a restaurant and the existing Synapse School Campus No. 1 to the east, and single-family residences to the south, across Edison Way. There are currently 125 parking spaces on site dedicated to the SportsHouse facility with access to Edison Way.

Background: SportsHouse is an existing 70,667-square-foot indoor recreational facility with various fields for soccer, basketball, and volleyball. The SportsHouse rents these spaces to the general public and also operates youth basketball and volleyball sports leagues and classes. The existing facility was established in 2011 with the approval of a use permit and zoning amendment to allow the use in the light industrial zone. SportsHouse operates during weekdays between the hours of 4:00 p.m. and 10:00 p.m. and during the weekend hours from 9:00 a.m. to 10:00 p.m.

Chronology:

<u>Date</u>	<u>Action</u>
December 13, 2011	- Use Permit (PLN2011-00070) approved by Planning Commission for an indoor recreation facility, SportsHouse.
March 27, 2023	- Application for the subject Use Permit renewal and amendment (PLN2011-00070) received.
May 24, 2023 to March 19, 2025	- Agency reviews and drafting of Traffic Impact Analyses (by applicant's consultant).
March 19, 2025	- Deemed complete.
June 23 to November 19, 2025	- Additional civil/drainage and DPW review due to new sidewalk improvements and Traffic Impact Analysis revisions.

- February 4 to February 24, 2026 - Initial Study/Mitigated Negative Declaration public review.
- February 26, 2026 - North Fair Oaks Community Council meeting.
- March 19, 2026 - Zoning Hearing Officer meeting.

DISCUSSION

A. SYNAPSE SCHOOL CAMPUS NO. 2

1. Compliance with the General Plan/North Fair Oaks Community Plan

Staff has reviewed the project for compliance with all of the applicable General Plan/North Fair Oaks Community Plan Policies, including the following:

a. Urban Land Uses Policies

General Plan Policies 8.12 (*General Plan Land Use Designations for Urban Areas*), 8.30 (*Infilling*), and 8.36 (*Uses*) seek to adopt the land use designations of the North Fair Oaks Community Plan, encourage infilling of urban areas where infrastructure and services are available, and allow uses in zoning districts that are consistent with the overall land use designation. Policy 8.2 (*Land Use Objectives for Urban Communities*) seeks to provide a variety of uses to support housing including institutional uses.

According to the North Fair Oaks (NFO) Community Plan, the project parcel is designated Commercial Mixed-Use (medium to high density). The primary objective of the Commercial Mixed-Use land use category is to allow medium to high-density land uses, including a mix of commercial and institutional land uses.

The project is entirely infill within an approximately 9,200-square-foot portion of an existing indoor recreation facility. All utilities will be provided by existing connections, and all required parking for the proposed school

is provided on the parcel. The institutional and commercial uses are allowed by both the Community Plan and the Zoning district.

General Plan Policy 8.40 (*Parking Requirements*) seeks to ensure minimum on-site parking requirements and standards are met in order to, among other things, accommodate the parking needs of the development, provide convenient and safe access, and prevent congestion of public streets.

The project will comply with all zoning requirements for off-street parking. As detailed in Section 2 below, the SportsHouse requires 72 spaces to accommodate the recreational use, the food establishment, and party rooms. The proposed primary school (institutional use) as part of a mixed-use project will provide 12 dedicated parking spaces. The project will provide 107 spaces. The SportsHouse operates after 4:00 p.m., outside of school hours, so traffic from the two uses will not overlap. The school will have access to the entire parking lot during school hours to ensure there is adequate parking during peak school traffic times. Synapse School will expand its shuttle and include stops at Campus No. 2 to further reduce traffic and parking occupancy. All staff members who drive to the school are required to park in the school's on-site parking lot, all on-site parking spaces are appropriately striped so that spaces are easily recognizable to drivers, and school staff and/or parents will be assigned to assist with the on-site management of drop-off and pick-up operations. Additionally, queuing analyses to identify any driveway back-up at the designated on-site drop-off/pick-up points will be required on a bi-annual basis to ensure that vehicle stacking in the public right-of-way is not occurring.

b. Transportation Policies

General Plan Policies 12.16 (*Urban Road Improvements*) and 12.21 (*Local Circulation Policies*) encourage minimal through traffic in residential areas and adequate access for emergency vehicles and improvements to enhance the functionality of travel routes for all users.

The project is located along a row of Commercial Mixed-Use designated parcels within a primarily residential area. Since there are limited alternative options for accessing the site, the proposed project will generate vehicular traffic to the area. To mitigate any potential increased traffic impacts to the area, Synapse School will provide shuttle service to serve students and/or faculty outside of the immediate community to reduce vehicle trips to the new school site. Additionally, a morning peak

hour vehicle trip cap of 92 morning peak hour trips will be implemented, with bi-annual counts by a third-party traffic consultant reported to the County.

The parking lot has been reconfigured to add four additional parking spaces and improve site circulation and emergency vehicle access. The new configuration, along with the required attendants during drop-off and pick-up times, will reduce delays. Because the project will introduce increased crossings at 5th Avenue and Edison Way, the applicant will coordinate with the San Mateo County Department of Public Works to install 290 linear feet of sidewalk to connect to new planned crosswalk improvements anticipated for construction in the summer of 2026. This will ensure travel routes to and from Campus No. 1 and 2 are safe.

A Traffic Impact Analysis (TIA) was prepared by Hexagon Transportation Consultants, Inc. for the project. The TIA provides analysis on intersection level of service (LOS) impacts and queuing impacts that would be generated by the project. It was determined, based on the TIA, that the project will result in increased impacts to the intersection at Edison Way/5th Avenue. Conditions of approval regarding the trip cap, Transportation Demand Management (TDM) implementation to reduce trips, expansion of the shuttle program, and required traffic monitors in the drop-off areas during peak drop-off and pick-up periods were determined to be adequate to mitigate the loss in LOS. Ongoing bi-annual traffic monitoring will also ensure all conditions of approval are met.

Policy 12.45 (*Bicycle Storage Facilities*) and 12.47 (*Facilities for Bicyclist*) seek to promote the provision of bicycle storage facilities at schools and other activity centers and encourage employers to provide showers and locker facilities for employees to bike to work. The project will install 26 bicycle parking spaces, and as part of the TDM measures to reduce traffic demand, the project will provide showers and changing rooms for cyclists.

c. Noise Policies

Policy 16.10 (*Designation of Noise Impact Areas*), Policy 16.13 (*Site Planning Noise Control*), and Policy 16.14 (*Noise Barriers Noise Control*) identify certain areas within the County as noise impact areas and encourage the use of natural topography and intervening structures to shield noise sensitive land uses. A majority of the North Fair Oaks community is identified as being within a Noise Impact Area as designated on the County's Community Noise Map. The project will utilize

an existing building located between the Southern Pacific Railroad tracks and Edison Way to operate a K-8 primary school along with the continued operation of the existing indoor recreation facility. Most school activities will be conducted indoors. The school will provide approximately 5,000 square feet of on-site outdoor recreational area in the northwestern part of the parcel. Outdoor recreational areas are fenced and will utilize sound blankets and/or artificial turf to help absorb noise levels generated from play areas. The play area is not located adjacent to any single-family residence.

2. Compliance with the Zoning Regulations

Staff has reviewed and determined that the project is in compliance with all of the applicable Zoning Regulations, including the following:

a. Permitted Land Uses

The applicant has applied for an amendment to the SportsHouse Use Permit to add a new primary school within 9,260 square feet of the existing recreation facility building. Both indoor recreational uses and school/institutional uses are permitted in the Commercial Mixed-Use 3 (CMU-3) zone with a Use Permit, as shown in Section 8.126.050 of the San Mateo County Ordinance Code. See Section A.1. of this report for further discussion on land use regulation compliance with both the General Plan and North Fair Oaks Community Plan.

b. CMU-3 Performance Standards

Section 8.126.080 of the CMU-3 Zoning Regulations states that no ongoing or new use may be conducted in a manner that does not meet the performance standards of the Zoning District with regard to limiting noise levels to the stipulated limits of the County Noise Ordinance; keeping glare and rays from exterior lighting to the confines of the premises; providing screening for trash and debris areas. Any project that generates over 100 daily trips shall adhere to the City/County Association of Governments (C/CAG) TDM policy, which requires a TDM Checklist with its development application that lists measures to be implemented to mitigate traffic impacts at desired trip reduction target thresholds.

Most of the school activities will operate within the enclosed building, with the exception of periodic student breaks throughout the day or special

outdoor classes. The project will utilize existing development and therefore does not introduce any new sources of light or glare that would extend beyond the project parcel. The applicant has submitted a TDM checklist included in Appendix E of the traffic study. The checklist ensures a commitment by the applicant to reduce traffic demand by 35 percent. Conditions of approval have been included in Attachment A to require compliance with all performance standards of the CMU-3 zoning district.

c. Parking Regulations

In 2011, the County required 112 parking spaces for the SportsHouse, which included 41 spaces for office use, where 124 spaces were provided to ensure adequate parking during busy periods. In 2021, because of COVID-related indoor occupancy restrictions, County Resolution No. 077632 allowed the temporary conversion of parking to accommodate uses that are allowed onsite and normally conducted indoors. During this time, the operator converted 22 parking spaces to outdoor beach volleyball courts, leaving 102 parking spaces available. On February 28, 2023 the state of emergency ended, and the site was to revert to its originally approved parking configuration. The project now includes the conversion of approximately 5,000 square feet of paved areas for outdoor classes and play areas, including the areas converted to outdoor volleyball courts and some additional parking areas. With the proposed reconfiguration of the parking lot and conversion of outdoor areas, the total parking provided will be 107 spaces. A majority of the existing office use will change to institutional as part of a mixed-use development, which has a lower parking requirement; therefore, the required parking has been reduced to 81 spaces. The applicant is proposing six EV charging stations and 5 EV-ready parking spaces to further the County's Community Climate Action Plan goal of reducing Greenhouse Gas (GHG) emissions by encouraging the use of zero-emission vehicles.

To alleviate periods of higher parking demand for SportsHouse activities, which operates during non-school hours, a reciprocal parking agreement between the SportsHouse and the existing Synapse School Campus No. 1 located at 3355 Edison Way has been added as a condition of approval; this will result in an additional 60 parking spaces available for a total of 167 parking spaces for the SportsHouse use, where 71 spaces are required.

The SportHouse provides 12 bicycle parking spaces on-site. The introduction of the new private school requires 7 public and 7 private

bicycle parking spaces to be provided. Due to limited sidewalk width along Edison Way, any new public bicycle parking in the right-of-way would reduce usable sidewalk space to an unacceptable 24 inches of clearance. Therefore, all public bicycle parking will be accommodated on site. The proposed project will provide a total of 26 bicycle parking spaces on site.

	Parking Requirements	Units of Measurement	Required Parking	Provided Parking
SportsHouse			72	167*
	Indoor Recreation: 1 per 2,000 sq. ft.	58,271 sq. ft.	29	
	Restaurant: 1 per 3 seats	69 Seats	23	
	Party Rooms: 1 per 100 sq. ft.	1,680 sq. ft.	17	
	Office: 1 per 200 sq. ft.	510 sq. ft.	3	
Synapse School Campus No. 2	1 per 1,000 sq. ft.	9,260 sq. ft.	9	12
Bicycle Parking	Public: 2 per 35 ft. of Synapse School frontage	119 ft.	7	26
	Private: 1 per 1,500 sq. ft.	9,260 sq. ft.	7	
*107 onsite spaces, plus 60 offsite spaces under a reciprocal parking agreement with existing Synapse School Campus No. 1 at 3355 Edison Way.				

d. Screening and Landscaping

Section 8.126.070(5)(d)(3)(c) of the CMU-3 regulations requires parking spaces to be set back at least 15 feet from the street and screened by a fence or shrubs that are at least 3-4 feet in height. The existing parking lot is approximately 13 feet from the street and is screened from view with mature shrubs and fencing that exceeds 3 feet in height.

e. Signs

The proposal includes one joint wall sign for both Synapse School and SportsHouse on the east elevation and one Synapse School wall sign on the south elevation. The CMU-3 regulations Section 8.126.060(8) for signs allows a maximum of one sign per use or one sign per 200 feet of parcel street frontage, whichever is greater. The building contains two businesses and has approximately 900 feet of frontage along Edison Way. The signs do not exceed the height of the building and fit with the building's aesthetic.

f. Compliance with the Use Permit Findings

The applicant is seeking an amendment to the SportsHouse Use Permit to establish a new K-8 primary school within the existing SportsHouse building, which is an allowed use in CMU-3 Zoning District with a Use Permit.

The granting of the use permit amendment is subject to the following finding:

That the establishment, maintenance, and/or conducting of the use will not, under the circumstances of the particular case, result in a significant adverse impact to coastal resources, or be detrimental to the public welfare or injurious to property or improvements in said neighborhood.

The project proposes to add a private kindergarten through 8th grade (K-8) school in an urban community that has been designated (by the North Fair Oaks Community Plan) to support medium to high-density land uses including industrial, commercial, and institutional uses.

The project will utilize existing development on the project parcel and minimal exterior building changes are proposed. The amendment will add 140 students and 15 staff. While the proposed school expansion will result in an increase in traffic, recommended measures from the TIA have been included as conditions of approval to mitigate any potential impacts. Conditions include, but are not limited to, a morning peak hour vehicle trip cap with bi-annual monitoring, a student enrollment cap, daily on-site management of drop-off and pick-up operations at the school to minimize traffic impacts to the area, and expansion of the school's shuttle program to serve Campus No. 2. Additional mitigation measures from the

Mitigated Negative Declaration have been included as recommended conditions of approval for the Use Permit Amendment to ensure potential impacts to the neighborhood are minimized. The school will introduce increased foot traffic at the intersection of 5th Avenue and Edison Way. The applicant is required to coordinate with the County Department of Public Works to install 290 linear feet of sidewalk connecting Synapse School Campus No. 1 and 2. The County also reserves the right to require that the Use Permit be reevaluated if there is continued non-compliance with conditions or mitigation measures.

The majority of school activities will be conducted indoors and will not result in noise levels in excess of any established noise standards. The school does provide on-site outdoor recreational areas; however, existing trees, living walls, acoustical wall panels, sound blankets, and artificial turf will help absorb any increased noise levels generated from play areas.

The project complies with off-street parking requirements. See Section A.2.c. of this report for further discussion on parking compliance.

Therefore, based on the above findings and recommendations, the project is not expected to be detrimental to the public welfare or injurious to property or improvements in the neighborhood. The project is not located in the coastal zone, therefore, no coastal resources will be impacted by the project.

B. SPORTSHOUSE USE PERMIT RENEWAL

1. Compliance with the General Plan/North Fair Oaks Community Plan

The project complies with all applicable General Plan Policies, specifically:

a. Park and Recreation Resources/Health and Wellness

Policy 6.1 (*Equitable and Balanced System of Facilities*), Policy 6.9 (*Locate Suitable Park and Recreation Facilities in Urban Areas*), and Policy 6.14 (*Site Planning for Public and Private Facilities*) encourage a balanced and equitable system of park and recreation facilities to locate in urban areas, take advantage of existing service infrastructure

systems, maximize the recreational use of limited available land, and provide a variety of recreational activities. Furthermore, the North Fair Oaks (NFO) Community Plan recognizes that play and recreation are important factors that contribute to the overall health and wellness of the community and that the NFO area is significantly deficient in parks and recreational facilities when compared to surrounding incorporated cities. Therefore, the NFO Community Plan encourages the efficient use of existing facilities to provide quality recreational facilities that offer a variety of programs and activities for residents of all ages.

The existing multi-sports and recreational facility, established within a former distribution warehouse, offers a diverse mix of year-round sporting, exercise, and recreational programs for people of all ages in a densely populated community that lacks adequate sports and recreational amenities.

2. Compliance with the Zoning Regulations

a. Permitted Uses

The CMU-3 Zoning District permits large-scale indoor exercise and leisure facilities subject to a Use Permit. The applicant has been operating the existing multi-sports and recreational facility since 2012 under a Use Permit approved in December 2011 by the Board of Supervisors.

b. Compliance with the Conditions of Last Approval

The Use Permit's last conditions of approval are assessed below with regard to compliance and whether the conditions should be retained or revised. Staff recommends that some conditions, as indicated, be eliminated in instances where the condition (1) has been satisfied, or (2) is no longer deemed necessary. Additional conditions have been added to mitigate operational impacts regarding insufficient parking for daily operations as documented by letters from the public.

Current Planning Section

- (1) This approval applies only to the proposal, documents and plans described in the staff report and submitted for review and approval by the Planning Commission on April 25, 2018. Any changes or

revisions to the project may be approved by the Community Development Director if they are consistent with the intent of, and in substantial conformance with this approval.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes, with an update to replace previous approvals with the date of an anticipated Zoning Hearing Officer public hearing for consideration of the subject renewal, March 19, 2026.

The revised condition will read:

This approval applies only to the proposal, documents and plans described in the staff report and submitted for review and approval by the Zoning Hearing Officer on March 19, 2026. Any changes or revisions to the project may be approved by the Director of Planning and Building if they are consistent with the intent of, and in substantial conformance with this approval.

- (2) The Use Permit shall be valid for five (5) years from the date of final approval, and shall expire on January 15, 2022. The applicant shall apply for renewal of the Use Permit, and pay applicable renewal fees six (6) months prior to expiration, if continuation of the use is desired. Any change in use shall be required to comply with applicable zoning regulations for this district.

Compliance with Condition? Yes. The subject renewal application was received on March 27, 2023.

Recommended to Retain Condition? Yes, with an update to reflect a new five year term from the date of approval, which is anticipated to be March 19, 2031.

- (3) There shall be one (1) administrative review in January 2020 to verify compliance with the conditions of this Use Permit that will include review of the performance of the operation to determine whether any modifications to the conditions, or any new conditions, are necessary. The applicant shall be responsible for paying the applicable administrative review fee and each administrative review

shall include a referral to the North Fair Oaks Community Council for comments, particularly regarding traffic, security and noise. If the County finds that the use is not in compliance with the conditions of approval, the applicant shall have thirty (30) days to comply with the terms of the approved Use Permit or apply for a use permit amendment, including payment of all applicable fees. Failure to do either action will result in the initiation of use permit revocation proceedings.

Compliance with Condition? No, due to COVID restrictions from 2020 to 2023, an administrative review was not conducted in 2020.

Recommended to Retain Condition? Yes, with an update to require two administrative review periods, one every two years of the new five-year Use Permit term, anticipated in March 2028 and 2030.

The revised condition will read:

There shall be two (2) administrative reviews, in March 2028 and March 2030 to verify compliance with the conditions of this Use Permit that will include review of the performance of the operation to determine whether any modifications to the conditions, or any new conditions, are necessary. The applicant shall be responsible for paying the applicable administrative review fee and each administrative review shall include a referral to the North Fair Oaks Community Council for comments, particularly regarding traffic, security and noise. If the County finds that the use is not in compliance with the conditions of approval, the applicant shall have thirty (30) days to comply with the terms of the approved Use Permit or apply for a use permit amendment, including payment of all applicable fees. Failure to do either action will result in the initiation of use permit revocation proceedings.

- (4) The hours of operation for visitors to the sports facility shall be no earlier than 6:00 a.m. and all visitors shall be vacated from the premises by 12:00 a.m. during weekdays (Monday through Friday) and shall open no earlier than 8:00 a.m. with all visitors vacated from the premises by 12:00 a.m. on Saturdays and Sundays. Use of the facility after 10:00 p.m. shall be limited to adult league games. San Mateo County Sheriff's staff may be on-site at any time.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes, with modification to remove references to the County Sheriff's staff as the Sheriff's substation office will no longer be onsite and to ensure that hours do not overlap with the new school use.

The revised condition will read:

The hours of operation for visitors to the sports facility shall be no earlier than 4:00 p.m. and all visitors shall be vacated from the premises by 12:00 a.m. during weekdays (Monday through Friday) and shall open no earlier than 8:00 a.m. with all visitors vacated from the premises by 12:00 a.m. on Saturdays and Sundays. Use of the facility after 10:00 p.m. shall be limited to adult league games.

- (5) The café shall stop serving alcohol one hour before closing time. Closing time shall be the time when the public is required to vacate the premises.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

- (6) Gates shall be maintained at the access driveways to the site and shall be kept closed during non-business hours, except when necessary to remain open for access to the premises by the Sheriff's Department, to deter unauthorized people from accessing and loitering on the property site.

Compliance with Condition? Yes, no complaints have been received or reports filed with regard to loitering on site.

Recommended to Retain Condition? Yes, with an update to remove reference to the Sheriff's Department because they are no longer located at the site.

The revised condition will read:

Gates shall be maintained at the access driveways to the site and shall be kept closed during non-business hours to deter unauthorized people from accessing and loitering on the property site.

- (7) Landscaping shall be maintained throughout the life of the use along the public right-of-ways (i.e., Edison Way and 5th Avenue) to provide added buffering from surrounding neighbors. Landscaping shall include, but not be limited to, hedges or other appropriate native vegetation that will provide opaque screening a minimum of 3 ½ feet above grade along the Edison Way public right-of-way to minimize glare from vehicle lights on residences across Edison Way. All maintained landscaping shall be native, non-invasive species. All perimeter landscaping shall serve to screen and soften the public's view of the site.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes

- (8) Loitering in and around the premises shall be prohibited. Facility staff shall regularly monitor all areas of the premise, particularly the outdoor parking lot areas, during hours of operation to ensure that visitors and/or unauthorized persons are not loitering in the parking lot and that no loud noises are generated from the premises at any time.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

- (9) Facility staff shall monitor and pick-up improperly disposed garbage (including debris, litter and/or solid waste) generated from the facility, including from patrons, around the property premise and along the Edison Way street frontage on a daily basis.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes

- (10) At any time during business operation there shall be an appointed, identified, responsible staff member designated as the "Community Point of Contact." The Community Point of Contact shall serve as the

primary contact person for all public inquiries and/or complaints regarding noise and/or parking lot operations, including loitering, and shall respond immediately to address any concerns and/or complaints.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

- (11) Video surveillance shall be provided for all exterior areas of the premise, 24 hours a day/7 days a week, and shall (at a minimum) include security surveillance camera coverage of all parking lot areas, the perimeters of the premise, and entrance and exit doors to the facility.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

- (12) All weather signs shall be maintained around the site notifying the public that the site is under 24-hour surveillance. The signs shall be maintained such that they are legible and visible to the general public, and shall be replaced as necessary. The minimum required posting locations should be at the west parking lot area, the west driveway (farthest from 5th Avenue), and the east driveway (closest to 5th Avenue).

Compliance with Condition? Yes

Recommended to Retain Condition? Yes

- (13) Noise levels associated with the approved use shall not exceed the limitations set forth in the County Noise Ordinance and/or Performance Standards of the M-1/Edison/NFO Zoning District.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes, with modification to reference the current zoning district.

The revised condition will read:

Noise levels associated with the approved use shall not exceed the limitations set forth in the County Noise Ordinance.

- (14) The roll-up doors along the west building elevation shall remain closed during business hours to limit interior noise from escaping the building.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

- (15) The applicant shall encourage visitors to carpool and/or use alternative modes of transportation to the project site. Information shall be made readily available on any facility website or to persons visiting the facility of options for alternative modes of transportation to the facility, including public transit services.

Compliance with Condition? Yes, the facility's website includes information on nearby public SamTrans bus routes, and encourages carpooling to the facility.

Recommended to Retain Condition? Yes.

- (16) All approved on-site parking, including striping and markings for compact parking spaces, shall be maintained in a condition that is easily recognizable and immediately clear to vehicular drivers.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes

- (17) All exterior lighting (including site and building) shall be maintained to confine direct rays to the subject property and prevent glare in the surrounding area.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes

- (18) All exterior lighting that is not necessary for security purposes shall be turned off during non-business hours.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

- (19) Any licensed alcohol sales and consumption during public business hours shall be limited to the sports café area only. Signs shall be posted in visible locations in the sports café area indicating to patrons that no alcohol shall be removed from the sports café area and this shall be strictly enforced by sports café staff.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

- (20) The applicant shall obtain a building permit prior to the start of any tenant improvement work on-site.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

- (21) The applicant shall ensure that all noise, light, dust, odors and other interferences with persons and property off the site be minimized.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

- (22) The use of brilliant, deep, highly contrasting or reflective exterior building colors shall be prohibited. The applicant shall submit color paint samples to the Planning Department for review and approval prior to any repainting of exterior buildings or structures.

Compliance with Condition? Yes, all existing exterior paint colors were approved by the Director of Planning and Building prior to implementation.

Recommended to Retain Condition? No, this is no longer a requirements under the CMU-3 zoning regulations.

- (23) The applicant shall be responsible for ensuring that all garbage, debris, litter and/or solid waste generated from the proposed use is properly disposed of and picked up on a daily basis.

Compliance with Condition? Yes

Recommended to Retain Condition? Yes.

- (24) Any outdoor garbage dumpsters shall be screened from view by six (6) foot high fencing and/or landscaping materials to reduce visual impacts. Verification of compliance with this condition shall be completed prior to a building permit final inspection.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes, with an update to remove the last sentence as this referenced requirement has already been satisfied.

- (25) The applicant shall maintain a valid license from Alcohol Beverage Control (ABC) for alcohol sales/service in the café area, which shall be limited to beer and wine. A copy of the license shall be submitted to the Planning Department for record. If the license is ever revoked or suspended, the applicant shall notify the Planning Department within ten (10) days of any such revocation or suspension.

Compliance with Condition? Yes, the facility maintains a valid Type 41 (on-sale beer and wine) liquor license.

Recommended to Retain Condition? Yes.

- (26) The Planning and Building Department shall be notified prior to any new tenant occupancy.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

- (27) The applicant shall maintain all perimeter fencing in good condition. Any damage to perimeter fencing shall be promptly repaired. All repairs shall match the appearance, materials, and workmanship of the fence as originally constructed.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

- (28) Dust, odors, or air pollutants generated from the project shall not be permitted beyond the boundaries of the M-1/Edison/NFO District.

Compliance with Condition? Yes.

Recommended to Retain Condition? No, This is no longer a requirement under the new CMU-3 zoning regulations.

- (29) All signage proposed for the site shall be indicated on a site plan and shall be submitted to the Planning and Building Department for review and approval prior to installation, including obtaining a building permit if necessary, and shall comply with the sign regulations of the M-1/Edison/NFO Zoning District.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes. Revise to update zoning district.

The condition will read:

All signage proposed for the site shall be indicated on a site plan and shall be submitted to the Planning and Building Department for review and approval prior to installation, including obtaining a building permit if necessary, and shall comply with the sign regulations of the CMU-3 Zoning District.

(30) Any new distribution lines shall be placed underground.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

(31) Vibration perceptible on adjoining property, except for temporary construction operations, shall be prohibited.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

(32) All uses, activities or operations associated with the proposed indoor sports and recreation facility shall be conducted entirely on the property.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

(33) Parking spaces on the east side of the parcel shall be limited to reserved parking for employees, sheriff staff, and/or assigned members. The spaces shall be visually designated (e.g. signs or pavement markings) to indicate the spaces are for limited authorized use only.

Compliance with Condition? Yes.

Recommended to Retain Condition? No. This parking area has been removed. The operating hours of the school and sports facility does not overlap so no dedicated parking is needed.

- (34) Clear markings shall be maintained for the entrance and exit driveways to the premise to identify ingress and egress for vehicles traveling along Edison Way and to aid in interior, on-site vehicle circulation.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes.

- (35) The applicant shall pursue shared parking agreements with neighboring businesses to alleviate spillover visitor parking for the permitted facility. Any shared parking agreements shall be submitted to the Current Planning Section for review and acceptance by the Planning and Building Department and Department of Public Works.

Compliance with Condition? Yes. The applicant has entered into an agreement with the Synapse School Campus No. 1 located at 3355 Edison Way to utilize their (60) parking spaces after 4:00 p.m. on weekdays and on the weekends during SportsHouse operating hours. The SportsHouse operator will be required to continue to pursue agreements with surrounding businesses.

Recommended to Retain Condition? Yes, with modification that any future shared parking agreements shall comply with the CMU-3 District's standards and analysis requirements for Alternative Parking Approaches (Section 8.126.100).

The revised condition will read:

The applicant shall pursue shared parking agreements with neighboring businesses to alleviate spillover visitor parking for the permitted SportsHouse facility. Any shared parking agreements shall comply with the CMU-3 District's standards and analysis for Alternative Parking Approaches (Section 8.126.100) and shall be submitted to the Current Planning Section for review and acceptance by the Planning and Building Department and Department of Public Works

Building Inspection Section

- (36) A functioning automatic fire sprinkler system shall be maintained, for the life of the permitted use, to the satisfaction of the Building Inspection Section.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes

- (37) Approved roof and site drainage shall be maintained in a functioning condition, for the life of the permitted use, to the satisfaction of the Building Inspection Section.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes

Department of Public Works

- (38) The south driveway, closest to 5th Avenue, shall be designated and maintained as an entrance only driveway, and the north driveway, farthest from 5th Avenue, shall be designated and maintained as an exit only driveway. Striping and signage at each driveway shall be maintained to the satisfaction of the Department of Public Works.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes

Environmental Health Division

- (39) An annual Environmental Health permit shall be maintained for continued operation of the food service area.

Compliance with Condition? Yes.

Recommended to Retain Condition? Yes

Additional Conditions

The SportsHouse provides recreational and youth sports opportunities in an area where there are few spaces available for these types of activities. Due to the popularity of the sports programs offered at the facility staff has received letters documenting that parking is spilling over into the neighborhood. Patrons are parking on curbs, in no parking areas, in front of driveways, and generally creating unsafe conditions for residents. Recognizing the need to mitigate these operational impacts, staff recommends the following additional conditions:

1. The applicant shall prepare and submit to the Current Planning Section for review and acceptance by the Planning and Building Department and Department of Public Works a shared parking agreement allowing use of the 60 parking spaces at Synapse School Campus No.1 (3355 Edison Way) by SportsHouse visitors and employees on weekends and after school hours on weekdays. Additionally, the owners or successors of SportsHouse shall implement the following measures to reduce spillover parking into the neighborhood:
 - (a) employ staff to patrol, monitor and direct parking onsite and to the Synapse School Campus No.1 lot when the onsite parking is full;
 - (b) post signage at the front of the building clearly indicating the location of the shared parking lots and number of parking spaces available for use in each parking lot. When the lot is full the signage will direct overflow parking to the Synapse Campus No.1 site. A sample of the proposed signage shall be submitted to the Planning and Building Department for review and approval within ten business days of final approval.
 - (c) Institute and enforce an employee policy requiring that employees park in available spaces at the SportsHouse parking lot and the Synapse Campus No.1 parking lots;
 - (d) as part of its rental agreements require that guests park in available spaces at the SportsHouse parking lot and the Synapse Campus No. 1 parking lots and notify guests that law enforcement may be called and/or their vehicles may be towed if they illegally block residential driveways or fire hydrants;
 - (e) encourage employees and guests to carpool and use ride share services whenever possible;
 - (f) announce neighbor reported street parking violations on its speaker systems.

- (2) The SportsHouse owner or operator will prepare and submit a parking demand study to the County of San Mateo Department of Public Works Roads Division and County of San Mateo Planning and Building Department Current Planning Section for review and acceptance. The report shall be due 6 months after final Use Permit approval and shall evaluate the impact of parking demand associated with SportsHouse operations during normal operation and scheduled tournaments on street parking in the vicinity of the SportsHouse. If the study indicates that SportsHouse parking demand is significantly impacting street parking in the vicinity of SportsHouse, the SportsHouse owner or operator shall pursue and enter into additional off-street parking agreements and/or take other measures identified in the report to avoid or reduce to the extent possible, any such reported significant impact. Any approved measures shall be implemented within 90 days of approval by the County, and their effectiveness shall be evaluated at each administrative review. Prior to conducting the above-mentioned parking demand study, the applicant shall consult with the County of San Mateo Department of Public Works Roads Division and County of San Mateo Planning and Building Department Current Planning Section to approve the scope for the study. Failure to submit the report in a timely manner may result in a review of the Use Permit by the Planning Commission.
- (3) Should any required shared parking agreement be terminated or changed (including to accommodate other users of the parking lot that are not parties to this application), the SportsHouse operator shall notify the Planning and Building Department within 30 days of such termination or change and shall demonstrate to the satisfaction of the Planning and Building Department that: (a) despite such termination or change its parking demand is not significantly impacting street parking; or (b) it has entered into a substitute shared parking agreement for the same amount of spaces that were terminated.

c. Compliance with the Use Permit Renewal Finding

The granting of a Use Permit Renewal for SportsHouse is subject to the following finding:

That the establishment, maintenance and/or conducting of the use will not, under the circumstances of the particular case, result in a significant adverse impact to coastal resources, or be detrimental to the public welfare or injurious to property or improvements in said neighborhood.

Planning staff has determined that the facility has maintained substantial compliance with its applicable conditions of approval since the facility's last renewal in 2018. Staff has referred this renewal application to applicable reviewing agencies, none of which identified any concerns with the renewal

request. During the one-year administrative review of the Use Permit in 2014, concerns over the facility's compliance with its Use Permit were raised by neighbors with regards to holding boxing events at the facility, noise, traffic and parking, garbage, and landscape screening along Edison Way. In response to the neighbors' concerns, SportsHouse worked with staff to address the concerns by posting signage for noise and traffic, assessing garbage receptacles and parking management practices, and replacing landscape screening along Edison Way. All screening and landscaping have been maintained by the operators and the facility ceased holding boxing events on the premises. The SportsHouse has maintained two permanent "No SportsHouse Parking" signs along the residential side of Edison Way.

In February of 2026 staff received letters documenting ongoing traffic and parking concerns from the surrounding neighbors as a result of volleyball tournaments held at the SportsHouse. To increase the availability of on-site parking, the SportsHouse has entered into a parking agreement with Synapse School Campus No. 1, located at 3355 Edison Way. The agreement will make an additional 60 parking spaces available during SportsHouse's operating hours, which do not overlap with the hours of operation of the Synapse School. The applicant has also agreed to additional Use Permit conditions, including providing trained parking attendants to ensure visitors park in an orderly manner onsite, a traffic and parking study to document the impacts of the SportsHouse, and implementation of a County-approved Traffic Demand Management and Parking Plan. Staff believes that the continued operation of the facility, subject to the recommended conditions, will not be detrimental to the public welfare, property or improvements in the neighborhood.

C. SYNAPSE SCHOOL CAMPUS NO. 1 - USE PERMIT (PLN2014-00295)
CONDITIONS OF APPROVAL AMENDMENTS

The project includes an amendment to the Use Permit conditions of approval for existing Synapse School Campus No. 1 (PLN2014-00295), located at 3375 Edison Way, to align traffic monitoring and reporting requirements with the proposed Synapse School Campus No. 2. The amended conditions will only serve to clarify reporting requirements and will not reduce in scope any previous mitigation required of Synapse School Campus No. 1. Removed and added conditions are shown in the table below and the complete amended conditions can be found in Attachment B. As the amended conditions are not substantive and will not impact mitigations or conditions meant to reduce environmental impacts, nor change the permitted scope of Campus No. 1, no additional environmental review is required for the condition amendments to Synapse School Campus No. 1.

Table 1

Conditions for Removal/Amendment	Added/Amended Conditions
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<u>Mitigation Measure 4 (Partial Amendment):</u> The applicant shall retain a third-party traffic consultant to count the trip generation of the school, which would include counting the school driveways plus counting any school-related traffic that is dropping off students along Edison Way or any of its cross-streets. The third-party consultant will conduct the counts over three (3) weekdays (a Tuesday, Wednesday, and/or Thursday) in October and March of each school year, excluding scheduled school holidays and early release days. The trip count shall be the average of the three (3) weekday counts. Concurrent with the trip counts, the third-party traffic consultant shall conduct a queuing analysis for on-street queuing due to driveway back-up at the designated on-site pick-up/drop-off points for the school. The data from the traffic counts shall be submitted to the County of San Mateo Traffic Services and the Current Planning Section of the County of San Mateo Planning and Building Department in a report for review and acceptance. These reports are due on April 30th and November 30th of each year; non-compliance in submitting reports in a timely manner may result in review of the use permit by the Planning Commission. The County may also choose to conduct its own monitoring if desired. If the monitoring shows that the trip cap is exceeded, the applicant shall have 30 days to prepare and submit a Transportation Demand Management (TDM) Program that incorporates measures to reduce the number of trips below the trip cap, and shall have an additional 30 days to implement the TDM Program to bring the site into compliance with the trip cap. Measures included in the TDM Program may include, but shall not be limited to, staggering start times, adding shuttle buses, initiating a carpooling program, and offering staff	The applicant will be responsible for collecting, summarizing and analyzing data to support ongoing monitoring and compliance with the Use Permit's conditions; this can occur concurrently with required monitoring under Synapse School No. 2 Use Permit, PLN2011-00070: a. The applicant shall retain a third-party traffic consultant (consultant) to collect: i. Vehicular counts at school driveways plus any school-related traffic that is dropping off students along Edison Way or any of its cross-streets. The consultant will conduct the counts over three (3) weekdays (a Tuesday, Wednesday, and/or Thursday) in October and March of each school year, excluding scheduled school holidays and early release days. The trip count shall be the average of the three (3) weekday counts. ii. Concurrent with the trip counts, conduct a queueing analysis for on-street queueing due to back-ups at driveways designated for on-site pick-up and drop-off points. b. Shuttle usage logs concurrent with the three (3) weekdays where traffic count data is collected that includes shuttle pick-up locations and number of students picked up by location for each day. c. Data collected as part of the implementation of Transportation Demand Management Programs.
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incentives to take alternative transportation. A subsequent monitoring will be conducted by the County 30 days following implementation of the TDM Program. If the subsequent monitoring indicates that the site still exceeds the trip cap, then the applicant shall reduce student enrollment to bring the site into compliance with the trip cap. Non-compliance evidenced by the subsequent monitoring may also result in review of the use permit by the Planning Commission.	
Mitigation Measure 5: The applicant shall provide, upon request by the County, shuttle bus logs for all shuttle buses serving the school. The shuttle logs shall show the number of students dropped off and picked up at the school site each day.	The applicant will prepare and submit bi-annual reports containing the information identified below to the County of San Mateo Department of Public Works Roads Division and County of San Mateo Planning and Building Department Current Planning Section for review and acceptance. Reports are due by April 30th and November 30th of each year. Failure to submit reports in a timely manner may result in a review of the Use Permit by the Planning Commission. The County may also choose to conduct its own monitoring at the owner's expense. Bi-annual reports can include required reporting under Synapse School Campus No. 2 Use Permit, PLN2011-00070; the reports shall include: a. Vehicular count data b. Queuing analysis c. Shuttle usage logs, showing number of students dropped off and picked up by stop. d. Student enrollment at the time of traffic data collection e. Staffing at the time of traffic data collection f. Transportation Demand Management program data.
	If monitoring shows that the trip cap is exceeded and added peak hour trips from Synapse School Campus No. 2 cause the combined peak hour trips to

	exceed 390, the applicant shall have 30 days to submit a Transportation Demand Management Plan to the County with additional measures to reduce the number of trips and achieve compliance. At the Planning and Building Director's discretion, the County may request a Transportation Demand Management Plan in the event the individual campus trip cap is exceeded. The Transportation Demand Management Plan can include updates to the approach for Synapse School Use Permit, PLN2014-00295. The applicant shall have an additional 30 days to implement additional measures to achieve compliance. A subsequent monitoring may be conducted by the County 30 days following implementation of the program at the applicant's expense. If the subsequent monitoring indicates that the trip cap continues to be exceeded, then the applicant shall reduce student enrollment to maintain compliance. Non-compliance evidenced by subsequent monitoring may also result in review of the Use Permit by the Planning Commission.
Mitigation Measure 7: The applicant shall apply for an encroachment permit to install a left-turn refuge lane on Marsh Road, within the current roadway width, to improve the intersection operation. Plans shall be submitted to the Department of Public Works Traffic Services for review and approval. (Mitigation satisfied)	
	Mitigation Measure 2: All faculty/staff members who drive to the school shall be required to park on-site at one of the Synapse School campuses (Synapse School Campus No.1 or No. 2).
	Mitigation Measure 3: All 60 on-site vehicular parking spaces shall be appropriately striped, with markings to be maintained in a clear and visible manner so that they are easily recognizable to drivers.

	The school shall train and provide designated staff or volunteers to act as traffic attendants and assist during morning drop-off and afternoon pick-up times to monitor inbound vehicle queuing conditions at the driveways and manage the loading area and parking lot to move inbound traffic into the site and student loading area.
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D. ENVIRONMENTAL REVIEW

An Initial Study and Mitigated Negative Declaration were prepared for this project and circulated from February 4, 2026 to Feb 24, 2026. No comments were received during the public comment period. Staff has determined that the project, with the adopted mitigation measures, will not have a significant impact on the environment. The project mitigation measures as shown in the Mitigation Monitoring and Reporting Program (MMRP) will be adopted as part of the conditions of approval.

E. REVIEWING AGENCIES

Building Inspection Section
Department of Public Works
Environmental Health Services
Menlo Park Fire Protection District
North Fair Oaks Community Council

ATTACHMENTS

- A. Project Site Location Map
- B. Project Plans
- C. Traffic and VMT Analysis Prepared by Hexagon Transportation Consultants



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT A



0.07 0 0.04 0.07 Miles

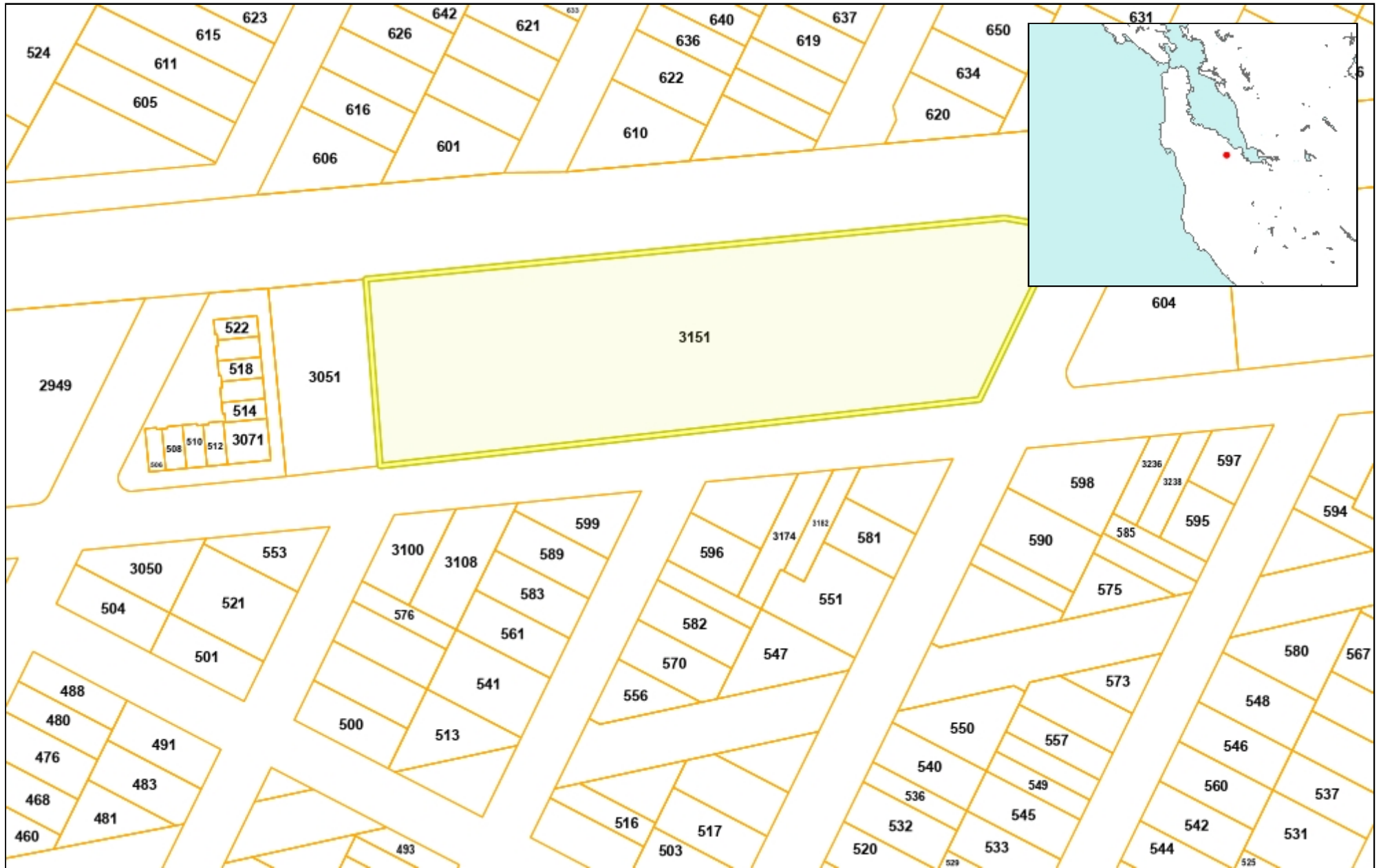
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THIS MAP IS NOT TO BE USED FOR NAVIGATION



0.07 0 0.04 0.07 Miles

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This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.

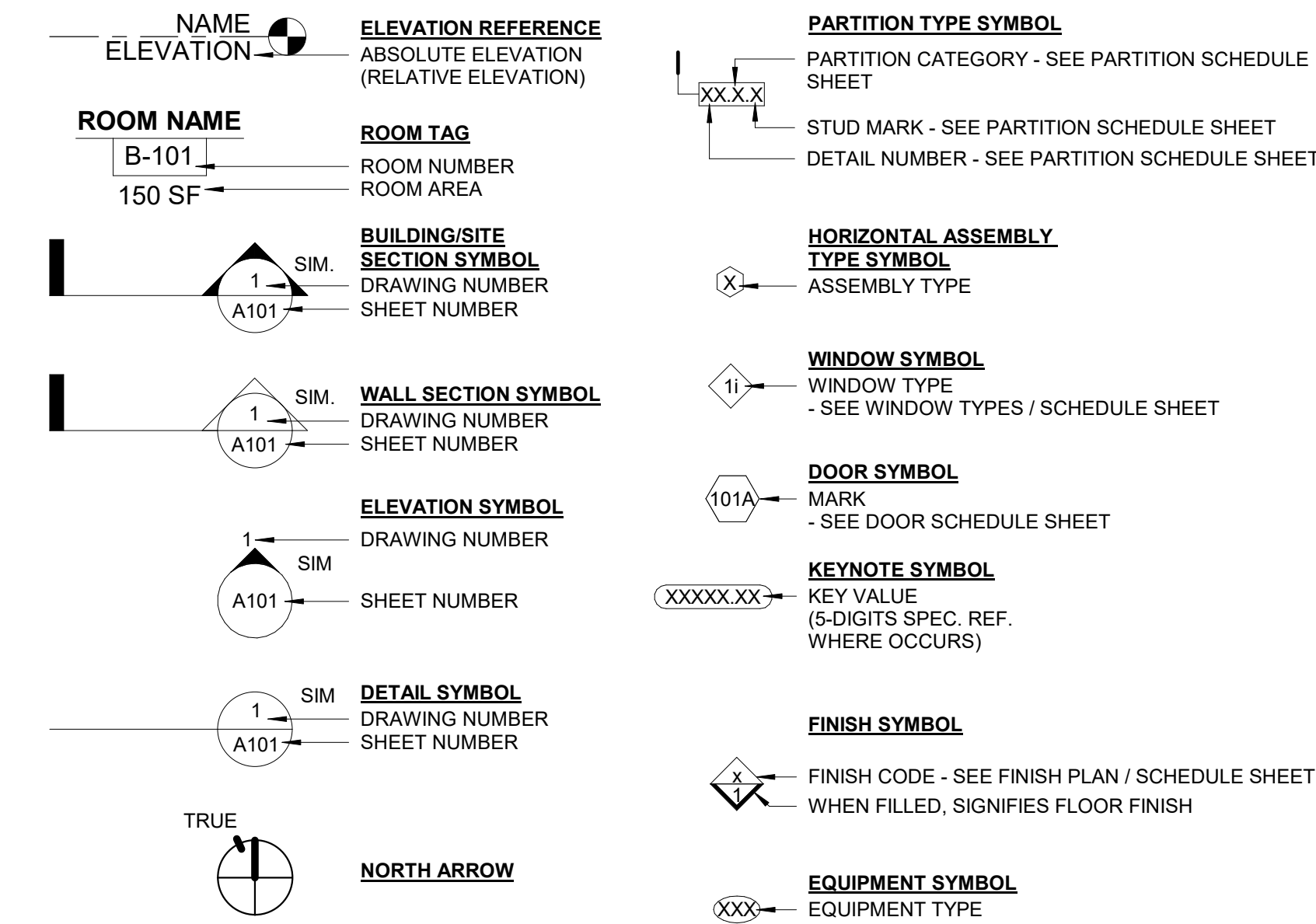
THIS MAP IS NOT TO BE USED FOR NAVIGATION



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT B

SYMBOLS



SHEET NOTES - GENERAL

- EXAMINE THE SITE AND COMPARE IT WITH DRAWINGS. NOTIFY ARCHITECT OF ANY DISCREPANCIES PRIOR TO THE START OF WORK.
- THE CONSTRUCTION DOCUMENTS ARE PROVIDED TO ILLUSTRATE THE DESIGN AND GENERAL TYPE OF CONSTRUCTION DESIRED AND IMPLY THE FINEST QUALITY OF CONSTRUCTION MATERIAL AND WORKMANSHIP THROUGHOUT. THE CONTRACTOR SHALL COMPLY WITH THE SPIRIT AS WELL AS THE LETTER IN WHICH THEY WERE WRITTEN.
- ALL CONSTRUCTION DOCUMENTS ARE COMPLIMENTARY AND WHAT IS CALLED FOR BY ANY WILL BE AS BINDING AS IF CALLED FOR BY ALL.
- S.E.D. AND S.M.D. FOR LOCATION OF ALL INTERIOR AND EXTERIOR HOUSEKEEPING PADS, VENT, DUCT, CONDUIT, AND SLEEVE PENETRATIONS.
- PROVIDE AS USED HEREIN SHALL MEAN FURNISH AND INSTALL.
- PROTECT SITE AND NEW OR EXISTING MATERIALS AND FINISHES FROM DAMAGE WHICH MAY OCCUR FROM CONSTRUCTION DEMOLITION, DUST, WATER ETC. AND PROVIDE AND MAINTAIN TEMPORARY BARRICADE, CLOSURE WALLS ETC. AS REQUIRED TO PROTECT THE PUBLIC DURING THE PERIOD OF CONSTRUCTION. DAMAGE TO NEW AND EXISTING MATERIALS, FINISHES, STRUCTURES AND EQUIPMENT SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ARCHITECT.
- PATCH ALL AREAS DAMAGED DUE TO NEW CONSTRUCTION OR WHERE PENETRATION OF UTILITIES HAS OCCURRED AND BEEN REMOVED. REPAIR ALL DEMOLITION PERFORMED IN EXCESS OF THAT REQUIRED, AT NO COST TO OWNER. PATCH ALL FINISHES TO MATCH EXISTING ADJACENT WHERE NEW CONSTRUCTION MEETS EXISTING.
- MAINTAIN A CURRENT AND COMPLETE SET OF CONSTRUCTION DOCUMENTS ON THE SITE DURING ALL PHASES OF CONSTRUCTION, FOR THE USE OF ALL TRADES, AND PROVIDE ALL SUB-CONTRACTORS WITH CURRENT CONSTRUCTION DOCUMENTS AS REQUIRED.
- REMOVE ALL RUBBISH AND WASTE MATERIALS ON A REGULAR BASIS AND EXERCISE STRICT CONTROL OVER JOB CLEANINGS TO PREVENT ANY DIRT, DEBRIS OR DUST FROM AFFECTING FINISHED AREA IN OR OUTSIDE SITE.
- VERIFY ALL DIMENSIONS SHOWN ON DRAWINGS BY TAKING FIELD MEASUREMENTS. PROPER FIT AND ATTACHMENT OF ALL PARTS IS REQUIRED. NOTIFY ARCHITECT OF CONFLICTS PRIOR TO THE START OF WORK. DO NOT SCALE DRAWINGS TO LAY OUT WALL. TYPICAL DIMENSIONS SHOWN ARE TO THE FACE OF STUD, UNLESS OTHERWISE NOTED. ALL DIMENSIONS NOTED "CLEAR" SHALL BE STRICTLY MAINTAINED.
- THE ARCHITECT HAS NO KNOWLEDGE OF AND SHALL NOT BE HELD LIABLE FOR ANY ASBESTOS OR OTHER HAZARDOUS MATERIAL ON JOB SITE. IF ASBESTOS OR OTHER HAZARDOUS MATERIALS ARE DISCOVERED DURING CONSTRUCTION, THE CONTRACTOR SHALL IMMEDIATELY ISOLATE THE AFFECTED AREA AND NOTIFY THE OWNER FOR FURTHER INSTRUCTION BEFORE PROCEEDING.
- ALL MATERIALS TO BE INSTALLED ARE TO BE NEW. DO NOT REUSE REMOVED OR OTHERWISE DEMOLISHED MATERIALS UNLESS DIRECTED BY THE ARCHITECT.
- DIMENSIONS ARE TO FACE OF GWB OR GRID, U.O.N. GRID LINES CORRESPOND TO CENTER OF STUD OR COLUMN, U.O.N.

SHEET NOTES - CODE REFERENCES

CCR TITLE 24 CALIFORNIA BUILDING STANDARDS CODE

CALIFORNIA CODE OF REGULATIONS TITLE 24 (2022 EDITION) - PART 1 CALIFORNIA ADMINISTRATIVE CODE

CALIFORNIA CODE OF REGULATIONS TITLE 24 (2022 EDITION) - PART 2/VOLUME 1 CALIFORNIA BUILDING CODE

CALIFORNIA CODE OF REGULATIONS TITLE 24 (2022 EDITION) - PART 2/VOLUME 2 CALIFORNIA BUILDING CODE

CALIFORNIA CODE OF REGULATIONS TITLE 24 (2022 EDITION) - PART 3 CALIFORNIA ELECTRICAL CODE

CALIFORNIA CODE OF REGULATIONS TITLE 24 (2022 EDITION) - PART 4 CALIFORNIA MECHANICAL CODE

CALIFORNIA CODE OF REGULATIONS TITLE 24 (2022 EDITION) - PART 5 CALIFORNIA PLUMBING CODE

CALIFORNIA CODE OF REGULATIONS TITLE 24 (2022 EDITION) - PART 6 CALIFORNIA ENERGY CODE

CALIFORNIA CODE OF REGULATIONS TITLE 24 (2022 EDITION) - PART 9 CALIFORNIA FIRE CODE

CALIFORNIA CODE OF REGULATIONS TITLE 24 (2022 EDITION) - PART 11 CALIFORNIA GREEN BUILDING STANDARDS CODE

CALIFORNIA CODE OF REGULATIONS TITLE 24 (2022 EDITION) - PART 12 CALIFORNIA REFERENCED STANDARDS CODE

TITLE 19, CCR, PUBLIC SAFETY, STATE FIRE MARSHAL REGULATIONS

NATIONAL REFERENCE STANDARDS

2010 ADA STANDARDS FOR ACCESSIBLE DESIGN

ASD (AISC) MANUAL OF STEEL CONSTRUCTION, 2017 EDITION

2018 REVISED NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION

ACI-318-19 EDITION CODE & COMMENTARY

NFPA 13, AUTOMATIC SPRINKLER SYSTEM, 2022 EDITION, AS CA AMENDED

NFPA 14, STANDPIPE & HOSE SYSTEM, 2019 EDITION, AS CA AMENDED

NFPA 24, STANDARD FOR INSTALLATION OF PRIVATE SERVICES AND THEIR APPURTENANCES, 2022 EDITION, AS CA AMENDED

NFPA 25, INSPECTION, TESTING AND MAINTENANCE OF WATER-BASED FIRE PROTECTION SYSTEMS, 2023 EDITION, AS CA AMENDED

NFPA 72, NATIONAL FIRE ALARM CODE, 2022 EDITION (AS CA AMENDED)

2022 TCNA, TILE COUNCIL OF NORTH AMERICA

ABBREVIATIONS

#	Number	E	East	LP	Lock Pin	S	South
&	And	E.J	Expansion Joint	LAB	Laboratory	S.C.	Solid Core
(E)	Existing	E.P	Electrical Panel	LAM	Laminate	S.C.D.	See Civil Drawings
(N)	North	E.W.C.	Electric Water Cooler	LAV	Lavatory	S.D	Soap Dispenser
@	At	EA	Each	LKR	Locker	S.E.D.	See Electrical Drawings
	Parallel	EL	Elevation	LNKG	Landing	S.M.D.	See Mechanical Drawings
∠	Angle	ELEC	Electric	LT	Light	S.N.D.	Sanitary Napkin Dispens.
ø	Diameter	ELEV	Elevator			S.N.R.	Sanitary Napkin Recept.
		EMER	Emergency	M.B.	Machine Bolt	S.P.D.	See Plumbing Drawings
A.D.	Area Drain	ENCL	Enclosure	M.H	Medicine Cabinet	S.S.	Stainless Steel
A.F.F.	Above Finished Floor	EQ	Equal	M.J.	Movement Joint	S.S.D.	See Structural Drawings
ABV	Above	EQPT	Equipment	M.O.	Masonry Opening	S.SK	Service Sink
ACOUS	Acoustic	EXIST	Existing	MOD	Modified	SCHED	Schedule
ADJ	Adjustable	EXP	Expansion	M.S.	Machine Screw	SCRN	Screen
AGGR	Aggregate	EXPO	Exposed	MAX	Maximum	SECT	Section
ALUM	Aluminum	EXT	Exterior	MECH	Mechanical	SH	Shelf
ANOD.	Anodized	EXTR	Extrusion	MEMB	Membrane	SHR	Shower
APPROX	Approximate			MFR	Manufacturer	SHT	Sheet
ARCH	Architectural	F	Fixed	MH	Manhole	SHTG	Sheathing
ASPH	Asphalt	F.A.	Fire Alarm	MIN	Minimum	SIM	Similar
		F.B.	Flat Bar	MIR	Mirror	SPEC	Specification
BD	Board	F.D.	Floor Drain	MISC	Miscellaneous	SQ	Square
BITUM	Bituminous	F.E.	Fire Extinguisher	MTD	Mounted	STA	Station
BLDG	Building	F.E.C.	Fire Extinguisher Cabinet	MTL	Metal	STD	Standard
BLK	Block	F.H.C.	Fire Hose Cabinet	MUL	Mullion	STL	Steel
BLKG	Blocking	F.I.	Floor Insert (recessed)			STOR	Storage
BM	Beam	F.O.C.	Face of Concrete	N	New	STRL	Structural
B.O.	Bottom of	F.O.F.	Face of Finish	N.I.C.	Not in Contract	STRUCT	Structure
BSMT	Basement	F.O.S.	Face of Stud	N.T.S.	Not to Scale	SUSP	Suspended
BTW	Between	F.S.	Frame Size	NO	Number	SYM	Symmetry
		F.S.R.	Fire Sprinkler Riser	NOM	Nominal		
		FL.S.	Floor Sink			T	Tread
C.B.	Catch Basin	FDN	Foundation	O.A.	Overall	T&G	Tongue & Groove
C.G.	Corner Guard	FIN	Finish	O.C.	On Center	T.B.	Towel Bar
C.I.	Cast Iron	FL	Floor	O.D.	Outside Diameter	T.O.	Top of
C.J.	Control Joint	FLASH	Flashing	O.H.	Opposite Hand	T.O.C.	Top of Curb
C.M.U.	Concrete Masonry Unit	FLUOR	Fluorescent	O	On	T.O.P	Top of Pavement
C.O.	Cased Opening	FPRF	Fireproof	OBS	Obsure	T.O.S.	Top of Slab
CAB	Cabinet	FRMG	Framing	OFF	Office	T.O.W.	Top of Wall
CEM	Cement	FRT	Fire Retardant Treated	OPNG	Opening	T.P.D.	Toilet Paper Dispenser
CER	Ceramic	FT	Foot or Feet	OPP	Opposite	T.V.	Television
CL	Closet	FTG	Footing			TEL	Telephone
CLG	Ceiling	FURR	Furring	PH	Panic Hardware	TER	Terrazzo
CLKG	Caulking	FUT	Future	P.LAM	Plastic Laminate	THK	Thick
CLR	Clear			P.T.D.	Paper Towel Dispenser	TYP	Typical
CNTR	Counter	G.B.	Grab Bar	P.T.D./R	Paper Towel Dispenser/ Receptacle		
COL	Column	G.F.R.C.	Glass Fiber Reinforced	P.T.R.	Paper Tower Receptacle	U.O.N.	Unless otherwise noted
CONC	Concrete	GA	Gauge	PL	Plate	U.R.	Urinal
CONF	Conference	GALV	Galvanized	PLAS	Plaster	UBC	Uniform Building Code
CONN	Connection	GL	Glass	PLYWD	Plywood	UNF	Unfinished
CONST	Construction	GND	Ground	POL	Polished		
CONT	Continuous	GR	Grade	PR	Pair	VERT	Vertical
CR	Corridor	GWB	Gypsum Wall Board	PRCST	Precast	VEST	Vestibule
CPT	Carpet	GYP	Gypsum	PRT	Pressure Treated		
Ctr	Center			PT	Point	W	West
CTSK	Countersunk	H.B.	Hose Bibb	PTD	Painted	W.C.	Water Closet
		H.C.	Hollow Core	PTN	Partition	W.O.	Where Occurs
D.F.	Drinking Fountain	H.M.	Hollow Metal			W.P.T	Working Point
D.G.	Decomposed Granite	HD	Head	R	Riser	W.R.	Water Resistant
D.J.	Drift Joint	HDR	Header	R.D.	Roof Drain	W.R.O.	Window Rough Opening
D.O.	Door Opening	HDWD	Hardwood	R.O.	Rough Opening	W	With
D.S.	Downspout	HDWE	Hardware	R.S.	Rough Sawn	W/O	Without
D.S.P.	Dry Standpipe	HGT	Height	R.W.L.	Rain Water Leader	WD	Wood
DBL	Double	HORIZ	Horizontal	RAD	Radius	WOW	Window
DEFLECT	Deflection	HR	Hour	REF	Reference	WP	Waterproof
DEPT	Department			REFR	Refrigerator	WSCOT	Wainscot
DET	Detail	I.D.	Inside Diameter	REIN	Reinforced	WT	Weight
DIA	Diameter	INSUL	Insulation	REQ	Required		
DIM	Dimension	INT	Interior	RESID	Residential		
DISP	Dispenser			RESIL	Resilient		
DN	Down	JAN	Janitor	RGTR	Register		
DR	Door	JT	Joint	RM	Room		
DRW	Drawer			RWD	Redwood		
DWG	Drawing	KIT	Kitchen				

USE PERMIT AMENDMENT

SHEET NO.		JOB NO.	
G0.01		2015	
DATE 1/27/24	DRAFTER Author	CHECKED BY Checker	SITE NO.
SCALE As indicated		CLIENT PROJECT NO.	

Approvals

Client

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Architect



Engineer

Firm Name and Address and Logo



K2A ARCHITECTURE
+ INTERIORS

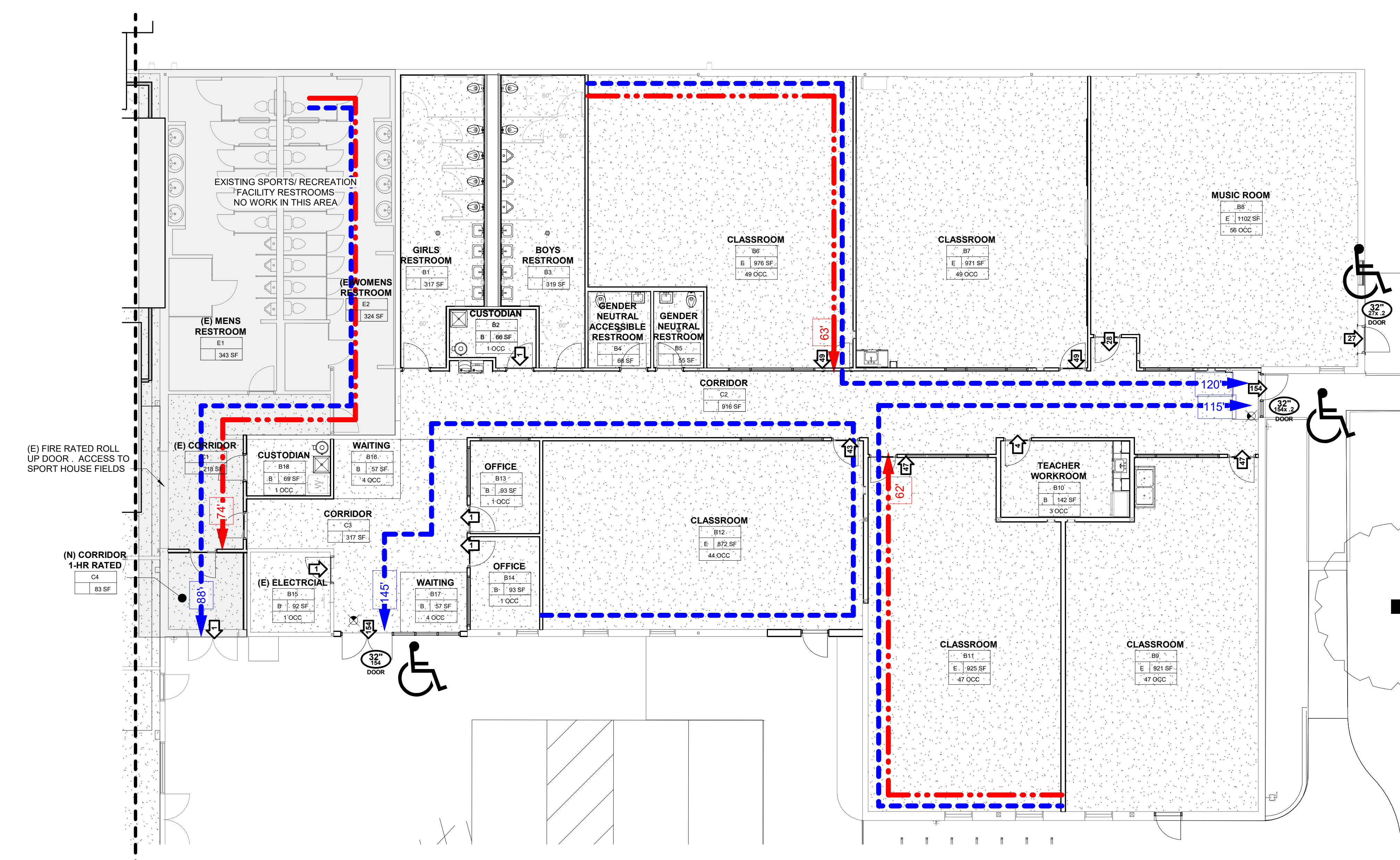
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TENANT
IMPROVEMENTS

3151 EDISON WAY
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EGRESS LEGEND

- PROPERTY LINE
- (N) EXTERIOR PATH OF TRAVEL - PROPOSED SCHOOL
- (E) EXTERIOR PATH OF TRAVEL - SPORT HOUSE
- (E) EXTERIOR PATH OF TRAVEL - UNOCCUPIED WAREHOUSE
- AUTOMOBILE QUEUE FOR (N) SCHOOL
- CBC TABLE 1006.2.1 COMMON PATH OF TRAVEL (OCCUP A & E 75'-0" MAX)
- CBC TABLE 1017.2 EXIT ACCESS TRAVEL DISTANCE (OCCUP A & E 250'-0" MAX)
- SAFE DISPERSAL AREA, 3 SF/ OCCUPANT, CBC 452.1.3
- 50'-0" MIN. SEPARATION BETWEEN BUILDING AND SAFE DISPERSAL AREA, CBC 452.1.3
- E/B - NEW RENOVATED SCHOOL SPACE OCCUPANT LOAD 20/150
- B - NEW RENOVATED OFFICE SPACE OCCUPANT LOAD 15/150
- A3 - INDOOR SPORTS FIELD 2 OCCUPANT LOAD 50
- A4 - INDOOR SPORTS FIELD 1 OCCUPANT LOAD 50
- A - CONCOURSE OCCUPANT LOAD 50
- A2 - DINING AREA OCCUPANT LOAD 15
- STORAGE
- OCCUPANT LOAD AT POINT OF EGRESS PATH EXIT SIGN
- MIN. EGRESS WIDTH:
32" MIN @ DOORS (CBC 1005.3.2)
72" MIN @ CORRIDORS (CBC 1020.2)
EGRESS WIDTH FACTOR: (3) FOR STAIRWAYS
(2) AT OTHER EGRESS COMPONENTS OR
(15) PER CBC EXCEPTION 1005.3.2.1
OCCUPANT LOAD AT POINT OF EGRESS PATH
- ROOM NAME
ROOM NUMBER
ROOM AREA
OCCUPANT TYPE

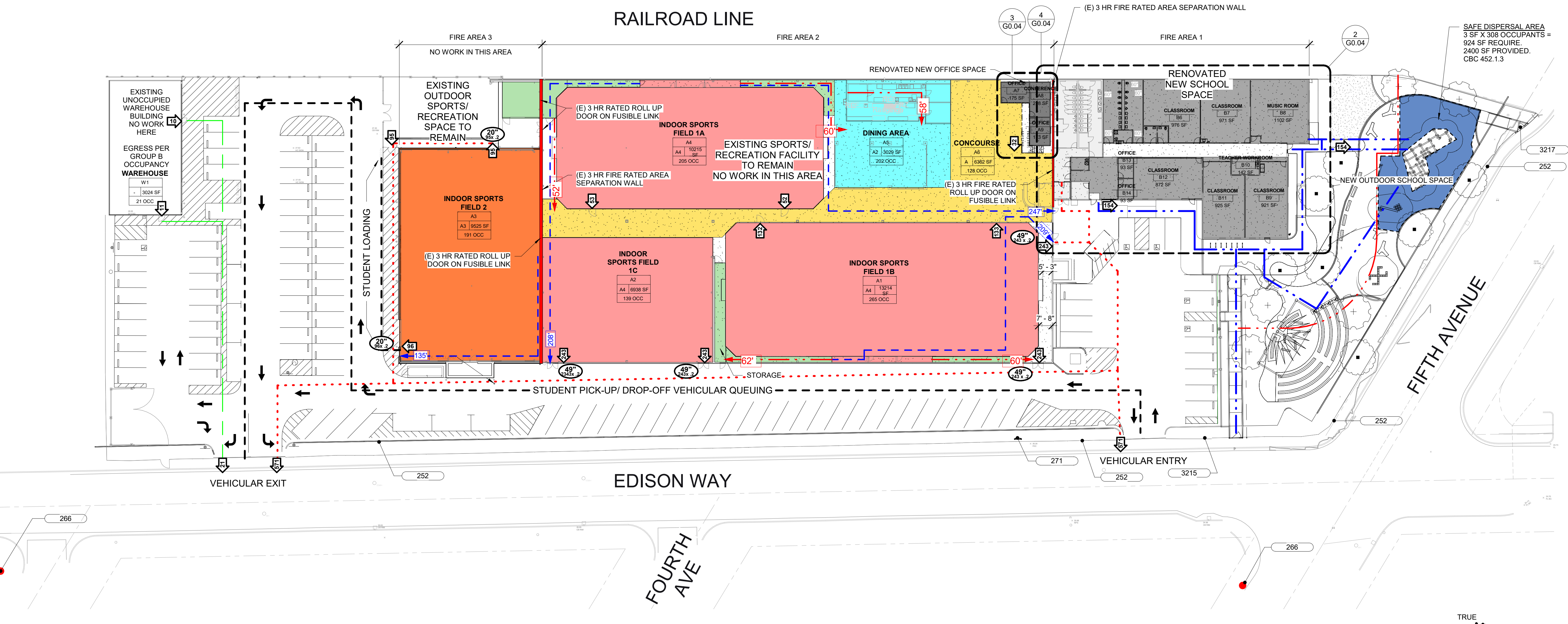
OCCUPANTS SCHOOL - FIRE AREA 1					
ROOM #	ROOM NAME	OCCUPANCY	AREA	OLF	OCCUPANTS
B6	CLASSROOM	E	976 SF	20 SF	49
B7	CLASSROOM	E	971 SF	20 SF	49
B8	MUSIC ROOM	E	1102 SF	20 SF	56
B9	CLASSROOM	E	921 SF	20 SF	47
B11	CLASSROOM	E	925 SF	20 SF	47
B12	CLASSROOM	E	872 SF	20 SF	44
A7	OFFICE	B	175 SF	50 SF	4
A8	CONFERENCE	B	218 SF	15 SF	15
A9	OFFICE	B	173 SF	50 SF	4
A10	OFFICE	B	173 SF	50 SF	4
A11	OFFICE	B	218 SF	50 SF	5
B2	CUSTODIAN	B	66 SF	300 SF	1
B10	TEACHER WORKROOM	B	142 SF	50 SF	3
B13	OFFICE	B	93 SF	150 SF	1
B14	OFFICE	B	93 SF	150 SF	1
B15	(E) ELECTRICAL	B	92 SF	300 SF	1
B16	WAITING	B	57 SF	15 SF	4
B17	WAITING	B	57 SF	15 SF	4
B18	CUSTODIAN	B	69 SF	300 SF	1
Grand total			7394 SF		340

OCCUPANTS SPORTS FIELDS 1A-1C/DINING/CONCOURSE - FIRE AREA 2					
ROOM #	ROOM NAME	OCCUPANCY	AREA	OLF	OCCUPANTS
A1	INDOOR SPORTS FIELD 1A	A4	13214 SF	50 SF	265
A2	INDOOR SPORTS FIELD 1C	A4	6938 SF	50 SF	139
A4	INDOOR SPORTS FIELD 1A	A4	10215 SF	50 SF	205
A5	DINING AREA	A2	3029 SF	15 SF	202
A6	CONCOURSE	A	6362 SF	50 SF	126
A7	OFFICE	B	175 SF	50 SF	4
A8	CONFERENCE	B	218 SF	15 SF	15
A9	OFFICE	B	173 SF	50 SF	4
A10	OFFICE	B	173 SF	50 SF	4
A11	OFFICE	B	218 SF	50 SF	5
Grand total			40716 SF		971

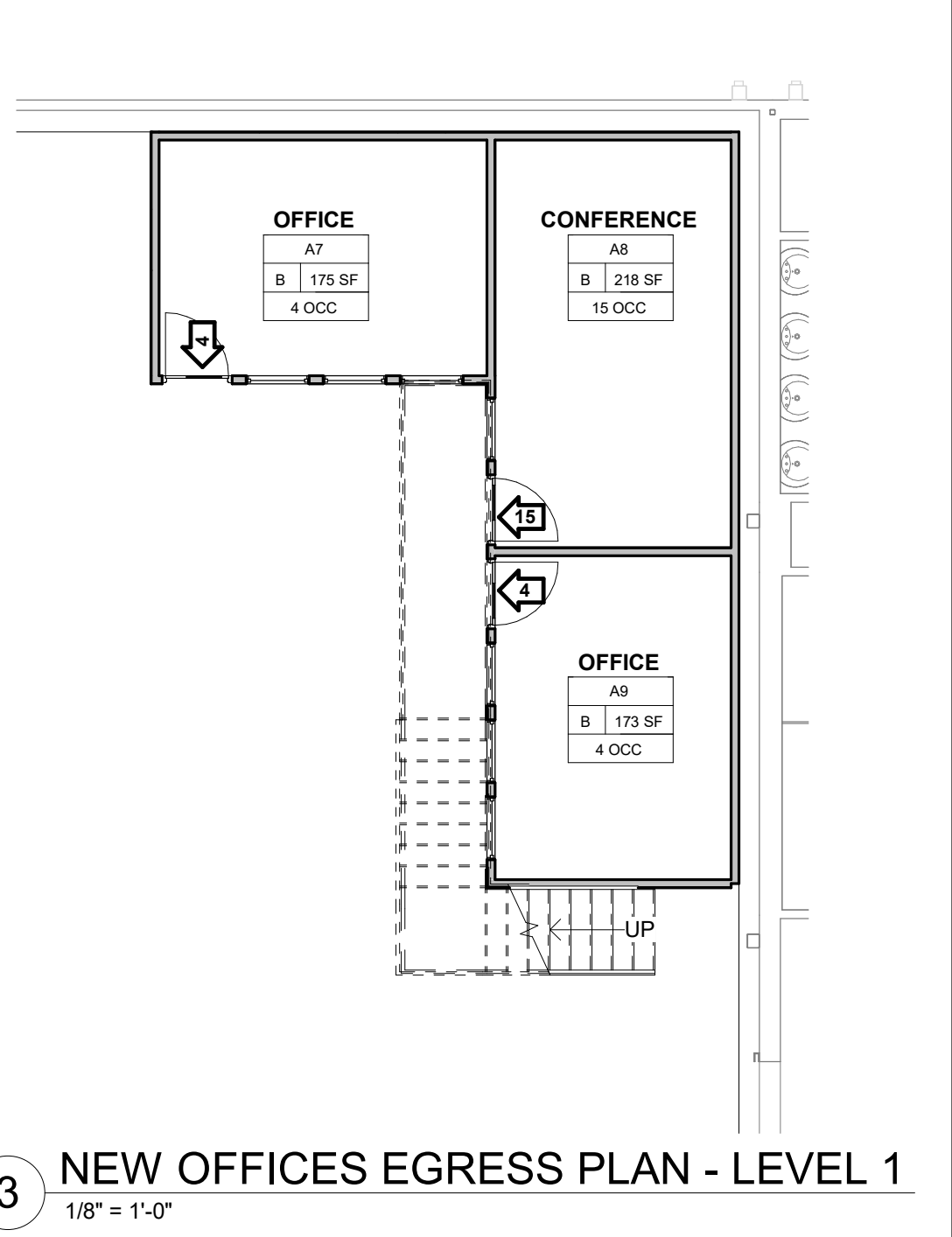
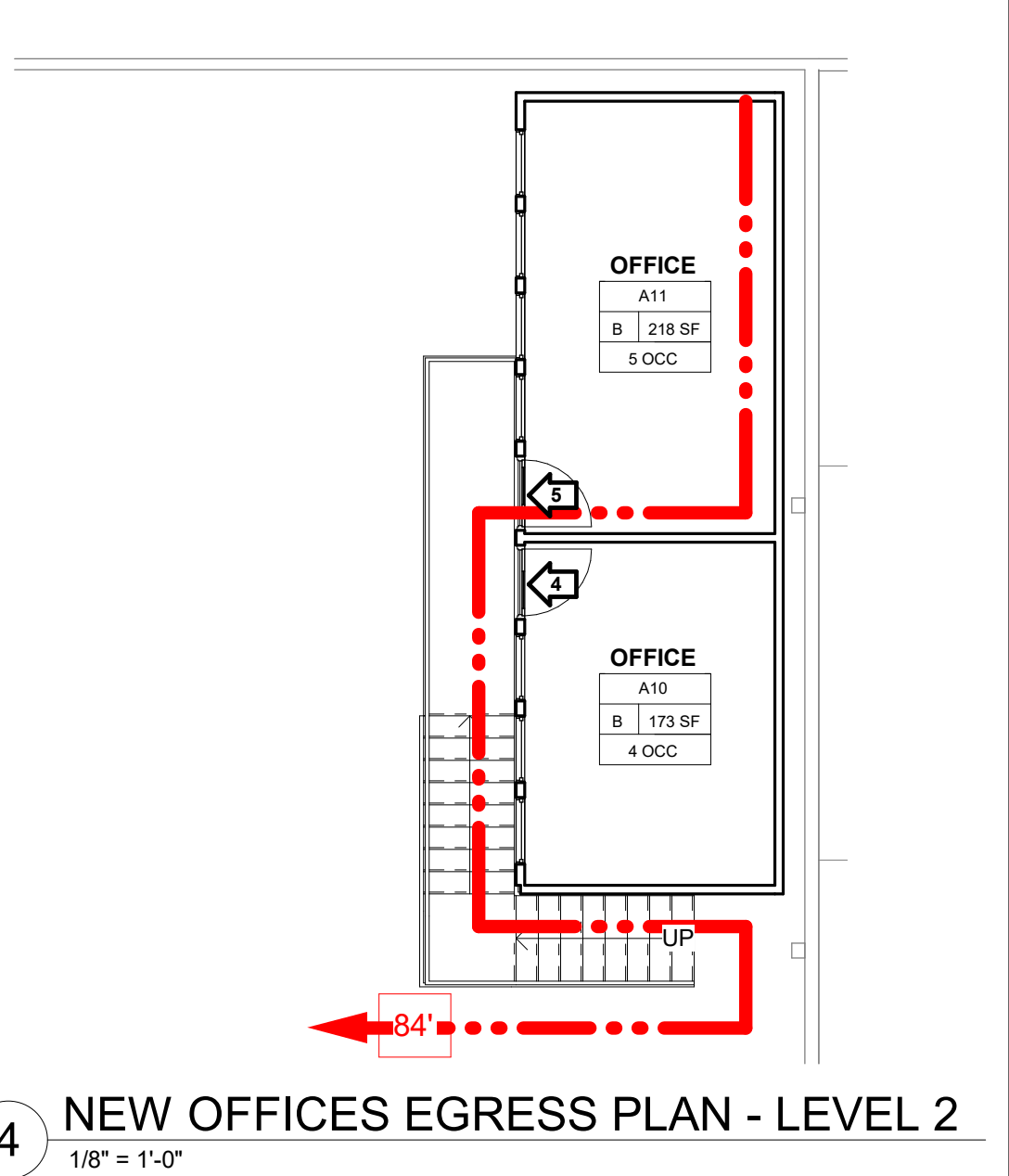
OCCUPANTS SPORTS FIELD 2 - FIRE AREA 3					
ROOM #	ROOM NAME	OCCUPANCY	AREA	OLF	OCCUPANTS
A3	INDOOR SPORTS FIELD 2	A3	9525 SF	50 SF	191
Grand total			9525 SF		191

KEYNOTE LEGEND	
KEY VALUE	DESCRIPTION
252	(E) CHAIN LINK FENCE TO REMAIN
266	(E) FIRE HYDRANT
271	(E) FIRE DEPARTMENT CONNECTION
3215	(N) ACCESSIBLE PEDESTRIAN SITE ENTRY POINT
3217	(N) SITE ACCESS GATE

2 NEW SCHOOL EGRESS PLAN
1/8" = 1'-0"



1 NEW SITE EGRESS PLAN
1" = 30'-0"



4 NEW OFFICES EGRESS PLAN - LEVEL 2
1/8" = 1'-0"

3 NEW OFFICES EGRESS PLAN - LEVEL 1
1/8" = 1'-0"

Approvals

Client
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STATE OF CALIFORNIA
EXP. 06/27

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TENANT IMPROVEMENTS FOR SYNAPSE SCHOOL EXPANSION
3151 EDISON WAY
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Date	No.	Revisions

DRAWING TITLE
EGRESS PLANS

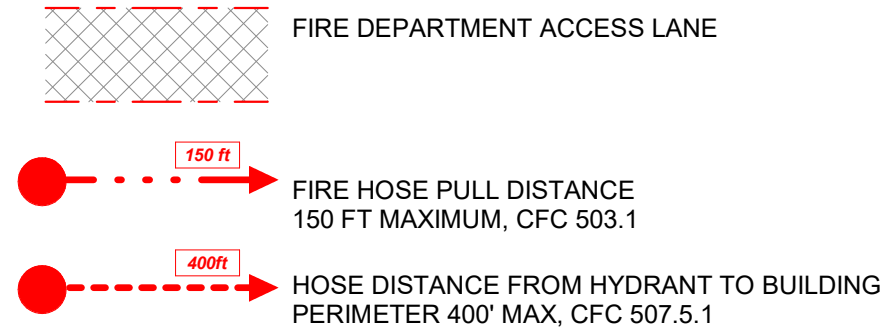
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SHEET NO. G0.04	JOB NO. 2015
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DATE 1/27/24	DRAFTER Author	CHECKED BY Checker	SITE NO.
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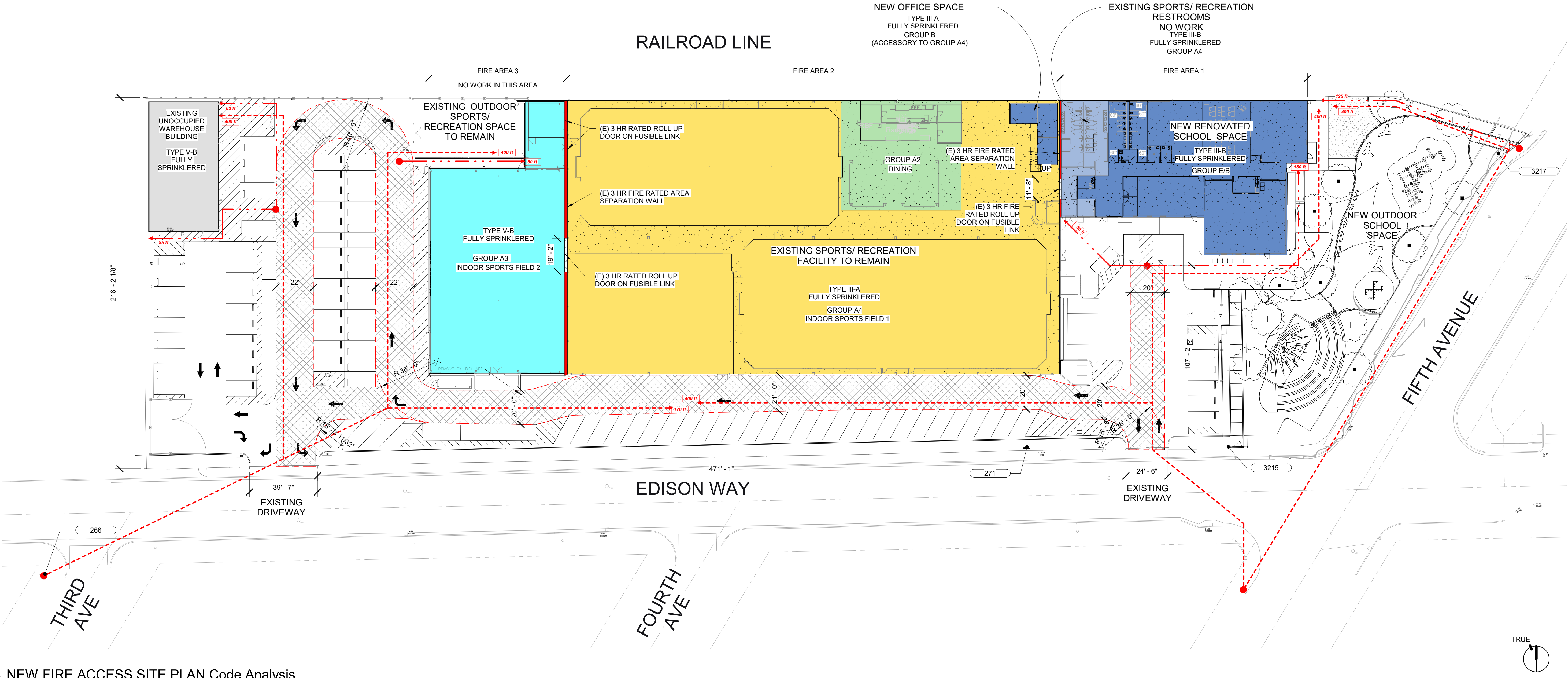
CODE ANALYSIS			Synapse School & Sport House			
Project Address		3151 Edison Way Redwood City, CA 94063				
APN						
ZONING		Commercial/Mixed Use				
OCCUPANCY CLASSIFICATION		Sections 302.1, 303.1, 303.3, 303.4, 303.4304.1, 305.1 & 508.3			A/E/B	
CONSTRUCTION TYPE		Sections 602.5			IIIA/IIIB/VB	
BUILDING HEIGHTS AND AREAS					Allowed	Proposed
Building Height - Table 504.3		SI				
School & Sports House Restrooms		SI			75	17 FT Existing
Dining Area & Indoor Sports Field 1		SI			85	27.5 FT Existing
Indoor Sports Field 2		SI			60	24.5 FT Existing
Number of Stories - Table 504.4		SI			x	1 Existing
		The entire building is 1 story				
Building Area						
Allowable Area Factor - Table 506.2						
School		E/B	III-B	SI more restrictive E	58,000	9,003
Sports House Restrooms		A3	III-B	SI	38,000	1,550
Dining Area		A2	III-A	SI	56,000	4,500
Indoor Sports Field 1		A4	III-A	SI	56,000	42,770
Indoor Sports Field 2		A3	V-B	SI	24,000	9,369
Fire Area Calculations		Table 707.3.10 A,B,E - 2 HR Fire - Resistance Rating Required				
Fire Area 1 - Area of Renovation						
School & Sports House Restrooms		A4/B/E	III-B	Non Separated occupancies 508.3 - A4 most restrictive	38,000	10,553
Fire Area 2 - No Work						
Dining Area & Indoor Sports Field 1		A2/A4	III-A	A2/A4	56,000	47,270
Fire Area 3 - No Work						
Indoor Sports Field 2		A3	V-B	A3	24,000	9,369
FIRE RESISTANCE RATINGS REQUIREMENT IN AREA OF NEW CONSTRUCTION - III-B						
Tables 601		Primary Structural Frame			0-HR	
		Bearing Walls - Exterior			2-HR	
		Bearing Walls - Interior			0-HR	
		Extr. Nonbearing Walls & Part			0-HR	
		Intr. Nonbearing Walls & Part			0-HR	
		Floor Construction			0-HR	
		Roof Construction			0-HR	

FAP LEGEND



KEYNOTE LEGEND	
KEY VALUE	DESCRIPTION
266	(E) FIRE HYDRANT
271	(E) FIRE DEPARTMENT CONNECTION
3215	(N) ACCESSIBLE PEDESTRIAN SITE ENTRY POINT
3217	(N) SITE ACCESS GATE

- SHEET NOTES:
- THIS IS A FULLY SPRINKLERED BUILDING.
 - A NEW FIRE SPRINKLER SYSTEM SHALL BE INSTALLED IN THE AREA OF NEW WORK SHOWN UNDER THIS PERMIT APPLICATION.
 - FIRE APPARATUS ROADWAYS, INCLUDING PUBLIC AND PRIVATE STREETS AND IN SOME CASES DRIVEWAYS USED FOR VEHICLE ACCESS, SHALL BE CAPABLE OF SUPPORTING THE IMPOSED WEIGHT OF A 75,000 POUND (34,050 KG) FIRE APPARATUS AND SHALL BE PROVIDED WITH AN ALL-WEATHER DRIVING SURFACE. ONLY PAVED OR CONCRETE SURFACES ARE CONSIDERED TO BE ALL-WEATHER DRIVING SURFACES. CFC 2022, APPENDIX D.
 - ALL CURBING LOCATED WITHIN THE SCHOOL SITE THAT HAS NOT BEEN ASSIGNED AS ONSITE PARKING SHALL BE DESIGNATED AS "NO PARKING FIRE LANE".



1 NEW FIRE ACCESS SITE PLAN Code Analysis
1" = 30'-0"

Approvals

Client

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Engineer

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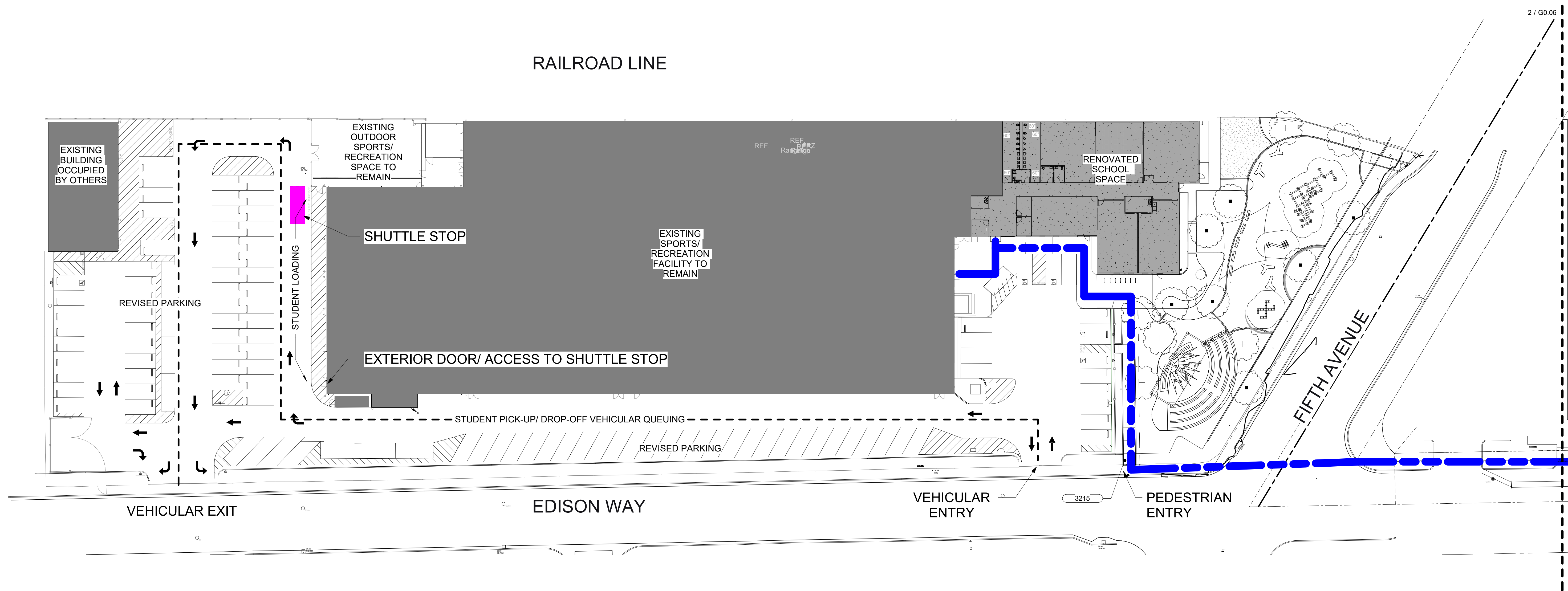
Date	No.	Revisions

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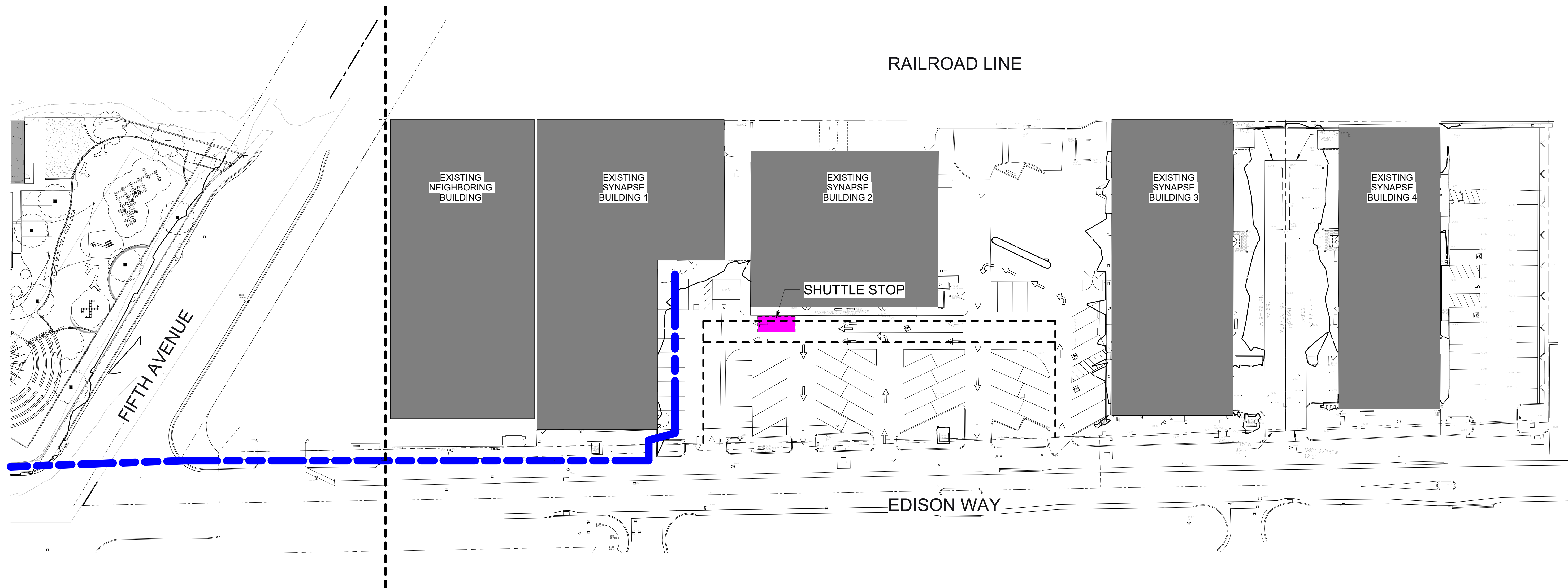
SITE FIRE ACCESS PLAN

USE PERMIT AMENDMENT

SHEET NO.	JOB NO.		
G0.05	2015		
DATE	DRAFTER	CHECKED BY	SITE NO.
1/27/24	Author	Checker	
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As indicated			



1 COMBINE CAMPUS PLAN - WEST
1" = 30'-0"



2 COMBINE CAMPUS PLAN - EAST
1" = 30'-0"

KEYNOTE LEGEND	
KEY VALUE	DESCRIPTION
3215	(N) ACCESSIBLE PEDESTRIAN SITE ENTRY POINT

PATH OF TRAVEL LEGEND

---	PROPERTY LINE
---	EXTERIOR PATH OF TRAVEL BETWEEN THE SYNAPSE SCHOOL CAMPUS AND THE SPORTS HOUSE. STUDENTS ARE ACCOMPANIED BY FACULTY AT ALL TIMES.
---	AUTOMOBILE QUEUE FOR SCHOOL
---	SHUTTLE STOP

Approvals

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3151 EDISON WAY
REDWOOD CITY, CA 94063

Date	No.	Revisions

DRAWING TITLE
COMBINE CAMPUS PLANS

USE PERMIT AMENDMENT

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G0.06	2015

DATE 1/27/24	DRAFTER Author	CHECKED BY Checker	SITE NO.
SCALE As indicated	CLIENT PROJECT NO.		



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Client
SYNAPSE SCHOOL

Client
SYNAPSE SCHOOL

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CAMPUS

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CONSULTANTS

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PROJECT: J22020

Sheet Name

SITEPLAN

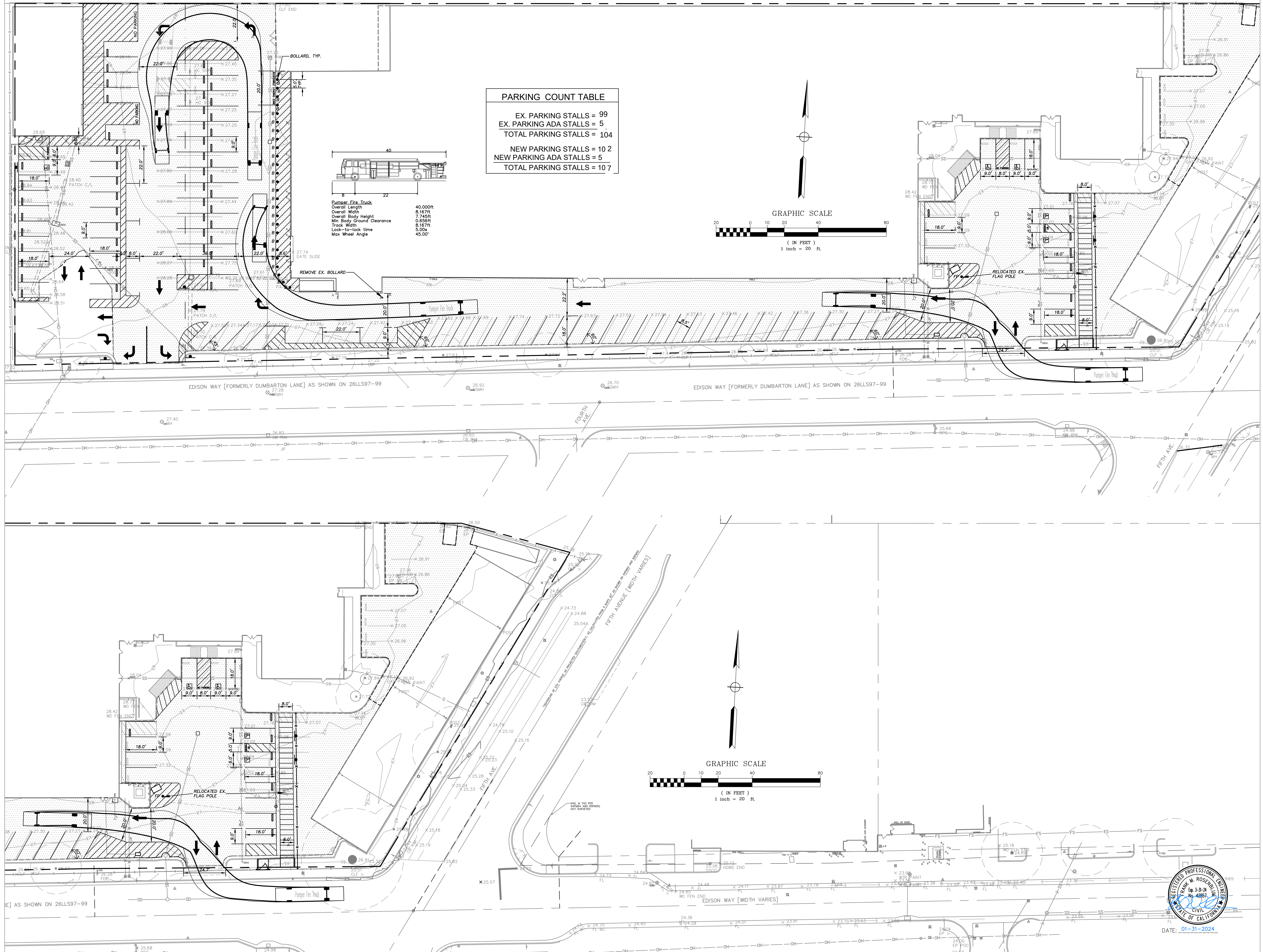
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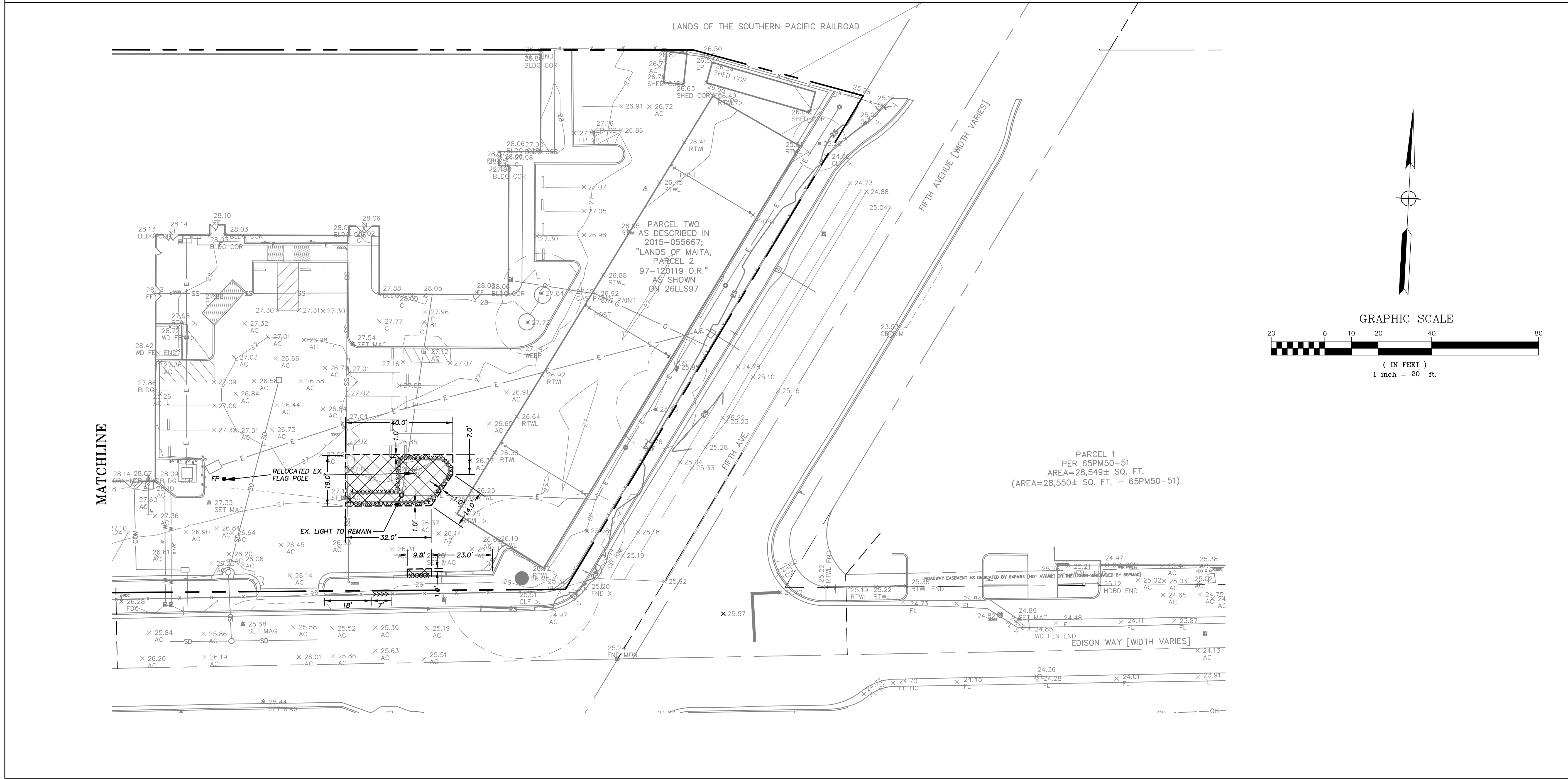
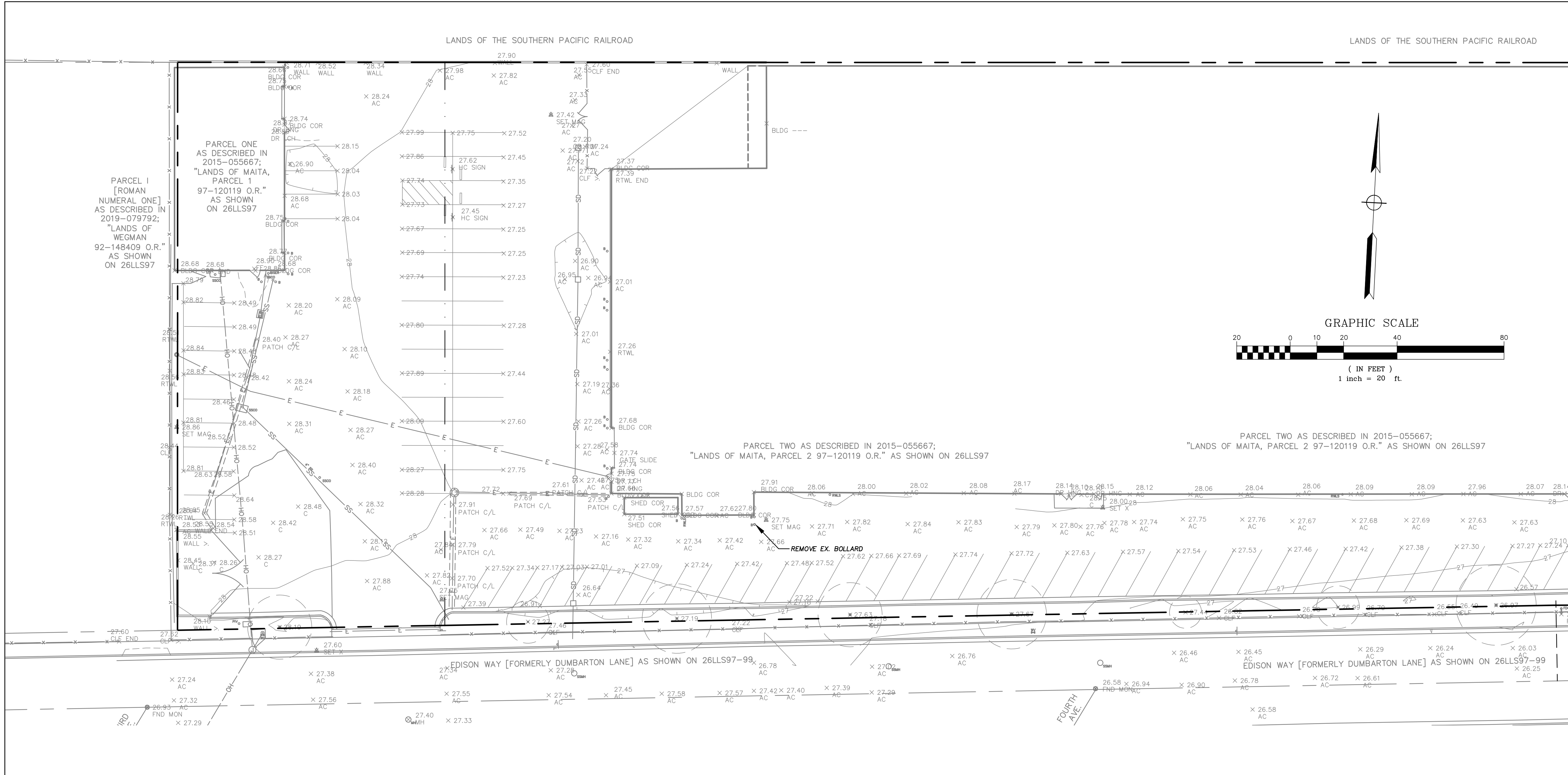
Sheet Information
Drawing Scale: As indicated
Drawn By: FLS

Project Information	
Date:	12/21/202
Status:	
Project Number:	J2202

Sheet

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GENERAL NOTES

1. THE CONTRACTOR SHALL LAY OUT THE WORK, SETTING GRADE STAKES, ESTABLISHING LINES, BASE LINES, ELEVATIONS AND OTHER REFERENCE MARKERS AND INFORMATION NECESSARY TO COMPLETE THE WORK AND SHALL BE RESPONSIBLE FOR THE ACCURACY THEREOF.
2. ANY INCONSISTENCIES IN EXISTING OR PROPOSED ELEVATIONS SHALL BE BROUGHT TO THE NOTICE OF THE OWNER'S REPRESENTATIVE FOR RESOLUTION PRIOR TO CONSTRUCTION OR AS SOON AS DISCOVERED.
3. IN THE EVENT THAT ANY UNKNOWN UNDERGROUND TANKS OR STRUCTURES OR UTILITY LINES ARE DISCOVERED ON THE SITE, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE TO DETERMINE THE DISPOSITION OF THE STRUCTURE.
4. CONTRACTOR SHALL IMPORT REQUIRED MATERIALS OR EXPORT EXCESS AS REQUIRED TO ESTABLISH PLAN GRADES. EXCESS MATERIAL IF ANY SHALL BE DISPOSED OFF-SITE IN A LEGAL MANNER AT CONTRACTOR'S EXPENSE.
5. EXISTING WATER, STORM AND SANITARY INVERTS SHALL BE EXPOSED AND VERIFIED PRIOR TO ANY NEW CONSTRUCTION.

DEMOLITION LEGEND

	REMOVE EXISTING PAVEMENT
	REMOVE EXISTING TREE
	REMOVE EXISTING CURB
	REMOVE EXISTING FENCE
	SAW CUT LINE
AC	ASPHALT CONCRETE
AD	AREA DRAIN
CB	CATCH BASIN
CO	CLEAN OUT
CONC.	CONCRETE
EX., EXIST.	EXISTING
TYP.	TYPICAL



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PROJECT:J22020

Sheet Name
DEMOLITION PLAN

Revisions

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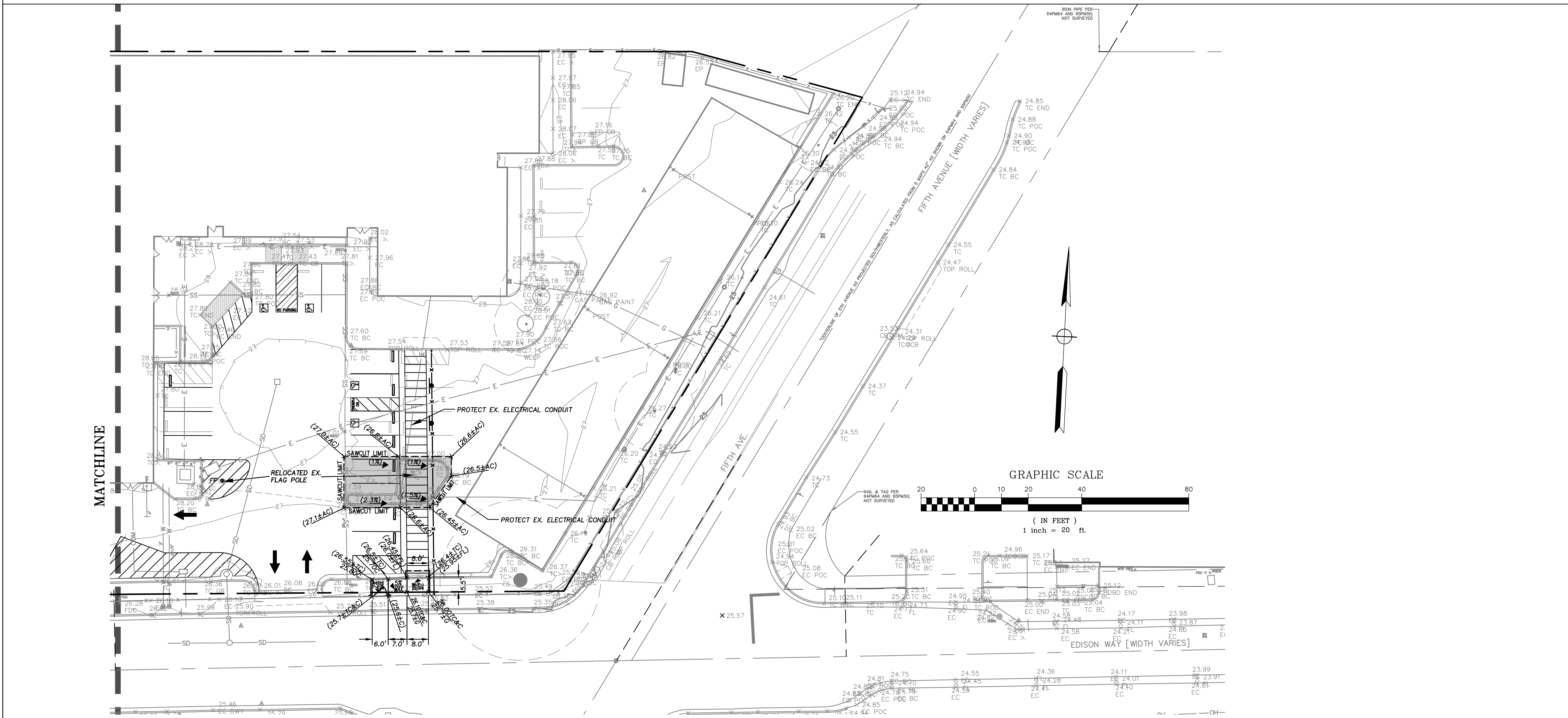
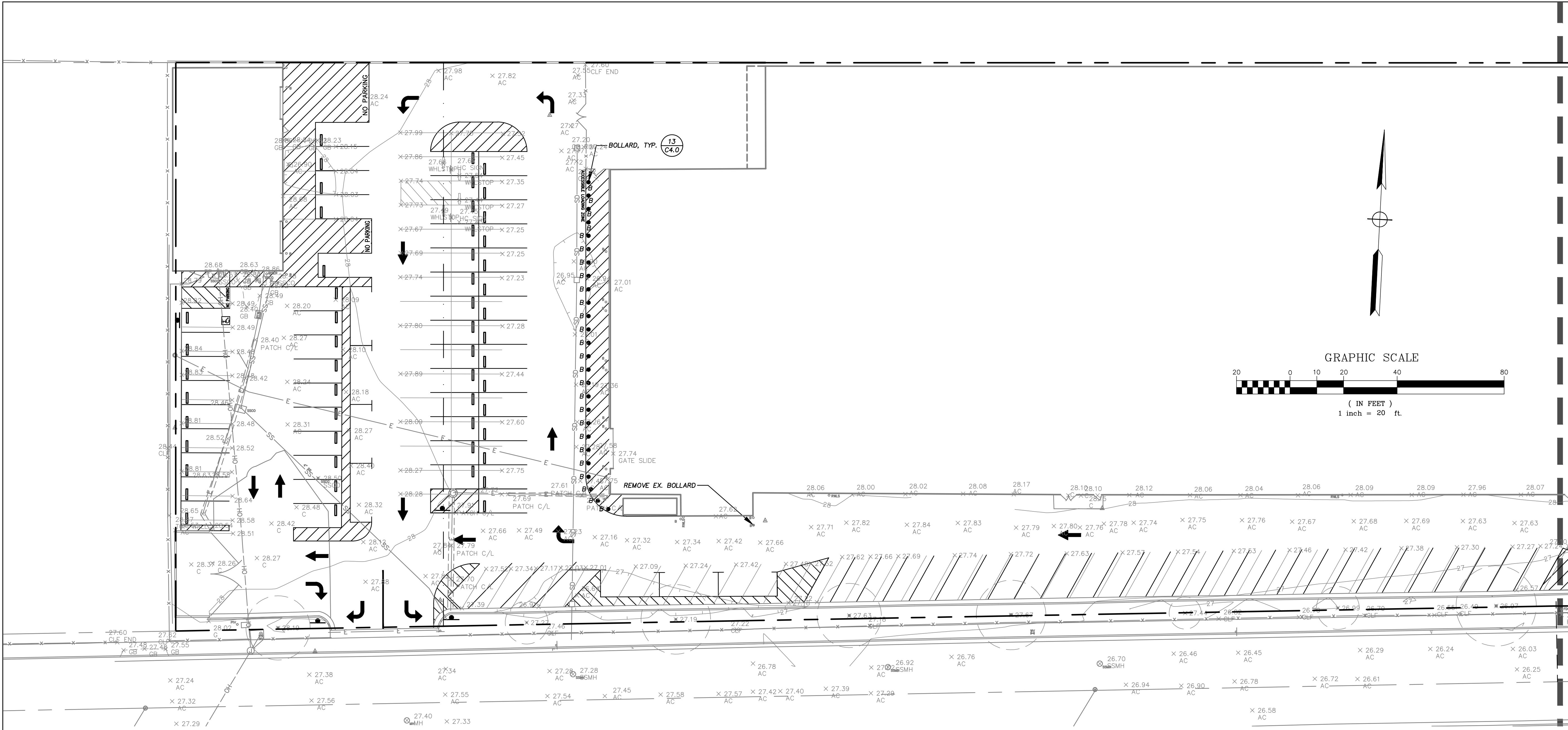
Project Information
Date: 10/14/2022
Status: -
Project Number: J22020

Sheet



DATE: 01-31-2024

C1.0



GENERAL NOTES

1. THE CONTRACTOR SHALL LAY OUT THE WORK, SETTING GRADESTAKES, ESTABLISHING LINES, BASE LINES, ELEVATIONS AND OTHER REFERENCE MARKERS AND INFORMATION NECESSARY TO COMPLETE THE WORK AND SHALL BE RESPONSIBLE FOR THE ACCURACY THEREOF.
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4. CONTRACTOR SHALL IMPORT REQUIRED MATERIALS OR EXPORT EXCESS AS REQUIRED TO ESTABLISH PLAN GRADES. EXCESS MATERIAL IF ANY SHALL BE DISPOSED OFF-SITE IN A LEGAL MANNER AT CONTRACTOR'S EXPENSE.
5. EXISTING WATER, STORM AND SANITARY INVERTS SHALL BE EXPOSED AND VERIFIED PRIOR TO ANY NEW CONSTRUCTION.

GRADING & PAVING LEGEND

	NEW CONCRETE SLAB (4" REINFORCED PCC ON 4" CLASS 2 AB ON 6" RECOMPACTED SUBGRADE (95%))
	NEW AC PAVEMENT (3" AC ON 6" CLASS 2 AB ON 6" RECOMPACTED SUBGRADE (95%))
	SAW CUT LINE
	NEW FENCE AND GATE (12' C4.0)
	NEW VERTICAL CURB (2' C4.0)
	ASPHALT CONCRETE
	AREA DRAIN
	PORTLAND CEMENT CONCRETE
	CATCH BASIN
	CLEAN OUT TO GRADE
	EXIST.
	EXISTING FINISH FLOOR
	FIRE HYDRANT
	FLOW LINE
	GROUND
	GRADE BREAK
	JUNCTION BOX
	STORM DRAIN MAINTENANCE HOLE
	SANITARY SEWER MAINTENANCE HOLE
	TOP OF CURB
	TOP OF WALL
	TYPICAL



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Client
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Project Name
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CAMPUS
3151 EDISON WAY, REDWOOD
CITY, CA

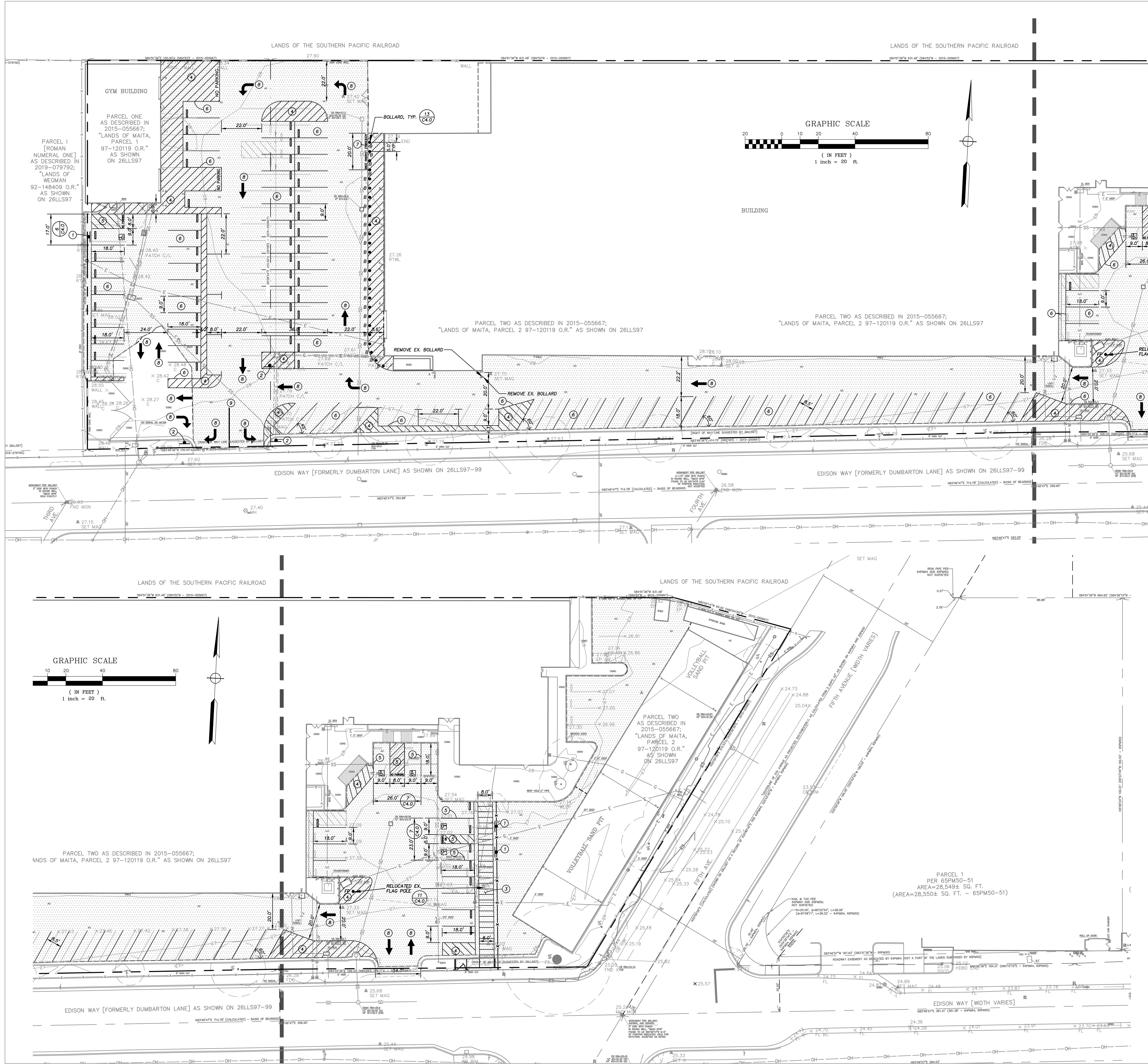
Consultants
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PROJECT:J22020

Sheet Name
GRADING AND PAVING
PLAN

Revisions

Sheet Information
Drawing Scale: As indicate
Drawn By: FI
Project Information
Date: 10/14/202
Status:
Project Number: J2202
Sheet





GENERAL NOTES

1. THE CONTRACTOR SHALL LAY OUT THE WORK, SETTING GRADE STAKES, ESTABLISHING LINES, BASE LINES, ELEVATIONS AND OTHER REFERENCE MARKERS. THE CONTRACTOR SHALL VERIFY THE ACCURACY TO COMPLETE THE WORK THEREOF.
2. ALL PAVEMENT STRIPING IS 4" WHITE PAINT UNLESS OTHERWISE NOTED.
3. ALL STRIPING FOR FIRE AGENCY CONTROL TO COMPLY WITH NFPA 24.

LEGEND

SLURRY COAT PRIOR TO STRIPE

KEY NOTES

- 1 ACCESSIBLE PARKING SIGN (1) (C4.0)
- 2 DO NOT ENTER SIGN PER M.U.T.C.D. CODE R5-1
- 3 CROSSWALK: PAINT WHITE STRIPING @ 3' O.C.; SEE PLAN FOR WIDTH
- 4 PAINT 4" WHITE STRIPING @ 3' O.C.
- 5 PAINT 4" BLUE STRIPING @ 3' O.C.
- 6 PAINT 4" WHITE STRIPE
- 7 PAINT TEXT WHITE USING 12" HIGH STENCIL
- 8 PAINT TRAFFIC ARROW WHITE
- 9 PAINT 8" WHITE LINE



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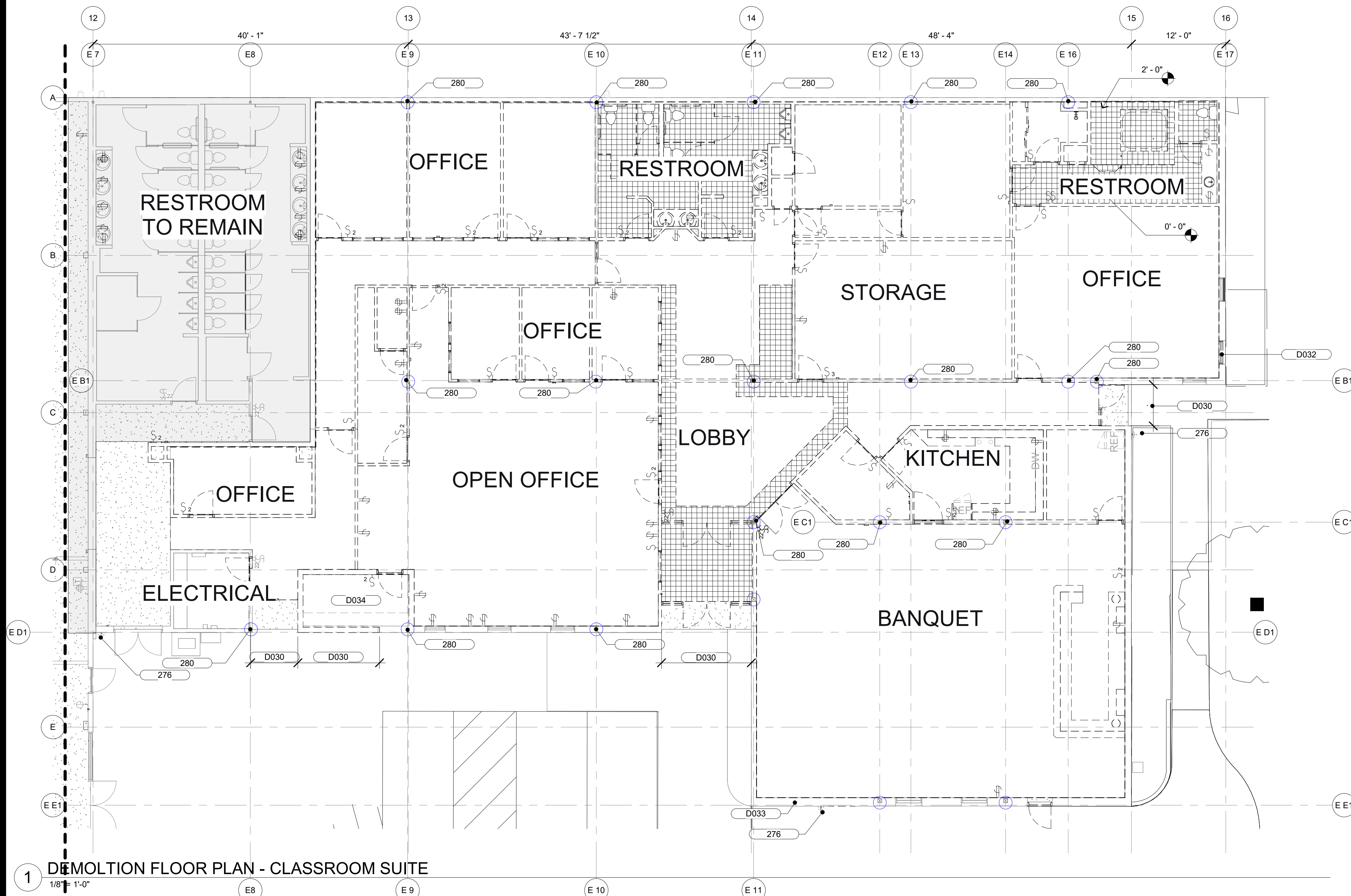
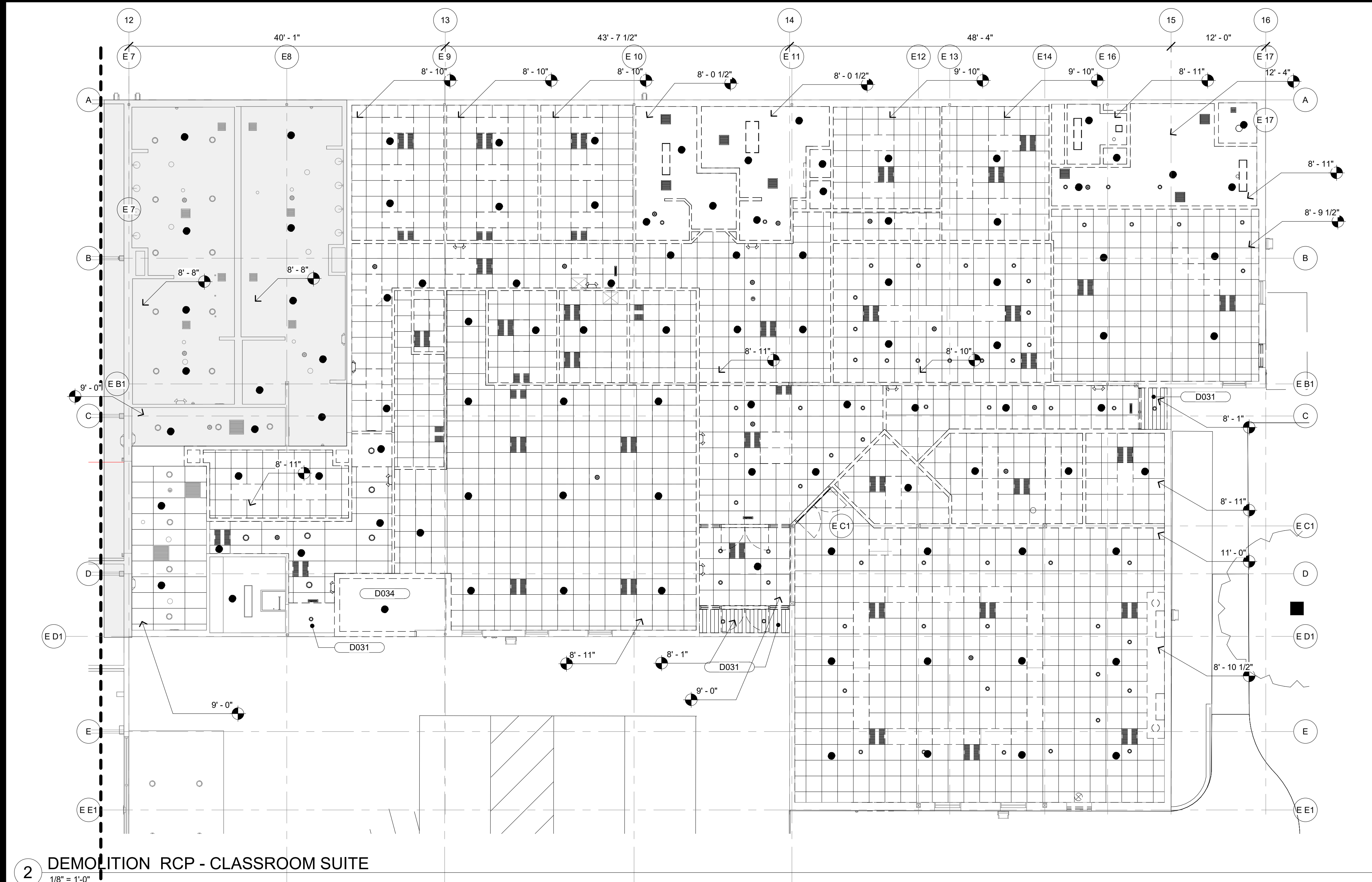
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PLAN

Revisions

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Project Information
Date: 10/14/202
Status:
Project Number: J2202
Sheet



C3.0



SHEET NOTES - DEMOLITION PLANS

1. DASHED ITEMS ARE TO BE DEMOLISHED UON
2. ALL FLOORING, WALL, CEILINGS AND OTHER FINISHES ARE TO BE DEMOLISHED. ALL ASSOCIATED ADHESIVES, FASTENERS, BACKING, TO BE REMOVED.
3. REMOVED ELEVATED FLOORS AND PADS.
4. ALL SUSPENDED CEILING SYSTEMS AND CEILING MOUNTED FIXTURES ARE TO BE REMOVED.
5. ALL PLUMBING FIXTURES, TUBS, SINKS, ACCESSORIES ARE TO BE REMOVED.
6. REMOVE ALL UNUSED PLUMBING WORK.
7. ALL INTERIOR NON BEARING WALLS ARE TO BE REMOVED.
8. ALL EXISTING LOAD BEARING WALLS ARE TO REMAIN.
9. ALL EXTERIOR WALLS: REMOVE INTERIOR GYPSO.
10. DEMOLISH ALL FLOOR DRAINAGE AND ALL DRAIN BODIES.
11. GROUT FILL ALL UNUSED SLAB PENETRATIONS.
12. REMOVE ALL MECHANICAL DUCTWORK, VENTS AND ASSOCIATED WORK.
13. REMOVE ALL MILLWORK, FURNITURE, APPLIANCES, EQUIPMENT.
14. REMOVE BUILT-IN BAR AND ASSOCIATED SOFFITS, FURNING, PLUMBING AND ELECTRICAL WORK.
15. REMOVE ALL ELECTRICAL OUTLETS AND WIRING BACK TO PANELS.
16. REMOVE ALL DATA CABLEING AND OUTLETS.

KEYNOTE LEGEND	
KEY VALUE	DESCRIPTION
278	(E) HOSE BIB TO REMAIN
280	(E) COLUMN TO REMAIN
D030	REMOVE SECTION OF EXTERIOR WALL AND/OR STOREFRONT
D031	REMOVE EXTERIOR SOFFIT
D032	REMOVE SECTION OF WALL AND WINDOW FOR NEW DOOR
D033	REMOVE SECTION OF WALL FOR NEW WINDOW
D034	REMOVE INTERIOR CMU WALLS AND CONCRETE SLAB CEILING AT (E) VAULT

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[illegible]

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DEMOLITION PLANS

USE PERMIT AMENDMENT

SHEET NO.

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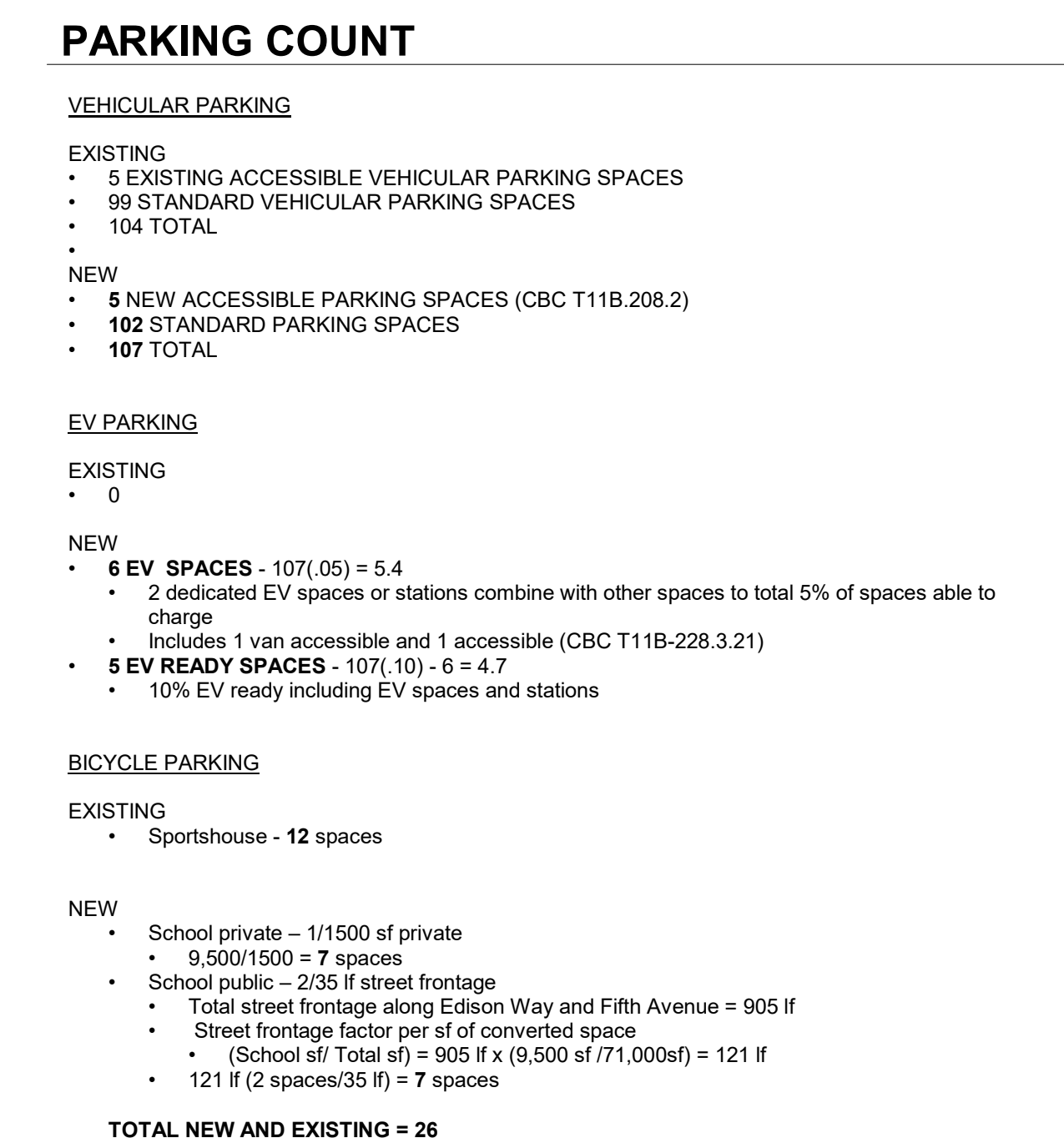
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Date	No.	Revisions	
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NEW SITE PLANS			
USE PERMIT AMENDMENT			
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 (N) PARTITION
 (E) PARTITION

1. NEW INTERIOR FINISHES THROUGHOUT RENOVATED SPACE.
2. ALL NEW INTERIOR LIGHTING, ELECTRICAL WIRING AND LOW VOLTAGE.
3. SEE EXTERIOR ELEVATIONS FOR NOTED NEW WORK.
4. ALL EXISTING WALL SURFACES IN AREA OF WORK TO RECEIVE NEW GYPBD FINISH.
5. ALL NEW INTERIOR WALLS ARE 6 F 6 U.O.N.
6. ALL EXTERIOR WALLS ARE 9 P.- U.O.N.

KEYNOTE LEGEND	
KEY VALUE	DESCRIPTION
801	(N) INTERIOR STORFRONT AT OFFICE AND CLASSROOMS, TYP.
1004	NEW RECESSED FIRE EXTINGUISHER CABINET AND FIRE EXTINGUISHER.
1105	STACKING WASHER AND DRYER
2230	WATER HEATER
2221	FLOOR MOP SINK
2222	2 BASIN ART SINK

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NEW FLOOR PLANS

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P-0 MATERIAL/FINISH TAB

SHEET NOTES - EXTERIOR FINISH NOTES

1. RE-CAULK ALL CONSTRUCTION JOINTS.
2. REMOVE WALL MOUNTED SIGNS AND REINSTALL U.O.N.
3. NORTH AND WEST FACADES OF CROSSFIT BUILDING NOT PAINTED, EXCEPT AS NOTED.

KEY VALUE		DESCRIPTION
201	(E)	UTILITY CONTAINERS, PT TO MATCH ADJACENT WALLS, TYP.
203	(E)	GAS MAIN METER
204	(E)	GAS LINES, PT TO MATCH ADJACENT WALLS
207		TRIM EXISTING FOLIAGE TO ACCOMMODATE PAINTING ENTIRE WALL
208	(E)	UTILITY CONDUIT/PIPING WIRING, PT TO MATCH ADJACENT WALLS
213	(E)	PAINT (E) GENERATOR STACK
218	(E)	LIGHT FIXTURE TO REMAIN, TYP.
220	(E)	SECURITY CAMERA TO REMAIN, TYP.
223	(E)	GALV ROOF LADDER
224	(E)	STEEL CANOPY
225	(E)	BOLLARDS, PT RED
226	(E)	BLACK METAL RIBBED PANELS AT DOOR ALCOVE, NO NEW FINISH. CLEAN ONLY.
227	(E)	GALV WALL CAP TO REMAIN, NO NEW FINISHES
261	(E)	ROOFTOP EQUIPMENT TO REMAIN, TYP.
262	(E)	BRONZE ANODIZED STOREFRONT SYSTEM TO REMAIN
268	(E)	REMOVE AND REINSTALL EXISTING WALL/DOOR MOUNTED SIGNAGE, TYP.
272	(E)	BICYCLE RACK TO REMAIN, 12 SPACES
1002		10" HT ADDRESS SIGNAGE, CENTER OVER EXISTING DOOR ALCOVE
1205	(N)	BICYCLE PARKING RACKS, 14 SPACES. SEE SITE PLAN, LEGEND.
D001		REMOVE EXISTING WALL MOUNTED SIGNAGE, PATCH/REPAIR WALL

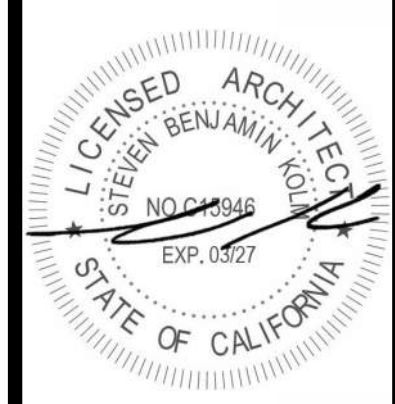
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EXTERIOR ELEVATIONS

USE PERMIT AMENDMENT

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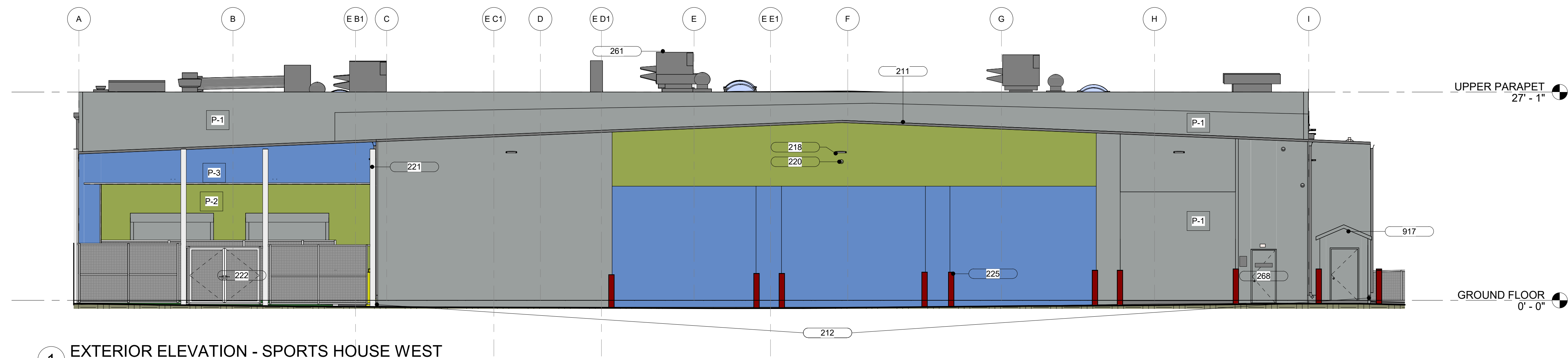
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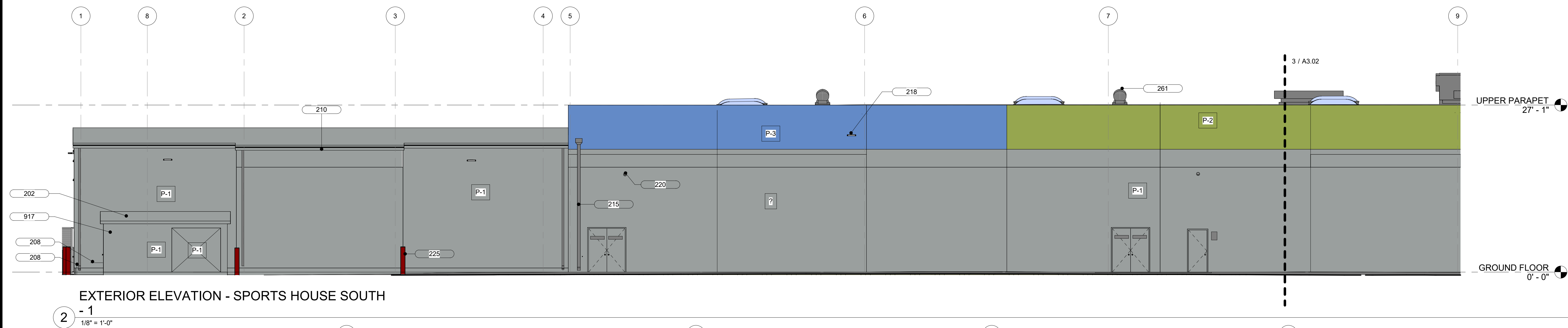
P-0 MATERIAL/FINISH TAB					
FINISH LEGEND					
KEY NAME	DESCRIPTION	MANUFACTURER	MODEL	COLOR	Comments
10					
P-1	PAINT	BENJAMIN MOORE	1660	MATCH GREY USED ON MAIN CAMPUS BLDGS	EXTERIOR
P-2	PAINT	BENJAMIN MOORE	406	HUNTINGTON GREEN	EXTERIOR
P-3	PAINT	BENJAMIN MOORE	2067-40	BLUE LAPIS	EXTERIOR/INT
P-4	PAINT	BENJAMIN MOORE	028	RICH CORAL	INTERIOR
P-5	NOT USED				
P-6	PAINT	BENJAMIN MOORE	OC-85	MAYONAISE	INTERIOR
P-7	PAINT	BENJAMIN MOORE	327	PURE JOY	INTERIOR
P-8	PAINT	BENJAMIN MOORE	2067-30	TWILIGHT BLUE	EXTERIOR
ST-1	WOOD STAIN				EXTERIOR

1. RE-CAULK ALL CONSTRUCTION JOINTS.
2. REMOVE WALL MOUNTED SIGNS AND REINSTALL U.O.N.
3. NORTH AND WEST FACADES OF CROSSFIT BUILDING NOT PAINTED, EXCEPT AS NOTED.

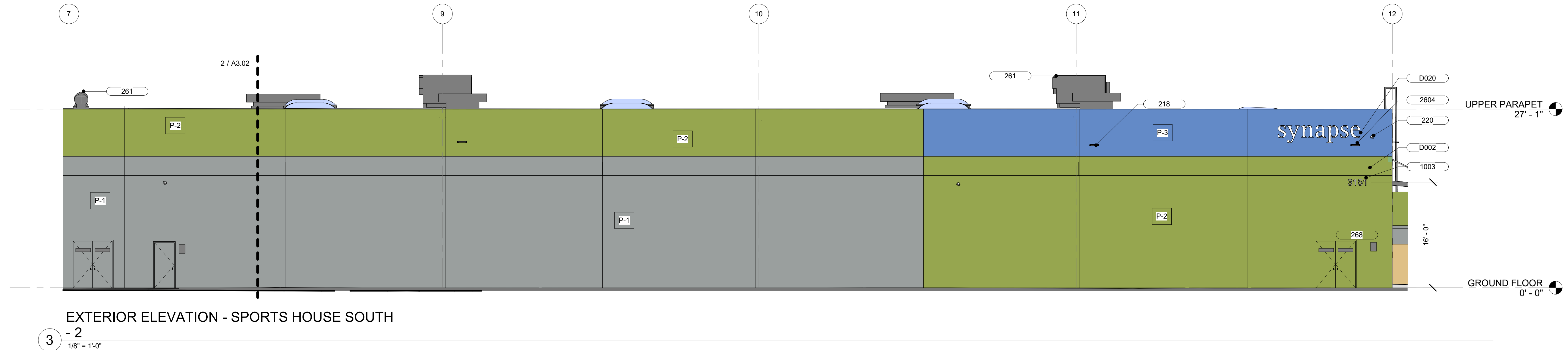
KEYNOTE LEGEND	
KEY VALUE	DESCRIPTION
202	(E) ROOFING TO REMAIN
208	(E) UTILITY CONDUIT/ PIPING/ WIRING, PT TO MATCH ADJACENT WALLS
210	(E) GUTTERS, PT TO MATCH ADJACENT WALL
211	(E) TRIM/FASCIA, PT TO MATCH ADJACENT WALL
212	(E) CONC CURB, PT RED TO BOTTOM OF METAL SIDING
215	(E) DOWNSPOUTS/LEADERS, PT TO MATCH WALL BEHIND
218	(E) LIGHT FIXTURE TO REMAIN, TYP.
220	(E) SECURITY CAMERA TO REMAIN, TYP.
221	(E) GALV STEEL, SUPPORT POSTS, TYP.
222	(E) CHAIN LINK FENCE/GATE TO REMAIN
225	(E) BOLLARDS, PT RED
261	(E) ROOF/TOP EQUIPMENT TO REMAIN, TYP.
268	(E) REMOVE AND REINSTALL EXISTING WALL/DOOR MOUNTED SIGNAGE, TYP.
917	PAIN'T ALL 4 SIDES OF SHED
1003	12" HT ADDRESS SIGNAGE
8694	(N) LIGHT FIXTURE TO MATCH EXISTING
D002	(E) FIRE ALARM BOX AND BELL, VERIFY REMOVE IF NOT FUNCTIONAL, V.I.F.
D020	(E) LIGHT FIXTURE TO BE REMOVED



1 EXTERIOR ELEVATION - SPORTS HOUSE WEST
1/8" = 1'-0"



EXTERIOR ELEVATION - SPORTS HOUSE SOUTH



EXTERIOR ELEVATION - SPORTS HOUSE SOUTH

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EXTERIOR ELEVATIONS

USE PERMIT AMENDMENT

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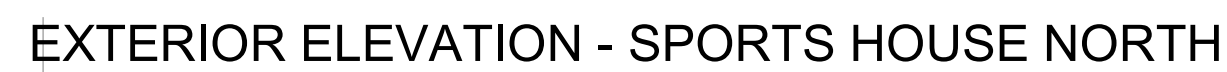
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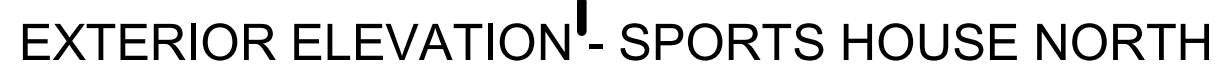
P-0 MATERIAL/FINISH TAB

FINISH LEGEND					
KEY NAME	DESCRIPTION	MANUFACTURER	MODEL	COLOR	Comments
10					
P-1	PAINT	BENJAMIN MOORE	1660	MATCH GREY USED ON MAIN CAMPUS BLDGS	EXTERIOR
P-2	PAINT	BENJAMIN MOORE	406	HUNTINGTON GREEN	EXTERIOR
P-3	PAINT	BENJAMIN MOORE	2067-40	BLUE LAPIS	EXTERIOR/INT
P-4	PAINT	BENJAMIN MOORE	028	RICH CORAL	INTERIOR
P-5	PAINT NOT USED				
P-6	PAINT	BENJAMIN MOORE	OC-85	MAYONAISE	INTERIOR
P-7	PAINT	BENJAMIN MOORE	327	PURE JOY	INTERIOR
P-8	PAINT	BENJAMIN MOORE	2067-30	TWILIGHT BLUE	EXTERIOR
ST-1	WOOD STAIN				EXTERIOR

1. RE-CAULK ALL CONSTRUCTION JOINTS.
2. REMOVE WALL MOUNTED SIGNS AND REINSTALL U.O.N.
3. NORTH AND WEST FACADES OF CROSSFIT BUILDING NOT PAINTED, EXCEPT AS NOTED.

KEYNOTE LEGEND	
KEY VALUE	DESCRIPTION
208	(E) UTILITY CONDUIT/ PIPING/ WIRING, PT TO MATCH ADJACENT WALLS
210	(E) GUTTERS, PT TO MATCH ADJACENT WALL
214	(E) FIRE RISER, PT TO MATCH ADJACENT WALLS
216	REMOVE (E) SIGNAGE TO PAINT WALL AND REPLACE.
217	(E) UTILITY SINK, PROTECT FROM (N) PAINT.
218	(E) LIGHT FIXTURE TO REMAIN, TYP.
260	(E) BOLLARDS TO REMAIN, TYP., PT RED.
263	(E) OH COILING DOOR.
264	(E) TRIM/FASCIA, PT TO MATCH P-1
265	(E) GUTTERS, PT TO MATCH P-1
267	(E) DOWNSPOUTS, PT P-1
912	PAINT CORNER CAP BOTH SIDES, "+/- 8"
913	PAINT TRANSITION 1 RIB OUT FROM DOOR FRAME
D003	(E) SIGN TO BE REMOVED. PATCH FASTENER PENETRATIONS.


$$\textcircled{1} - 1$$

$$1/8'' = 1'-0''$$

$$\textcircled{2} - 2 \quad \frac{1}{8}'' = 1'-0''$$


3 $1/8" = 1'-0"$



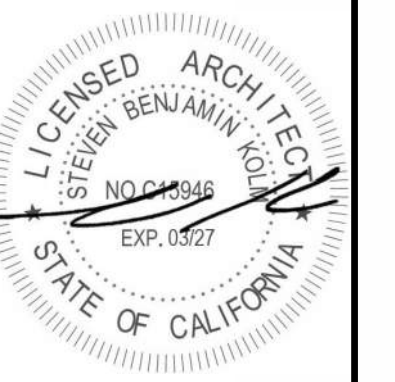
4 $1/8" = 1'-0"$

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EXTERIOR ELEVATIONS

USE PERMIT AMENDMENT

SHEET NO.

B. NO.

A3.03

2015

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CLIENT PROJECT NO.



COUNTY OF SAN MATEO - PLANNING AND BUILDING DEPARTMENT

ATTACHMENT C



HEXAGON TRANSPORTATION CONSULTANTS, INC.



Synapse School New Campus

Transportation Impact Analysis

Prepared for:

Synapse School

April 8, 2025



Hexagon Transportation Consultants, Inc.

Hexagon Office: 100 Century Center Court, Suite 501

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Hexagon Job Number: 23GB01

Client Name: Jim Eagen, Synapse School

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Areawide Circulation Plans Corridor Studies Pavement Delineation Plans Traffic Handling Plans Impact Fees Interchange Analysis Parking
Transportation Planning Traffic Calming Traffic Control Plans Traffic Simulation Traffic Impact Analysis Traffic Signal Design Travel Demand Forecasting

Table of Contents

Executive Summary	i
1. Introduction	1
2. Existing Conditions	10
3. Intersection Operational Analysis	20
4. Other Transportation Issues	37
5. Conclusions	46

Appendices

Appendix A	New SportsHouse Campus VMT Analysis
Appendix B	Traffic Counts
Appendix C	Intersection Level of Service Calculations
Appendix C	Signal Warrant Check
Appendix E	C/CAG TDM Checklist

List of Tables

Table ES-1	Intersection Level of Service Summary	iv
Table 1	Signalized Intersection Level of Service Definitions Based on Average Delay	6
Table 2	Unsignalized Intersection Level of Service Definitions Based on Delay	7
Table 3	Existing Intersection Levels of Service	19
Table 4	Project Trip Generation Estimates	21
Table 5	Existing Plus Project Intersection Levels of Service	26
Table 6	Intersection Levels of Service Under Background Conditions	31
Table 7	Intersection Levels of Service Under Cumulative Conditions	36
Table 8	C/CAG TDM Checklist with Existing TDM Program	42
Table 9	C/CAG TDM Checklist with Additional TDM Measures	44
Table 10	New Trip Cap Estimation	45

List of Figures

Figure 1	Site Location and Study Intersections	2
Figure 2	Proposed Site Plan	3
Figure 3	Existing Bicycle Facilities	13
Figure 4	Existing Transit Service	15
Figure 5	Existing Lane Configurations	17
Figure 6	Existing Traffic Volumes	18
Figure 7	Project Trip Distribution Pattern	22
Figure 8	Project Trip Assignment	23
Figure 9	Existing Plus Project Traffic Volumes	25
Figure 10	Background No Project Traffic Volumes	28
Figure 11	Background Plus Project Traffic Volumes	29
Figure 12	Cumulative No Project Traffic Volumes	33
Figure 13	Cumulative Plus Project Traffic Volumes	34

Executive Summary

This report presents the results of the transportation impact analysis (TIA) for the proposed expansion of Synapse School on 3375 Edison Way in San Mateo County, CA (see Figure 1). The school proposes a new campus at the SportsHouse site located at 3151 Edison Way ("New Campus") which is across the street (Fifth Avenue) from Synapse School's existing campus ("Existing Campus"). The New Campus, sometimes referred to herein as the "project", would involve an amendment to the existing SportsHouse use permit (PLN 2011-00070) to convert approximately 9,500 sq. ft. within an existing $\pm 70,667$ sq. ft. square foot commercial/ industrial building currently used for an indoor multi-sports and recreational facility into six (6) classrooms that would accommodate a maximum of 140 K-8 students and 15 faculty/staff. The Existing Campus, which operates under a separate use permit (PLN 2014-00295 last amended in 2021) and accommodates at maximum 310 students and 80 staff, would remain. Access to both the New Campus and Existing Campus are provided via driveways off Edison Way.

This transportation analysis was conducted for the purpose of identifying operational deficiencies related to traffic or parking resulting from the proposed New Campus and recommending appropriate measures to fully mitigate or lessen the deficiencies. The potential effects of the project were evaluated in accordance with the standards set forth by the County of San Mateo, Redwood City, City of Menlo Park, and Town of Atherton. Since the New Campus would generate more than 100 daily vehicle trips, a City/County Association of Governments of San Mateo County (C/CAG)-compliant Transportation Demand Management (TDM) checklist also was prepared.

Note that Hexagon previously completed a CEQA compliant Vehicle Miles Travelled (VMT) analysis for the project, which has been reviewed and accepted by the County (see Appendix A). The VMT analysis concludes that the combined VMT of students and staff calculates to an average of 12.27 daily VMT per person which is below the County threshold of 14.28 daily VMT, and therefore the project's resulting impact to VMT would be less than significant under CEQA. Accordingly, no mitigation measures are required under CEQA.

Project Trip Estimates

Based on the trip generation rates estimated at the existing school, the proposed New Campus is estimated to generate an increase of 135 AM peak-hour trips (74 inbound and 61 outbound) and 112 school PM peak-hour trips (56 inbound and 56 outbound).

Intersection Level of Service Analysis

Table ES-1 summarizes the results of the peak-hour intersection level of service (LOS) analysis under the following conditions: existing, existing plus project, background no project, background plus project, cumulative no project, and cumulative plus project conditions.

The level of service analysis results show that the intersection of 5th Avenue and Edison Way would degrade to an unacceptable LOS E during the AM peak hour under all project scenarios, and the intersection traffic volumes would meet the peak-hour signal warrant. While not a significant impact under CEQA because CEQA impacts are measured in VMT not by LOS, this would exceed the thresholds established in the *County of San Mateo Traffic Impact Study Requirements (9/1/2013)*.

Intersection operations could be improved by installing a traffic signal. With a signal, the intersection would operate at an acceptable LOS A during both AM and school PM peak hours under all project conditions. The project's traffic would represent 8.2 percent of the average AM and PM peak-hour traffic.

Other Transportation Issues

The following recommendations were identified to address issues associated with site access, on-site circulation, and C/CAG TDM compliances check.

- The school should implement appropriate signage, striping, and/or traffic attendants to encourage drivers to not disrupt the flow of traffic into and out of the student loading zone during peak drop-off and pick-up times.
- During the peak drop-off/pick-up periods, the school should assign a staff member at the eastern driveway to monitor the inbound vehicle queueing condition at the driveway and coordinate with staff in the loading area and parking lot to quickly move the inbound traffic if the vehicle queue extends to Edison Way.
- There is no existing crosswalk across Fifth Avenue at the intersection of Fifth Avenue and Edison Way. Hexagon recommends striping a crosswalk on the north approach of the intersection at Fifth Avenue and Edison Way to improve student safety when walking between the campus sites. Also as identified in the intersection level of service analysis, the proposed project would have an adverse effect at the intersection of Fifth Avenue and Edison Way, and a traffic signal was recommended. If the County decides to install a traffic signal at this intersection, the new traffic signal should include appropriate pedestrian and bicycle accommodation.
- With the implementation of the current TDM measures, the project would not meet the C/CAG required vehicle trip reduction target of 35 percent. The following additional TDM measures would be needed in order to fulfill the C/CAG trip reduction requirements:
 - 1) The project could participate in Commute.org's Certified Development Program if they have not done so.
 - 2) The school could provide free or subsidized transit passes for their employees. Passes/subsidies could be for any public transportation option, including but not limited to Caltrain, SamTrans, ridesharing platforms, or vanpool subscriptions.
 - 3) The project could provide preferential parking for carpools or vanpools, including reserved spaces or spaces near the entrance.

- 4) The project would stripe a crosswalk on the north approach of the intersection of Fifth Avenue & Edison Way to improve student safety when walking between the campus sites.
- The C/CAG required 35 percent trip reduction goal results in a trip cap of 92 trips during the AM peak hour. Added to the existing trip cap of 298, this results in a total trip cap of 390 on the entire expanded campus (Existing Campus plus New Campus).

Table ES-1
Intersection Level of Service Summary

ID	Intersection (Jurisdiction)	LOS	Standard	Control	Peak Hour	Existing				Existing + Project				Background				Background + Project				Cumulative				Cumulative + Project			
						Average ¹		Worst ²		Average ¹		Worst ²		Average ¹		Worst ²		Average ¹		Worst ²		Average ¹		Worst ²		Average ¹		Worst ²	
						Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
1	2nd Ave and Edison Wy (San Mateo County)	D	AWSC	AM	10.9	B	12.3	B	11.1	B	12.6	B	10.9	B	12.3	B	11.1	B	12.6	B	10.9	B	12.3	B	11.1	B	12.6	B	
2	5th Ave and Edison Wy (San Mateo County)	D	AWSC	AM	26.3	D	38.5	E	43.6	E	70.0	F	26.3	D	38.5	E	43.6	E	70.0	F	26.3	D	38.5	E	43.6	E	70.0	F	
			AWSC	Mitigated AM	19.9	C	25.4	D	7.9	A	9.2	A	19.9	C	25.4	D	7.9	A	9.2	A	19.9	C	25.4	D	7.9	A	9.2	A	
3	Fair Oaks Ave and Edison Wy (San Mateo County)	D	OWSC	AM			9.9	A		10.3	B		9.9	A		10.3	B		10.3	B		9.9	A		10.3	B		10.3	B
				PM			10.1	B		9.4	A		10.1	B		10.4	B		10.1	B		10.1	B					10.4	B
4	Palmer Ln and Fair Oaks Ave (San Mateo County)	D	TWSC	AM			11.2	B		11.7	B		11.2	B		11.7	B		11.2	B		11.2	B					11.7	B
				PM			9.7	A		9.9	A		9.7	A		9.9	A		9.7	A		9.7	A					9.9	A
5	2nd Ave and Middlefield Rd (San Mateo County)	D	TWSC	AM			19.9	C		20.7	C		21.4	C		22.3	C		21.4	C		21.4	C					22.3	C
				PM			24.1	C		26.3	D		25.9	D		26.7	D		25.9	D		25.9	D					26.7	D
6	5th Ave and Middlefield Rd (San Mateo County)	D	Signal	AM	41.2	D	50.4	D	44.5	D	56.7	E	47.4	D	65.0	E	51.6	D	74.2	E	47.4	D	64.0	E	51.6	D	72.7	E	
				PM	40.2	D	47.2	D	42.5	D	49.9	D	45.8	D	57.6	E	49.0	D	63.7	E	45.8	D	56.5	E	49.0	D	63.7	E	
7	5th Ave and Semicircular Rd (San Mateo County)	D	Signal	AM	8.2	A	11.6	B	8.3	A	11.8	B	8.2	A	11.6	B	8.3	A	11.8	B	8.2	A	11.6	B	8.3	A	11.8	B	
				PM	5.6	A	8.5	A	5.6	A	8.6	A	5.6	A	8.5	A	5.6	A	8.6	A	5.6	A	8.5	A	5.6	A	8.6	A	
8	5th Ave and El Camino Real (San Mateo County)	D	Signal	AM	19.6	B	35.0	D	20.3	C	36.0	D	19.8	B	35.0	D	20.4	C	36.0	D	19.8	B	35.0	D	20.5	C	36.0	D	
				PM	23.3	C	35.5	D	24.0	C	35.3	D	23.4	C	35.4	D	24.1	C	35.3	D	23.5	C	35.6	D	24.2	C	37.3	D	
9	2nd Ave and Bay Rd (Redwood City)	D	AWSC	AM	17.3	C		17.7	C		20.9	C		21.5	C		20.9	C		21.5	C		20.9	C		21.5	C		
				PM	13.5	B		13.7	B		17.0	C		17.3	C		17.0	C		17.3	C		17.0	C		17.3	C		
10	Marsh Rd and Florence St (Menlo Park)	D	Signal	AM	39.7	D		39.6	D		40.1	D		40.2	D		40.7	D		40.9	D		40.9	D		40.9	D		
				PM	29.4	C		29.3	C		33.5	C		33.4	C		40.4	D		40.3	D		40.3	D		40.3	D		
11	Marsh Rd and Bay Rd (Menlo Park)	D	Signal	AM	23.0	C		23.2	C		23.0	C		23.2	C		23.6	C		23.8	C		23.8	C		23.8	C		
				PM	33.3	C		33.3	C		33.1	C		32.2	C		32.7	C		32.7	C		32.7	C		32.7	C		
12	Marsh Rd and Fair Oaks Ave (San Mateo County)	D	OWSC	AM			16.3	C		16.9	C		16.3	C		16.9	C		16.3	C		16.3	C					16.9	C
				PM			18.6	C		19.5	C		18.6	C		19.5	C		18.6	C		18.6	C					19.5	C
13	Marsh Rd and Middlefield Rd (Atherton)	D	Signal	AM	30.7	C		30.9	C		30.7	C		30.9	C		34.7	C		35.0	D		35.0	D		35.0	D		
				PM	32.5	C		32.8	C		32.9	C		34.0	C		34.3	C		34.6	C		34.6	C		34.6	C		

Notes:

AWSC = all-way stop controlled intersection; TWSC = two-way stop controlled intersection; OWSC = one-way stop controlled intersection.

1. Average intersection delay and LOS are reported for signalized and all-way stop controlled intersections.

2. Worst movement delay and LOS are reported for signalized and unsignalized intersections in the San Mateo County.

Bold indicates a substandard level of service.**Bold** indicates a significant impact.

1.

Introduction

This report presents the results of the transportation impact analysis (TIA) for the proposed expansion of Synapse School on 3375 Edison Way in San Mateo County, CA (see Figure 1). The school proposes a new campus at the SportsHouse site located at 3151 Edison Way ("New Campus") which is across the street (Fifth Avenue) from Synapse School's existing campus ("Existing Campus"). The New Campus would involve an amendment to the existing SportsHouse use permit (PLN 2011-00070) to convert approximately 9,500 sq. ft. within an existing $\pm 70,667$ sq. ft. square foot commercial/ industrial building currently used for an indoor multi-sports and recreational facility into six (6) classrooms that would accommodate a maximum of 140 K-8 students and 15 faculty/staff. The Existing Campus, which operates under a separate use permit (PLN 2014-00295 last amended in 2021) and accommodates at maximum 310 students and 80 staff, would remain. Access to the school is provided via driveways off Edison Way (see Figure 2).

As proposed, all students attending the SportsHouse Site classrooms (that are not biking or walking) would be dropped off and picked up at the SportsHouse Site whether by car, carpool or shuttle. An extra stop at the SportsHouse Site would be added to Synapse School's existing shuttle program to drop off and pick up students attending the SportsHouse Site classrooms. Drop off would occur between 8:00 AM and 9:00 AM, and pick up would occur between 2:45 PM to 4:00 PM.

Scope of Study

This transportation analysis was conducted for the purpose of identifying operational deficiencies related to traffic or parking resulting from the proposed New Campus and recommending appropriate measures to fully mitigate or lessen the deficiencies. The potential effects of the project were evaluated in accordance with the standards set forth by the County of San Mateo, Redwood City, City of Menlo Park, and Town of Atherton. Since the New Campus would generate more than 100 daily vehicle trips, a City/County Association of Governments of San Mateo County (C/CAG)-compliant Transportation Demand Management (TDM) checklist also was prepared. Note that Hexagon previously completed a CEQA compliant Vehicle Miles Travelled (VMT) analysis for the project, which has been reviewed and accepted by the County (see Appendix A).



Figure 1
Site Location and Study Intersections

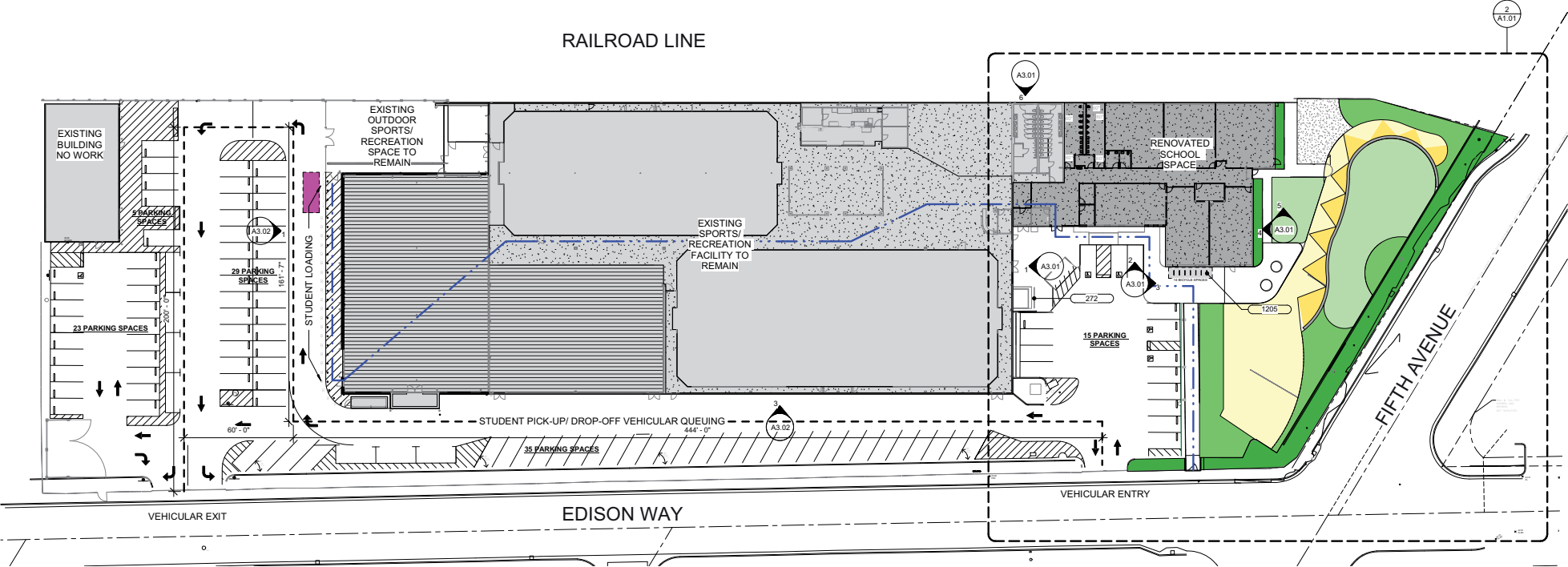


Figure 2
Proposed Site Plan

The traffic analysis included an analysis of weekday AM (7:00 - 9:00 AM) and school PM (2:00 - 4:00 PM) peak-hour traffic conditions and determined the adverse effect of the proposed New Campus on 13 key intersections in the vicinity of the New Campus.

Nine of the study intersections are under the jurisdiction of the County of San Mateo, one is located in Redwood City, two are located in Menlo Park, and one is located in Atherton. The study intersections are identified below.

1. 2nd Avenue and Edison Way (Unsignalized) (San Mateo County)
2. 5th Avenue and Edison Way (Unsignalized) (San Mateo County)
3. Fair Oaks Avenue and Edison Way (Unsignalized) (San Mateo County)
4. Palmer Lane and Fair Oaks Avenue (Unsignalized) (San Mateo County)
5. 2nd Avenue and Middlefield Road (Unsignalized) (San Mateo County)
6. 5th Avenue and Middlefield Road (San Mateo County)
7. 5th Avenue and Semicircle Road (San Mateo County)
8. 5th Avenue and El Camino Real (SR 82) (San Mateo County)
9. 2nd Avenue and Bay Road (Unsignalized) (Redwood City)
10. Mash Road and Florence Street (Menlo Park)
11. Marsh Road and Bay Road (Menlo Park)
12. Fair Oaks Avenue and Marsh Road (Unsignalized) (San Mateo County)
13. Marsh Road and Middlefield Road (Atherton)

Traffic conditions were evaluated for the following scenarios:

- **Existing Conditions.** Existing intersection volumes were obtained from manual turning-movement counts conducted in October 2024. New traffic count data are contained in Appendix B.
- **Existing Plus Project Conditions.** Existing plus project traffic volumes were estimated by adding to existing traffic volumes the trips associated with the project. Existing plus project conditions were evaluated relative to existing conditions in order to determine potential project operational effects according to the level of service policy for each jurisdiction based on the location of each study intersection.
- **Background Conditions.** Background traffic volumes were estimated by adding to existing traffic volumes the projected volumes from approved but not yet constructed developments in the vicinity of the project. Lists of approved but not yet constructed developments were provided by the County of San Mateo, Cities of Redwood City and Menlo Park.
- **Background Plus Project Conditions.** Background plus project traffic volumes were estimated by adding to background traffic volumes the trips associated with the project. Background plus project conditions were evaluated relative to background conditions in order to determine potential project operational effects according to the level of service policy for each jurisdiction based on the location of each study intersection.
- **Cumulative Conditions.** Cumulative traffic volumes were estimated by adding to background traffic volumes the projected volumes from pending and under review projects in the vicinity of the project. Lists of pending and under review projects were provided by the County of San Mateo, Cities of Redwood City and Menlo Park.
- **Cumulative Plus Project Conditions** Cumulative plus project traffic volumes were estimated by adding to cumulative traffic volumes the trips associated with the project. Cumulative plus project conditions were evaluated relative to cumulative conditions in order to determine

potential project operational effects according to the level of service policy for each jurisdiction based on the location of each study intersection.

Methodology

This section describes the methods used to determine the traffic conditions for each scenario described above. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards.

Data Requirements

The data required for the analysis were obtained from new traffic counts, previous traffic studies, Redwood City, City of Menlo Park, and the County of San Mateo. The following data were collected from these sources:

- Existing intersection volumes
- Existing lane geometries
- Signal timing and phasing
- Approved but not yet completed projects
- Pending/under review projects

Intersection Level of Service Analysis Methodologies

Traffic conditions at the study intersections were evaluated using level of service (LOS). *Level of Service* is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or jammed conditions with excessive delays.

This study uses the *Highway Capacity Manual (HCM) 7th Edition* methodology (latest available) for the signalized and unsignalized study intersections utilizing Synchro 12 software to determine intersection level of service.

This method evaluates intersection operations on the basis of average control delay time (measured in seconds per vehicle) for all vehicles at the intersection. This average delay can then be correlated to a level of service as shown in Table 1 for signalized intersections. The level of service correlation for unsignalized, stopped-controlled intersections is shown in Table 2. For stop-controlled intersections, level of service depends on the average delay experienced by vehicles on the stop-controlled approaches. For all-way stop controlled intersections, level of service is determined by the average delay for all movements through the intersection. For two-way or T-intersections, operations are defined by the average control delay experienced by vehicles entering the intersection from the stop-controlled approaches on minor streets or from left-turn approaches on major streets. Note that for unsignalized intersections under two-way or side-street stop control, the level of service is reported for the worst approach.

Table 1
Signalized Intersection Level of Service Definitions Based on Average Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 20.0
C	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though some vehicles may still pass through the intersection without stopping.	20.1 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	This is considered to be the limit of acceptable delay. These high delay values generally indicated poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	Greater than 80.0
Source: Transportation Research Board, <i>Highway Capacity Manual 7th Edition</i> , (Washington, D.C., 2023).		

Table 2
Unsignalized Intersection Level of Service Definitions Based on Delay

Level of Service	Description	Average Delay Per Vehicle (sec.)
A	Little or no traffic delay	10.0 or less
B	Short traffic delays	10.1 to 15.0
C	Average traffic delays	15.1 to 25.0
D	Long traffic delays	25.1 to 35.0
E	Very long traffic delays	35.1 to 50.0
F	Extreme traffic delays	greater than 50.0

Source: Transportation Research Board, Highway Capacity Manual 7th Edition, (Washington, D.C., 2023).

Level of Service Standards and Adverse Effect Criteria

The study intersections are located within different jurisdictions including San Mateo County, Redwood City, the City of Menlo Park, and the Town of Atherton. Level of Service standards and adverse effect criteria are described for each jurisdiction below.

County of San Mateo

According to the *County of San Mateo Traffic Impact Study Requirements* (9/1/2013), a project will be considered to have an adverse effect if, for either peak hour, either of the following conditions occurs:

1. For intersections currently in compliance with the level of service standard, a project will be considered to have an adverse effect if the project will cause the intersection to operate at a level of service that violates the overall standard of LOS C with no individual movement operating at worse than LOS D. On occasion, LOS D may be allowed for peak periods in very dense urban conditions at the County's discretion.
2. For intersections currently NOT in compliance with the level of service standard, a project will be considered to have an adverse effect if the project will cause the intersection to operate at a level of service that violates the standard LOS mentioned above, and the proposed project increases average control delay at the intersection by 4 seconds or more.

As noted above, minimum LOS standards for County intersections are typically LOS C or better; however, a LOS D standard may be allowed for peak periods in very dense urban conditions per the County's discretion. The County Public Works staff confirmed that the County-maintained intersections within the study area are considered urban and therefore are subject to the LOS D standard. Therefore, for this study, a LOS D standard has been established for intersections and individual movements.

City of Redwood City

The Redwood City General Plan contains the following transportation policy with respect to level of service:

“Program BE-55 / Level of Service Policy Evaluation: Evaluate Redwood City’s current Level of Service (LOS) policies for motor vehicle circulation. The evaluation shall consider the following to ensure efficient traffic flow and balance multi-modal mobility goals:

Maintaining LOS D or better for motor vehicles in all areas of the city, except the Downtown area as defined by the Downtown Precise Plan. In Downtown, no minimum vehicular LOS standard will be maintained but vehicular LOS will be calculated and alternate LOS standards for other travel modes will be established.”

The unsignalized study intersection of 2nd Avenue and Bay Road is located outside the Downtown area; thus, the intersection is subject to the City’s LOS D standard.

According to the Redwood City Transportation Analysis Manual, a substantial adverse effect at an unsignalized study intersection will be caused by the project if:

1. Operations at an unsignalized intersection deteriorate from an acceptable level (LOS D or better for City intersections) to an unacceptable level (LOS E or F for City intersections) and the traffic volumes at the intersection satisfy the California MUTCD Peak Hour Volume warrant for traffic signal installation; or
2. Delay at an unsignalized intersection operating at an unacceptable level (LOS E or F for City intersections) to increase by five or more seconds and the traffic volumes at the intersection satisfy the California MUTCD Peak Hour Volume warrant for traffic signal installation.

A substantial adverse effect at an intersection is said to be satisfactorily mitigated when improvements are implemented that eliminate the project’s adverse effect.

City of Menlo Park

The following thresholds are from the City of Menlo Park’s TIA Guidelines, and the project’s compliance with local policies was evaluated based on these thresholds.

- A project is considered potentially noncompliant with local policies if the addition of project traffic causes an intersection on a collector street operating at LOS “A” through “C” to operate at an unacceptable level (LOS “D,” “E” or “F”) or have an increase of 23 seconds or greater in average vehicle delay, whichever comes first. Potential noncompliance shall also include a project that causes an intersection on arterial streets or local approaches to State controlled signalized intersections operating at LOS “A” through “D” to operate at an unacceptable level (LOS “E” or “F”) or have an increase of 23 seconds or greater in average vehicle delay, whichever comes first.
- A project is also considered potentially noncompliant if the addition of project traffic causes an increase of more than 0.8 seconds of average delay to vehicles on all critical movements for intersections operating at a near-term LOS “D” through “F” for collector streets and at a near-term LOS “E” or “F” for arterial streets. For local approaches to State controlled signalized intersections, a project is considered to be potentially noncompliant if the addition of project traffic causes an increase of more than 0.8 seconds of delay to vehicles on the most critical movements for intersections operating at a near-term LOS “E” or “F.”

Town of Atherton

According to common Atherton practice, a project is said to have an adverse effect on traffic conditions at an intersection if, for either peak hour, either of the following conditions occurs:

1. The level of service at the intersection degrades from an acceptable LOS D or better under no project conditions to an unacceptable LOS E or F under project conditions, or

2. The level of service at the intersection is an unacceptable LOS E or F under no project conditions and the addition of project trips causes the intersection delay on the worst approach to increase by 4 seconds or more.

Report Organization

The remainder of this report is divided into three chapters. Chapter 2 describes existing conditions, including the existing roadway network, transit service, and existing bicycle and pedestrian facilities. Chapter 3 presents the intersection operational analysis including the method by which project traffic is estimated and the project's traffic effects on the intersection operations. Chapter 4 presents the analyses of other transportation-related issues, including site access and on-site circulation, potential effects on bicycle, pedestrian, and transit facilities, parking analysis, and a C/CAG TDM compliance check.

2. Existing Conditions

This chapter describes the existing conditions for transportation facilities in the vicinity of the site, including the roadway network, transit services, pedestrian and bicycle facilities, and traffic operations at the study intersections.

Existing Roadway Network

Regional access to the project site is provided via US 101. US 101 is a north-south freeway that extends through and beyond the Bay Area, connecting San Francisco to San Jose. In the project vicinity, US 101 generally runs in an east-west direction and has four mixed-flow lanes and one high occupancy vehicle (HOV) lane in each direction south of the Woodside Road interchange. US 101 provides site access via full interchanges at Woodside Road (SR 84) and Marsh Road.

Local access to the site is provided by El Camino Real (SR 82), Marsh Road, Middlefield Road, Bay Road, Fifth Avenue, Second Avenue, Fair Oaks Avenue and Edison Way. Descriptions of each roadway facility are presented below.

The existing road network is not laid out consistent with the cardinal directions. As a result, for the purpose of this report, streets that run parallel to US 101 are assumed to run in an east-west direction, such as El Camino Real, Middlefield Road, Bay Road, and Edison Way. Streets that run perpendicular to US 101 are assumed to run in a north-south direction, such as Marsh Road, Fifth Avenue, and Second Avenue.

El Camino Real (State Route [SR] 82) is an east-west four- to six-lane boulevard (Primary Arterial) that extends northward through Daly City and southward through Santa Clara. It is a designated state highway. In the vicinity of the project site, El Camino Real has six travel lanes. The posted speed limit within the Study Area is 35 mph. El Camino Real has continuous sidewalks along the north side of the street, on-street parking along most street segments, and a landscaped center median with left-turn pockets at major intersections. Access to the project site is provided via its intersection with Fifth Avenue.

Marsh Road is a north-south arterial roadway beginning at Middlefield Road with two lanes, widening to four lanes south of Bay Road, and ending as a four-lane arterial roadway at Bayfront Expressway, which connects to the Dumbarton Bridge. The posted speed limit is 35 mph north of Fair Oaks Avenue. The portion between Bay Road and Scott Drive is a designated Class III bike route. Sidewalks are provided on the west side between Fair Oaks Avenue and Florence Street, and north of Scott Drive. Sidewalks are provided on the east side north of Bay Road. On-street parking is permitted on the west

side south of Page Street. Access to the project site is provided via its intersections with Florence Street or Middlefield Road.

Middlefield Road is an east-west two- to four-lane avenue – mixed-use facility (Minor Arterial). Middlefield Road extends from Jefferson Avenue to the north to San Antonio Road to the south. Bike lanes are provided along Middlefield Road; on-street parking is prohibited. Sidewalks are generally present south of Ravenswood Avenue. Middlefield Road has a posted speed limit of 35 mph.

Bay Road is an east-west collector roadway that extends from Beech Street in Redwood City to Fifteenth Avenue, where it transitions to Florence Street, with four lanes between Woodside Road and Fifth Avenue and three lanes east of Fifth Avenue. The posted speed limit is 30 mph. Within the project vicinity, sidewalks are provided, and on-street parking is permitted. Bay Road is designated as a Class III bike route between Second Avenue and Douglas Avenue. Bay Road provides access to the project site via its intersections with Second Avenue or Fifth Avenue.

Fifth Avenue is a north-south roadway extending from El Camino Real to Rolison Road adjacent to the US 101 freeway. It consists of four lanes between El Camino Real and Semicircular Road, then two lanes north of Semicircular Road. The posted speed limit is 25 mph. In the project vicinity, sidewalks are provided, and on-street parking is permitted on both sides of the street. Class II bike lanes exist south of the Dumbarton Rail tracks, and Fifth Avenue is a designated Class III bike route from Bay Road to the rail tracks. Access to the project site is provided via its intersection with Edison Way.

Second Avenue is a north-south two-lane residential and industrial street that extends from Williams Avenue adjacent to the Caltrain tracks in the North Fair Oaks area to Broadway in Redwood City. The posted speed limit is 25 mph. On-street parking is permitted on both sides of the street. North of Edison Way, sidewalks are provided along both sides of the street. South of Edison Way, there are no sidewalks along either side of the street. Second Avenue provides access to the project site via Edison Way.

Fair Oaks Avenue is a two-lane local residential street in the North Fair Oaks area connecting Marsh Road with Edison Way near the project site. Fair Oaks Avenue includes numerous traffic circles at intersections as well as other traffic calming devices that discourage cut-through vehicle traffic and promote lower vehicle speeds within the neighborhood. Street parking is prohibited on both sides of the street. Fair Oaks Avenue provides access to the project site via Edison Way.

Edison Way is a two-lane local street that runs from First Avenue to the roadway terminus at 11th Avenue. The posted speed limit is 25 mph. Street parking is permitted on both sides of the street in the project proximity. West of Fifth Avenue, a sidewalk is provided along the north side of the street in the vicinity of the project site. East of Fifth Avenue, no sidewalks are available on either side of the street. Edison Way provides direct access to the project site.

Existing Pedestrian Facilities

Pedestrian facilities in the study area include crosswalks at intersections, actuated pedestrian signals, and sidewalks. Sidewalks are provided intermittently throughout the project vicinity. In the Project vicinity, sidewalks are provided on the following roadways:

- North side of Edison Way west of Fifth Avenue
- Both sides of Second Avenue north of Edison Way
- Both sides of Fifth Avenue

With the above exceptions, no sidewalks are provided on any of the local streets within the North Fair Oaks neighborhood bounded by Edison Way, First Avenue, Middlefield Road, and Marsh Road.

Crosswalks and actuated pedestrian signals are provided at all signalized study intersections, with the exception of the intersection of Fifth Avenue and Semicircular Road.

Crosswalks are not provided at most of the unsignalized study intersections, except at the following locations:

- Crosswalks are present on all approaches of the 2nd Avenue/Bay Road and 2nd Avenue/Middlefield Road intersections.

Existing Bicycle Facilities

The bicycle facilities in the study area (see Figure 3) include striped bike lanes (Class II bikeway), shared bike routes (Class III bikeway), and protected bike lanes (Class IV bikeway). Bike lanes are lanes on roadways designated for use by bicyclists with special lane markings, pavement legends, and signage. Buffered bike lanes are a type of Class II bike lane that provide additional separation from auto traffic via a painted buffer. Bike routes are signed bike routes where bicyclists share a travel lane with motorists. Protected bike lanes are lanes on roadways that provide a physical separation between bicyclists and vehicles through posts, parked cars, planters, etc.

Striped bike lanes are present along the following street segments:

- Broadway between Charter Street and Fifth Avenue, with buffered bike lanes between Douglas Avenue and Second Avenue, and some segments of bike routes;
- Fifth Avenue between the Dumbarton railroad (just north of the project site) and Waverly Avenue, with buffered bike lanes; and
- Middlefield Road between Fifth Avenue and Pacific Avenue, with buffered bike lanes.

Bike routes are indicated with signs and sometimes sharrows (shared-lane pavement markings) along the following streets:

- Bay Road between Second Avenue and Douglas Avenue;
- Douglas Avenue north of Bay Road;
- Second Avenue north of Bay Road; and
- Fifth Avenue between Bay Road and the Dumbarton railroad (just north of the project site).

Although bicycle facilities in the project area are limited, the nearby local streets carry low traffic volume and are conducive to bicyclists.

The *Unincorporated San Mateo County Active Transportation Plan* (January 2021) proposes bike lanes on Fifth Avenue between Bay Road and Fair Oaks Avenue and buffered bike lanes between Fair Oaks Avenue and the existing buffered bike lanes north of Edison Way. Bicycle boulevards are proposed on Second Avenue (between William Avenue and Spring Street), on Fair Oaks Avenue (between Hurlingame Avenue and Fifth Avenue and between Edison Way and Marsh Road), and on Hurlingame Avenue (between Middlefield Road and Bay Road). Separated bike lanes are proposed on Bay Road between Woodside Road and Florence Street. Bicycle boulevards are a type of Class III bike route that typically occupy low-speed, low-volume neighborhood streets with traffic calming enhancements.

The *Redwood City Walk Bike Thrive Plan* (June 2022) proposes Class II bike lanes on Charter Street, Bay Road (east of Douglas Avenue), Fifth Avenue (north of Spring Street), Class III bike routes on Haven Avenue (north of Bay Road), Class III bike boulevards on Second Avenue (north of Spring Street), Page Street (east of Second Avenue), Hanover Street (east of Second Avenue), and Rolison Road (east of Second Avenue), and Class IV protected bike lanes (cycle tracks) on Bay Road (between Fifteenth Avenue and Woodside Road) and Woodside Road (south of Broadway).



Figure 3
Existing Bicycle Facilities

Existing Transit Service

Existing transit service to the study area is provided by the San Mateo County Transit District (SamTrans). The existing SamTrans service is described below and shown on Figure 4. Route 79 is the only bus route that has stops within the typically assumed walking distance (one quarter mile) from the proposed new campus.

Route 79 only runs on school days between 17th Avenue/Florence Street and Kennedy Middle School in Redwood City. In the morning, it provides one westbound run in the morning and one eastbound run in the afternoon with the closest stop on Fair Oaks Avenue at 5th Avenue, about 0.2 miles from the school.

Because Route 79 only runs on school days and has limited runs in the morning and afternoon and the school is not near a major transit center, the project site is considered to be unserved by public transit. However, Synapse School runs its own shuttle bus system, which is described below.

School Shuttle Program

The school currently operates 5 shuttles serving 43 students in the morning and 3 shuttles serving 24 students in the afternoon.

Morning Shuttle Routes

All shuttles arrive at the school at around 8:30 AM.

- Burlingame/Hillsborough + Woodside (1 Van/9 Students).
- McKenzie Park Los Altos (1 Van/6 Students).
- Las Palmas & Palo Alto Art Center1 (1 Van/6 Students).
- San Mateo Caltrain & Beresford Rec Center & Laureola Park (1 Van/14 Students).
- Palo Alto Art Center (1 van/8 students)

Afternoon Shuttle Routes

All shuttles depart the school at 3:50 PM on Monday through Thursday and at 2:50 PM on Friday.

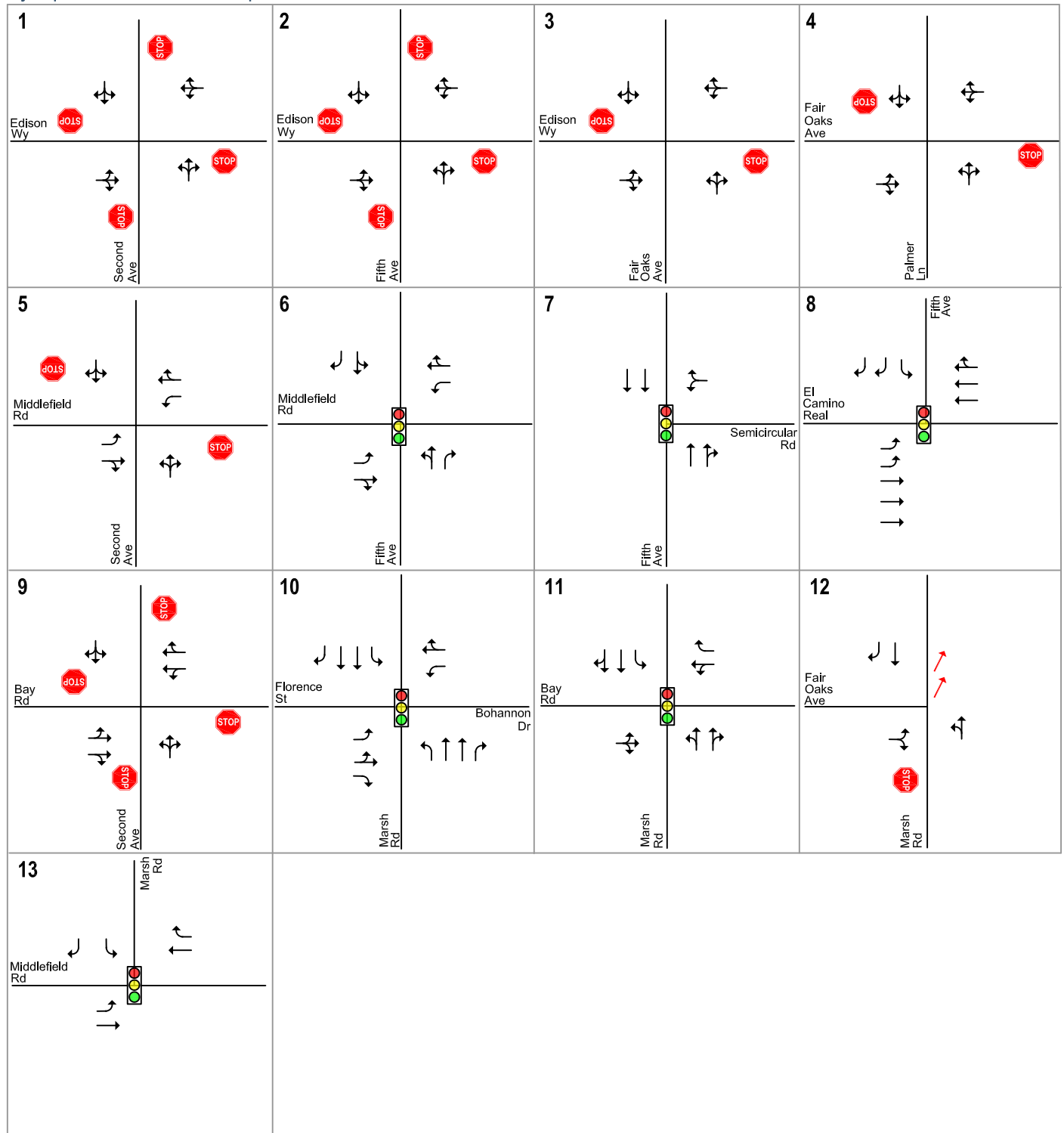
- McKenzie Park & Las Palmas Park (1 Van/9 Students).
- Palo Alto Art Center1 (1 Van/6 Students).
- San Mateo Caltrain & Beresford Rec Center & Laureola Park (1 Van/9 Students).



Figure 4
Existing Transit Service

Existing Lane Configurations and Traffic Volumes

The existing lane configurations at the study intersections were obtained from field observations (see Figure 5). Existing traffic volumes were obtained from manual peak-hour turning-movement counts on weekdays in October 2024 (see Figure 6). Peak-hour intersection turning movement counts of vehicles, bicycles, and pedestrians were collected during the morning peak period (7:00 - 9:00 AM) and afternoon school peak period (2:00 - 4:00 PM). The 2:00 - 4:00 PM peak period was selected to account for traffic levels encountered during typical school pick-up activity occurring during this time period. The traffic counts are included in Appendix B.

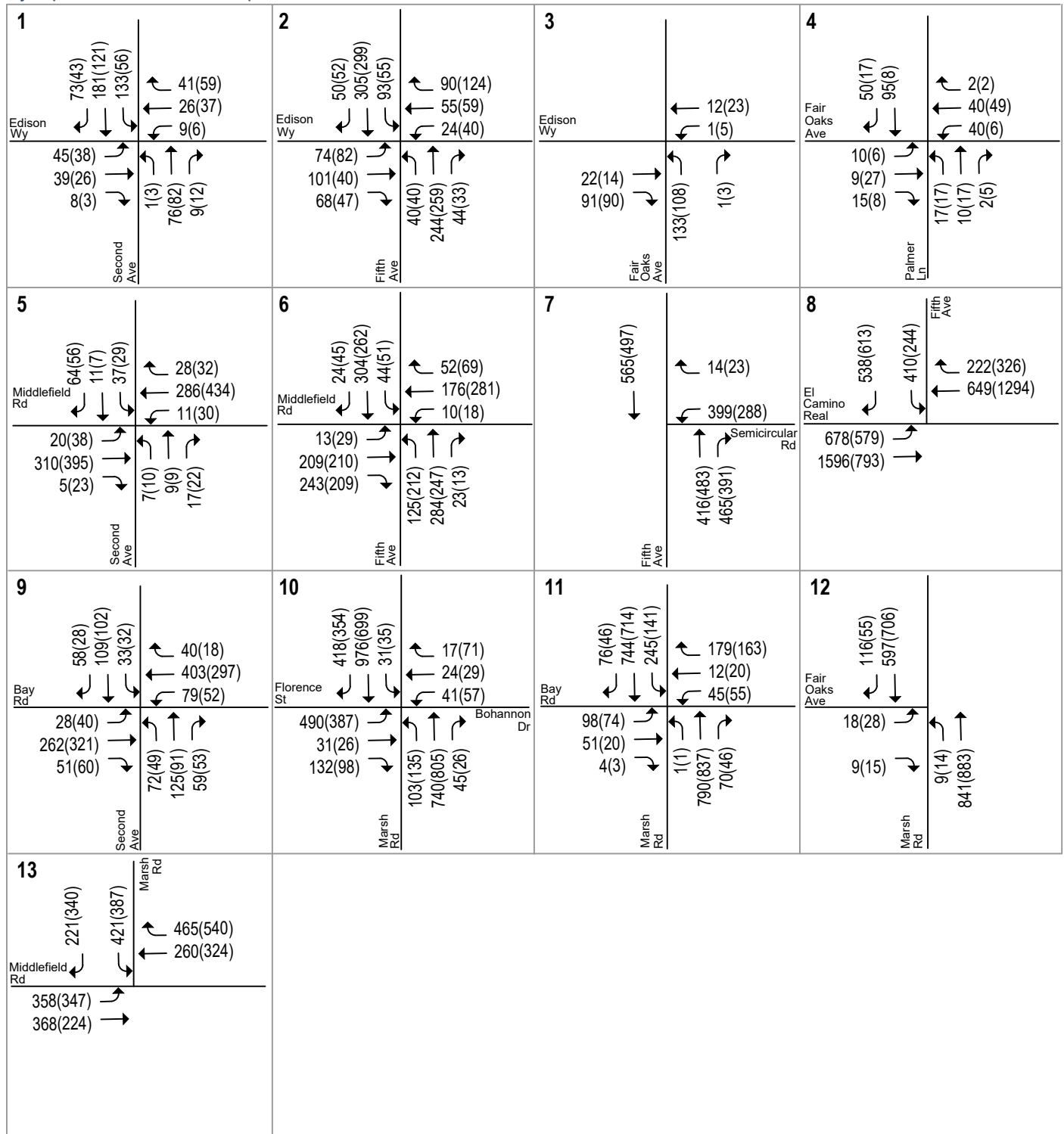


LEGEND

 = Stop Controlled Intersection

 = Signalized Intersection

Figure 5
Existing Lane Configurations



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 6
Existing Traffic Volumes

Existing Intersection Levels of Service

The results of the intersection level of service analysis (Table 3) show that under existing conditions, all study intersections are operating within applicable level of service standards.

The level of service calculation sheets are included in Appendix C.

Table 3
Existing Intersection Levels of Service

ID	Intersection (Jurisdiction)	LOS Standard	Control	Peak Hour	Average ¹		Worst ²	
					Delay (sec.)	LOS	Delay (sec.)	LOS
1	2nd Ave and Edison Wy (San Mateo County)	D	AWSC	AM	10.9	B	12.3	B
				PM	8.8	A	9.3	A
2	5th Ave and Edison Wy (San Mateo County)	D	AWSC	AM	26.3	D	38.5	E
				PM	19.9	C	25.4	D
3	Fair Oaks Ave and Edison Wy (San Mateo County)	D	OWSC	AM			9.9	A
				PM			10.1	B
4	Palmer Ln and Fair Oaks Ave (San Mateo County)	D	TWSC	AM			11.2	B
				PM			9.7	A
5	2nd Ave and Middlefield Rd (San Mateo County)	D	TWSC	AM			19.9	C
				PM			24.1	C
6	5th Ave and Middlefield Rd (San Mateo County)	D	Signal	AM	41.2	D	50.4	D
				PM	40.2	D	47.2	D
7	5th Ave and Semicircular Rd (San Mateo County)	D	Signal	AM	8.2	A	11.6	B
				PM	5.6	A	8.5	A
8	5th Ave and El Camino Real (San Mateo County)	D	Signal	AM	19.6	B	35.0	D
				PM	23.3	C	35.5	D
9	2nd Ave and Bay Rd (Redwood City)	D	AWSC	AM	17.3	C		
				PM	13.5	B		
10	Marsh Rd and Florence St (Menlo Park)	D	Signal	AM	39.7	D		
				PM	29.4	C		
11	Marsh Rd and Bay Rd (Menlo Park)	D	Signal	AM	23.0	C		
				PM	33.3	C		
12	Fair Oaks Ave and Marsh Rd (San Mateo County)	D	OWSC	AM			16.3	C
				PM			18.6	C
13	Marsh Rd and Middlefield Rd (Atherton)	D	Signal	AM	30.7	C		
				PM	32.5	C		

Notes:
 AWSC = all-way stop controlled intersection; TWSC = two-way stop controlled intersection;
 OWSC = one-way stop controlled intersection.
 1. Average intersection delay and LOS are reported for signalized and all-way stop controlled intersections.
 2. Worst movement delay and LOS are reported for signalized and unsignalized intersections in the San Mateo County.

3.

Intersection Operational Analysis

This chapter presents the intersection operational analysis including the method by which project traffic is estimated, the results of intersection level of service analysis for existing plus project, background and cumulative conditions, any adverse effects to intersection level of service caused by the project. A potential adverse effect on a study intersection is not considered a CEQA impact.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the site is estimated for the AM and PM peak hours. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets. These procedures are described further in the following sections.

Trip Generation

The magnitude of traffic produced by a new development is typically estimated by applying the size of the project to the applicable trip generation rates contained in the Institute of Transportation Engineers (ITE) *Trip Generation Manual*. However, because the project involves the expansion of the existing school operations and the ITE manual does not provide trip rates that would truly represent the existing school operations, the trips generated by the proposed New Campus during the AM peak hour were estimated based on the trip cap imposed by the conditions of approval (COA) for the existing school with an enrollment of 310 students. The trips generated by the proposed New Campus during the PM peak hour were estimated based on a trip generation count at the existing school in September 2018 when the enrollment was 254 students. The PM trip generation counts show there were 203 trips (101 inbound and 102 outbound) during the PM school peak hour.

Based on the trip cap of 298 trips, the AM peak hour trip generation rate was calculated to be 0.96 trips per student (298 trips/310 students). The percentage of the inbound trips (55%) vs the outbound trips (45%) were based on the trip generation counts at the Existing Campus conducted in October 2024. The trip generation rate for the school PM peak hour was calculated to be 0.8 trips per student (203 trips/254 students) with the split at 50% inbound and 50% outbound. The trip rates account for the shuttle program that is being implemented at the school, which will be implemented at the New Campus.

With the New Campus, the school would increase the enrollment to 450 students. The proposed New Campus is estimated to generate an increase of 135 AM peak-hour trips (74 inbound and 61 outbound) and 112 school PM peak-hour trips (56 inbound and 56 outbound). To ensure a conservative analysis, it is assumed that the operations of the SportsHouse would remain the same, and therefore no trip reductions were applied to account for the converted office space.

Table 4
Project Trip Generation Estimates

Land Use	Size	Units	AM Peak Hour							School PM Peak Hour					
			Pk-Hr Rate	Splits		In	Out	Total	Pk-Hr Rate	Splits		In	Out	Total	
				In	Out					In	Out				
<u>Proposed Use</u>															
	Private K-8	140	students	0.96	55%	45%	74	61	135	0.80	50%	50%	56	56	112
<u>Notes:</u>															
1. Existing AM Peak-hour trips are based on the AM trip cap of 298 and the PM peak hour trips are based on the trip generation counts conducted at the existing school in September 2018.															

Trip Distribution and Assignment

The trip distribution pattern (see Figure 7) for the proposed expansion was estimated based on the trip distribution pattern developed for the Synapse School’s previous expansion (TIA prepared in 2017). The new peak-hour trips generated by the project were assigned to the roadway system in accordance with the trip distribution pattern shown. Figure 8 shows the assignment of project trips at each study intersection.

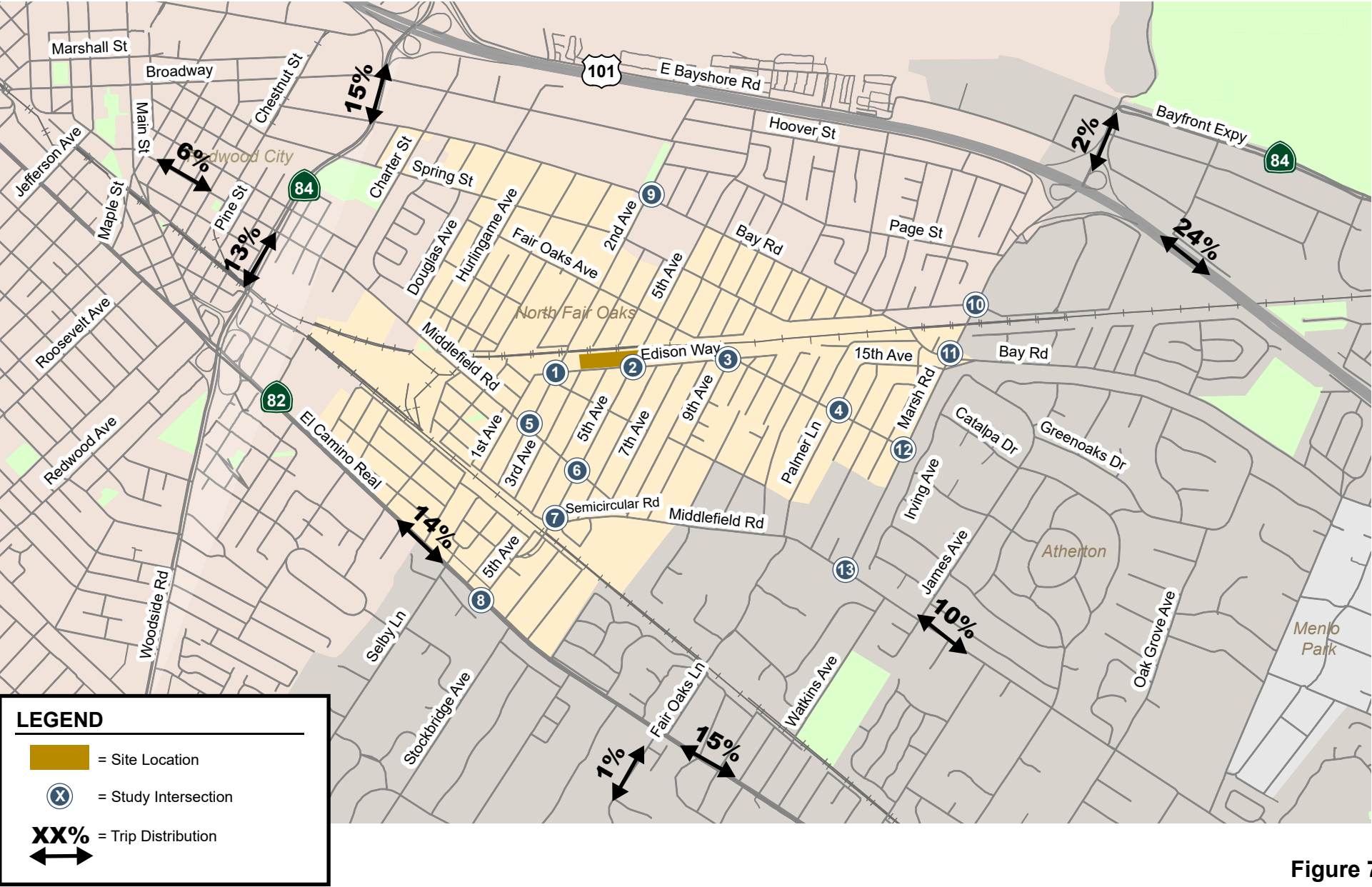
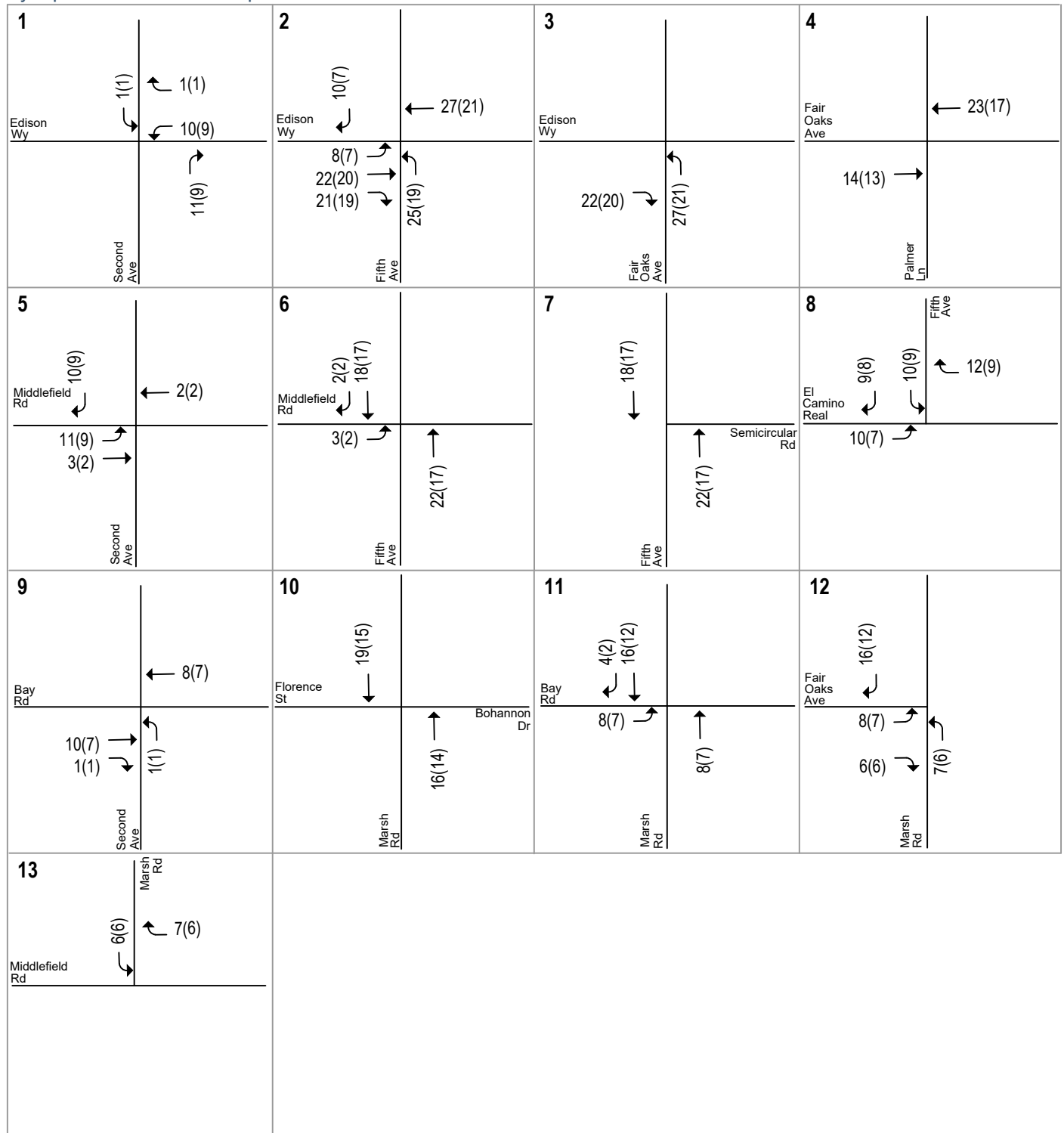


Figure 7
Project Trip Distribution Pattern

Synapse School New Campus TIA



LEGEND

XX(X) = AM(PM) Peak-Hour Trips

Figure 8
Project Trip Assignment

Existing Plus Project Conditions

It is assumed in this analysis that the roadway network under existing plus project conditions would be the same as the existing roadway network.

Existing Plus Project Traffic Volumes

The new project trips, as represented in the above project trip assignment, were added to existing traffic volumes to obtain existing plus project traffic volumes. The existing plus project traffic volumes are shown in Figure 9.

Existing Plus Project Intersection Levels of Service

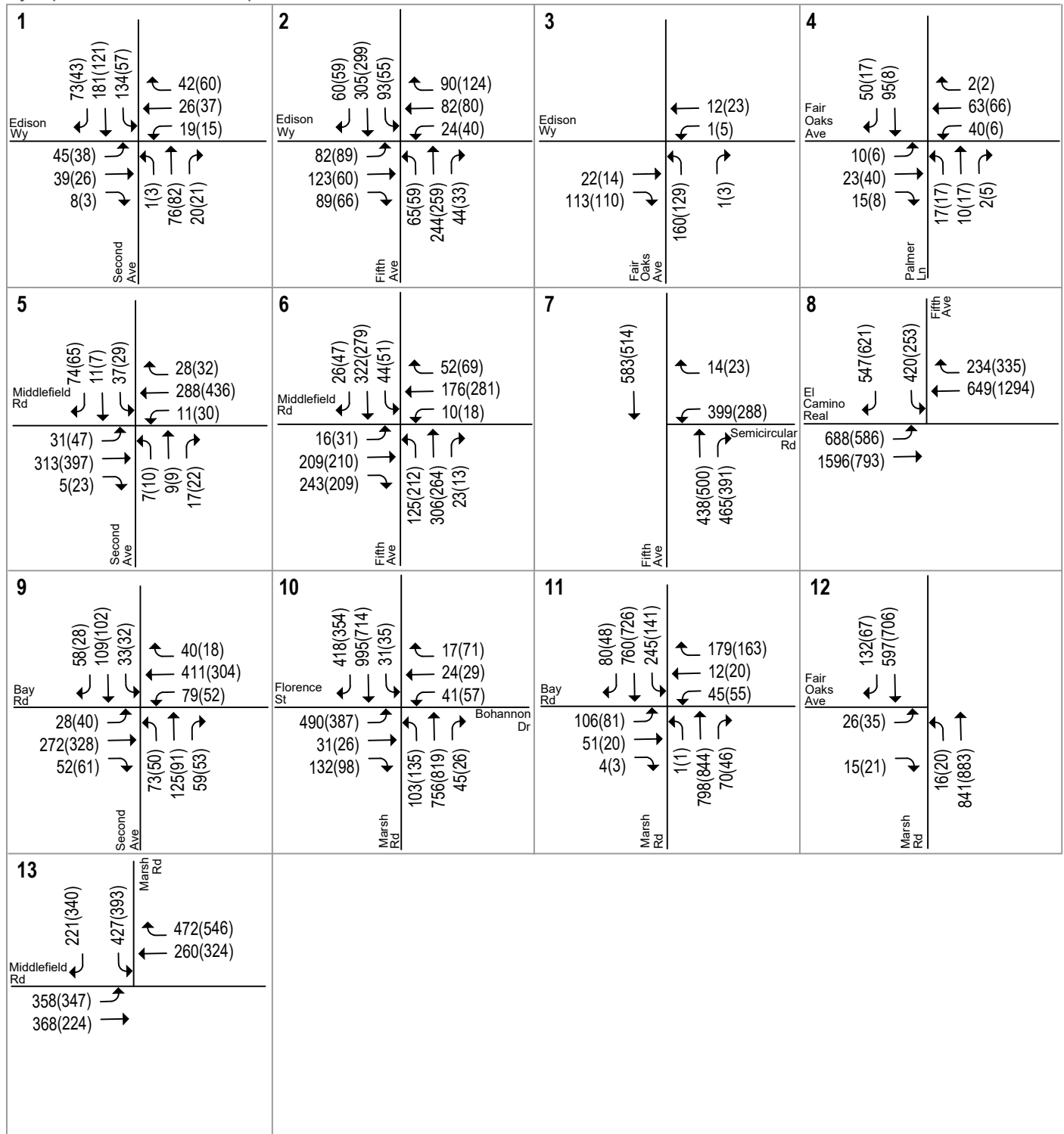
The results of the intersection level of service analysis under existing plus project conditions are summarized in Table 5. The intersection level of service calculation sheets are included in Appendix C. At some intersections where the project would add trips to low-delay movements, there would be a decrease in overall average delay.

The results show that, measured against the adverse effect criteria presented in the previous section, the project would have an adverse effect on the following intersection during the AM peak hour under existing plus project conditions:

- 5th Avenue and Edison Way (Unsignalized) (San Mateo County)

This intersection is currently operating at an acceptable LOS D during the AM peak hour. Under existing plus project conditions, the level of service would degrade to an unacceptable LOS E, and the intersection traffic volumes would satisfy the Peak-Hour Volume Signal Warrant (see Appendix D). While not a significant impact under CEQA because CEQA impacts are measured in VMT not by LOS, this would exceed the threshold established in the *County of San Mateo Traffic Impact Study Requirements* (9/1/2013).

Intersection operations could be improved by installing a traffic signal. With a signal, the intersection would operate at an acceptable LOS A during both AM and school PM peak hours. The project's traffic would represent 8.2 percent of the average AM and PM peak-hour traffic.



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 9
Existing Plus Project Traffic Volumes

Table 5
Existing Plus Project Intersection Levels of Service

ID	Intersection (Jurisdiction)	Control	Peak Hour	Existing				Existing + Project			
				Average ¹		Worst ²		Average ¹		Worst ²	
				Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
1	2nd Ave and Edison Wy (San Mateo County)	AWSC	AM	10.9	B	12.3	B	11.1	B	12.6	B
			PM	8.8	A	9.3	A	8.9	A	9.4	A
2	5th Ave and Edison Wy (San Mateo County)	AWSC	AM	26.3	D	38.5	E	43.6	E	70.0	F
			Mitigated AM					7.9	A	9.2	A
			PM	19.9	C	25.4	D	26.9	D	36.5	E
3	Fair Oaks Ave and Edison Wy (San Mateo County)	OWSC	AM			9.9	A			10.3	B
			PM			10.1	B			9.4	A
4	Palmer Ln and Fair Oaks Ave (San Mateo County)	TWSC	AM			11.2	B			11.7	B
			PM			9.7	A			9.9	A
5	2nd Ave and Middlefield Rd (San Mateo County)	TWSC	AM			19.9	C			20.7	C
			PM			24.1	C			26.3	D
6	5th Ave and Middlefield Rd (San Mateo County)	Signal	AM	41.2	D	50.4	D	44.5	D	56.7	E
			PM	40.2	D	47.2	D	42.5	D	49.9	D
7	5th Ave and Semicircular Rd (San Mateo County)	Signal	AM	8.2	A	11.6	B	8.3	A	11.8	B
			PM	5.6	A	8.5	A	5.6	A	8.6	A
8	5th Ave and El Camino Real (San Mateo County)	Signal	AM	19.6	B	35.0	D	20.3	C	36.0	D
			PM	23.3	C	35.5	D	24.0	C	35.3	D
9	2nd Ave and Bay Rd (Redwood City)	AWSC	AM	17.3	C			17.7	C		
			PM	13.5	B			13.7	B		
10	Marsh Rd and Florence St (Menlo Park)	Signal	AM	39.7	D			39.6	D		
			PM	29.4	C			29.3	C		
11	Marsh Rd and Bay Rd (Menlo Park)	Signal	AM	23.0	C			23.2	C		
			PM	33.3	C			33.3	C		
12	Marsh Rd and Fair Oaks Ave (San Mateo County)	OWSC	AM			16.3	C			16.9	C
			PM			18.6	C			19.5	C
13	Marsh Rd and Middlefield Rd (Atherton)	Signal	AM	30.7	C			30.9	C		
			PM	32.5	C			32.8	C		

Notes:
1. Average intersection delay and LOS are reported for signalized and all-way stop controlled intersections.
2. Worst movement delay and LOS are reported for signalized and unsignalized intersections in the San Mateo County.
Bold indicates a substandard level of service.
Bold indicates a significant impact.

Background Conditions

Background Roadway Network

The roadway network under background and background plus project conditions would be the same as existing conditions because there are no planned and funded transportation improvements at the study intersections that would alter the existing intersection lane configurations.

Background Traffic Volumes

Background peak-hour traffic volumes (see Figure 10) were calculated by adding to existing volumes the estimated traffic from the approved developments in the study area. The trips added to the study

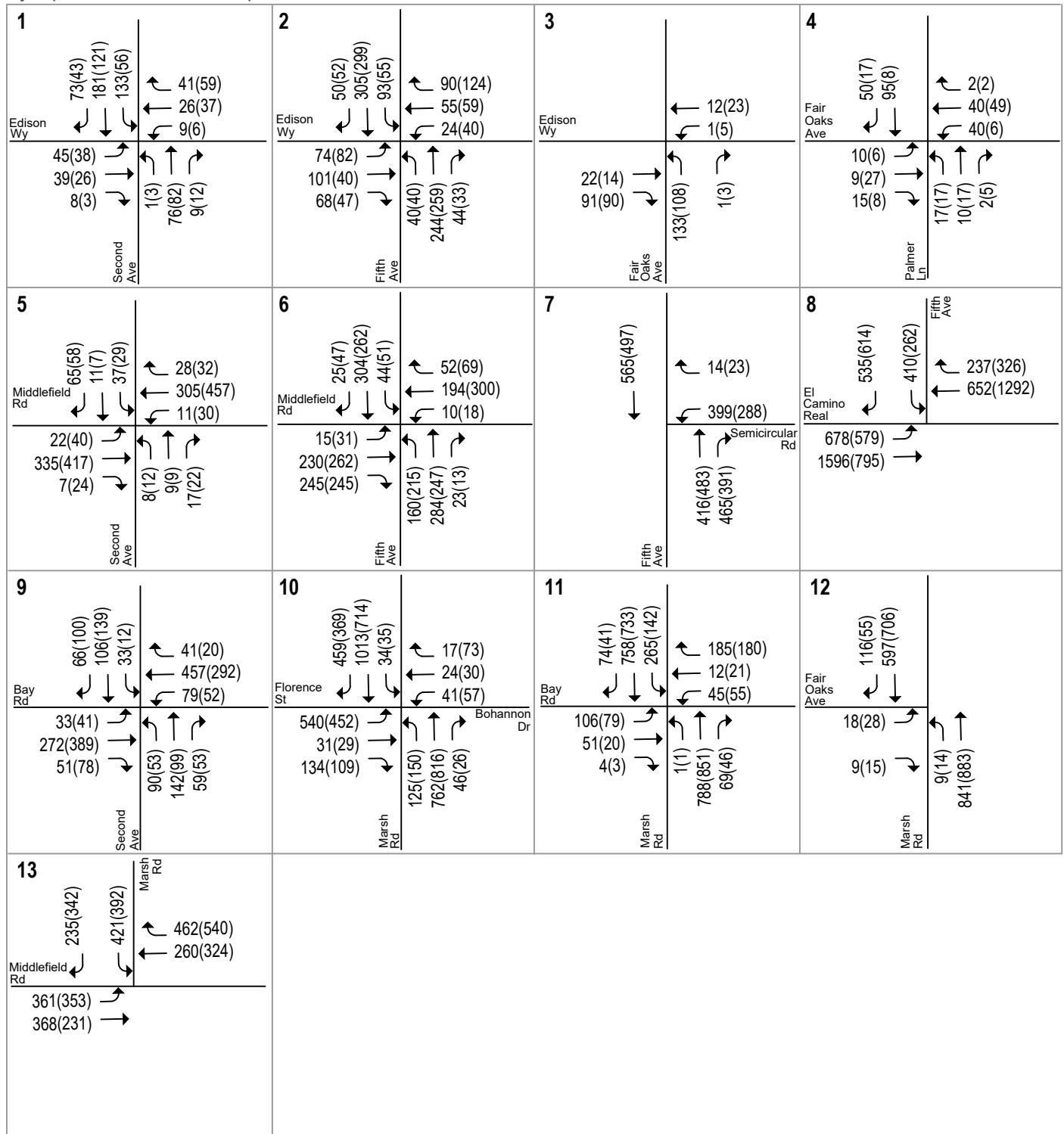
intersections for each of the projects were obtained from each project's TIA or environmental impact report (EIR). These traffic studies evaluate traffic conditions during the AM (7:00 – 9:00 AM) and PM (4:00 – 6:00 PM) peak hours of commute traffic. Since the school PM peak hour was not analyzed for these traffic studies, the PM peak-hour trips reported in those studies were reduced by 10 percent to estimate the trips during the school PM peak-hour (2-4 PM).

The following projects were considered under background conditions because they would contribute trips to the study intersections.

- Broadway Plaza (1401-1501 Broadway and 2111 Bay Road) – approximate 398 market-rate residential units, 120 affordable residential units, 420,000 s.f. of office space, 26,000 s.f. of retail space including a stand-alone CVS pharmacy (at 2111 Bay Road), 10,000 s.f. child care center, public and private open space, and shared underground parking.
- Stanford Precise Plan Block E (440, 500 & 510 Broadway) – 265,000 square foot medical office building and 928 parking spaces.
- Stanford Precise Plan Block C (505 Broadway) – 250,000 s.f. commercial office space, 4,000 s.f. one-story amenity building and 1,063 parking spaces.
- 111 Independence Drive - construction of a new eight-story residential apartment building with 105 dwelling units (96,055 square feet) and a community-serving retail space.
- 165 Jefferson Dr. (Menlo Flats) - redevelopment of a 6.4-acre site with approximately 220,000 square feet of commercial uses and 183 dwelling units.
- Willow Village (1350-1390 Willow Road., 925-1098 Hamilton Avenue, and 1005-1275 Hamilton Court) - construction of 432 dwelling units across four parcels.
- Menlo Uptown (141 Jefferson Drive and 180-186 Constitution Drive) - construction of 483 multi-family dwelling units
- Menlo Portal (115 Independence Drive and 104 & 110 Constitution Drive) – construction of 335 dwelling units and one office building with approximately 34,819 square feet of office space and 1,609 square feet of ground floor commercial space
- 2700 and 2704 Middlefield Road – mixed-use development including 179 units of affordable family housing, daycare space for 100 students, and 3,100 square feet of community space.

Background Plus Project Traffic Volumes

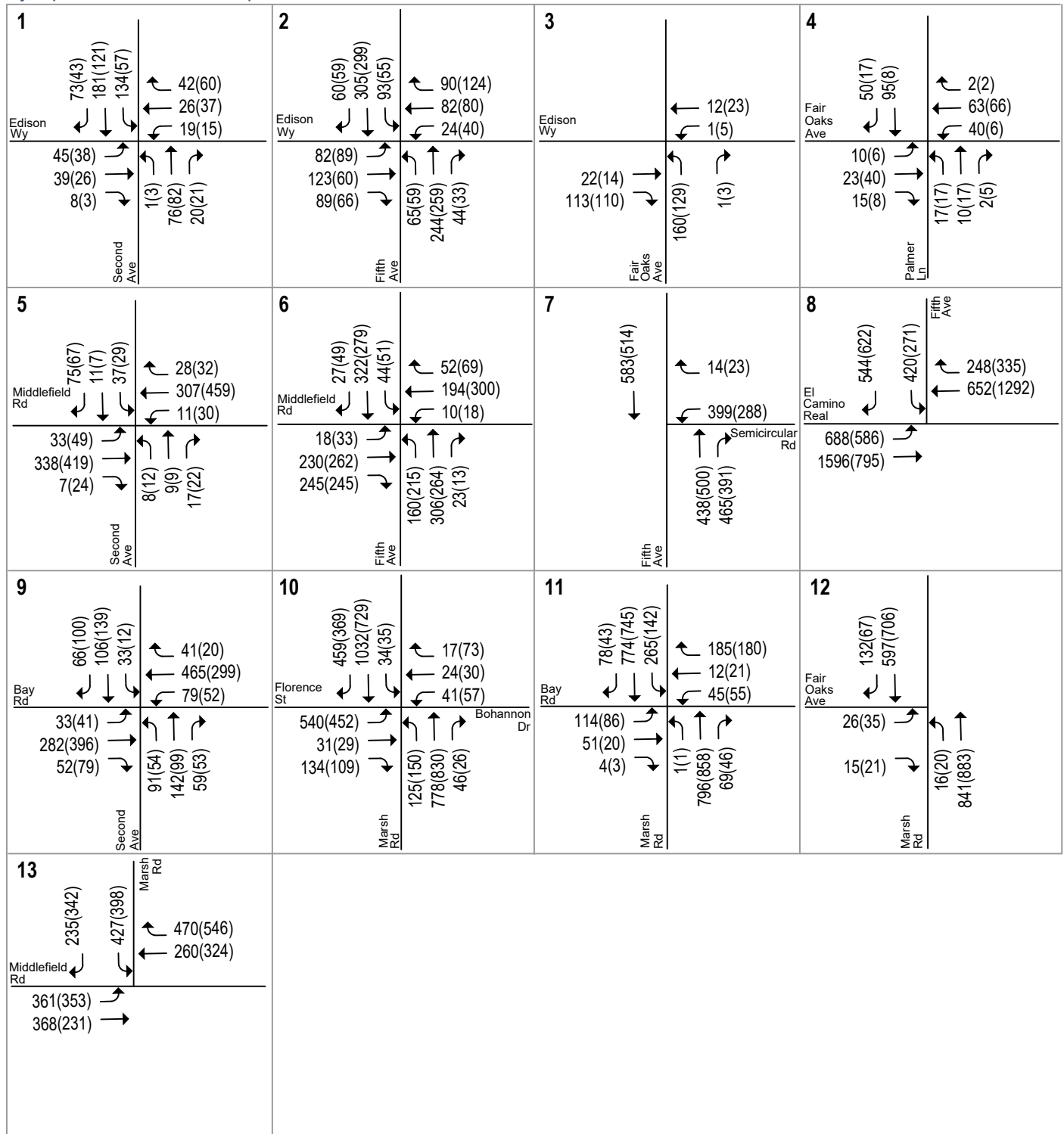
The project trip estimates were added to the background traffic volumes to derive the background plus project traffic volumes (see Figure 11).



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 10
Background Traffic Volumes



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 11
Background Plus Project Traffic Volumes

Background Intersection Levels of Service

The results of the intersection level-of-service analysis under the background no project scenario show that all the study intersections would operate at acceptable levels of service during both AM and PM peak hours (see Table 6). The level of service calculation sheets are included in Appendix C.

Background plus project conditions were evaluated relative to background no project conditions in order to determine potential adverse effects associated with the proposed development. The results show that, measured against the adverse effect criteria presented in the previous section, the project would have an adverse effect on the following intersection during the AM peak hour under background plus project conditions. The level of service calculation sheets are included in Appendix C.

- 5th Avenue and Edison Way (Unsignalized) (San Mateo County)

This intersection would operate at an acceptable LOS D during the AM peak hour under background no project conditions. Under background plus project conditions, the level of service would degrade to an unacceptable LOS E and the intersection traffic volumes would satisfy the Peak-Hour Volume Signal Warrant (see Appendix D). While not a significant impact under CEQA because CEQA impacts are measured in VMT not by LOS, this would exceed the thresholds established in the *County of San Mateo Traffic Impact Study Requirements* (9/1/2013).

Intersection operations could be improved by installing a traffic signal. With a signal, the intersection would operate at an acceptable LOS A during both AM and PM peak hours. The project's traffic would represent 8.2 percent of the average AM and PM peak-hour traffic.

Table 6
Intersection Levels of Service Under Background Conditions

ID	Intersection (Jurisdiction)	Control	Peak Hour	Background				Background + Project			
				Average ¹		Worst ²		Average ¹		Worst ²	
				Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
1	2nd Ave and Edison Wy (San Mateo County)	AWSC	AM	10.9	B	12.3	B	11.1	B	12.6	B
			PM	8.8	A	9.3	A	8.9	A	9.4	A
2	5th Ave and Edison Wy (San Mateo County)	AWSC	AM	26.3	D	38.5	E	43.6	E	70.0	F
			Mitigated AM					7.9	A	9.2	A
			PM	19.9	C	25.4	D	26.9	D	36.5	E
3	Fair Oaks Ave and Edison Wy (San Mateo County)	OWSC	AM			9.9	A			10.3	B
			PM			10.1	B			10.4	B
4	Palmer Ln and Fair Oaks Ave (San Mateo County)	TWSC	AM			11.2	B			11.7	B
			PM			9.7	A			9.9	A
5	2nd Ave and Middlefield Rd (San Mateo County)	TWSC	AM			21.4	C			22.3	C
			PM			25.9	D			26.7	D
6	5th Ave and Middlefield Rd (San Mateo County)	Signal	AM	47.4	D	65.0	E	51.6	D	74.2	E
			PM	45.8	D	57.6	E	49.0	D	63.7	E
7	5th Ave and Semicircular Rd (San Mateo County)	Signal	AM	8.2	A	11.6	B	8.3	A	11.8	B
			PM	5.6	A	8.5	A	5.6	A	8.6	A
8	5th Ave and El Camino Real (San Mateo County)	Signal	AM	19.8	B	35.0	D	20.4	C	36.0	D
			PM	23.4	C	35.4	D	24.1	C	35.3	D
9	2nd Ave and Bay Rd (Redwood City)	AWSC	AM	20.9	C			21.5	C		
			PM	17.0	C			17.3	C		
10	Marsh Rd and Florence St (Menlo Park)	Signal	AM	40.1	D			40.2	D		
			PM	33.5	C			33.4	C		
11	Marsh Rd and Bay Rd (Menlo Park)	Signal	AM	23.0	C			23.2	C		
			PM	33.1	C			32.2	C		
12	Marsh Rd and Fair Oaks Ave (San Mateo County)	OWSC	AM			16.3	C			16.9	C
			PM			18.6	C			19.5	C
13	Marsh Rd and Middlefield Rd (Atherton)	Signal	AM	30.7	C			30.9	C		
			PM	32.9	C			34.0	C		

Notes:

1. Average intersection delay and LOS are reported for signalized and all-way stop controlled intersections.

2. Worst movement delay and LOS are reported for signalized and unsignalized intersections in the San Mateo County.

Bold indicates a substandard level of service.

Bold indicates a significant impact.

Cumulative Conditions

Cumulative Roadway Network

The roadway network under cumulative conditions would be the same as existing conditions because there are no planned and funded transportation improvements at the study intersections that would alter the existing intersection lane configurations.

Cumulative Traffic Volumes

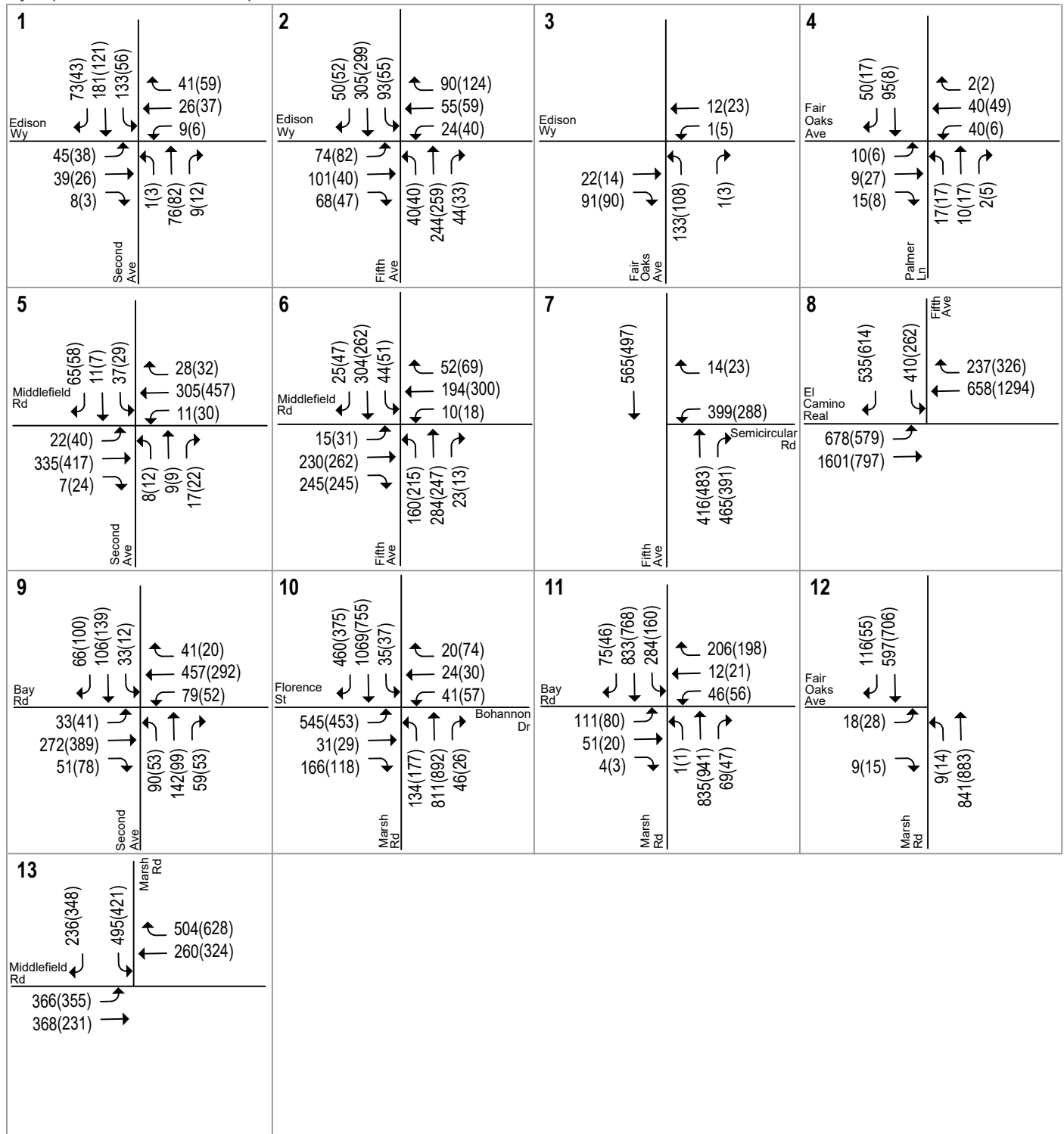
Traffic volumes under cumulative no project conditions were estimated by adding to background volumes the estimated traffic from the pending developments in the study area that would add trips to the study intersections. The trips added to the study intersections for each of the pending projects were obtained from each project's TIA or environmental impact report (EIR). These traffic studies evaluate traffic conditions during the AM (7:00 – 9:00 AM) and PM (4:00 – 6:00 PM) peak hours of commute traffic. Since the school PM peak hour was not analyzed for these traffic studies, the PM peak-hour trips reported in the studies were reduced by 10 percent to estimate the trips during the school PM peak-hour (2-4 PM). The cumulative no project traffic volumes are shown on Figure 12.

The following projects were considered under cumulative conditions because they would contribute trips to the study intersections.

- 320 Sheridan Drive – construction of three residential apartment buildings totaling 88 below market rate (BMR) housing units, with a 2,200 square foot (s.f.) community center located on the ground floor of one of the buildings.
- Commonwealth Building 3 – development of a 249,500 square foot 4-story office building and a parking structure with four above-grade levels as well as one partial below-grade level.
- Parkline – Redevelopment of SRI International's existing 63.2-acre research campus adjacent to city hall and near Menlo Park's downtown and Caltrain station with approximately 1,768,802 square feet (sf) of mixed-use development, approximately 1,093,602 sf of office/R&D uses and approximately 675,200 sf of residential uses.
- 2567 El Camino Real - construction of a new 69-unit hotel project

Cumulative Plus Project Traffic Volumes

The project trip estimates were added to the cumulative no project traffic volumes to derive the cumulative plus project traffic volumes (see Figure 13).



LEGEND

XX(XX) = AM(PM) Peak-Hour Traffic Volumes

Figure 12
Cumulative No Project Traffic Volumes

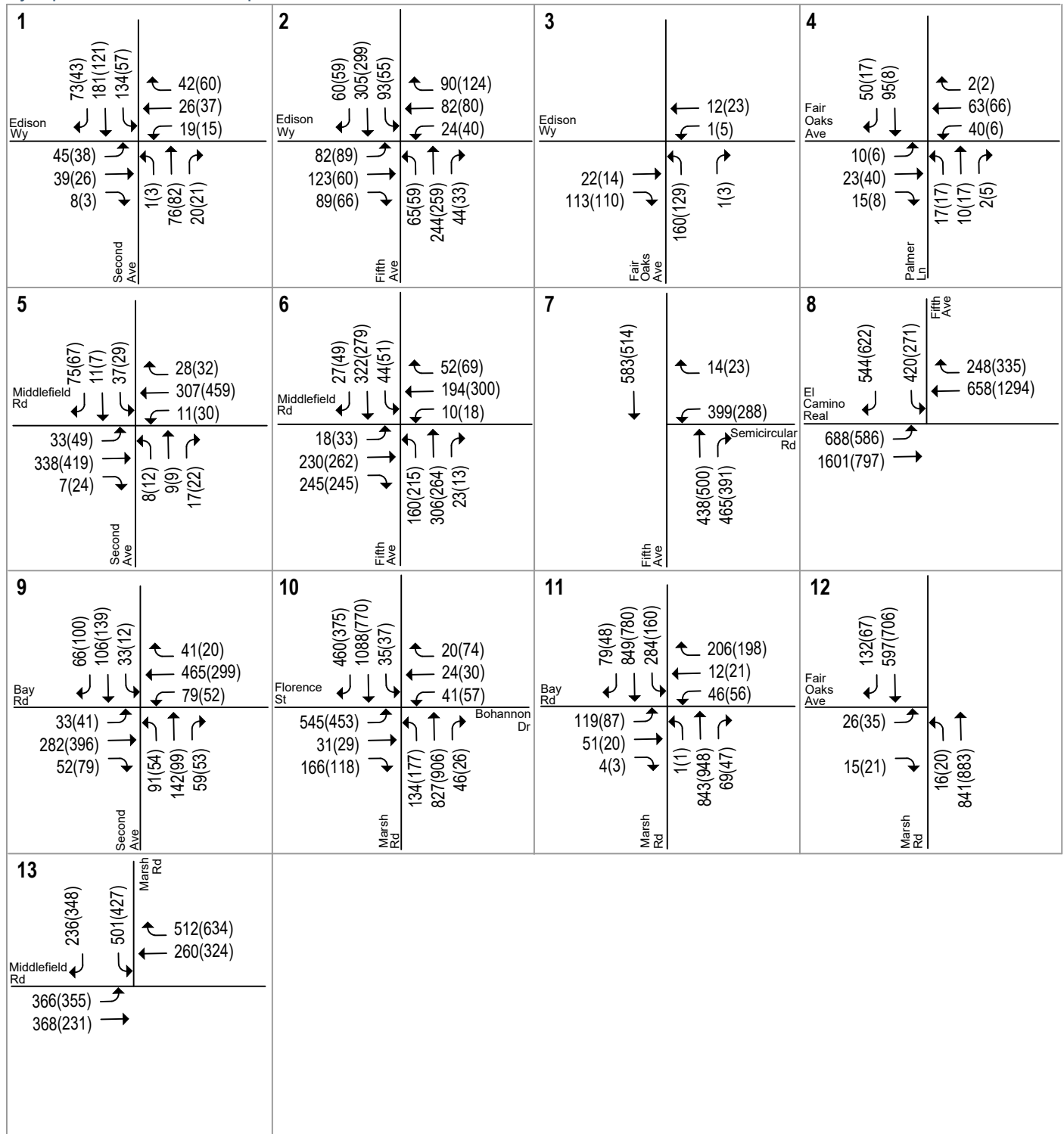


Figure 13
Cumulative Plus Project Traffic Volumes

Cumulative Intersection Levels of Service

The results of the intersection level-of-service analysis under the cumulative no project scenario show that all the study intersections would operate at acceptable levels of service during both AM and PM peak hours (see Table 7). The level of service calculation sheets are included in Appendix C.

Cumulative plus project conditions were evaluated relative to cumulative no project conditions in order to determine potential adverse effects associated with the proposed development. The results show that, measured against the adverse effect criteria presented in the previous section, the project would have an adverse effect on the following intersection during the AM peak hour under cumulative plus project conditions. The level of service calculation sheets are included in Appendix C.

- 5th Avenue and Edison Way (Unsignalized) (San Mateo County)

This intersection would operate at an acceptable LOS D during the AM peak hour under cumulative no project conditions. The proposed project would cause the intersection to degrade to an unacceptable LOS E, and the intersection traffic volumes would satisfy the Peak-Hour Volume Signal Warrant (see Appendix D). While not a significant impact under CEQA because CEQA impacts are measured in VMT not by LOS, this would exceed the thresholds established in the *County of San Mateo Traffic Impact Study Requirements* (9/1/2013).

Intersection operations could be improved by installing a traffic signal. With a signal, the intersection would operate at an acceptable LOS A during both AM and PM peak hours. The project's traffic would represent 8.2 percent of the average AM and PM peak-hour traffic.

Signal Warrant Analysis

A signal warrant check (*MUTCD 2010 edition, Part 4, Warrant 3, Part B*) was conducted for the unsignalized study intersection at Fifth Avenue and Edison Way. The signal warrant analysis sheets are included in Appendix D.

5th Avenue and Edison Way

The intersection of 5th Avenue and Edison Way would operate at a substandard level of service with the project during the AM peak hour with the current all-way stop control. The traffic volumes during the AM peak hour under all project scenarios would meet the peak-hour signal warrant. Intersection operations could be improved by installing a traffic signal. With the recommended improvement, the intersection is expected to operate at an acceptable LOS A during both AM and PM peak hours.

Table 7
Intersection Levels of Service Under Cumulative Conditions

ID	Intersection (Jurisdiction)	Control	Peak Hour	Cumulative				Cumulative + Project			
				Average ¹		Worst ²		Average ¹		Worst ²	
				Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS	Delay (sec.)	LOS
1	2nd Ave and Edison Wy (San Mateo County)	AWSC	AM	10.9	B	12.3	B	11.1	B	12.6	B
			PM	8.8	A	9.3	A	8.9	A	9.4	A
2	5th Ave and Edison Wy (San Mateo County)	AWSC	AM	26.3	D	38.5	E	43.6	E	70.0	F
			Mitigated AM					7.9	A	9.2	A
			PM	19.9	C	25.4	D	26.9	D	36.5	E
3	Fair Oaks Ave and Edison Wy (San Mateo County)	OWSC	AM			9.9	A			10.3	B
			PM			10.1	B			10.4	B
4	Palmer Ln and Fair Oaks Ave (San Mateo County)	TWSC	AM			11.2	B			11.7	B
			PM			9.7	A			9.9	A
5	2nd Ave and Middlefield Rd (San Mateo County)	TWSC	AM			21.4	C			22.3	C
			PM			25.9	D			26.7	D
6	5th Ave and Middlefield Rd (San Mateo County)	Signal	AM	47.4	D	64.0	E	51.6	D	72.7	E
			PM	45.8	D	56.5	E	49.0	D	63.7	E
7	5th Ave and Semicircular Rd (San Mateo County)	Signal	AM	8.2	A	11.6	B	8.3	A	11.8	B
			PM	5.6	A	8.5	A	5.6	A	8.6	A
8	5th Ave and El Camino Real (San Mateo County)	Signal	AM	19.8	B	35.0	D	20.5	C	36.0	D
			PM	23.5	C	35.6	D	24.2	C	37.3	D
9	2nd Ave and Bay Rd (Redwood City)	AWSC	AM	20.9	C			21.5	C		
			PM	17.0	C			17.3	C		
10	Marsh Rd and Florence St (Menlo Park)	Signal	AM	40.7	D			40.9	D		
			PM	40.4	D			40.3	D		
11	Marsh Rd and Bay Rd (Menlo Park)	Signal	AM	23.6	C			23.8	C		
			PM	32.7	C			32.7	C		
12	Marsh Rd and Fair Oaks Ave (San Mateo County)	OWSC	AM			16.3	C	0.0	0	16.9	C
			PM			18.6	C	0.0	0	19.5	C
13	Marsh Rd and Middlefield Rd (Atherton)	Signal	AM	34.7	C			35.0	D		
			PM	34.3	C			34.6	C		

Notes:
1. Average intersection delay and LOS are reported for signalized and all-way stop controlled intersections.
2. Worst movement delay and LOS are reported for signalized and unsignalized intersections in the San Mateo County.
3old indicates a substandard level of service.
Bold indicates a significant impact.

4. Other Transportation Issues

This chapter presents an analysis of other transportation issues associated with the project, including:

- Site access and circulation
- Parking Analysis
- Effects on pedestrian, bicycle, and transit facilities
- C/CAG TDM Checklist

The analyses in this chapter are based on professional judgement in accordance with the standards and methods employed by traffic engineering professionals. The analyses in this chapter are not CEQA issues.

Site Access and Circulation

A review of the project site plan was performed to determine if adequate vehicle site access and on-site circulation would be provided and to identify any access or circulation issues that should be improved. This review is based on the site plan prepared by K2A Architect and Interiors, dated January 27, 2024, presented on Figure 2 and in accordance with generally accepted traffic engineering standards.

Vehicular Site Access

Vehicular access to the project site would be provided via two existing driveways on Edison Way. The western driveway would remain an outbound only driveway. The eastern driveway currently serves as an inbound only driveway and would be converted to a two-way driveway under project conditions.

Based on the trip generation counts conducted at the existing SportsHouse site on October 1, 2 and 3, 2024, there are currently only a small number of vehicle trips for the Upper School entering (14 inbound trips) and exiting (14 outbound trips) the site during the AM peak hour. The proposed new campus is estimated to generate 135 new trips (74 inbound and 61 outbound) during the AM peak-hour and 112 new trips (56 inbound and 56 outbound) during the school PM peak-hour, which equates to about one additional inbound trip every minute at the eastern driveway and one additional outbound trip every minute at the western driveway during the AM and PM peak periods of traffic. This modest increase in trips would not cause operational issues at the project driveways.

On-Site Circulation

As shown in Figure 2, a student loading zone would be located along the western side of the SportsHouse building. The drop-off/pick-up area would have one-way circulation during the peak

periods before and after school in a counterclockwise direction from the eastern driveway to the western (outbound) driveway on Edison Way. All the drop-off/pick-up vehicles would enter the project site via the eastern driveway, drop off/pick-up students at the loading zone, and exit the parking lot via the western driveway.

The existing parking lot layout would be modified to eliminate some parking spaces on the east side of site to add additional landscaping and a pedestrian path connecting the New Campus to the sidewalks along Edison Way.

Vehicles entering from the eastern driveway and parking at the eastern parking lot could use the eastern driveway to exit the parking lot. All drop-off/pick-up vehicles and vehicles parking at other areas could only use the western driveway to exit the site. Measures should be taken to prohibit parents from parking at the parking lot and walking students to the new classrooms to ensure efficient utilization of the pick-up and drop-off zone.

Recommendations: The school should implement appropriate signage, striping, and/or traffic attendants to encourage drivers to not disrupt the flow of traffic into and out of the student loading zone during peak drop-off and pick-up times.

The site also includes a pedestrian path through the existing building connecting the drop-off/pick-up area to the New Campus located on the east side of the SportsHouse. This connection provides a safe and convenient walking path for new students.

Drop-off and Pick-up

The proposed student loading zone would allow five cars to drop-off/pick-up students at the same time. After loading or unloading students, vehicles would be able to pull into the travel lane to the left to proceed without having to wait for other vehicles to finish loading/unloading. There is space for approximately 16 cars to queue on site along the one-way drive aisle next to the diagonal parking spaces between the eastern driveway and the start of the student loading zone. Thus, drop-off/pick-up queues totaling up to 21 vehicles could be accommodated on site without extending back on to Edison Way. Furthermore, the site plan shows there is space for approximately 11 vehicles to queue between the end of the student loading zone and the exit at the western driveway, providing ample space to accommodate queues for vehicles waiting to turn onto Edison Way without interfering with or delaying drop-off and pick-up operations. Hexagon has observed the drop-off and pick-up operations at several school sites. Based on the observed queue lengths at other sites and a comparison of the estimated vehicle trips generated by new campus versus the other schools, the provided queue space for drop-off and pick-up operations is adequate. Thus, the queue is not expected to extend onto Edison Way. However, since the eastern driveway is located just 80 feet west of the intersection at Fifth Avenue and Edison Way, the school should monitor the inbound vehicle queuing conditions carefully at the driveway.

Recommendations: During the peak drop-off/pick-up periods, the school should assign a staff member at the eastern driveway to monitor the inbound vehicle queueing condition at the driveway and coordinate with staff in the loading area and parking lot to quickly move the inbound traffic if the vehicle queue extends to Edison Way.

In the afternoon, the Existing Campus implements an informing system to speed up the pick-up operations. It is assumed the New Campus will implement the same system. Upon arrival, parents inform the staff at the driveway who then inform the staff inside the building to bring out each student. The pick-up vehicle moves forward to the loading area, while waiting for the student to be brought out. Observations at the Existing Campus show that the pick-up traffic moved efficiently and smoothly within the parking lot with the informing system, and the pick-up vehicle queue did not extend to Edison Way.

Impacts on Bicycle, Pedestrian, and Transit Facilities

Similar to existing conditions, the school draws students from all of the peninsula area and so few students would live close enough to walk or bike to/from the school. Therefore, most students would be dropped off at school, with very few students walking or bicycling to school. Most of the residential streets in the vicinity of the school have no sidewalks. Therefore, it would not be safe for the younger students to walk to school.

As proposed, new students (5-8 graders) may walk from the new campus to the existing campus for science labs occasionally between the hours of 10:00 AM and 2:00 PM. Students will walk between the two campuses via the pedestrian path and cross Fifth Avenue. All travel between the campuses would be by foot; there will be no shuttling of students by car between the campuses. All students crossing between campuses will be chaperoned by teachers and staff at all times. Therefore, with the new proposed campus, the pedestrian traffic crossing Fifth Avenue will increase.

Recommendations: There is no existing crosswalk across Fifth Avenue at the intersection of Fifth Avenue and Edison Way. Hexagon recommends striping a crosswalk on the north approach of the intersection to improve student safety when walking between the campus sites. Also as identified in the previous chapter, the proposed project would have an adverse effect at the intersection of 5th Avenue and Edison Way, and a traffic signal was recommended. If the County decides to install a traffic signal at this intersection, the new traffic signal should include appropriate pedestrian and bicycle accommodation.

Bicycle lanes are only present on Fifth Avenue from the Dumbarton railroad (just north of the project site) to Waverly Avenue. Existing bicycle facilities in the vicinity of the project site are not well-connected. While the neighborhood streets surrounding the project site do not have bicycle lanes, they are conducive to bicycle travel due to their low traffic volumes and low speeds.

The school is more than one-half mile from most existing transit stops and is not near a major transit center. Because the distance is farther than the typically assumed walking distance of one quarter mile, the school is considered to be unserved by public transit. However, the school runs its own shuttle buses that are used by students and staff.

Parking

Vehicle Parking

Currently, there are 104 parking spaces on the project site. Based on Hexagon's counts conducted on December 14, 15, and 19, 2023, the maximum number of vehicles parked on the existing SportsHouse site ranged from 16 to 26 vehicles around 9:00 AM. As proposed, approximately 9,500 sq. ft. of the existing office space of the current SportsHouse will be converted to six classrooms to accommodate 140 students. The future parking demand generated by the New Campus was estimated based on the proposed student enrollment and the existing parking generation rate at the existing school site. Based on Hexagon's counts conducted on January 24 to 26, 2023, the maximum number of vehicles parked on the existing school site ranged from 36 to 43 vehicles around 9:00 AM. With the current enrollment of 310 students, the existing parking demand rate is 0.14 parking spaces per student (43/310). The future parking demand of the new campus with 140 students during the AM peak hour would be 20 parking spaces. The project proposes to do some minor parking and circulation improvements and as a result, the total number of parking spaces would be increased to 107, which would be more than adequate to accommodate the parking demand of the New Campus and the rest of the SportsHouse.

Bicycle Parking

As confirmed by the County, because the use permit amendment for the proposed project only concerns the conversion of approximately 9,500 sq. ft. within an existing $\pm 70,667$ sq. ft. building for school use and leaves the uses for the remainder of the building intact, the use permit amendment does not trigger an increased private bicycle parking requirement for the non-school uses. Therefore, the required bicycle parking analysis was only conducted for the proposed school use. The San Mateo County Zoning Code (Section 6276.7 - Table 1) states that:

- All uses listed under the "Institutional Use Classification" are required to provide one private bicycle parking space per 1,500 square feet; and
- Two public bicycle parking spaces are required for each 35 feet of street frontage.

Therefore, to meet the requirements, the New Campus would need to provide 7 ($=9,500/1,500$) private bicycle parking spaces.

The required number of public bicycle parking spaces is based on the proportionally calculated street frontage for the converted school space only. The street frontage of the proposed New Campus (905 feet) multiplied by the proportionate square footage used by the New Campus (.134) is 121 feet (905 total linear foot street frontage of project site on both Edison Way and Fifth Avenue) $\times$ (9,500 s.f. of proposed school use / 70,668 s.f. total building space). For the 121 feet of street frontage, 7 ($=121 \times 2 / 35$) public bicycle parking spaces would be required.

The site plan shows that the proposed project will add 14 U-style bicycle racks close to the school classrooms. The provided bicycle parking spaces would meet the County's requirement for both private and public bicycle parking.

The bike rack design and placement meets the bicycle parking on private property specifications recommended in the County's Unincorporated San Mateo County Active Transportation Plan (adopted February 2021).

C/CAG TDM Requirement

Based on C/CAG's *Transportation Demand Management Policy Update Approach* updated September 1, 2021, and the *Implementation Guide* dated March 2021, any new development project anticipated to generate at least 100 average daily trips (ADT) is subject to the TDM Policy and must complete a TDM Checklist and implement associated measures to mitigate traffic impacts. The proposed project would generate more than 100 daily trips. Therefore, implementation of measures in the C/CAG TDM Checklist would be required. To accomplish the reduction goal, C/CAG provides a list of potential TDM measures, some of which are required and some of which are optional. Each measure has an associated trip reduction percentage. Based on the C/CAG TDM policy, the project must first fulfill all required measures prior to selecting a sufficient number of additional recommended measures to achieve the minimum 35 percent trip reduction.

For the purpose of TDM requirement check, the New Campus would be combined with the Existing Campus and would be categorized as a large project. Furthermore, since the project is located within 3 miles of the Redwood City Caltrain station, it would be categorized as large, non-residential, and transit proximate. Therefore, the project would be required to commit to enough TDM measures to achieve a 35 percent vehicle trip reduction.

Synapse School already implements TDM measures at the existing campus. These include giving priority admission to students nearer the school, operating shuttle buses, and promoting carpool matching.

Existing TDM Program

Synapse School already implements the following TDM measures.

- **School Shuttle.** The school currently operates 5 shuttles serving 43 students in the morning and 3 shuttles serving 24 students in the afternoon. As proposed, an extra stop at the SportsHouse Site would be added to Synapse School's existing shuttle program to drop off and pick up students attending the SportsHouse Site classrooms. Synapse School would add additional shuttles based on demand.
- **Commute assistance and ride-matching.** The school currently encourages carpooling and works to match families and employees to form carpools.
- **Secure bicycle storage and bike repair station.** The proposed project would provide a total of 68 on-site private bicycle parking spaces and 30 public bike parking spaces along Edison Way. The school currently has a bike repair station on campus.
- **Provide TDM Coordinator.** Synapse has staff that implement the current TDM program. They assist with carpool matching and manage the shuttle bus program. Synapse regularly communicates with parents to encourage alternative modes for accessing the campus.
- **Showers, Lockers, and Changing Rooms for Cyclists.** There are showers, lockers and changing rooms available on campus which can be used by cyclists.
- **Pre-tax Transportation Benefits.** The school currently offers a transportation benefit for employees.

As shown in Table 8, with the implementation of the current TDM measures, the project would not meet the vehicle trip reduction target of 35 percent. Additional TDM measures would be needed in order to fulfill the C/CAG trip reduction requirements.

Table 8
C/CAG TDM Checklist with Existing TDM Program

Measure		Provided by Project (Y/N)	Estimated Trip Reduction Percentage
Required TDM Measures for Large Non-Residential (Office, Industrial, Institutional) Projects			
1	M1 - Free/Preferential Parking for Carpools	N	1.0%
2	M3 - TDM Coordinator/Contact Person	Y	0.5%
3	M4 - Actively Participate in Commute.org, or Transportation Management Association (TMA) Equivalent	N	16.5%
4	M5 - Carpool or Vanpool Program	Y	2.0%
5	M6 - Transit or Ridesharing Passes/Subsidies	N	10.0%
6	M7 - Pre-Tax Transportation Benefits	Y	1.0%
7	M8 - Secure Bicycle Storage	Y	1.0%
8	M9 - Design Streets to Encourage Bike/Ped Access	N	1.0%
9	M25 - Showers, Lockers, and Changing Rooms for Cyclists	Y	2.0%
Required TDM Measures Total			6.5%
Additional TDM Measures for Large Non-Residential (Office, Industrial, Institutional) Projects			
11	M12 - Flex Time, Compressed Work Week, Telecommute	N	5.0%
12	M14 - Paid Parking at Market Rate	N	25.0%
13	M15 - Reduced Parking	N	10.0%
14	M16 - Short Term Daily Parking	N	2.0%
15	M17 - Developer TDM Fee/TDM Fund	N	4.0%
16	M18 - Car Share On-Site	N	1.0%
17	M19 - Land Dedication or Capital Improvements for Transit	N	4.0%
18	M20 - Shuttle Program/Shuttle Consortium/Fund Transit Service	Y	10.0%
19	M21 - Bike/Scooter Share On-Site	N	1.0%
20	M22 - Active Transportation Subsidies	N	2.0%
21	M23 - Gap Closure	N	7.0%
22	M24 - Bike Repair Station	Y	0.5%
23	M26 - Pedestrian Oriented Uses & Amenities on Ground Floor	N	3.0%
Additional TDM Measures Total			10.5%
Provided TDM Measures Total			17.0%

Recommended Additional TDM Measures

- Certified participation in Commute.org or TMA.** Commute.org is a joint powers agency in San Mateo County. Transportation Management Associations (TMA) are associations of businesses, property owners, tenants, and cities. Both organizations offer programs and services to give commuters alternatives to driving alone, including shuttles, guaranteed ride

home, and rewards programs. The project could participate in Commute.org's Certified Development Program if they have not done so.

- **Subsidized transit passes.** The school could provide free or subsidized transit passes for their employees. Passes/subsidies could be for any public transportation option, including but not limited to Caltrain, SamTrans, ridesharing platforms, or vanpool subscriptions.
- **Preferential parking for carpools.** The project could provide preferential parking for carpools or vanpools, including reserved spaces or spaces near the entrance. This initiative encourages employees to rideshare by making it more convenient upon arrival to work.
- **Design streets to encourage bike/ped. access.** The project would stripe a crosswalk on the north approach of the intersection of Fifth Avenue & Edison Way to improve student safety when walking between the campus sites.

As shown in Table 9, with the implementation of these additional TDM measures, the project would meet the vehicle trip reduction target of 35 percent. The C/CAG TDM Checklist with the recommended additional TDM measures is included in Appendix E.

TDM Monitoring and Reporting

The project would be expected to monitor and report the status of TDM implementation at the project site to ensure that the C/CAG required trip reduction goal is met. C/CAG also requests the following periodic reporting for large non-residential projects post-occupancy:

- Monitoring and reporting for 20 years post-occupancy
- A TDM self-certification status form biennially for 18 years post occupancy.
- Travel surveys of employees/occupants biennially - beginning in the third year post-occupancy for a period of six years and then triennially for the remaining 12 years.

Table 9
C/CAG TDM Checklist with Additional TDM Measures

Measure		Provided by Project (Y/N)	Estimated Trip Reduction Percentage
Required TDM Measures for Large Non-Residential (Office, Industrial, Institutional) Projects			
1	M1 - Free/Preferential Parking for Carpools	Y	1.0%
2	M3 - TDM Coordinator/Contact Person	Y	0.5%
3	M4 - Actively Participate in Commute.org, or Transportation Management Association (TMA) Equivalent	Y	16.5%
4	M5 - Carpool or Vanpool Program	Y	2.0%
5	M6 - Transit or Ridesharing Passes/Subsidies	Y	4.0%
6	M7 - Pre-Tax Transportation Benefits	Y	1.0%
7	M8 - Secure Bicycle Storage	Y	1.0%
8	M9 - Design Streets to Encourage Bike/Ped Access	Y	1.0%
9	M25 - Showers, Lockers, and Changing Rooms for Cyclists	Y	2.0%
Required TDM Measures Total			29.0%
Additional TDM Measures for Large Non-Residential (Office, Industrial, Institutional) Projects			
11	M12 - Flex Time, Compressed Work Week, Telecommute	N	5.0%
12	M14 - Paid Parking at Market Rate	N	25.0%
13	M15 - Reduced Parking	N	10.0%
14	M16 - Short Term Daily Parking	N	2.0%
15	M17 - Developer TDM Fee/TDM Fund	N	4.0%
16	M18 - Car Share On-Site	N	1.0%
17	M19 - Land Dedication or Capital Improvements for Transit	N	4.0%
18	M20 - Shuttle Program/Shuttle Consortium/Fund Transit Service	Y	10.0%
19	M21 - Bike/Scooter Share On-Site	N	1.0%
20	M22 - Active Transportation Subsidies	N	2.0%
21	M23 - Gap Closure	N	7.0%
22	M24 - Bike Repair Station	Y	0.5%
23	M26 - Pedestrian Oriented Uses & Amenities on Ground Floor	N	3.0%
Additional TDM Measures Total			10.5%
Provided TDM Measures Total			39.5%

New Trip Cap Estimation

To determine the trip cap for the proposed project, the trips generated by the New Campus were estimated based on the trip generation rates published in the Institute of Transportation Engineers' (ITE) manual entitled *Trip Generation Manual, 11th Edition* (2019) for "Private School (K-8) - in a General Urban/Suburban area" (Land Use 530). As shown in Table 10, the C/CAG required 35 percent trip reduction goal results in a trip cap of 92 trips during the AM peak hour. Added to the existing trip cap of 298, this results in a total trip cap of 390 on the entire expanded campus (Existing Campus plus New Campus).

Table 10
New Trip Cap Estimation

Land Use	Size	Units	AM Peak Hour				
			Pk-Hr Rate	In	Out	Total	
<u>Proposed Use</u>							
Private K-8 ¹	140	students	1.01	79	62	141	
C/CAG Required Trip Reduction (35%)						(49)	
Trip Cap for the Proposed New Campus						92	
Trip Cap for the Existing School						298	
Total Trip Cap						390	
<u>Notes:</u>							
1. Based on the ITE's Trip Generation Manual, 11th Edition rates for Land Use Code Land Use Code 530 "Private School (K-8) in a General Urban/Suburban area."							

5. Conclusions

The school proposes a new campus at the SportsHouse site located at 3151 Edison Way which is across the street (Fifth Avenue) from Synapse School's Existing Campus. The project would involve an amendment to the existing SportsHouse use permit (PLN 2011-00070) to convert approximately 9,500 sq. ft. within an existing $\pm 70,667$ sq. ft. square foot commercial/ industrial building currently used for an indoor multi-sports and recreational facility into six (6) classrooms that would accommodate a maximum of 140 K-8 students and 15 faculty/staff. The Existing Campus, which operates under a separate use permit (PLN 2014-00295 last amended in 2021) and accommodates at maximum 310 students and 80 staff, would remain. Access to both the New Campus and Existing Campus are provided via driveways off Edison Way.

This transportation analysis was conducted for the purpose of identifying operational deficiencies related to traffic or parking resulting from the proposed New Campus and recommending appropriate measures to fully mitigate or lessen the deficiencies. The potential effects of the project were evaluated in accordance with the standards set forth by the County of San Mateo, Redwood City, City of Menlo Park, and Town of Atherton. Since the New Campus would generate more than 100 daily vehicle trips, a City/County Association of Governments of San Mateo County (C/CAG)-compliant Transportation Demand Management (TDM) checklist also was prepared. Note that Hexagon previously completed a CEQA compliant Vehicle Miles Travelled (VMT) analysis for the project, which has been reviewed and accepted by the County.

Project Trip Estimates

Based on the trip generation rates estimated at the Existing Campus, the New Campus is estimated to generate an increase of 135 AM peak-hour trips (74 inbound and 61 outbound) and 112 school PM peak-hour trips (56 inbound and 56 outbound).

Intersection Level of Service Analysis

The level of service analysis results show that the intersection of 5th Avenue and Edison Way would degrade to an unacceptable LOS E during the AM peak hour under all project scenarios and the intersection traffic volumes would meet the peak-hour signal warrant. While not a significant impact under CEQA because CEQA impacts are measured in VMT not by LOS, this would exceed the thresholds established in the *County of San Mateo Traffic Impact Study Requirements* (9/1/2013).

Intersection operations could be improved by installing a traffic signal. With a signal, the intersection would operate at an acceptable LOS A during both AM and school PM peak hours under all project conditions. The project's traffic would represent 8.2 percent of the average AM and PM peak-hour traffic.

Other Transportation Issues

The following recommendations were identified to address issues associated with site access, on-site circulation, and C/CAG TDM compliances check.

- The school should implement appropriate signage, striping, and/or traffic attendants to encourage drivers to not disrupt the flow of traffic into and out of the student loading zone during peak drop-off and pick-up times.
- During the peak drop-off/pick-up periods, the school should assign a staff member at the eastern driveway to monitor the inbound vehicle queueing condition at the driveway and coordinate with staff in the loading area and parking lot to quickly move the inbound traffic if the vehicle queue extends to Edison Way.
- There is no existing crosswalk across Fifth Avenue at the intersection of Fifth Avenue and Edison Way. Hexagon recommends striping a crosswalk on the north approach of the intersection at Fifth Avenue and Edison Way to improve student safety when walking between the campus sites. Also as identified in the intersection level of service analysis, the proposed project would have an adverse effect at the intersection of Fifth Avenue and Edison Way, and a traffic signal was recommended. If the County decides to install a traffic signal at this intersection, the new traffic signal should include appropriate pedestrian and bicycle accommodation.
- With the implementation of the current TDM measures, the project would not meet the C/CAG required vehicle trip reduction target of 35 percent. The following additional TDM measures would be needed in order to fulfill the C/CAG trip reduction requirements:
 - 1) The project could participate in Commute.org's Certified Development Program if they have not done so.
 - 2) The school could provide free or subsidized transit passes for their employees. Passes/subsidies could be for any public transportation option, including but not limited to Caltrain, SamTrans, ridesharing platforms, or vanpool subscriptions.
 - 3) The project could provide preferential parking for carpools or vanpools, including reserved spaces or spaces near the entrance.
 - 4) The project would stripe a crosswalk on the north approach of the intersection of Fifth Avenue & Edison Way to improve student safety when walking between the campus sites.

The C/CAG required 35 percent trip reduction goal results in a trip cap of 92 trips during the AM peak hour. Added to the existing trip cap of 298, this results in a total trip cap of 390 on the entire expanded campus (Existing Campus plus New Campus).

Synapse School New Campus TIA Technical Appendices

April 8, 2025

Appendix A

New SportsHouse Campus VMT Analysis



HEXAGON TRANSPORTATION CONSULTANTS, INC.

Memorandum

Date: July 11, 2024
To: Ms. Summer Burlinson, San Mateo County Planning Department
From: Gary Black
Subject: Synapse School – New Sportshouse Campus VMT

Hexagon Transportation Consultants, Inc. has completed an analysis of the vehicle miles traveled (VMT) for Synapse School's proposed new campus at the Sportshouse site located at 3151 Edison Way ("New Campus") which is across the street (Fifth Avenue) from Synapse School's existing campus located at 3375 Edison Way ("Existing Campus"). The New Campus would involve the amendment of the existing Sportshouse use permit (PLN 2011-00070) to convert approximately 9,500 sq. ft. within an existing $\pm 70,667$ sq. ft. square foot commercial/ industrial building currently used for an indoor multi-sports and recreational facility to six (6) classrooms serve that would accommodate a maximum of 140 students and 15 faculty/staff. The Existing Campus which operates under a separate use permit (PLN 2014-00295) and accommodates as maximum 310 students and 80 staff would remain

San Mateo County has an adopted VMT policy and typically uses the C/CAG VMT Tool to analyze the impact of new development. However, neither the County policy nor the tool address private schools. Therefore, a logical approach to the VMT analysis was devised by Hexagon in conjunction with County staff. The approach is based on an office equivalency. From a trip length perspective, offices and private schools are similar: both involve primarily commute trips (inbound in the morning, outbound in the afternoon) and both draw from a large geographic area. Thus, absent any policies for trip reduction, we would expect that an office or school in a given location would have a similar VMT per person.

The C/CAG VMT tool was used to determine that the average daily VMT per employee for the Synapse zone is 16.0. This is slightly below the countywide average of 16.8 daily VMT per employee as shown in the tool. The County policy seeks new development to achieve daily VMT per employee that is 15% below the county average, which calculates to 14.28.

The Existing Campus VMT was calculated based on the trip lengths for the year 2023-2024 school attendance. The weighted average trip length was calculated based on the trip lengths in each zip code area and number of students. A large number of students come from the nearby cities of Redwood City, Atherton, Menlo Park, and Palo Alto. Table 1 shows the trip length to the Synapse School based on the cities the students are travelling from. The results indicate that the average trip length is 6.54 miles per student.

The Existing Campus has a trip cap of 298 trips during the morning drop-off period. Past counts have shown that 30 of those trips are staff and 268 are students. The number of daily student trips would be double the morning drop-off, which calculates to 536 trips. The daily VMT per student calculates to 11.3 ($536 \times 6.54/320 = 11.3$).

To this must be added the staff trips. There are 80 staff, and it can be assumed their daily VMT is 16.0 as shown in the VMT tool. Table 2 shows that the combined VMT of students and staff calculates to an average of 12.27 daily VMT per person. This is below the threshold of 14.28.

Synapse School already implements programs to reduce VMT at the Existing Campus. These include giving priority admission to students nearer the school, operating shuttle buses, and promoting carpool matching. These have resulted in the school's VMT being below the 16.0 average for their zone and even below the threshold of 14.28. Assuming the same programs will be applied to the New Campus, the resulting impact to VMT would be less than significant.

Table 1
Trip Length to Synapse School by Zip Code

Zip Code	City	Percentage of Students	Trip Length to Synapse School (miles)	Weighted Trip Length to Synapse School (miles)
94065	Redwood City	1.50%	6.6	0.099
94041	Mountain View	1.90%	12.5	0.238
94010	Burlingame	1.90%	13.8	0.262
94024	Los Altos	2.20%	15.0	0.330
94028	Portola Valley	2.80%	8.8	0.246
94402	San Mateo	3.10%	12.5	0.388
94306	Palo Alto	3.40%	6.8	0.231
94002	Belmont	3.40%	7.5	0.255
94022	Los Altos	3.70%	10.5	0.389
94303	Palo Alto	4.30%	5.7	0.245
94403	San Mateo	5.60%	8.6	0.482
94025	Menlo Park	11.40%	3.5	0.399
94301	Palo Alto	11.40%	3.9	0.445
94062	Redwood City	9.60%	9.2	0.883
94061	Redwood City	7.10%	2.7	0.192
94027	Atherton	6.80%	2.4	0.163
94070	San Carlos	6.50%	6.4	0.416
Total		86.60%		6.538

Table 2
Synapse School VMT Calculation

Component	Daily Trips	Trip Length	VMT	Persons	VMT/person
Students	536	6.54	3505	310	11.31
Staff			1280	80	16.00
Total			4785	390	12.27

Appendix B

Traffic Counts



ALL TRAFFIC DATA SERVICES

(303) 216-2439

www.alltrafficdata.net

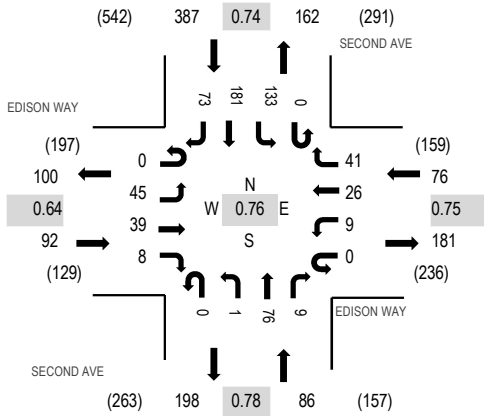
Location: 1 SECOND AVE & EDISON WAY AM

Date: Tuesday, October 15, 2024

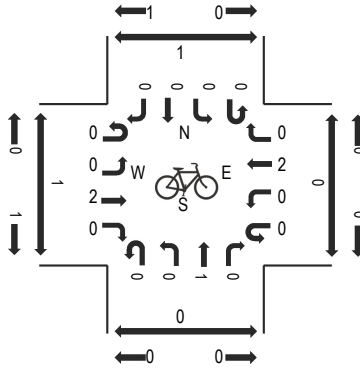
Peak Hour: 07:30 AM - 08:30 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

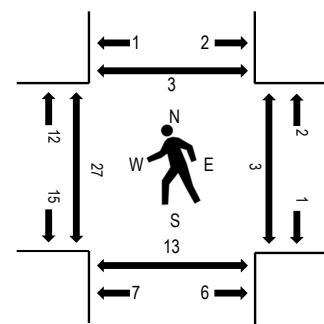
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	EDISON WAY Eastbound				EDISON WAY Westbound				SECOND AVE Northbound				SECOND AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	1	4	3	0	0	2	9	5	0	3	18	2	0	3	12	13	75	518	1	1	0	5
7:15 AM	1	8	1	0	0	0	7	7	0	3	23	6	0	13	20	11	100	606	5	0	1	1
7:30 AM	0	10	9	0	0	2	9	6	0	1	18	4	0	18	38	17	132	641	5	2	2	0
7:45 AM	0	16	15	5	0	4	6	12	0	0	21	1	0	49	60	22	211	606	5	0	0	0
8:00 AM	0	8	9	2	0	2	7	7	0	0	18	2	0	43	45	20	163	469	9	1	7	1
8:15 AM	0	11	6	1	0	1	4	16	0	0	19	2	0	23	38	14	135		8	0	4	2
8:30 AM	0	8	3	0	0	2	6	22	0	1	8	0	0	14	17	16	97		1	0	3	0
8:45 AM	0	7	1	0	0	1	9	13	0	1	6	0	0	9	11	16	74		3	0	2	1

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Lights	0	40	38	7	0	9	24	40	0	1	73	9	0	132	178	70	621
Mediums	0	4	1	1	0	0	2	1	0	0	3	0	0	1	3	3	19
Total	0	45	39	8	0	9	26	41	0	1	76	9	0	133	181	73	641



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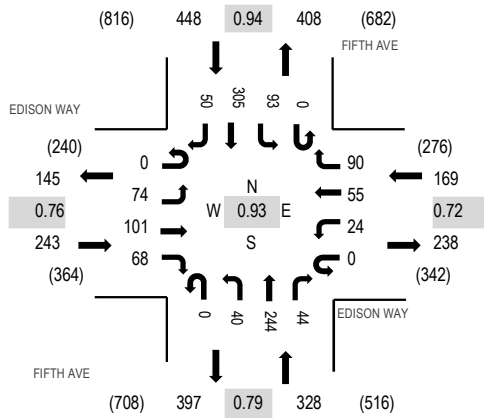
Location: 2 FIFTH AVE & EDISON WAY AM

Date: Tuesday, October 15, 2024

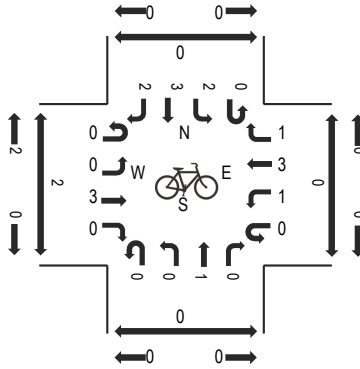
Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

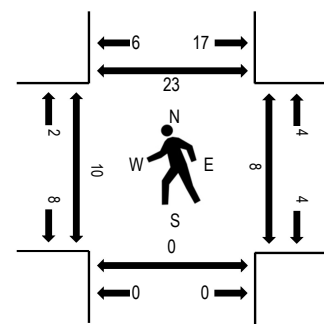
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	EDISON WAY Eastbound				EDISON WAY Westbound				FIFTH AVE Northbound				FIFTH AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	11	2	4	0	3	5	11	0	4	31	2	0	9	38	14	134	873	2	0	0	1
7:15 AM	0	14	11	4	0	3	5	13	0	7	41	2	0	13	77	18	208	1,032	3	0	0	1
7:30 AM	0	25	13	13	0	3	5	12	0	4	23	3	0	13	106	11	231	1,100	1	0	0	0
7:45 AM	0	15	37	28	0	4	6	18	0	4	49	9	0	29	89	12	300	1,188	3	5	0	3
8:00 AM	0	18	30	13	0	6	10	19	0	14	53	10	0	27	80	13	293	1,099	3	1	0	11
8:15 AM	0	19	17	10	0	2	14	25	0	4	72	7	0	18	77	11	276		4	2	0	1
8:30 AM	0	22	17	17	0	12	25	28	0	18	70	18	0	19	59	14	319		0	0	0	8
8:45 AM	0	12	7	5	0	14	7	26	0	5	55	11	0	18	41	10	211		0	2	0	90

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	74	99	67	0	24	53	88	0	39	240	43	0	93	299	50	1,169
Mediums	0	0	2	1	0	0	2	2	0	1	4	1	0	0	6	0	19
Total	0	74	101	68	0	24	55	90	0	40	244	44	0	93	305	50	1,188



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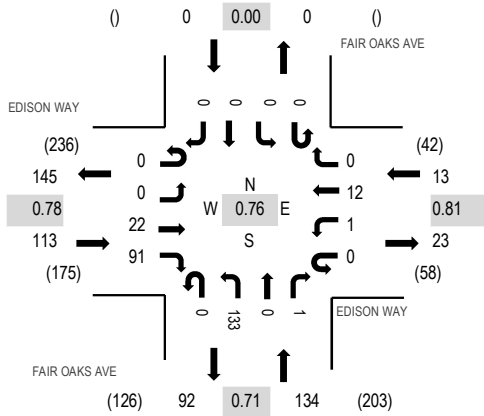
Location: 3 FAIR OAKS AVE & EDISON WAY AM

Date: Tuesday, October 15, 2024

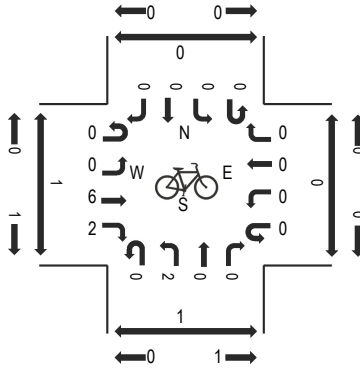
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

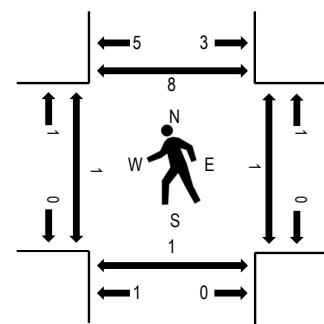
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	EDISON WAY Eastbound				EDISON WAY Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	3	2	0	1	8	0	0	9	0	0	0	0	0	0	23	160	0	0	0	0
7:15 AM	0	0	14	10	0	1	3	0	0	15	0	2	0	0	0	0	45	190	0	0	2	0
7:30 AM	0	0	3	12	0	0	7	0	0	13	0	2	0	0	0	0	37	201	4	1	0	4
7:45 AM	1	0	9	8	0	0	9	0	0	26	0	2	0	0	0	0	55	250	1	1	2	1
8:00 AM	0	0	4	17	0	0	4	0	0	28	0	0	0	0	0	0	53	260	0	0	0	0
8:15 AM	0	0	3	22	0	0	2	0	0	29	0	0	0	0	0	0	56		0	1	1	1
8:30 AM	0	0	7	29	0	1	2	0	0	46	0	1	0	0	0	0	86		1	0	0	5
8:45 AM	0	0	8	23	0	0	4	0	0	30	0	0	0	0	0	0	65		0	0	0	2

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	21	91	0	1	12	0	0	130	0	1	0	0	0	0	256
Mediums	0	0	1	0	0	0	0	0	0	3	0	0	0	0	0	0	4
Total	0	0	22	91	0	1	12	0	0	133	0	1	0	0	0	0	260



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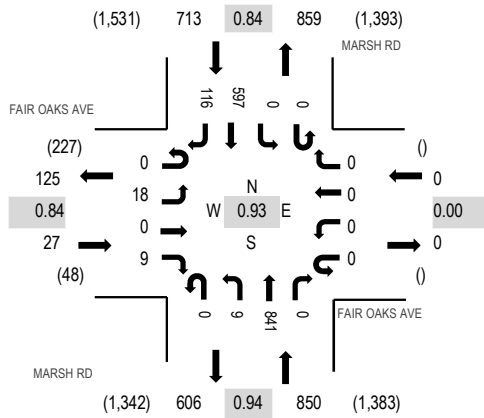
Location: 4 MARSH RD & FAIR OAKS AVE AM

Date: Tuesday, October 15, 2024

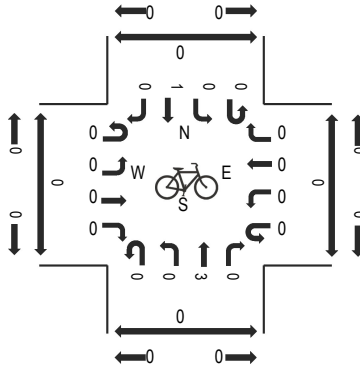
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:15 AM - 08:30 AM

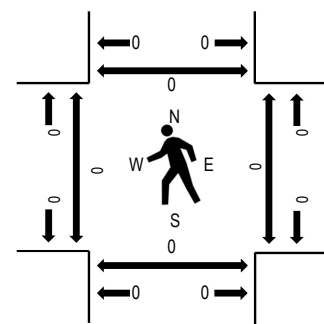
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	FAIR OAKS AVE Eastbound				FAIR OAKS AVE Westbound				MARSH RD Northbound				MARSH RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	1	0	4	0	0	0	0	0	1	109	0	0	0	182	11	308	1,372	0	0	0	0
7:15 AM	0	2	0	3	0	0	0	0	0	0	137	0	0	0	228	16	386	1,430	0	0	0	0
7:30 AM	0	2	0	7	0	0	0	0	0	1	152	0	0	0	166	31	359	1,470	0	0	0	0
7:45 AM	0	1	0	1	0	0	0	0	0	3	130	0	0	0	145	39	319	1,519	0	0	0	0
8:00 AM	0	3	0	2	0	0	0	0	0	3	178	0	0	0	134	46	366	1,590	0	0	0	0
8:15 AM	0	4	0	3	0	0	0	0	0	2	224	0	0	0	161	32	426		0	0	0	0
8:30 AM	0	5	0	3	0	0	0	0	0	4	212	0	0	0	155	29	408		0	0	0	0
8:45 AM	0	6	0	1	0	0	0	0	0	0	227	0	0	0	147	9	390		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Lights	0	18	0	9	0	0	0	0	0	9	819	0	0	0	580	115	1,550
Mediums	0	0	0	0	0	0	0	0	0	0	22	0	0	0	16	1	39
Total	0	18	0	9	0	0	0	0	0	9	841	0	0	0	597	116	1,590



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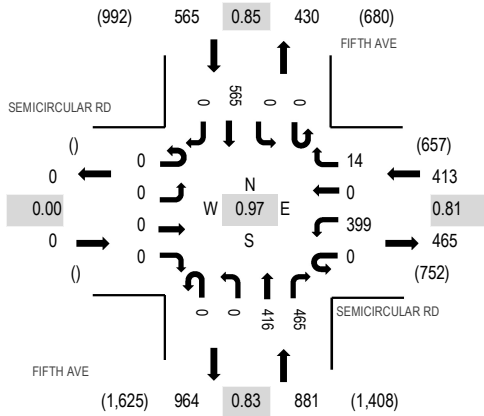
Location: 5 FIFTH AVE & SEMICIRCULAR RD AM

Date: Tuesday, October 15, 2024

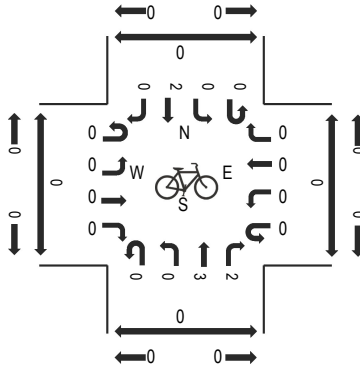
Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 08:00 AM - 08:15 AM

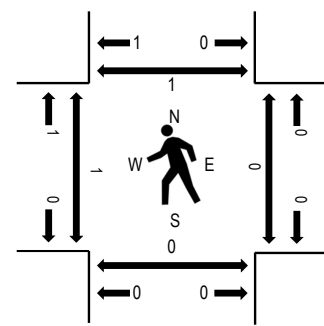
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	SEMICIRCULAR RD Eastbound				SEMICIRCULAR RD Westbound				FIFTH AVE Northbound				FIFTH AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	0	0	0	44	0	0	0	0	43	39	0	0	87	0	213	1,320	0	1	0	0
7:15 AM	0	0	0	0	0	59	0	4	0	0	60	56	0	0	106	0	285	1,587	0	0	0	0
7:30 AM	0	0	0	0	0	71	0	2	0	0	46	91	0	0	141	0	351	1,762	4	0	0	0
7:45 AM	0	0	0	0	0	105	0	2	0	0	90	102	0	0	172	0	471	1,859	0	0	0	0
8:00 AM	0	0	0	0	0	128	0	2	0	0	91	119	0	0	140	0	480	1,737	0	0	0	0
8:15 AM	0	0	0	0	0	106	0	7	0	0	108	106	0	0	133	0	460		0	0	0	0
8:30 AM	0	0	0	0	0	60	0	3	0	0	127	138	0	0	120	0	448		1	0	0	1
8:45 AM	0	0	0	0	0	60	0	4	0	0	91	101	0	0	93	0	349		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Lights	0	0	0	0	0	396	0	14	0	0	409	461	0	0	556	0	1,836
Mediums	0	0	0	0	0	3	0	0	0	0	5	4	0	0	9	0	21
Total	0	0	0	0	0	399	0	14	0	0	416	465	0	0	565	0	1,859



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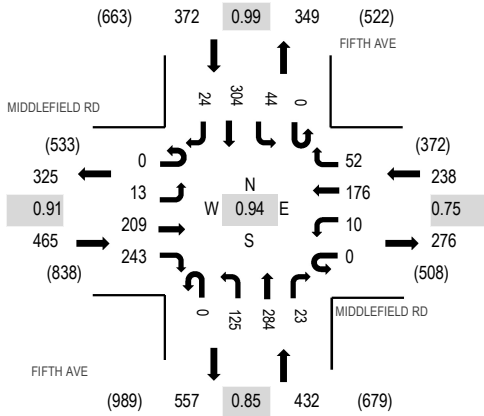
Location: 6 FIFTH AVE & MIDDLEFIELD RD AM

Date: Tuesday, October 15, 2024

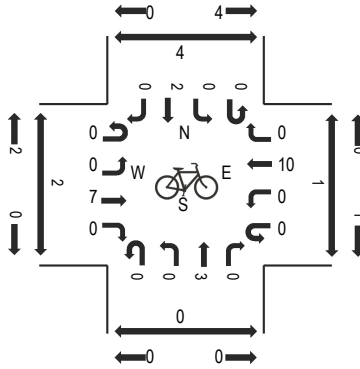
Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 08:15 AM - 08:30 AM

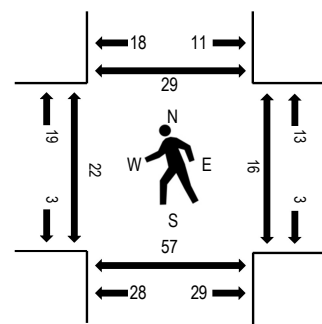
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MIDDLEFIELD RD Eastbound				MIDDLEFIELD RD Westbound				FIFTH AVE Northbound				FIFTH AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	3	32	39	0	2	14	4	0	12	27	2	0	6	41	0	182	1,077	1	3	3	1
7:15 AM	0	3	43	50	0	4	23	5	0	21	38	4	0	13	60	5	269	1,262	3	1	9	5
7:30 AM	0	0	50	62	0	0	20	6	0	18	23	2	0	12	78	0	271	1,394	1	6	18	7
7:45 AM	0	1	53	76	0	2	32	3	0	30	57	8	0	5	82	6	355	1,507	5	5	20	9
8:00 AM	0	4	56	63	0	2	42	14	0	23	64	7	0	13	77	2	367	1,475	6	3	22	2
8:15 AM	0	4	47	56	0	4	63	19	0	36	73	5	0	11	75	8	401		10	8	14	15
8:30 AM	0	4	53	48	0	2	39	16	0	36	90	3	0	15	70	8	384		1	0	1	3
8:45 AM	0	3	50	38	0	7	42	7	0	43	54	3	0	15	51	10	323		0	1	10	5

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	1	0	1	0	0	4
Lights	0	13	200	239	0	10	166	51	0	122	281	22	0	42	298	24	1,468
Mediums	0	0	9	4	0	0	9	1	0	2	3	0	0	1	6	0	35
Total	0	13	209	243	0	10	176	52	0	125	284	23	0	44	304	24	1,507



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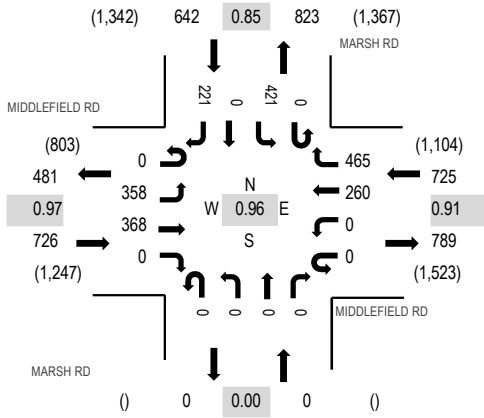
Location: 7 MARSH RD & MIDDLEFIELD RD AM

Date: Tuesday, October 15, 2024

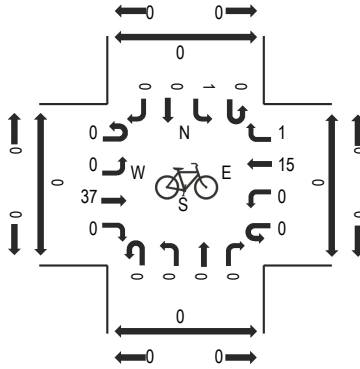
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:30 AM - 08:45 AM

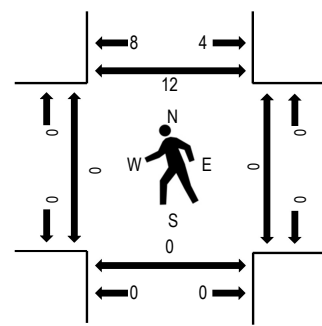
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MIDDLEFIELD RD Eastbound				MIDDLEFIELD RD Westbound				MARSH RD Northbound				MARSH RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	52	37	0	0	0	12	62	0	0	0	0	0	114	0	67	344	1,600	0	0	0	0
7:15 AM	0	66	45	0	0	0	18	67	0	0	0	0	0	138	0	69	403	1,741	0	0	0	0
7:30 AM	0	76	74	0	0	0	31	82	0	0	0	0	0	102	0	55	420	1,869	0	1	0	7
7:45 AM	0	66	105	0	0	0	34	73	0	0	0	0	0	119	0	36	433	1,996	0	0	1	4
8:00 AM	0	72	101	0	0	0	59	103	0	0	0	0	0	100	0	50	485	2,093	0	0	0	5
8:15 AM	0	101	86	0	0	0	72	118	0	0	0	0	0	109	0	45	531		0	0	0	0
8:30 AM	0	87	92	0	0	0	74	126	0	0	0	0	0	111	0	57	547		0	0	0	3
8:45 AM	0	98	89	0	0	0	55	118	0	0	0	0	0	101	0	69	530		0	0	0	4

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	348	359	0	0	0	254	454	0	0	0	0	0	411	0	216	2,042
Mediums	0	10	9	0	0	0	6	11	0	0	0	0	0	10	0	5	51
Total	0	358	368	0	0	0	260	465	0	0	0	0	0	421	0	221	2,093



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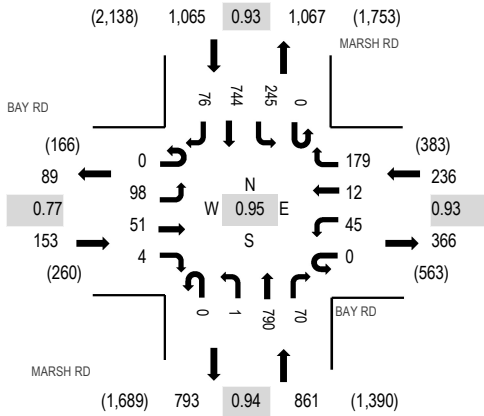
Location: 8 MARSH RD & BAY RD AM

Date: Tuesday, October 15, 2024

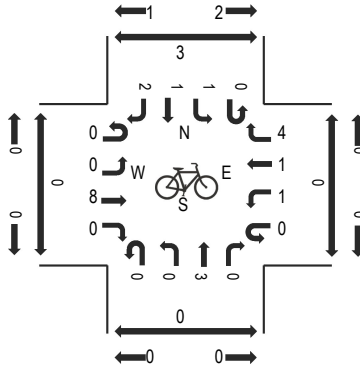
Peak Hour: 08:00 AM - 09:00 AM

Peak 15-Minutes: 08:15 AM - 08:30 AM

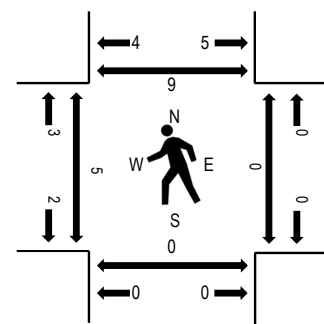
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BAY RD Eastbound				BAY RD Westbound				MARSH RD Northbound				MARSH RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	14	0	0	0	4	1	14	0	0	104	2	0	17	179	4	339	1,856	1	0	0	0
7:15 AM	0	24	4	1	0	9	1	17	0	0	141	4	0	28	236	10	475	2,054	2	0	0	2
7:30 AM	0	28	4	0	0	10	2	21	0	0	149	4	0	41	251	14	524	2,189	0	0	0	2
7:45 AM	0	26	6	0	0	21	6	41	0	0	107	18	0	69	185	39	518	2,273	1	0	0	2
8:00 AM	0	35	14	1	0	10	3	41	0	0	160	20	0	60	170	23	537	2,315	3	0	0	3
8:15 AM	0	21	7	2	0	14	3	49	0	0	215	12	0	59	211	17	610		1	0	0	2
8:30 AM	0	21	15	0	0	8	3	55	0	1	204	20	0	57	200	24	608		1	0	0	2
8:45 AM	0	21	15	1	0	13	3	34	0	0	211	18	0	69	163	12	560		0	0	0	2

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	3
Lights	0	98	51	4	0	45	11	173	0	1	771	69	0	239	727	76	2,265
Mediums	0	0	0	0	0	0	1	5	0	0	19	1	0	5	16	0	47
Total	0	98	51	4	0	45	12	179	0	1	790	70	0	245	744	76	2,315

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Lights	1	670	1,559	0	0	0	633	217	0	0	0	0	0	400	0	533	4,013
Mediums	0	6	36	0	0	0	16	5	0	0	0	0	0	10	0	5	78
Total	1	677	1,596	0	0	0	649	222	0	0	0	0	0	410	0	538	4,093



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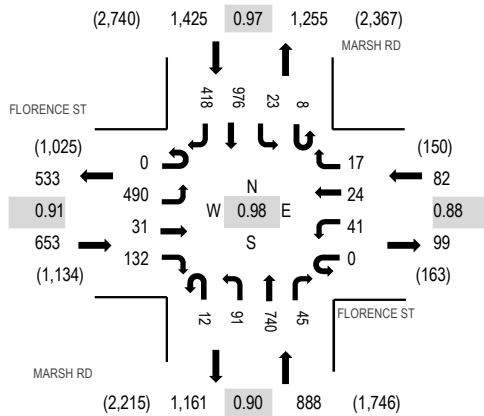
Location: 10 MARSH RD & FLORENCE ST AM

Date: Tuesday, October 15, 2024

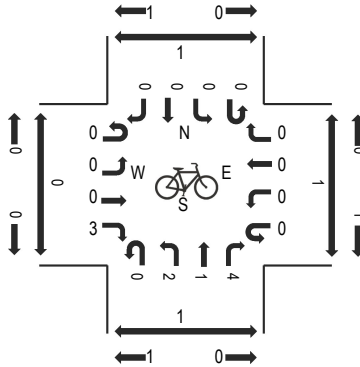
Peak Hour: 07:30 AM - 08:30 AM

Peak 15-Minutes: 08:15 AM - 08:30 AM

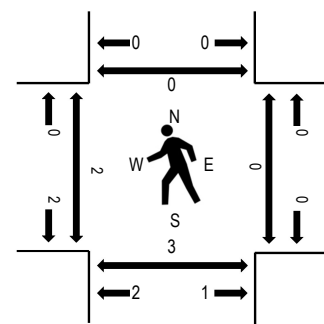
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	FLORENCE ST Eastbound				FLORENCE ST Westbound				MARSH RD Northbound				MARSH RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	84	1	23	0	14	2	3	0	10	126	3	2	2	190	119	579	2,774	0	0	0	1
7:15 AM	0	96	3	27	0	4	6	7	2	19	147	10	2	5	249	114	691	2,963	0	0	0	0
7:30 AM	0	138	4	38	0	5	6	4	5	19	162	12	2	7	267	102	771	3,048	0	0	1	0
7:45 AM	0	133	11	34	0	11	5	6	1	18	144	7	2	7	249	105	733	2,995	1	0	0	0
8:00 AM	0	108	9	33	0	12	3	6	5	22	200	14	3	3	239	111	768	2,996	0	0	1	0
8:15 AM	0	111	7	27	0	13	10	1	1	32	234	12	1	6	221	100	776		1	0	1	0
8:30 AM	0	82	3	26	0	9	7	1	5	25	206	11	1	5	258	79	718		0	1	1	0
8:45 AM	0	101	5	30	0	9	2	4	3	31	248	12	2	4	205	78	734		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2	1	5
Lights	0	481	29	132	0	40	20	15	12	91	727	44	8	22	963	410	2,994
Mediums	0	9	2	0	0	1	4	1	0	0	12	1	0	1	11	7	49
Total	0	490	31	132	0	41	24	17	12	91	740	45	8	23	976	418	3,048



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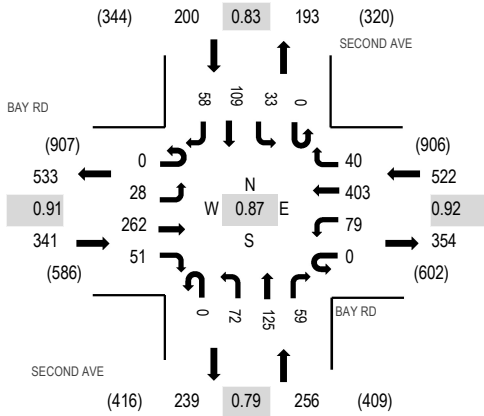
Location: 11 SECOND AVE & BAY RD AM

Date: Tuesday, October 15, 2024

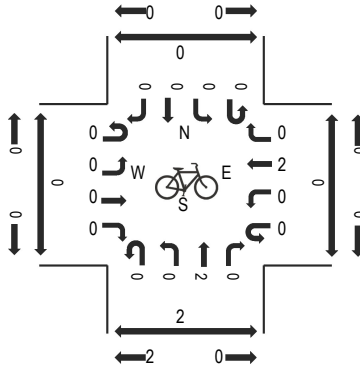
Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

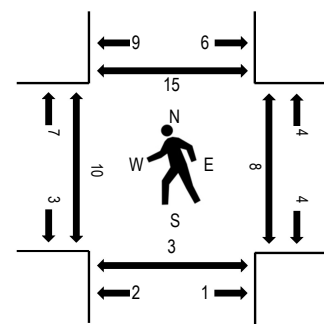
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BAY RD Eastbound				BAY RD Westbound				SECOND AVE Northbound				SECOND AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	4	22	9	0	20	62	5	0	5	18	9	0	9	12	4	179	1,084	1	1	1	3
7:15 AM	0	10	42	10	0	13	84	5	0	10	20	17	0	2	24	13	250	1,245	0	3	1	2
7:30 AM	0	12	54	7	0	17	85	5	0	12	18	15	0	5	32	16	278	1,312	1	0	0	1
7:45 AM	0	6	74	14	0	24	100	10	0	21	43	17	0	8	40	20	377	1,319	2	3	1	4
8:00 AM	0	7	56	9	0	19	115	8	0	14	27	20	0	8	36	21	340	1,161	2	3	1	5
8:15 AM	0	10	65	10	0	22	102	14	0	23	25	11	0	9	20	6	317		5	2	1	3
8:30 AM	0	5	67	18	0	14	86	8	0	14	30	11	0	8	13	11	285		1	0	0	3
8:45 AM	0	7	62	6	0	11	69	8	0	10	15	4	0	7	16	4	219		1	0	0	5

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	4
Lights	0	28	249	50	0	79	392	39	0	69	116	55	0	32	108	58	1,275
Mediums	0	0	10	0	0	0	11	1	0	3	9	4	0	1	1	0	40
Total	0	28	262	51	0	79	403	40	0	72	125	59	0	33	109	58	1,319



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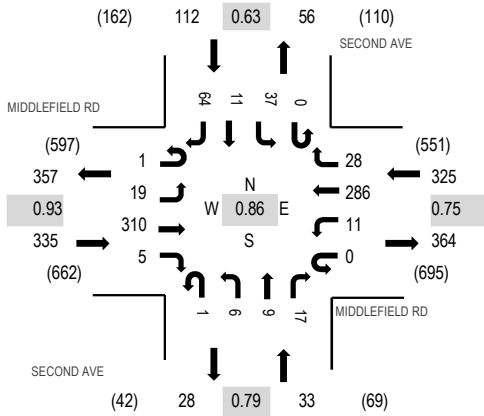
Location: 12 SECOND AVE & MIDDLEFIELD RD AM

Date: Tuesday, October 15, 2024

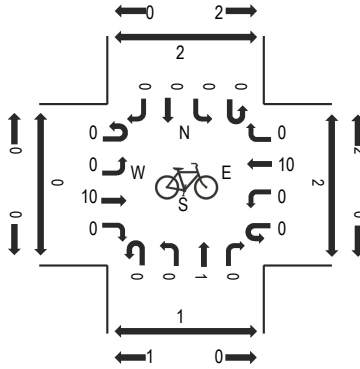
Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 08:15 AM - 08:30 AM

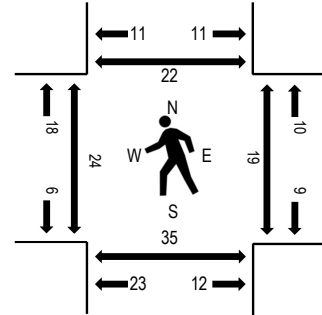
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MIDDLEFIELD RD Eastbound				MIDDLEFIELD RD Westbound				SECOND AVE Northbound				SECOND AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	12	57	1	0	2	31	4	0	2	1	7	0	4	1	8	130	673	4	0	3	0
7:15 AM	0	13	72	2	0	2	42	10	0	2	2	8	0	5	1	10	169	731	9	6	11	11
7:30 AM	0	5	84	1	0	0	43	6	0	2	1	5	0	7	1	13	168	797	6	5	14	2
7:45 AM	0	4	78	0	0	0	54	8	1	2	2	9	0	11	6	31	206	805	9	6	15	3
8:00 AM	0	10	69	3	0	1	60	4	0	0	5	5	0	12	2	17	188	771	6	0	10	2
8:15 AM	1	4	88	0	0	5	99	13	0	2	2	1	0	6	2	12	235		7	4	6	9
8:30 AM	0	1	75	2	0	5	73	3	0	2	0	2	0	8	1	4	176		2	9	4	8
8:45 AM	0	0	78	2	0	1	85	0	0	2	0	4	0	0	0	0	172		0	1	1	4

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
Lights	1	17	294	5	0	11	276	27	1	6	9	17	0	37	11	62	774
Mediums	0	2	16	0	0	0	8	1	0	0	0	0	0	0	0	2	29
Total	1	19	310	5	0	11	286	28	1	6	9	17	0	37	11	64	805



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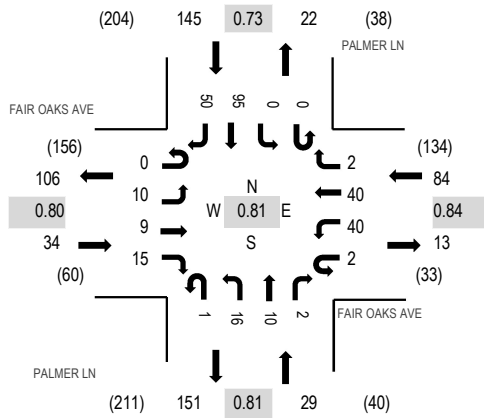
Location: 13 PALMER LN & FAIR OAKS AVE AM

Date: Tuesday, October 15, 2024

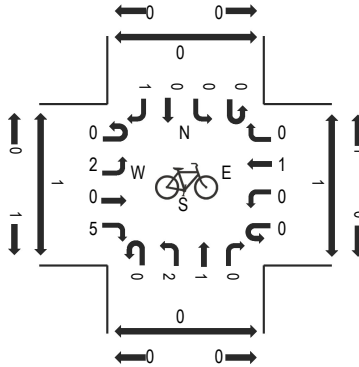
Peak Hour: 07:45 AM - 08:45 AM

Peak 15-Minutes: 07:45 AM - 08:00 AM

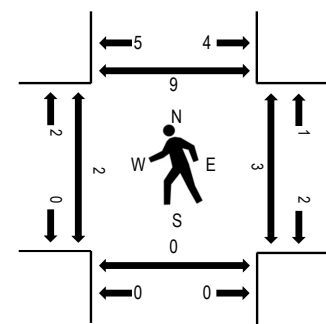
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	FAIR OAKS AVE Eastbound				FAIR OAKS AVE Westbound				PALMER LN Northbound				PALMER LN Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	4	0	0	2	5	2	0	0	0	0	0	0	3	0	16	186	0	0	1	0
7:15 AM	0	0	3	2	0	1	8	1	0	0	1	1	2	1	2	2	24	248	0	0	0	0
7:30 AM	0	0	7	4	0	10	9	2	0	1	0	1	0	0	17	5	56	285	0	0	0	0
7:45 AM	0	3	1	3	0	18	8	0	1	2	4	0	0	0	39	11	90	292	1	2	0	2
8:00 AM	0	3	3	1	1	5	12	0	0	4	2	1	0	0	31	15	78	252	0	1	0	5
8:15 AM	0	1	4	5	0	11	10	1	0	4	1	1	0	0	13	10	61		0	0	0	1
8:30 AM	0	3	1	6	1	6	10	1	0	6	3	0	0	0	12	14	63		1	0	0	1
8:45 AM	1	5	0	0	0	3	7	0	0	1	3	3	0	0	16	11	50		2	0	1	2

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	10	9	15	2	40	39	2	1	16	10	2	0	0	95	50	291
Mediums	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	0	10	9	15	2	40	40	2	1	16	10	2	0	0	95	50	292



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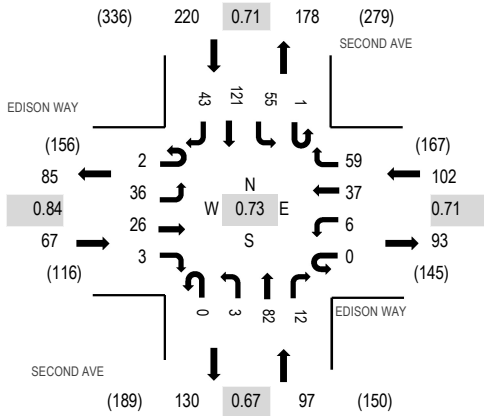
Location: 1 SECOND AVE & EDISON WAY PM

Date: Tuesday, October 15, 2024

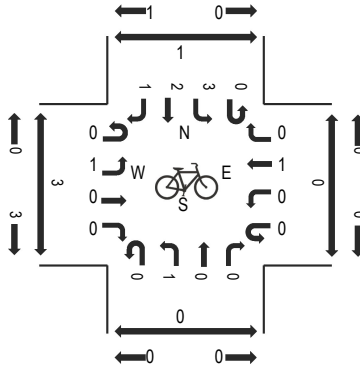
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:30 PM - 03:45 PM

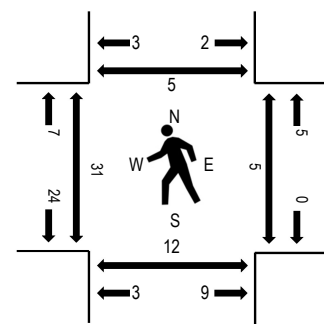
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	EDISON WAY Eastbound				EDISON WAY Westbound				SECOND AVE Northbound				SECOND AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:00 PM	0	7	0	1	0	2	9	7	0	2	16	2	0	5	11	10	72	283	2	0	0	0
2:15 PM	0	6	5	0	1	0	8	4	0	1	11	4	0	6	11	10	67	295	1	0	0	1
2:30 PM	0	9	5	0	0	2	6	13	0	1	4	2	1	8	18	12	81	339	1	0	0	0
2:45 PM	0	9	7	0	0	3	6	4	0	0	10	0	0	7	11	6	63	424	1	0	1	0
3:00 PM	2	10	6	2	0	1	5	6	0	0	11	1	0	5	24	11	84	486	2	0	0	0
3:15 PM	0	7	7	0	0	2	11	10	0	0	21	2	0	17	25	9	111		13	2	5	3
3:30 PM	0	9	6	1	0	3	8	25	0	1	28	7	0	21	42	15	166		6	3	2	2
3:45 PM	0	10	7	0	0	0	13	18	0	2	22	2	1	12	30	8	125		10	0	5	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	2	36	25	3	0	6	37	59	0	3	79	12	1	54	120	43	480
Mediums	0	0	1	0	0	0	0	0	0	0	3	0	0	1	1	0	6
Total	2	36	26	3	0	6	37	59	0	3	82	12	1	55	121	43	486



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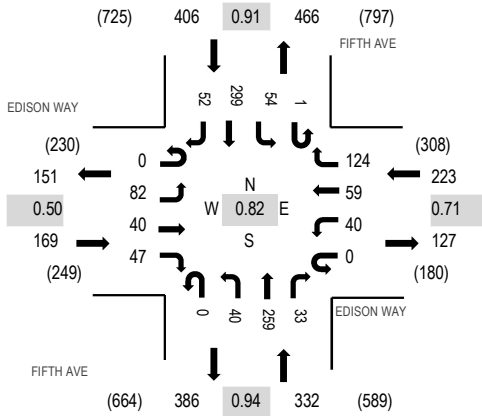
Location: 2 FIFTH AVE & EDISON WAY PM

Date: Tuesday, October 15, 2024

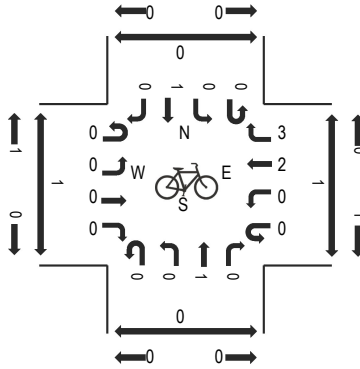
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:30 PM - 03:45 PM

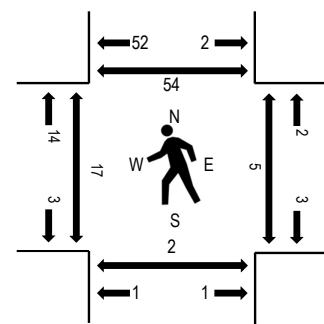
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	EDISON WAY Eastbound				EDISON WAY Westbound				FIFTH AVE Northbound				FIFTH AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:00 PM	0	8	1	4	0	8	7	16	0	4	63	1	0	6	59	9	186	741	1	1	0	0
2:15 PM	0	13	7	3	0	2	4	15	0	3	46	0	0	6	60	9	168	776	0	1	0	2
2:30 PM	0	16	4	7	0	1	6	7	0	8	61	1	0	8	52	12	183	877	1	1	0	56
2:45 PM	0	7	1	9	0	2	3	14	0	3	65	2	0	16	71	11	204	1,038	0	3	0	13
3:00 PM	0	15	1	4	0	4	4	26	0	7	59	8	1	9	76	7	221	1,130	0	0	1	2
3:15 PM	0	7	8	12	0	3	17	23	0	10	65	13	0	16	79	16	269		4	1	0	52
3:30 PM	0	37	21	26	0	15	25	39	0	14	62	7	0	13	68	17	344		11	4	1	0
3:45 PM	0	23	10	5	0	18	13	36	0	9	73	5	0	16	76	12	296		2	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	82	39	46	0	39	59	122	0	40	252	30	1	53	293	52	1,108
Mediums	0	0	1	1	0	1	0	2	0	0	7	3	0	1	6	0	22
Total	0	82	40	47	0	40	59	124	0	40	259	33	1	54	299	52	1,130



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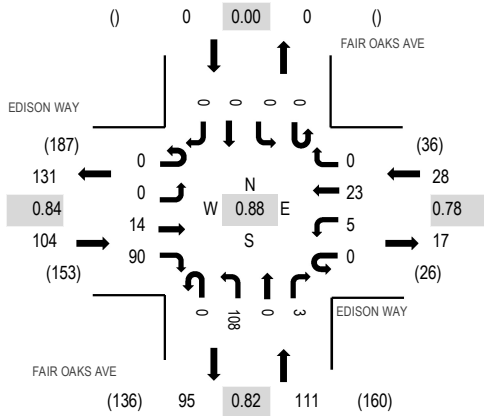
Location: 3 FAIR OAKS AVE & EDISON WAY PM

Date: Tuesday, October 15, 2024

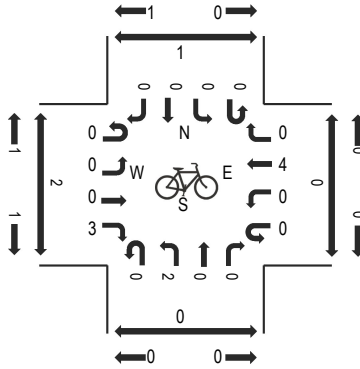
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:15 PM - 03:30 PM

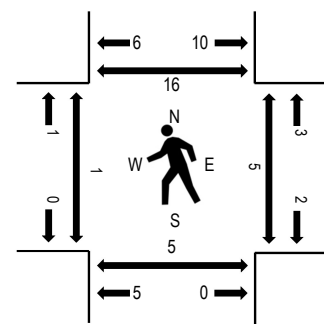
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	EDISON WAY Eastbound				EDISON WAY Westbound				FAIR OAKS AVE Northbound				FAIR OAKS AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:00 PM	0	0	3	4	0	0	4	0	0	19	0	0	0	0	0	0	30	106	0	2	0	2
2:15 PM	0	0	0	14	0	1	0	0	0	11	0	0	0	0	0	0	26	126	0	0	0	3
2:30 PM	0	0	3	12	0	0	1	0	0	8	0	0	0	0	0	0	24	169	0	2	0	5
2:45 PM	1	0	2	10	0	0	2	0	0	10	0	1	0	0	0	0	26	214	1	2	0	0
3:00 PM	0	0	1	18	0	2	7	0	0	22	0	0	0	0	0	0	50	243	0	2	2	3
3:15 PM	0	0	6	22	0	2	5	0	0	34	0	0	0	0	0	0	69		1	0	0	1
3:30 PM	0	0	1	30	0	1	5	0	0	31	0	1	0	0	0	0	69		0	1	2	6
3:45 PM	0	0	6	20	0	0	6	0	0	21	0	2	0	0	0	0	55		0	2	1	6

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	11	86	0	5	23	0	0	106	0	2	0	0	0	0	233
Mediums	0	0	3	4	0	0	0	0	0	2	0	1	0	0	0	0	10
Total	0	0	14	90	0	5	23	0	0	108	0	3	0	0	0	0	243



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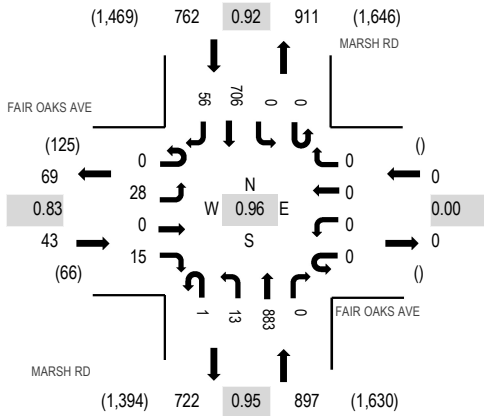
Location: 4 MARSH RD & FAIR OAKS AVE PM

Date: Tuesday, October 15, 2024

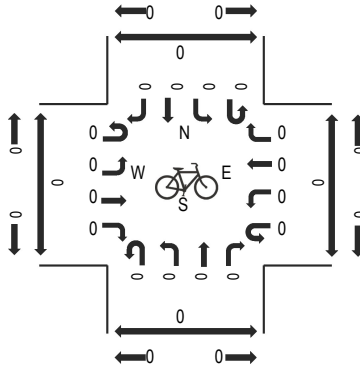
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:30 PM - 03:45 PM

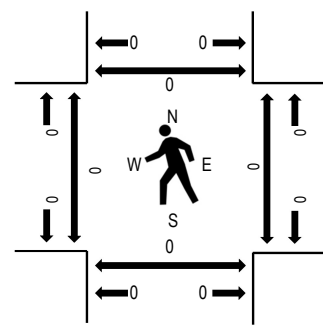
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	FAIR OAKS AVE Eastbound				FAIR OAKS AVE Westbound				MARSH RD Northbound				MARSH RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:00 PM	0	5	0	4	0	0	0	0	0	2	176	0	0	0	152	7	346	1,463	0	0	0	0
2:15 PM	0	2	0	1	0	0	0	0	0	4	220	0	0	0	166	13	406	1,542	0	0	0	0
2:30 PM	0	3	0	2	0	0	0	0	0	0	160	0	0	0	168	10	343	1,561	0	0	0	0
2:45 PM	0	2	0	4	0	0	0	0	0	4	167	0	0	0	175	16	368	1,659	0	0	0	0
3:00 PM	0	6	0	4	0	0	0	0	0	4	226	0	0	0	173	12	425	1,702	0	0	0	0
3:15 PM	0	10	0	3	0	0	0	0	0	2	231	0	0	0	166	13	425		0	0	0	0
3:30 PM	0	7	0	6	0	0	0	0	0	5	231	0	0	0	174	18	441		0	0	0	0
3:45 PM	0	5	0	2	0	0	0	0	1	2	195	0	0	0	193	13	411		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Lights	0	26	0	14	0	0	0	0	1	13	865	0	0	0	697	55	1,671
Mediums	0	2	0	1	0	0	0	0	0	0	16	0	0	0	9	1	29
Total	0	28	0	15	0	0	0	0	1	13	883	0	0	0	706	56	1,702



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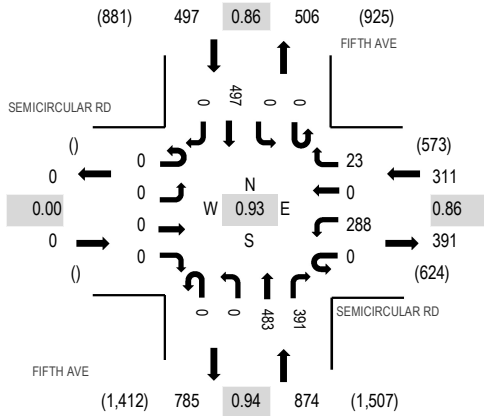
Location: 5 FIFTH AVE & SEMICIRCULAR RD PM

Date: Tuesday, October 15, 2024

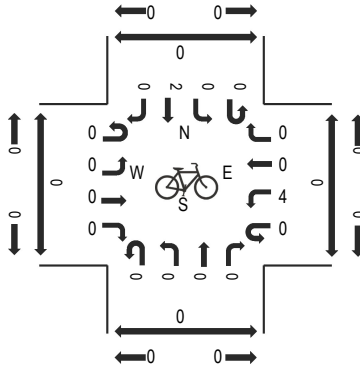
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:45 PM - 04:00 PM

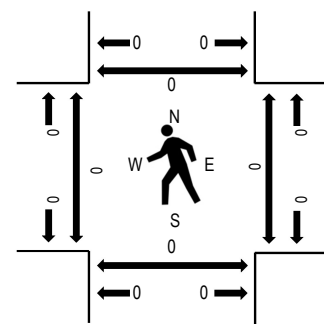
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	SEMICIRCULAR RD Eastbound				SEMICIRCULAR RD Westbound				FIFTH AVE Northbound				FIFTH AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:00 PM	0	0	0	0	0	62	0	9	0	0	92	39	0	0	91	0	293	1,279	0	0	0	0
2:15 PM	0	0	0	0	0	57	0	5	0	0	93	57	0	0	101	0	313	1,368	0	0	0	0
2:30 PM	0	0	0	0	0	59	0	4	0	0	100	71	0	0	87	0	321	1,471	0	0	0	0
2:45 PM	0	0	0	0	0	65	0	1	0	0	115	66	0	0	105	0	352	1,584	0	0	0	2
3:00 PM	0	0	0	0	0	85	0	5	0	0	110	78	0	0	104	0	382	1,682	0	0	0	0
3:15 PM	0	0	0	0	0	62	0	5	0	0	124	108	0	0	117	0	416		0	0	0	0
3:30 PM	0	0	0	0	0	67	0	7	0	0	122	107	0	0	131	0	434		0	0	0	0
3:45 PM	0	0	0	0	0	74	0	6	0	0	127	98	0	0	145	0	450		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	0	0	0	0	288	0	23	0	0	473	384	0	0	488	0	1,656
Mediums	0	0	0	0	0	0	0	0	0	0	10	7	0	0	9	0	26
Total	0	0	0	0	0	288	0	23	0	0	483	391	0	0	497	0	1,682



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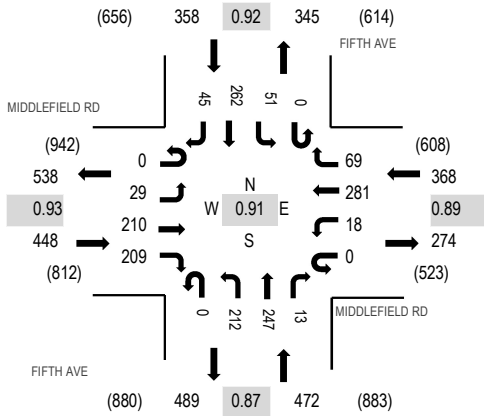
Location: 6 FIFTH AVE & MIDDLEFIELD RD PM

Date: Tuesday, October 15, 2024

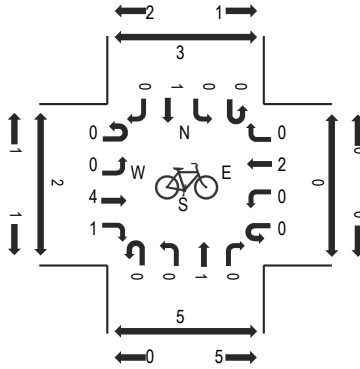
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:45 PM - 04:00 PM

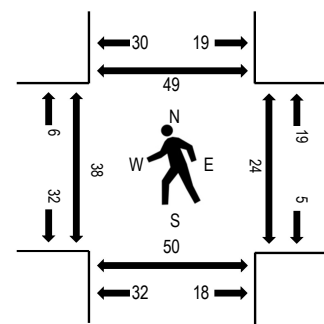
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MIDDLEFIELD RD Eastbound				MIDDLEFIELD RD Westbound				FIFTH AVE Northbound				FIFTH AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:00 PM	0	3	54	39	0	5	46	9	0	45	56	6	0	6	50	10	329	1,313	3	1	5	4
2:15 PM	0	6	44	34	0	7	50	6	0	37	40	5	0	12	63	7	311	1,345	1	2	2	1
2:30 PM	0	7	43	42	1	2	36	10	0	44	59	4	0	7	47	10	312	1,448	8	0	3	6
2:45 PM	0	3	49	40	0	3	54	11	0	51	59	5	0	13	59	14	361	1,555	2	1	2	5
3:00 PM	0	9	52	44	0	4	49	16	0	51	50	4	0	18	52	12	361	1,646	8	11	10	9
3:15 PM	0	6	56	47	0	3	81	19	0	42	72	3	0	9	68	8	414		7	6	9	9
3:30 PM	0	7	56	51	0	3	70	20	0	43	67	5	0	12	76	9	419		19	3	23	18
3:45 PM	0	7	46	67	0	8	81	14	0	76	58	1	0	12	66	16	452		4	4	8	13

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	29	205	208	0	17	271	66	0	210	239	12	0	50	257	44	1,608
Mediums	0	0	5	1	0	1	10	3	0	2	8	1	0	1	5	1	38
Total	0	29	210	209	0	18	281	69	0	212	247	13	0	51	262	45	1,646



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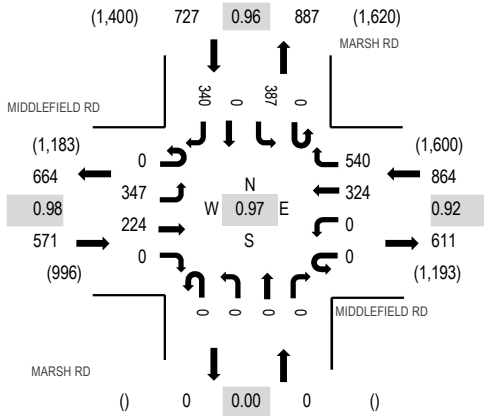
Location: 7 MARSH RD & MIDDLEFIELD RD PM

Date: Tuesday, October 15, 2024

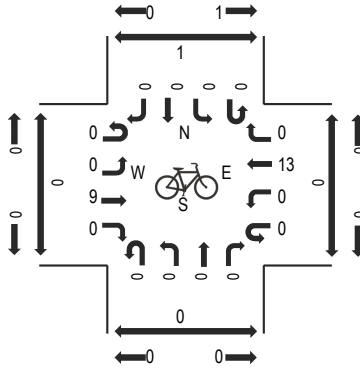
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:30 PM - 03:45 PM

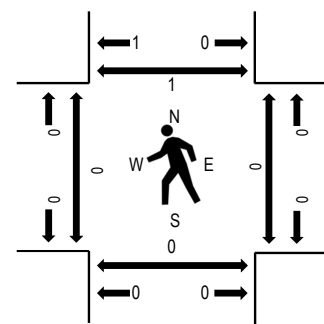
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MIDDLEFIELD RD Eastbound				MIDDLEFIELD RD Westbound				MARSH RD Northbound				MARSH RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:00 PM	0	60	39	0	0	0	63	118	0	0	0	0	0	95	0	68	443	1,834	0	0	0	0
2:15 PM	0	72	43	0	0	0	61	152	0	0	0	0	0	99	0	60	487	1,915	0	0	0	0
2:30 PM	0	46	39	0	0	0	56	105	0	0	0	0	0	102	0	80	428	1,981	0	0	0	0
2:45 PM	0	67	59	0	0	0	68	113	0	0	0	0	0	106	0	63	476	2,113	0	0	0	0
3:00 PM	0	88	50	0	0	0	69	142	0	0	0	0	0	99	0	76	524	2,162	0	0	0	1
3:15 PM	0	85	60	0	0	0	87	149	0	0	0	0	0	92	0	80	553		0	0	0	0
3:30 PM	0	88	55	0	0	0	85	142	0	0	0	0	0	101	0	89	560		0	0	0	0
3:45 PM	0	86	59	0	0	0	83	107	0	0	0	0	0	95	0	95	525		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
Lights	0	342	219	0	0	0	315	529	0	0	0	0	0	378	0	338	2,121
Mediums	0	5	5	0	0	0	9	9	0	0	0	0	0	9	0	2	39
Total	0	347	224	0	0	0	324	540	0	0	0	0	0	387	0	340	2,162



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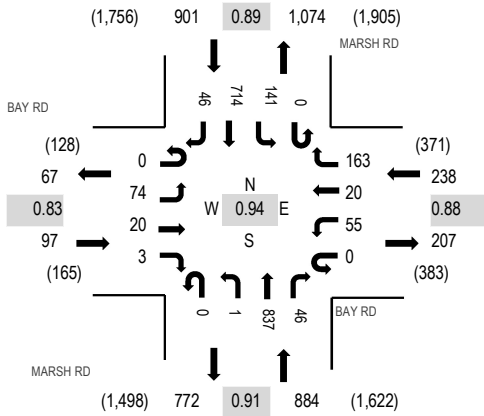
Location: 8 MARSH RD & BAY RD PM

Date: Tuesday, October 15, 2024

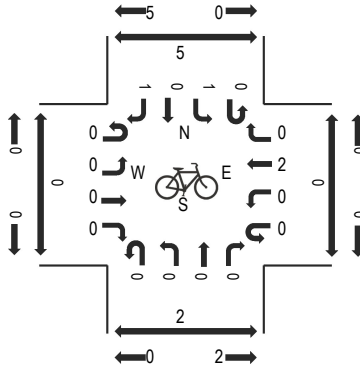
Peak Hour: 02:45 PM - 03:45 PM

Peak 15-Minutes: 03:30 PM - 03:45 PM

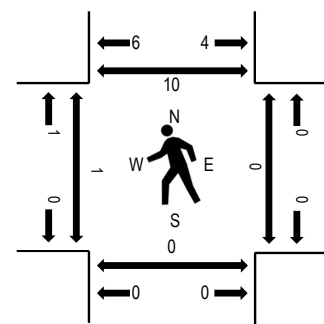
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BAY RD Eastbound				BAY RD Westbound				MARSH RD Northbound				MARSH RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:00 PM	0	10	0	1	0	7	3	32	0	0	178	5	0	22	154	7	419	1,797	0	0	0	0
2:15 PM	0	11	5	3	0	9	0	17	0	0	212	13	0	21	168	10	469	1,918	1	0	0	3
2:30 PM	0	11	4	1	0	6	3	24	0	0	149	9	0	32	167	15	421	1,976	0	0	0	2
2:45 PM	0	12	5	2	0	11	4	38	0	0	170	9	0	41	184	12	488	2,120	0	0	0	3
3:00 PM	0	25	4	1	0	13	4	51	0	0	218	7	0	30	177	10	540	2,117	0	0	0	4
3:15 PM	0	19	7	0	0	22	8	35	0	0	225	13	0	27	160	11	527		1	0	0	1
3:30 PM	0	18	4	0	0	9	4	39	0	1	224	17	0	43	193	13	565		0	0	0	2
3:45 PM	0	15	7	0	0	13	2	17	0	1	155	16	0	42	197	20	485		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
Lights	0	71	20	3	0	51	20	160	0	1	818	45	0	138	709	45	2,081
Mediums	0	3	0	0	0	4	0	3	0	0	17	1	0	3	5	1	37
Total	0	74	20	3	0	55	20	163	0	1	837	46	0	141	714	46	2,120



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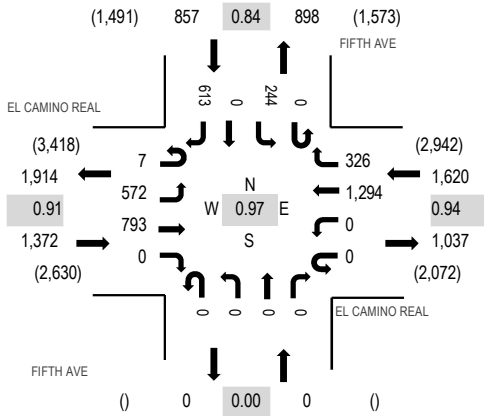
Location: 9 FIFTH AVE & EL CAMINO REAL PM

Date: Tuesday, October 15, 2024

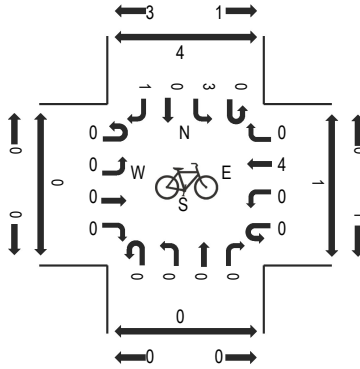
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:00 PM - 03:15 PM

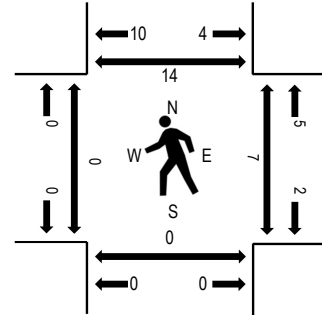
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	EL CAMINO REAL Eastbound				EL CAMINO REAL Westbound				FIFTH AVE Northbound				FIFTH AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:00 PM	1	86	219	0	0	0	207	50	0	0	0	0	0	43	0	107	713	3,214	0	1	0	1
2:15 PM	0	106	199	0	0	0	267	60	0	0	0	0	0	56	0	118	806	3,490	0	4	0	1
2:30 PM	2	123	211	0	0	0	300	66	0	0	0	0	0	57	0	97	856	3,615	0	1	0	2
2:45 PM	0	116	195	0	0	0	304	68	0	0	0	0	0	55	0	101	839	3,714	0	0	0	0
3:00 PM	3	129	202	0	0	0	336	65	0	0	0	0	0	53	0	201	989	3,849	0	2	0	2
3:15 PM	2	170	205	0	0	0	286	84	0	0	0	0	0	49	0	135	931		0	2	0	5
3:30 PM	1	142	187	0	0	0	327	91	0	0	0	0	0	76	0	131	955		0	2	0	5
3:45 PM	1	131	199	0	0	0	345	86	0	0	0	0	0	66	0	146	974		0	1	0	2

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	7	564	780	0	0	0	1,276	318	0	0	0	0	0	241	0	605	3,791
Mediums	0	8	13	0	0	0	18	8	0	0	0	0	0	3	0	8	58
Total	7	572	793	0	0	0	1,294	326	0	0	0	0	0	244	0	613	3,849



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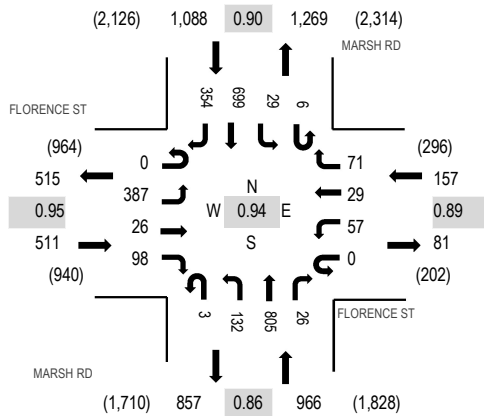
Location: 10 MARSH RD & FLORENCE ST PM

Date: Tuesday, October 15, 2024

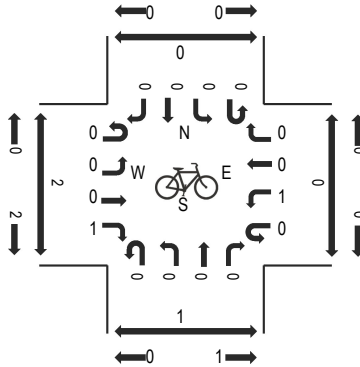
Peak Hour: 02:30 PM - 03:30 PM

Peak 15-Minutes: 03:15 PM - 03:30 PM

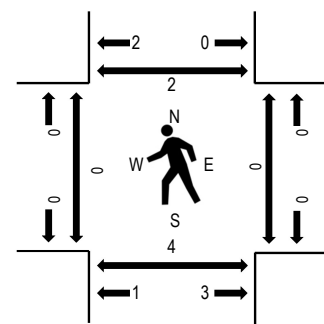
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	FLORENCE ST Eastbound				FLORENCE ST Westbound				MARSH RD Northbound				MARSH RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:00 PM	0	82	9	20	0	15	10	12	2	27	163	14	0	9	132	56	551	2,473	0	0	8	0
2:15 PM	0	62	6	17	0	13	6	29	3	33	185	11	0	15	175	63	618	2,617	0	0	7	3
2:30 PM	0	103	4	27	0	11	16	22	1	27	164	7	1	11	186	77	657	2,722	0	0	3	0
2:45 PM	0	92	8	31	0	11	2	17	1	23	171	9	2	8	176	96	647	2,714	0	0	0	0
3:00 PM	0	102	4	19	0	22	7	18	0	39	221	7	2	3	170	81	695	2,717	0	0	0	1
3:15 PM	0	90	10	21	0	13	4	14	1	43	249	3	1	7	167	100	723		0	0	1	1
3:30 PM	0	64	4	26	0	11	5	14	1	41	189	16	1	4	192	81	649		0	1	2	0
3:45 PM	0	104	10	25	0	12	5	7	2	33	128	14	5	9	207	89	650		1	1	5	2

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	1	0	0	0	0	1	0	0	0	2	0	0	2	0	0	6
Lights	0	378	25	97	0	56	26	70	3	132	784	26	6	27	690	345	2,665
Mediums	0	8	1	1	0	1	2	1	0	0	19	0	0	0	9	9	51
Total	0	387	26	98	0	57	29	71	3	132	805	26	6	29	699	354	2,722



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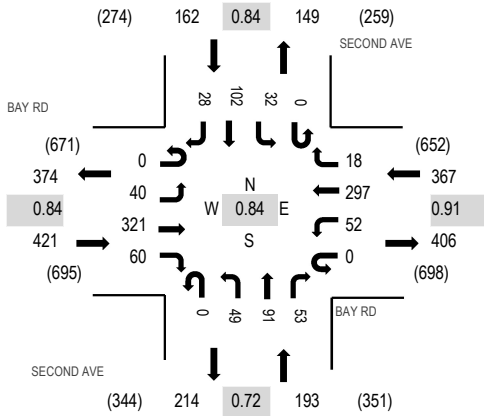
Location: 11 SECOND AVE & BAY RD PM

Date: Tuesday, October 15, 2024

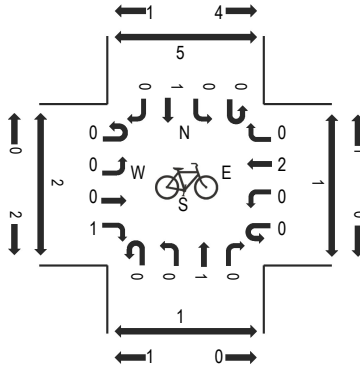
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:30 PM - 03:45 PM

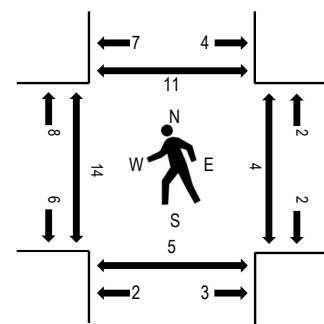
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	BAY RD Eastbound				BAY RD Westbound				SECOND AVE Northbound				SECOND AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:00 PM	0	3	41	8	0	3	62	4	0	11	17	7	0	8	14	3	181	829	0	0	0	1
2:15 PM	0	7	51	11	0	5	50	6	0	9	12	8	0	5	18	5	187	908	2	2	0	1
2:30 PM	0	6	57	9	0	8	59	9	0	6	17	29	0	3	14	10	227	981	0	1	0	1
2:45 PM	0	10	60	11	0	10	67	2	0	7	17	18	0	5	19	8	234	1,093	4	3	3	3
3:00 PM	0	10	83	14	0	20	70	3	0	6	18	6	0	4	22	4	260	1,143	4	0	2	4
3:15 PM	0	4	66	11	0	10	72	5	0	10	21	13	0	12	30	6	260		2	0	0	2
3:30 PM	0	12	92	22	0	14	82	5	0	20	26	21	0	8	28	9	339		4	3	2	3
3:45 PM	0	14	80	13	0	8	73	5	0	13	26	13	0	8	22	9	284		4	1	1	2

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	0	39	313	59	0	51	287	17	0	48	90	53	0	32	102	28	1,119
Mediums	0	1	8	1	0	1	10	1	0	1	1	0	0	0	0	0	24
Total	0	40	321	60	0	52	297	18	0	49	91	53	0	32	102	28	1,143



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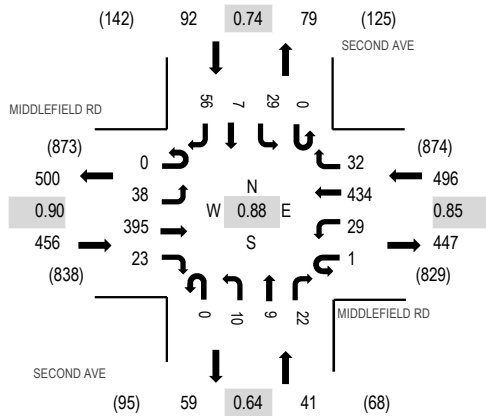
Location: 12 SECOND AVE & MIDDLEFIELD RD PM

Date: Tuesday, October 15, 2024

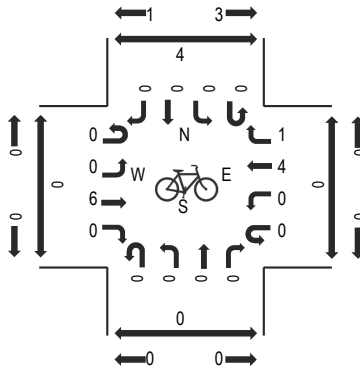
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:45 PM - 04:00 PM

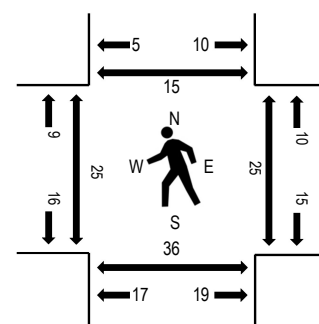
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	MIDDLEFIELD RD Eastbound				MIDDLEFIELD RD Westbound				SECOND AVE Northbound				SECOND AVE Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:00 PM	0	11	86	3	1	5	80	6	0	1	1	3	0	4	1	7	209	837	0	2	6	1
2:15 PM	1	11	87	4	0	3	82	3	0	1	1	3	0	5	0	8	209	858	2	1	6	1
2:30 PM	0	4	75	3	1	5	81	0	0	1	0	9	0	7	0	11	197	914	7	3	7	2
2:45 PM	0	3	91	3	0	9	96	6	0	1	0	6	0	4	0	3	222	999	2	0	6	1
3:00 PM	0	5	99	2	0	3	94	5	0	1	0	2	0	8	3	8	230	1,085	3	4	3	1
3:15 PM	0	10	100	4	1	7	105	9	0	4	2	4	0	4	1	14	265		6	1	13	3
3:30 PM	0	11	91	7	0	7	112	7	0	2	5	9	0	9	0	22	282		8	15	11	10
3:45 PM	0	12	105	10	0	12	123	11	0	3	2	7	0	8	3	12	308		8	5	9	1

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Lights	0	38	390	23	1	29	425	31	0	10	7	21	0	28	7	56	1,066
Mediums	0	0	5	0	0	0	8	1	0	0	2	1	0	1	0	0	18
Total	0	38	395	23	1	29	434	32	0	10	9	22	0	29	7	56	1,085



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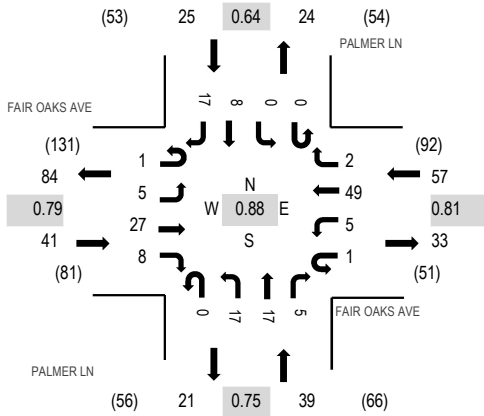
Location: 13 PALMER LN & FAIR OAKS AVE PM

Date: Tuesday, October 15, 2024

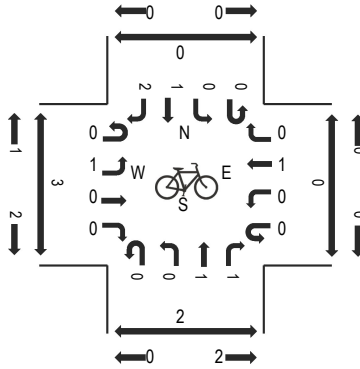
Peak Hour: 03:00 PM - 04:00 PM

Peak 15-Minutes: 03:15 PM - 03:30 PM

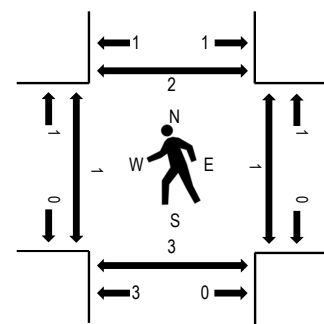
Peak Hour - Motorized Vehicles



Peak Hour - Bicycles



Peak Hour - Pedestrians



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	FAIR OAKS AVE Eastbound				FAIR OAKS AVE Westbound				PALMER LN Northbound				PALMER LN Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
2:00 PM	0	6	3	6	1	2	8	0	0	1	4	1	0	1	2	8	43	130	0	0	0	2
2:15 PM	0	2	4	1	0	1	5	0	0	3	4	0	0	0	4	2	26	120	0	0	0	4
2:30 PM	1	2	0	4	0	0	6	1	0	2	5	1	0	0	6	0	28	140	0	0	1	0
2:45 PM	1	3	3	4	1	2	7	1	0	2	2	2	0	1	3	1	33	155	0	0	0	0
3:00 PM	0	1	4	2	0	2	10	1	0	4	6	0	0	0	2	1	33	162	0	0	2	0
3:15 PM	0	2	9	2	0	2	14	0	0	4	5	0	0	0	2	6	46		1	0	1	0
3:30 PM	0	1	7	0	0	1	17	0	0	1	4	2	0	0	2	8	43		0	0	0	0
3:45 PM	1	1	7	4	1	0	8	1	0	8	2	3	0	0	2	2	40		0	1	0	2

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights	1	5	25	8	1	5	49	2	0	17	17	5	0	0	8	17	160
Mediums	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	1	5	27	8	1	5	49	2	0	17	17	5	0	0	8	17	162

Appendix C

Intersection Level of Service Calculations

HCM 7th AWSC
1: 2nd Avenue & Edison Way

Existing AM Peak

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	39	8	9	26	41	1	76	9	133	181	73
Future Vol, veh/h	45	39	8	9	26	41	1	76	9	133	181	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	42	9	10	28	45	1	83	10	145	197	79
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9.3	8.7	8.6	12.3
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	49%	12%	34%
Vol Thru, %	88%	42%	34%	47%
Vol Right, %	10%	9%	54%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	92	76	387
LT Vol	1	45	9	133
Through Vol	76	39	26	181
RT Vol	9	8	41	73
Lane Flow Rate	93	100	83	421
Geometry Grp	1	1	1	1
Degree of Util (X)	0.125	0.147	0.114	0.522
Departure Headway (Hd)	4.816	5.274	4.96	4.468
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	739	676	717	803
Service Time	2.876	3.338	3.027	2.51
HCM Lane V/C Ratio	0.126	0.148	0.116	0.524
HCM Control Delay, s/veh	8.6	9.3	8.7	12.3
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	0.4	0.5	0.4	3.1

HCM 7th AWSC
2: 5th Avenue & Edison Way

Existing AM Peak

Intersection	
Intersection Delay, s/veh	26.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	74	101	68	24	55	90	40	244	44	93	305	50
Future Vol, veh/h	74	101	68	24	55	90	40	244	44	93	305	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	80	110	74	26	60	98	43	265	48	101	332	54
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	17.8	14.5	21.9	38.5
HCM LOS	C	B	C	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	30%	14%	21%
Vol Thru, %	74%	42%	33%	68%
Vol Right, %	13%	28%	53%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	328	243	169	448
LT Vol	40	74	24	93
Through Vol	244	101	55	305
RT Vol	44	68	90	50
Lane Flow Rate	357	264	184	487
Geometry Grp	1	1	1	1
Degree of Util (X)	0.663	0.523	0.369	0.871
Departure Headway (Hd)	6.694	7.123	7.24	6.438
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	542	504	494	565
Service Time	4.718	5.191	5.317	4.457
HCM Lane V/C Ratio	0.659	0.524	0.372	0.862
HCM Control Delay, s/veh	21.9	17.8	14.5	38.5
HCM Lane LOS	C	C	B	E
HCM 95th-tile Q	4.9	3	1.7	9.7

HCM 7th AWSC
17: 2nd Avenue & Bay Road

Existing AM Peak

Intersection	
Intersection Delay, s/veh	17.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	262	51	79	403	40	72	125	59	33	109	58
Future Vol, veh/h	28	262	51	79	403	40	72	125	59	33	109	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	285	55	86	438	43	78	136	64	36	118	63
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	14.6	19.1	18.4	15.8
HCM LOS	B	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	28%	18%	0%	28%	0%	17%
Vol Thru, %	49%	82%	72%	72%	83%	55%
Vol Right, %	23%	0%	28%	0%	17%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	256	159	182	281	242	200
LT Vol	72	28	0	79	0	33
Through Vol	125	131	131	202	202	109
RT Vol	59	0	51	0	40	58
Lane Flow Rate	278	173	198	305	263	217
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.546	0.361	0.397	0.614	0.51	0.435
Departure Headway (Hd)	7.06	7.521	7.228	7.255	6.991	7.21
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	509	477	497	497	515	498
Service Time	5.124	5.292	4.999	5.021	4.757	5.281
HCM Lane V/C Ratio	0.546	0.363	0.398	0.614	0.511	0.436
HCM Control Delay, s/veh	18.4	14.5	14.7	21	16.9	15.8
HCM Lane LOS	C	B	B	C	C	C
HCM 95th-tile Q	3.2	1.6	1.9	4.1	2.9	2.2

HCM 7th TWSC
3: Fair Oaks Avenue & Edison Way

Existing AM Peak

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	22	91	1	12	0	133	0	1	0	0	0
Future Vol, veh/h	0	22	91	1	12	0	133	0	1	0	0	0
Conflicting Peds, #/hr	9	0	2	2	0	9	2	0	2	9	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	99	1	13	0	145	0	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	22	0	0	125	0	0	100	100	84	57	149	31
Stage 1	-	-	-	-	-	-	75	75	-	24	24	-
Stage 2	-	-	-	-	-	-	24	24	-	33	125	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1593	-	-	1462	-	-	882	790	975	940	742	1043
Stage 1	-	-	-	-	-	-	934	832	-	994	875	-
Stage 2	-	-	-	-	-	-	994	875	-	983	793	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1581	-	-	1459	-	-	873	783	966	924	735	1028
Mov Cap-2 Maneuver	-	-	-	-	-	-	873	783	-	924	735	-
Stage 1	-	-	-	-	-	-	932	831	-	986	868	-
Stage 2	-	-	-	-	-	-	986	868	-	975	791	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			0.57			9.94			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	874	1581	-	-	138	-	-	-				
HCM Lane V/C Ratio	0.167	-	-	-	0.001	-	-	-				
HCM Ctrl Dly (s/v)	9.9	0	-	-	7.5	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	-				

HCM 7th TWSC
4: Marsh Road & Fair Oaks Avenue

Existing AM Peak

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	9	9	841	597	116
Future Vol, veh/h	18	9	9	841	597	116
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	10	10	914	649	126

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1583	649	775
Stage 1	649	-	-
Stage 2	934	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	120	470	841
Stage 1	520	-	-
Stage 2	383	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	117	470	841
Mov Cap-2 Maneuver	309	-	-
Stage 1	508	-	-
Stage 2	383	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	16.28	0.1	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	19	-	349	-	-
HCM Lane V/C Ratio	0.012	-	0.084	-	-
HCM Ctrl Dly (s/v)	9.3	0	16.3	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

HCM 7th TWSC
18: Middlefield Road & 2nd Avenue

Existing AM Peak

Intersection												
Int Delay, s/veh	3.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	310	5	11	286	28	7	9	17	37	11	64
Future Vol, veh/h	20	310	5	11	286	28	7	9	17	37	11	64
Conflicting Peds, #/hr	46	0	59	54	0	41	59	0	54	41	0	46
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	337	5	12	311	30	8	10	18	40	12	70

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	387	0	0	401	0	0	842	853	453	835	841	431
Stage 1	-	-	-	-	-	-	442	442	-	396	396	-
Stage 2	-	-	-	-	-	-	400	411	-	439	445	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1171	-	-	1157	-	-	284	296	607	287	301	624
Stage 1	-	-	-	-	-	-	594	576	-	629	604	-
Stage 2	-	-	-	-	-	-	627	595	-	596	575	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1126	-	-	1100	-	-	209	263	551	238	267	571
Mov Cap-2 Maneuver	-	-	-	-	-	-	209	263	-	238	267	-
Stage 1	-	-	-	-	-	-	554	537	-	599	575	-
Stage 2	-	-	-	-	-	-	507	566	-	530	536	-

Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.49			0.28			17.04			19.85		
HCM LOS							C			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	335	1126	-	-	1100	-	-	363
HCM Lane V/C Ratio	0.107	0.019	-	-	0.011	-	-	0.336
HCM Ctrl Dly (s/v)	17	8.3	-	-	8.3	-	-	19.9
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	1.4

HCM 7th TWSC
22: Palmer Lane & Fair Oaks Avenue

Existing AM Peak

Intersection												
Int Delay, s/veh	7.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	9	15	40	40	2	17	10	2	0	95	50
Future Vol, veh/h	10	9	15	40	40	2	17	10	2	0	95	50
Conflicting Peds, #/hr	11	0	2	3	0	12	2	0	3	12	0	11
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	10	16	43	43	2	18	11	2	0	103	54
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	58	0	0	29	0	0	236	187	33	192	194	68
Stage 1	-	-	-	-	-	-	43	43	-	144	144	-
Stage 2	-	-	-	-	-	-	193	145	-	49	51	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1547	-	-	1584	-	-	719	707	1041	767	701	996
Stage 1	-	-	-	-	-	-	972	859	-	859	778	-
Stage 2	-	-	-	-	-	-	809	777	-	964	853	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1531	-	-	1580	-	-	550	674	1028	713	668	977
Mov Cap-2 Maneuver	-	-	-	-	-	-	550	674	-	713	668	-
Stage 1	-	-	-	-	-	-	962	851	-	827	749	-
Stage 2	-	-	-	-	-	-	634	748	-	934	844	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	2.17			3.58			11.24			11.08		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	608	471	-	-	870	-	-	750				
HCM Lane V/C Ratio	0.052	0.007	-	-	0.028	-	-	0.21				
HCM Ctrl Dly (s/v)	11.2	7.4	0	-	7.3	0	-	11.1				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.8				

HCM 7th Signalized Intersection Summary 5: 5th Avenue & Semicircular Road

Existing AM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	399	14	416	465	0	565
Future Volume (veh/h)	399	14	416	465	0	565
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	434	15	452	0	0	614
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	545	19	1127		0	1127
Arrive On Green	0.32	0.32	0.32	0.00	0.00	0.32
Sat Flow, veh/h	1711	59	3741	0	0	3741
Grp Volume(v), veh/h	450	0	452	0	0	614
Grp Sat Flow(s),veh/h/ln	1774	0	1777	0	0	1777
Q Serve(g_s), s	5.4	0.0	2.3	0.0	0.0	3.3
Cycle Q Clear(g_c), s	5.4	0.0	2.3	0.0	0.0	3.3
Prop In Lane	0.96	0.03		0.00	0.00	
Lane Grp Cap(c), veh/h	565	0	1127		0	1127
V/C Ratio(X)	0.80	0.00	0.40		0.00	0.54
Avail Cap(c_a), veh/h	761	0	1753		0	1753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	0.0	6.2	0.0	0.0	6.6
Incr Delay (d2), s/veh	4.3	0.0	0.3	0.0	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.4	0.0	0.0	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	11.6	0.0	6.5	0.0	0.0	7.1
LnGrp LOS	B		A			A
Approach Vol, veh/h	450		452			614
Approach Delay, s/veh	11.6		6.5			7.1
Approach LOS	B		A			A
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	11.9		11.9		11.4	
Change Period (Y+Rc), s	4.5		4.5		4.0	
Max Green Setting (Gmax), s	11.5		11.5		10.0	
Max Q Clear Time (g_c+I1), s	4.3		5.3		7.4	
Green Ext Time (p_c), s	1.9		2.1		0.4	
Intersection Summary						
HCM 7th Control Delay, s/veh			8.2			
HCM 7th LOS			A			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 7th Signalized Intersection Summary 6: Middlefield Road & 5th Avenue

Existing AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	13	209	243	10	176	52	125	284	23	44	304	24
Future Volume (veh/h)	13	209	243	10	176	52	125	284	23	44	304	24
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.97		0.86	1.00		0.87	1.00		0.90	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	14	227	264	11	191	57	136	309	25	48	330	26
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	339	254	295	121	467	139	155	353	394	60	410	374
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.28	0.28	0.28	0.25	0.25	0.25
Sat Flow, veh/h	1102	722	840	906	1331	397	563	1279	1429	236	1623	1481
Grp Volume(v), veh/h	14	0	491	11	0	248	445	0	25	378	0	26
Grp Sat Flow(s),veh/h/ln	1102	0	1562	906	0	1728	1842	0	1429	1859	0	1481
Q Serve(g_s), s	1.0	0.0	29.7	1.2	0.0	10.8	23.0	0.0	1.3	19.0	0.0	1.3
Cycle Q Clear(g_c), s	11.8	0.0	29.7	30.8	0.0	10.8	23.0	0.0	1.3	19.0	0.0	1.3
Prop In Lane	1.00		0.54	1.00		0.23	0.31		1.00	0.13		1.00
Lane Grp Cap(c), veh/h	339	0	548	121	0	607	508	0	394	470	0	374
V/C Ratio(X)	0.04	0.00	0.90	0.09	0.00	0.41	0.88	0.00	0.06	0.80	0.00	0.07
Avail Cap(c_a), veh/h	339	0	548	121	0	607	702	0	545	839	0	668
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	29.0	0.0	30.6	45.2	0.0	24.5	34.5	0.0	26.6	34.9	0.0	28.3
Incr Delay (d2), s/veh	0.2	0.0	19.8	1.5	0.0	2.0	9.1	0.0	0.1	3.3	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	13.8	0.3	0.0	4.7	11.5	0.0	0.5	9.0	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	29.2	0.0	50.4	46.7	0.0	26.6	43.6	0.0	26.7	38.2	0.0	28.4
LnGrp LOS	C		D	D		C	D		C	D		C
Approach Vol, veh/h	505			259			470			404		
Approach Delay, s/veh	49.8			27.4			42.7			37.6		
Approach LOS	D			C			D			D		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	39.0			31.5			39.0			29.2		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	35.0			38.0			35.0			45.0		
Max Q Clear Time (g_c+I1), s	31.7			25.0			32.8			21.0		
Green Ext Time (p_c), s	1.1			2.5			0.3			2.6		
Intersection Summary												
HCM 7th Control Delay, s/veh	41.2											
HCM 7th LOS	D											

HCM 7th Signalized Intersection Summary 8: Middlefield Road & Marsh Road

Existing AM Peak

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	358	368	260	465	421	221
Future Volume (veh/h)	358	368	260	465	421	221
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	389	400	283	505	458	240
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	424	1223	718	1030	497	819
Arrive On Green	0.24	0.65	0.38	0.38	0.28	0.28
Sat Flow, veh/h	1781	1870	1870	1530	1781	1585
Grp Volume(v), veh/h	389	400	283	505	458	240
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1530	1781	1585
Q Serve(g_s), s	26.6	11.8	13.7	20.8	31.2	10.8
Cycle Q Clear(g_c), s	26.6	11.8	13.7	20.8	31.2	10.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	424	1223	718	1030	497	819
V/C Ratio(X)	0.92	0.33	0.39	0.49	0.92	0.29
Avail Cap(c_a), veh/h	641	1223	718	1030	851	1134
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.5	9.5	28.0	10.6	43.8	17.2
Incr Delay (d2), s/veh	13.4	0.7	1.6	1.7	7.8	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	4.9	6.5	14.4	14.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	60.0	10.3	29.6	12.3	51.5	17.4
LnGrp LOS	E	B	C	B	D	B
Approach Vol, veh/h		789	788		698	
Approach Delay, s/veh		34.8	18.5		39.8	
Approach LOS		C	B		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.0		39.1	33.8	52.2
Change Period (Y+Rc), s		4.2		4.2	4.0	4.2
Max Green Setting (Gmax), s		81.8		59.8	45.0	32.8
Max Q Clear Time (g_c+I1), s		13.8		33.2	28.6	22.8
Green Ext Time (p_c), s		1.7		1.7	1.1	1.7
Intersection Summary						
HCM 7th Control Delay, s/veh			30.7			
HCM 7th LOS			C			

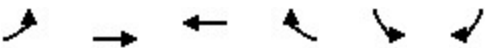
HCM 7th Signalized Intersection Summary 9: Marsh Road & Bay Road

Existing AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	98	51	4	45	12	179	1	790	70	245	744	76
Future Volume (veh/h)	98	51	4	45	12	179	1	790	70	245	744	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	107	55	4	49	13	195	1	859	76	266	809	83
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	202	91	5	275	64	831	45	981	87	614	2272	233
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.30	0.30	0.30	0.34	0.70	0.70
Sat Flow, veh/h	693	492	29	1053	346	1541	1	3226	285	1781	3245	333
Grp Volume(v), veh/h	166	0	0	62	0	195	498	0	438	266	443	449
Grp Sat Flow(s),veh/h/ln	1215	0	0	1399	0	1541	1869	0	1643	1781	1777	1801
Q Serve(g_s), s	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.2	9.2	8.0	8.0
Cycle Q Clear(g_c), s	10.8	0.0	0.0	2.9	0.0	0.0	20.2	0.0	20.2	9.2	8.0	8.0
Prop In Lane	0.64		0.02	0.79		1.00	0.00		0.17	1.00		0.18
Lane Grp Cap(c), veh/h	299	0	0	339	0	831	614	0	500	614	1244	1261
V/C Ratio(X)	0.56	0.00	0.00	0.18	0.00	0.23	0.81	0.00	0.88	0.43	0.36	0.36
Avail Cap(c_a), veh/h	503	0	0	557	0	1067	659	0	540	614	1244	1261
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.85	0.85	0.85
Uniform Delay (d), s/veh	31.4	0.0	0.0	27.7	0.0	10.1	26.4	0.0	26.4	20.2	4.8	4.8
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.2	0.0	0.1	11.2	0.0	19.0	0.2	0.7	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.1	0.0	0.0	1.0	0.0	1.7	10.3	0.0	10.0	3.7	2.5	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.6	0.0	0.0	27.9	0.0	10.2	37.6	0.0	45.4	20.3	5.5	5.5
LnGrp LOS	C			C		B	D		D	C	A	A
Approach Vol, veh/h	166				257				936		1158	
Approach Delay, s/veh	32.6				14.5				41.2		8.9	
Approach LOS	C				B				D		A	
Timer - Assigned Phs	2		4		5	6	8					
Phs Duration (G+Y+Rc), s	60.6		19.4		32.2	28.4	19.4					
Change Period (Y+Rc), s	4.6		4.6		4.6	* 4.1	4.6					
Max Green Setting (Gmax), s	43.8		27.0		13.9	* 26	27.0					
Max Q Clear Time (g_c+I1), s	10.0		12.8		11.2	22.2	4.9					
Green Ext Time (p_c), s	6.8		0.7		0.1	2.1	0.7					
Intersection Summary												
HCM 7th Control Delay, s/veh			23.0									
HCM 7th LOS			C									
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 7th Signalized Intersection Summary 10: El Camino Avenue & 5th Avenue

Existing AM Peak

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰↰	↑↑↑	↑↑↑		↰	↰↰
Traffic Volume (veh/h)	678	1596	649	222	410	538
Future Volume (veh/h)	678	1596	649	222	410	538
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	737	1735	705	241	446	585
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	838	2934	1032	347	553	1542
Arrive On Green	0.24	0.57	0.27	0.27	0.31	0.31
Sat Flow, veh/h	3456	5274	3925	1265	1781	2790
Grp Volume(v), veh/h	737	1735	638	308	446	585
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1618	1781	1395
Q Serve(g_s), s	14.3	15.2	11.6	11.9	16.0	8.3
Cycle Q Clear(g_c), s	14.3	15.2	11.6	11.9	16.0	8.3
Prop In Lane	1.00			0.78	1.00	1.00
Lane Grp Cap(c), veh/h	838	2934	935	444	553	1542
V/C Ratio(X)	0.88	0.59	0.68	0.69	0.81	0.38
Avail Cap(c_a), veh/h	894	2934	935	444	819	1959
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	9.5	22.5	22.6	22.1	8.8
Incr Delay (d2), s/veh	9.7	0.9	4.0	8.6	3.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	4.7	4.8	5.2	6.8	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	35.0	10.4	26.5	31.2	25.8	9.0
LnGrp LOS	D	B	C	C	C	A
Approach Vol, veh/h		2472	946		1031	
Approach Delay, s/veh		17.8	28.1		16.2	
Approach LOS		B	C		B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.9	23.1			44.0	25.6
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	18.0	18.0			40.0	32.0
Max Q Clear Time (g_c+I1), s	16.3	13.9			17.2	18.0
Green Ext Time (p_c), s	0.6	2.2			13.7	3.6
Intersection Summary						
HCM 7th Control Delay, s/veh			19.6			
HCM 7th LOS			B			

HCM 7th Signalized Intersection Summary 11: Marsh Road & Florence Street/Bohannon Drive

Existing AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	31	132	41	24	17	103	740	45	31	976	418
Future Volume (veh/h)	490	31	132	41	24	17	103	740	45	31	976	418
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	557	0	143	45	26	18	112	804	49	34	1061	454
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	625	0	278	87	50	35	549	2295	1080	44	1273	845
Arrive On Green	0.18	0.00	0.18	0.05	0.05	0.05	0.62	1.00	1.00	0.02	0.36	0.36
Sat Flow, veh/h	3563	0	1585	1781	1029	713	1781	3554	1552	1781	3554	1581
Grp Volume(v), veh/h	557	0	143	45	0	44	112	804	49	34	1061	454
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1742	1781	1777	1552	1781	1777	1581
Q Serve(g_s), s	24.4	0.0	13.1	3.9	0.0	3.9	4.4	0.0	0.0	3.0	43.7	30.1
Cycle Q Clear(g_c), s	24.4	0.0	13.1	3.9	0.0	3.9	4.4	0.0	0.0	3.0	43.7	30.1
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	625	0	278	87	0	85	549	2295	1080	44	1273	845
V/C Ratio(X)	0.89	0.00	0.51	0.52	0.00	0.52	0.20	0.35	0.05	0.78	0.83	0.54
Avail Cap(c_a), veh/h	846	0	376	310	0	303	549	2295	1080	67	1342	875
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.83	0.83	0.83	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.5	0.0	59.8	74.2	0.0	74.2	22.1	0.0	0.0	77.6	47.0	24.4
Incr Delay (d2), s/veh	8.5	0.0	1.1	3.5	0.0	3.5	0.1	0.4	0.1	12.4	6.5	2.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	5.4	1.9	0.0	1.9	1.8	0.1	0.0	1.6	20.5	16.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	73.0	0.0	60.9	77.7	0.0	77.7	22.1	0.4	0.1	90.0	53.5	26.8
LnGrp LOS	E		E	E		E	C	A	A	F	D	C
Approach Vol, veh/h	700			89			965			1549		
Approach Delay, s/veh	70.5			77.7			2.9			46.5		
Approach LOS	E			E			A			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	107.9		12.0	53.9	61.9		32.1				
Change Period (Y+Rc), s	4.0	4.6		4.2	4.6	* 4.6		4.0				
Max Green Setting (Gmax), s	6.0	71.4		27.8	17.0	* 60		38.0				
Max Q Clear Time (g_c+I1), s	5.0	2.0		5.9	6.4	45.7		26.4				
Green Ext Time (p_c), s	0.0	15.5		0.2	0.1	11.6		1.6				

Intersection Summary

HCM 7th Control Delay, s/veh 39.7
HCM 7th LOS D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

Existing AM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th AWSC
1: 2nd Avenue & Edison Way

Existing School PM Peak

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	26	3	6	37	59	3	82	12	56	121	43
Future Vol, veh/h	38	26	3	6	37	59	3	82	12	56	121	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	28	3	7	40	64	3	89	13	61	132	47
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.5	8.2	8.3	9.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	57%	6%	25%
Vol Thru, %	85%	39%	36%	55%
Vol Right, %	12%	4%	58%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	67	102	220
LT Vol	3	38	6	56
Through Vol	82	26	37	121
RT Vol	12	3	59	43
Lane Flow Rate	105	73	111	239
Geometry Grp	1	1	1	1
Degree of Util (X)	0.134	0.1	0.138	0.294
Departure Headway (Hd)	4.568	4.941	4.478	4.423
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	783	724	799	813
Service Time	2.602	2.979	2.514	2.452
HCM Lane V/C Ratio	0.134	0.101	0.139	0.294
HCM Control Delay, s/veh	8.3	8.5	8.2	9.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.3	0.5	1.2

HCM 7th AWSC
2: 5th Avenue & Edison Way

Existing School PM Peak

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	40	47	40	59	124	40	259	33	55	299	52
Future Vol, veh/h	82	40	47	40	59	124	40	259	33	55	299	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	43	51	43	64	135	43	282	36	60	325	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14	14.9	19.6	25.4
HCM LOS	B	B	C	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	49%	18%	14%
Vol Thru, %	78%	24%	26%	74%
Vol Right, %	10%	28%	56%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	332	169	223	406
LT Vol	40	82	40	55
Through Vol	259	40	59	299
RT Vol	33	47	124	52
Lane Flow Rate	361	184	242	441
Geometry Grp	1	1	1	1
Degree of Util (X)	0.63	0.357	0.444	0.75
Departure Headway (Hd)	6.285	6.99	6.599	6.116
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	570	511	543	587
Service Time	4.36	5.08	4.681	4.185
HCM Lane V/C Ratio	0.633	0.36	0.446	0.751
HCM Control Delay, s/veh	19.6	14	14.9	25.4
HCM Lane LOS	C	B	B	D
HCM 95th-tile Q	4.4	1.6	2.3	6.6

Intersection	
Intersection Delay, s/veh	13.5
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	321	60	52	297	18	49	91	53	32	102	28
Future Vol, veh/h	40	321	60	52	297	18	49	91	53	32	102	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	349	65	57	323	20	53	99	58	35	111	30
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	13.7	13.4	13.6	13
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	25%	20%	0%	26%	0%	20%
Vol Thru, %	47%	80%	73%	74%	89%	63%
Vol Right, %	27%	0%	27%	0%	11%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	193	201	221	201	167	162
LT Vol	49	40	0	52	0	32
Through Vol	91	161	161	149	149	102
RT Vol	53	0	60	0	18	28
Lane Flow Rate	210	218	240	218	181	176
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.381	0.404	0.425	0.411	0.33	0.327
Departure Headway (Hd)	6.531	6.676	6.38	6.783	6.574	6.677
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	550	540	566	534	548	539
Service Time	4.575	4.389	4.092	4.497	4.287	4.722
HCM Lane V/C Ratio	0.382	0.404	0.424	0.408	0.33	0.327
HCM Control Delay, s/veh	13.6	13.8	13.7	14.2	12.5	13
HCM Lane LOS	B	B	B	B	B	B
HCM 95th-tile Q	1.8	1.9	2.1	2	1.4	1.4

HCM 7th TWSC
3: Fair Oaks Avenue & Edison Way

Existing School PM Peak

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	14	90	5	23	0	108	0	3	0	0	0
Future Vol, veh/h	0	14	90	5	23	0	108	0	3	0	0	0
Conflicting Peds, #/hr	17	0	6	10	0	21	6	0	10	21	0	17
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	98	5	25	0	117	0	3	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	46	0	0	123	0	0	127	131	95	93	180	63
Stage 1	-	-	-	-	-	-	74	74	-	57	57	-
Stage 2	-	-	-	-	-	-	53	57	-	36	123	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1562	-	-	1464	-	-	846	760	961	891	714	1002
Stage 1	-	-	-	-	-	-	935	833	-	955	847	-
Stage 2	-	-	-	-	-	-	960	847	-	979	794	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1534	-	-	1452	-	-	824	737	937	853	693	970
Mov Cap-2 Maneuver	-	-	-	-	-	-	824	737	-	853	693	-
Stage 1	-	-	-	-	-	-	927	826	-	935	829	-
Stage 2	-	-	-	-	-	-	943	829	-	959	787	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			1.34			10.09			0		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	827	1534	-	-	321	-	-	-				
HCM Lane V/C Ratio	0.146	-	-	-	0.004	-	-	-				
HCM Ctrl Dly (s/v)	10.1	0	-	-	7.5	0	-	0				
HCM Lane LOS	B	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	-				

HCM 7th TWSC
4: Marsh Road & Fair Oaks Avenue

Existing School PM Peak

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	15	14	883	706	55
Future Vol, veh/h	28	15	14	883	706	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	16	15	960	767	60

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1758	767	827
Stage 1	767	-	-
Stage 2	990	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	93	402	804
Stage 1	458	-	-
Stage 2	360	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	89	402	804
Mov Cap-2 Maneuver	277	-	-
Stage 1	440	-	-
Stage 2	360	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	18.64	0.15	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	28	-	311	-	-
HCM Lane V/C Ratio	0.019	-	0.151	-	-
HCM Ctrl Dly (s/v)	9.6	0	18.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

HCM 7th TWSC
18: Middlefield Road & 2nd Avenue

Existing School PM Peak

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	395	23	30	434	32	10	9	22	29	7	56
Future Vol, veh/h	38	395	23	30	434	32	10	9	22	29	7	56
Conflicting Peds, #/hr	40	0	61	61	0	40	61	0	61	40	0	40
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	429	25	33	472	35	11	10	24	32	8	61
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	547	0	0	515	0	0	951	1197	349	958	1192	354
Stage 1	-	-	-	-	-	-	585	585	-	594	594	-
Stage 2	-	-	-	-	-	-	366	612	-	363	598	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1019	-	-	1047	-	-	214	184	647	212	186	642
Stage 1	-	-	-	-	-	-	464	496	-	458	491	-
Stage 2	-	-	-	-	-	-	626	482	-	628	489	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	985	-	-	993	-	-	151	155	583	161	156	589
Mov Cap-2 Maneuver	-	-	-	-	-	-	151	155	-	161	156	-
Stage 1	-	-	-	-	-	-	419	448	-	426	456	-
Stage 2	-	-	-	-	-	-	504	448	-	532	442	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.04			0.79			22.23			24.07		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	253	279	-	-	199	-	-	287				
HCM Lane V/C Ratio	0.176	0.042	-	-	0.033	-	-	0.348				
HCM Ctrl Dly (s/v)	22.2	8.8	0.4	-	8.7	0.3	-	24.1				
HCM Lane LOS	C	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.6	0.1	-	-	0.1	-	-	1.5				

HCM 7th TWSC
22: Palmer Lane & Fair Oaks Avenue

Existing School PM Peak

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	27	8	6	49	2	17	17	5	0	8	17
Future Vol, veh/h	6	27	8	6	49	2	17	17	5	0	8	17
Conflicting Peds, #/hr	3	0	4	4	0	3	4	0	4	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	29	9	7	53	2	18	18	5	0	9	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	58	0	0	42	0	0	125	122	42	126	125	61
Stage 1	-	-	-	-	-	-	51	51	-	70	70	-
Stage 2	-	-	-	-	-	-	75	71	-	56	55	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1546	-	-	1567	-	-	848	768	1029	848	765	1004
Stage 1	-	-	-	-	-	-	962	853	-	939	836	-
Stage 2	-	-	-	-	-	-	935	835	-	957	849	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1542	-	-	1562	-	-	811	757	1022	811	754	998
Mov Cap-2 Maneuver	-	-	-	-	-	-	811	757	-	811	754	-
Stage 1	-	-	-	-	-	-	955	846	-	933	831	-
Stage 2	-	-	-	-	-	-	901	830	-	924	842	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.07			0.77			9.71			9.1		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	807	252	-	-	188	-	-	904				
HCM Lane V/C Ratio	0.053	0.004	-	-	0.004	-	-	0.03				
HCM Ctrl Dly (s/v)	9.7	7.3	0	-	7.3	0	-	9.1				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

HCM 7th Signalized Intersection Summary 5: 5th Avenue & Semicircular Road

Existing School PM Peak

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	288	23	483	391	0	497
Future Volume (veh/h)	288	23	483	391	0	497
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	313	25	525	0	0	540
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	392	31	1371		0	1371
Arrive On Green	0.24	0.24	0.39	0.00	0.00	0.39
Sat Flow, veh/h	1630	130	3741	0	0	3741
Grp Volume(v), veh/h	339	0	525	0	0	540
Grp Sat Flow(s),veh/h/ln	1765	0	1777	0	0	1777
Q Serve(g_s), s	3.6	0.0	2.1	0.0	0.0	2.2
Cycle Q Clear(g_c), s	3.6	0.0	2.1	0.0	0.0	2.2
Prop In Lane	0.92	0.07		0.00	0.00	
Lane Grp Cap(c), veh/h	425	0	1371		0	1371
V/C Ratio(X)	0.80	0.00	0.38		0.00	0.39
Avail Cap(c_a), veh/h	1144	0	3453		0	3453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	7.2	0.0	4.4	0.0	0.0	4.5
Incr Delay (d2), s/veh	1.3	0.0	0.2	0.0	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.2	0.0	0.0	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.5	0.0	4.7	0.0	0.0	4.7
LnGrp LOS	A		A			A
Approach Vol, veh/h	339		525			540
Approach Delay, s/veh	8.5		4.7			4.7
Approach LOS	A		A			A
Timer - Assigned Phs	2		4		6	
Phs Duration (G+Y+Rc), s	12.2		7.8		12.2	
Change Period (Y+Rc), s	4.5		3.0		4.5	
Max Green Setting (Gmax), s	19.5		13.0		19.5	
Max Q Clear Time (g_c+I1), s	4.1		5.6		4.2	
Green Ext Time (p_c), s	3.6		0.1		3.1	
Intersection Summary						
HCM 7th Control Delay, s/veh			5.6			
HCM 7th LOS			A			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

Existing PM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 6: Middlefield Road & 5th Avenue

Existing School PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	210	209	18	281	69	212	247	13	51	262	45
Future Volume (veh/h)	29	210	209	18	281	69	212	247	13	51	262	45
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.91	1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	32	228	227	20	305	75	230	268	14	55	285	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	238	294	293	170	492	121	256	299	464	70	364	348
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.30	0.30	0.30	0.23	0.23	0.23
Sat Flow, veh/h	1003	849	845	936	1418	349	844	984	1528	300	1555	1489
Grp Volume(v), veh/h	32	0	455	20	0	380	498	0	14	340	0	49
Grp Sat Flow(s),veh/h/ln	1003	0	1693	936	0	1766	1828	0	1528	1855	0	1489
Q Serve(g_s), s	2.8	0.0	24.9	2.0	0.0	18.6	27.1	0.0	0.7	17.8	0.0	2.7
Cycle Q Clear(g_c), s	21.4	0.0	24.9	26.9	0.0	18.6	27.1	0.0	0.7	17.8	0.0	2.7
Prop In Lane	1.00		0.50	1.00		0.20	0.46		1.00	0.16		1.00
Lane Grp Cap(c), veh/h	238	0	588	170	0	613	555	0	464	434	0	348
V/C Ratio(X)	0.13	0.00	0.77	0.12	0.00	0.62	0.90	0.00	0.03	0.78	0.00	0.14
Avail Cap(c_a), veh/h	238	0	588	170	0	613	687	0	574	769	0	617
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	37.1	0.0	30.2	42.3	0.0	28.2	34.6	0.0	25.4	37.3	0.0	31.5
Incr Delay (d2), s/veh	1.2	0.0	9.6	1.4	0.0	4.7	12.7	0.0	0.0	3.1	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	11.5	0.5	0.0	8.5	13.9	0.0	0.2	8.5	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	38.3	0.0	39.8	43.7	0.0	32.8	47.2	0.0	25.4	40.4	0.0	31.7
LnGrp LOS	D		D	D		C	D		C	D		C
Approach Vol, veh/h	487			400			512			389		
Approach Delay, s/veh	39.7			33.4			46.6			39.3		
Approach LOS	D			C			D			D		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	40.0			35.5			40.0			28.3		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	36.0			39.0			36.0			43.0		
Max Q Clear Time (g_c+I1), s	26.9			29.1			28.9			19.8		
Green Ext Time (p_c), s	2.2			2.4			1.4			2.4		
Intersection Summary												
HCM 7th Control Delay, s/veh	40.2											
HCM 7th LOS	D											

HCM 7th Signalized Intersection Summary 8: Middlefield Road & Marsh Road

Existing School PM Peak

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	347	224	324	540	387	340
Future Volume (veh/h)	347	224	324	540	387	340
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	377	243	352	587	421	370
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	404	1262	778	1050	462	771
Arrive On Green	0.23	0.67	0.42	0.42	0.26	0.26
Sat Flow, veh/h	1781	1870	1870	1535	1781	1585
Grp Volume(v), veh/h	377	243	352	587	421	370
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1535	1781	1585
Q Serve(g_s), s	26.4	6.2	17.2	25.6	29.2	19.9
Cycle Q Clear(g_c), s	26.4	6.2	17.2	25.6	29.2	19.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	404	1262	778	1050	462	771
V/C Ratio(X)	0.93	0.19	0.45	0.56	0.91	0.48
Avail Cap(c_a), veh/h	574	1262	778	1050	641	931
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.2	7.7	26.7	10.8	45.7	21.9
Incr Delay (d2), s/veh	15.1	0.3	1.9	2.2	12.8	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	2.5	8.1	17.5	14.5	19.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	63.3	8.1	28.6	13.0	58.5	22.2
LnGrp LOS	E	A	C	B	E	C
Approach Vol, veh/h		620	939		791	
Approach Delay, s/veh		41.6	18.9		41.5	
Approach LOS		D	B		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		90.0		37.2	32.9	57.1
Change Period (Y+Rc), s		4.2		4.2	4.0	4.2
Max Green Setting (Gmax), s		85.8		45.8	41.0	40.8
Max Q Clear Time (g_c+I1), s		8.2		31.2	28.4	27.6
Green Ext Time (p_c), s		1.0		1.8	0.5	2.4
Intersection Summary						
HCM 7th Control Delay, s/veh			32.5			
HCM 7th LOS			C			

HCM 7th Signalized Intersection Summary 9: Marsh Road & Bay Road

Existing School PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	74	20	3	55	20	163	1	837	46	141	714	46
Future Volume (veh/h)	74	20	3	55	20	163	1	837	46	141	714	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	80	22	3	60	22	177	1	910	50	153	776	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	147	36	4	205	69	923	26	1070	59	775	2654	171
Arrive On Green	0.15	0.15	0.15	0.15	0.15	0.15	0.32	0.32	0.32	0.43	0.78	0.78
Sat Flow, veh/h	672	238	27	1062	454	1546	0	3354	184	1781	3389	218
Grp Volume(v), veh/h	105	0	0	82	0	177	508	0	453	153	407	419
Grp Sat Flow(s),veh/h/ln	937	0	0	1516	0	1546	1870	0	1669	1781	1777	1831
Q Serve(g_s), s	10.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.6	7.4	9.0	9.0
Cycle Q Clear(g_c), s	16.8	0.0	0.0	6.6	0.0	0.0	35.5	0.0	35.6	7.4	9.0	9.0
Prop In Lane	0.76		0.03	0.73		1.00	0.00		0.11	1.00		0.12
Lane Grp Cap(c), veh/h	187	0	0	274	0	923	622	0	532	775	1391	1434
V/C Ratio(X)	0.56	0.00	0.00	0.30	0.00	0.19	0.82	0.00	0.85	0.20	0.29	0.29
Avail Cap(c_a), veh/h	272	0	0	371	0	1025	998	0	869	775	1391	1434
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	59.9	0.0	0.0	53.2	0.0	13.5	44.6	0.0	44.6	24.5	4.3	4.3
Incr Delay (d2), s/veh	2.0	0.0	0.0	0.5	0.0	0.1	11.3	0.0	15.7	0.0	0.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.0	0.0	2.6	0.0	2.6	18.2	0.0	16.9	3.2	3.1	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.8	0.0	0.0	53.6	0.0	13.6	55.9	0.0	60.3	24.5	4.7	4.7
LnGrp LOS	E			D		B	E		E	C	A	A
Approach Vol, veh/h	105			259			961			979		
Approach Delay, s/veh	61.8			26.3			58.0			7.8		
Approach LOS	E			C			E			A		
Timer - Assigned Phs	2			4		5	6	8				
Phs Duration (G+Y+Rc), s	114.2			25.8		65.5	48.8	25.8				
Change Period (Y+Rc), s	4.6			4.6		4.6	* 4.1	4.6				
Max Green Setting (Gmax), s	100.4			30.4		23.9	* 73	30.4				
Max Q Clear Time (g_c+I1), s	11.0			18.8		9.4	37.6	8.6				
Green Ext Time (p_c), s	6.4			0.3		0.2	7.1	0.8				
Intersection Summary												
HCM 7th Control Delay, s/veh				33.3								
HCM 7th LOS				C								
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 7th Signalized Intersection Summary 10: El Camino Avenue & 5th Avenue

Existing School PM Peak

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	579	793	1294	326	244	613
Future Volume (veh/h)	579	793	1294	326	244	613
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	629	862	1407	354	265	666
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	733	3400	1598	400	389	1200
Arrive On Green	0.21	0.67	0.40	0.40	0.22	0.22
Sat Flow, veh/h	3456	5274	4205	1011	1781	2790
Grp Volume(v), veh/h	629	862	1186	575	265	666
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1644	1781	1395
Q Serve(g_s), s	12.1	4.7	22.3	22.5	9.4	12.3
Cycle Q Clear(g_c), s	12.1	4.7	22.3	22.5	9.4	12.3
Prop In Lane	1.00			0.62	1.00	1.00
Lane Grp Cap(c), veh/h	733	3400	1348	651	389	1200
V/C Ratio(X)	0.86	0.25	0.88	0.88	0.68	0.55
Avail Cap(c_a), veh/h	800	3400	1348	651	413	1238
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	4.6	19.3	19.4	24.8	14.7
Incr Delay (d2), s/veh	8.7	0.2	8.4	16.1	4.2	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	1.2	9.3	10.4	4.2	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	34.9	4.8	27.8	35.5	29.0	15.2
LnGrp LOS	C	A	C	D	C	B
Approach Vol, veh/h		1491	1761		931	
Approach Delay, s/veh		17.5	30.3		19.2	
Approach LOS		B	C		B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.6	31.4			50.0	19.1
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	16.0	26.0			46.0	16.0
Max Q Clear Time (g_c+I1), s	14.1	24.5			6.7	14.3
Green Ext Time (p_c), s	0.5	1.3			7.0	0.7
Intersection Summary						
HCM 7th Control Delay, s/veh			23.3			
HCM 7th LOS			C			

HCM 7th Signalized Intersection Summary 11: Marsh Road & Florence Street/Bohannon Drive

Existing School PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	26	98	57	29	71	135	805	26	35	699	354
Future Volume (veh/h)	387	26	98	57	29	71	135	805	26	35	699	354
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	441	0	107	62	32	77	147	875	28	38	760	385
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	565	0	250	158	43	104	125	1982	1025	48	1829	1067
Arrive On Green	0.16	0.00	0.16	0.09	0.09	0.09	0.07	0.56	0.56	0.03	0.51	0.51
Sat Flow, veh/h	3563	0	1573	1781	487	1172	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	441	0	107	62	0	109	147	875	28	38	760	385
Grp Sat Flow(s),veh/h/ln	1781	0	1573	1781	0	1659	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	11.9	0.0	6.1	3.3	0.0	6.4	7.0	14.4	0.6	2.1	13.2	10.5
Cycle Q Clear(g_c), s	11.9	0.0	6.1	3.3	0.0	6.4	7.0	14.4	0.6	2.1	13.2	10.5
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	565	0	250	158	0	147	125	1982	1025	48	1829	1067
V/C Ratio(X)	0.78	0.00	0.43	0.39	0.00	0.74	1.18	0.44	0.03	0.79	0.42	0.36
Avail Cap(c_a), veh/h	998	0	440	481	0	448	125	1982	1025	71	1829	1067
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	0.0	38.0	43.0	0.0	44.4	46.5	13.0	6.4	48.4	15.0	7.1
Incr Delay (d2), s/veh	1.8	0.0	0.9	1.2	0.0	5.3	132.5	0.6	0.0	17.3	0.7	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	2.4	1.5	0.0	2.8	7.7	5.6	0.3	1.2	5.3	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.2	0.0	38.8	44.2	0.0	49.7	179.0	13.6	6.4	65.7	15.7	8.0
LnGrp LOS	D		D	D		D	F	B	A	E	B	A
Approach Vol, veh/h	548				171				1050			
Approach Delay, s/veh	41.5				47.7				36.6			
Approach LOS	D				D				D			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	60.4		13.1	11.0	56.1		19.9				
Change Period (Y+Rc), s	4.0	4.6		4.2	4.0	4.6		4.0				
Max Green Setting (Gmax), s	4.0	24.2		27.0	7.0	21.2		28.0				
Max Q Clear Time (g_c+I1), s	4.1	16.4		8.4	9.0	15.2		13.9				
Green Ext Time (p_c), s	0.0	5.1		0.6	0.0	4.5		1.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	29.4											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Existing PM
Hexagon

Synchro 12 Report
12/05/2024

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	39	8	19	26	42	1	76	20	134	181	73
Future Vol, veh/h	45	39	8	19	26	42	1	76	20	134	181	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	42	9	21	28	46	1	83	22	146	197	79
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9.3	8.9	8.7	12.6
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	49%	22%	35%
Vol Thru, %	78%	42%	30%	47%
Vol Right, %	21%	9%	48%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	92	87	388
LT Vol	1	45	19	134
Through Vol	76	39	26	181
RT Vol	20	8	42	73
Lane Flow Rate	105	100	95	422
Geometry Grp	1	1	1	1
Degree of Util (X)	0.141	0.148	0.133	0.529
Departure Headway (Hd)	4.798	5.326	5.048	4.516
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	741	668	704	793
Service Time	2.864	3.402	3.124	2.565
HCM Lane V/C Ratio	0.142	0.15	0.135	0.532
HCM Control Delay, s/veh	8.7	9.3	8.9	12.6
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	0.5	0.5	0.5	3.2

HCM 7th AWSC
2: 5th Avenue & Edison Way

Existing+Proj AM

Intersection	
Intersection Delay, s/veh	43.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	82	123	89	24	82	90	65	244	44	93	305	60
Future Vol, veh/h	82	123	89	24	82	90	65	244	44	93	305	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	134	97	26	89	98	71	265	48	101	332	65
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	27.7	19.1	36.1	70
HCM LOS	D	C	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	28%	12%	20%
Vol Thru, %	69%	42%	42%	67%
Vol Right, %	12%	30%	46%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	353	294	196	458
LT Vol	65	82	24	93
Through Vol	244	123	82	305
RT Vol	44	89	90	60
Lane Flow Rate	384	320	213	498
Geometry Grp	1	1	1	1
Degree of Util (X)	0.811	0.702	0.49	1.008
Departure Headway (Hd)	7.61	7.907	8.272	7.288
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	476	457	432	498
Service Time	5.69	5.986	6.366	5.359
HCM Lane V/C Ratio	0.807	0.7	0.493	1
HCM Control Delay, s/veh	36.1	27.7	19.1	70
HCM Lane LOS	E	D	C	F
HCM 95th-tile Q	7.6	5.4	2.6	13.8

Intersection	
Intersection Delay, s/veh	17.7
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	28	272	52	79	411	40	73	125	59	33	109	58
Future Vol, veh/h	28	272	52	79	411	40	73	125	59	33	109	58
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	30	296	57	86	447	43	79	136	64	36	118	63
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	15	19.7	18.7	16
HCM LOS	B	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	28%	17%	0%	28%	0%	17%
Vol Thru, %	49%	83%	72%	72%	84%	55%
Vol Right, %	23%	0%	28%	0%	16%	29%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	257	164	188	285	246	200
LT Vol	73	28	0	79	0	33
Through Vol	125	136	136	206	206	109
RT Vol	59	0	52	0	40	58
Lane Flow Rate	279	178	204	309	267	217
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.553	0.374	0.413	0.627	0.522	0.44
Departure Headway (Hd)	7.122	7.558	7.271	7.3	7.04	7.279
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	506	474	492	492	510	493
Service Time	5.192	5.335	5.047	5.072	4.812	5.355
HCM Lane V/C Ratio	0.551	0.376	0.415	0.628	0.524	0.44
HCM Control Delay, s/veh	18.7	14.8	15.1	21.7	17.3	16
HCM Lane LOS	C	B	C	C	C	C
HCM 95th-tile Q	3.3	1.7	2	4.2	3	2.2

HCM 7th TWSC
3: Fair Oaks Avenue & Edison Way

Existing+Proj AM

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	22	113	1	12	0	160	0	1	0	0	0
Future Vol, veh/h	0	22	113	1	12	0	160	0	1	0	0	0
Conflicting Peds, #/hr	9	0	2	2	0	9	2	0	2	9	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	123	1	13	0	174	0	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	22	0	0	149	0	0	112	112	96	57	173	31
Stage 1	-	-	-	-	-	-	87	87	-	24	24	-
Stage 2	-	-	-	-	-	-	24	24	-	33	149	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1593	-	-	1433	-	-	866	779	960	940	720	1043
Stage 1	-	-	-	-	-	-	920	822	-	994	875	-
Stage 2	-	-	-	-	-	-	994	875	-	983	774	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1581	-	-	1430	-	-	858	771	951	924	713	1028
Mov Cap-2 Maneuver	-	-	-	-	-	-	858	771	-	924	713	-
Stage 1	-	-	-	-	-	-	919	821	-	985	868	-
Stage 2	-	-	-	-	-	-	985	868	-	975	773	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			0.58			10.27			0		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	858	1581	-	-	138	-	-	-				
HCM Lane V/C Ratio	0.204	-	-	-	0.001	-	-	-				
HCM Ctrl Dly (s/v)	10.3	0	-	-	7.5	0	-	0				
HCM Lane LOS	B	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	-				

HCM 7th TWSC
4: Marsh Road & Fair Oaks Avenue

Existing+Proj AM

Intersection

Int Delay, s/veh 0.5

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 26 15 16 841 597 132

Future Vol, veh/h 26 15 16 841 597 132

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - 0

Veh in Median Storage, # 2 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 28 16 17 914 649 143

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 1598 649 792 0 - 0

Stage 1 649 - - - - -

Stage 2 949 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 117 470 828 - - -

Stage 1 520 - - - - -

Stage 2 376 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 112 470 828 - - -

Mov Cap-2 Maneuver 303 - - - - -

Stage 1 498 - - - - -

Stage 2 376 - - - - -

Approach EB NB SB

HCM Ctrl Dly, s/v 16.86 0.18 0

HCM LOS C

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 34 - 348 - -

HCM Lane V/C Ratio 0.021 - 0.128 - -

HCM Ctrl Dly (s/v) 9.4 0 16.9 - -

HCM Lane LOS A A C - -

HCM 95th %tile Q(veh) 0.1 - 0.4 - -

HCM 7th TWSC
18: Middlefield Road & 2nd Avenue

Existing+Proj AM

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	31	313	5	11	288	28	7	9	17	37	11	74
Future Vol, veh/h	31	313	5	11	288	28	7	9	17	37	11	74
Conflicting Peds, #/hr	46	0	59	54	0	41	59	0	54	41	0	46
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	340	5	12	313	30	8	10	18	40	12	80
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	389	0	0	405	0	0	871	883	456	865	870	433
Stage 1	-	-	-	-	-	-	469	469	-	398	398	-
Stage 2	-	-	-	-	-	-	402	413	-	466	472	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1169	-	-	1154	-	-	271	285	604	274	290	623
Stage 1	-	-	-	-	-	-	575	560	-	628	603	-
Stage 2	-	-	-	-	-	-	625	593	-	577	559	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1124	-	-	1097	-	-	193	250	549	225	254	569
Mov Cap-2 Maneuver	-	-	-	-	-	-	193	250	-	225	254	-
Stage 1	-	-	-	-	-	-	530	517	-	597	573	-
Stage 2	-	-	-	-	-	-	494	564	-	506	516	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.74			0.28			17.69			20.65		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	320	1124	-	-	1097	-	-	361				
HCM Lane V/C Ratio	0.112	0.03	-	-	0.011	-	-	0.367				
HCM Ctrl Dly (s/v)	17.7	8.3	-	-	8.3	-	-	20.7				
HCM Lane LOS	C	A	-	-	A	-	-	C				
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	1.6				

HCM 7th TWSC
22: Palmer Lane & Fair Oaks Avenue

Existing+Proj AM

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	23	15	40	63	2	17	10	2	0	95	50
Future Vol, veh/h	10	23	15	40	63	2	17	10	2	0	95	50
Conflicting Peds, #/hr	11	0	2	3	0	12	2	0	3	12	0	11
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	25	16	43	68	2	18	11	2	0	103	54
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	83	0	0	44	0	0	276	228	48	233	235	93
Stage 1	-	-	-	-	-	-	58	58	-	169	169	-
Stage 2	-	-	-	-	-	-	218	170	-	64	66	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1515	-	-	1564	-	-	676	672	1021	722	666	965
Stage 1	-	-	-	-	-	-	954	847	-	833	759	-
Stage 2	-	-	-	-	-	-	784	758	-	947	840	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1499	-	-	1560	-	-	511	640	1008	669	634	946
Mov Cap-2 Maneuver	-	-	-	-	-	-	511	640	-	669	634	-
Stage 1	-	-	-	-	-	-	944	838	-	801	730	-
Stage 2	-	-	-	-	-	-	611	729	-	916	832	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.55			2.81			11.68			11.45		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	570	348	-	-	682	-	-	715				
HCM Lane V/C Ratio	0.055	0.007	-	-	0.028	-	-	0.22				
HCM Ctrl Dly (s/v)	11.7	7.4	0	-	7.4	0	-	11.5				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.8				

HCM 7th Signalized Intersection Summary 5: 5th Avenue & Semicircular Road

Existing+Proj AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	399	14	438	465	0	583
Future Volume (veh/h)	399	14	438	465	0	583
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	434	15	476	0	0	634
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	543	19	1143		0	1143
Arrive On Green	0.32	0.32	0.32	0.00	0.00	0.32
Sat Flow, veh/h	1711	59	3741	0	0	3741
Grp Volume(v), veh/h	450	0	476	0	0	634
Grp Sat Flow(s),veh/h/ln	1774	0	1777	0	0	1777
Q Serve(g_s), s	5.5	0.0	2.5	0.0	0.0	3.5
Cycle Q Clear(g_c), s	5.5	0.0	2.5	0.0	0.0	3.5
Prop In Lane	0.96	0.03		0.00	0.00	
Lane Grp Cap(c), veh/h	564	0	1143		0	1143
V/C Ratio(X)	0.80	0.00	0.42		0.00	0.55
Avail Cap(c_a), veh/h	753	0	1735		0	1735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	0.0	6.3	0.0	0.0	6.6
Incr Delay (d2), s/veh	4.5	0.0	0.3	0.0	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.5	0.0	0.0	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	11.8	0.0	6.6	0.0	0.0	7.1
LnGrp LOS	B		A			A
Approach Vol, veh/h	450		476			634
Approach Delay, s/veh	11.8		6.6			7.1
Approach LOS	B		A			A
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	12.1		12.1		11.5	
Change Period (Y+Rc), s	4.5		4.5		4.0	
Max Green Setting (Gmax), s	11.5		11.5		10.0	
Max Q Clear Time (g_c+I1), s	4.5		5.5		7.5	
Green Ext Time (p_c), s	2.0		2.1		0.4	
Intersection Summary						
HCM 7th Control Delay, s/veh			8.3			
HCM 7th LOS			A			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 7th Signalized Intersection Summary 6: Middlefield Road & 5th Avenue

Existing+Proj AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	209	243	10	176	52	125	306	23	44	322	26
Future Volume (veh/h)	16	209	243	10	176	52	125	306	23	44	322	26
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.86	1.00		0.87	1.00		0.90	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	17	227	264	11	191	57	136	333	25	48	350	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	324	246	286	104	453	135	153	375	411	57	418	379
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.29	0.29	0.29	0.26	0.26	0.26
Sat Flow, veh/h	1104	720	838	906	1329	397	535	1309	1434	224	1635	1481
Grp Volume(v), veh/h	17	0	491	11	0	248	469	0	25	398	0	28
Grp Sat Flow(s),veh/h/ln	1104	0	1558	906	0	1726	1844	0	1434	1859	0	1481
Q Serve(g_s), s	1.2	0.0	31.1	1.2	0.0	11.4	25.0	0.0	1.3	20.8	0.0	1.5
Cycle Q Clear(g_c), s	12.6	0.0	31.1	32.3	0.0	11.4	25.0	0.0	1.3	20.8	0.0	1.5
Prop In Lane	1.00		0.54	1.00		0.23	0.29		1.00	0.12		1.00
Lane Grp Cap(c), veh/h	324	0	531	104	0	589	528	0	411	475	0	379
V/C Ratio(X)	0.05	0.00	0.92	0.11	0.00	0.42	0.89	0.00	0.06	0.84	0.00	0.07
Avail Cap(c_a), veh/h	324	0	531	104	0	589	682	0	531	815	0	649
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.9	0.0	32.5	48.1	0.0	26.0	35.0	0.0	26.6	36.2	0.0	29.0
Incr Delay (d2), s/veh	0.3	0.0	24.2	2.0	0.0	2.2	11.2	0.0	0.1	4.0	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	15.0	0.3	0.0	5.0	12.8	0.0	0.5	9.9	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	31.2	0.0	56.7	50.1	0.0	28.2	46.3	0.0	26.6	40.2	0.0	29.1
LnGrp LOS	C		E	D		C	D		C	D		C
Approach Vol, veh/h	508			259			494			426		
Approach Delay, s/veh	55.9			29.2			45.3			39.5		
Approach LOS	E			C			D			D		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	39.0			33.4			39.0			30.2		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	35.0			38.0			35.0			45.0		
Max Q Clear Time (g_c+I1), s	33.1			27.0			34.3			22.8		
Green Ext Time (p_c), s	0.7			2.4			0.1			2.7		
Intersection Summary												
HCM 7th Control Delay, s/veh	44.5											
HCM 7th LOS	D											

HCM 7th Signalized Intersection Summary 8: Middlefield Road & Marsh Road

Existing+Proj AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	358	368	260	472	427	221
Future Volume (veh/h)	358	368	260	472	427	221
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	389	400	283	513	464	240
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	423	1217	713	1031	503	824
Arrive On Green	0.24	0.65	0.38	0.38	0.28	0.28
Sat Flow, veh/h	1781	1870	1870	1530	1781	1585
Grp Volume(v), veh/h	389	400	283	513	464	240
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1530	1781	1585
Q Serve(g_s), s	26.8	11.9	13.9	21.3	31.8	10.8
Cycle Q Clear(g_c), s	26.8	11.9	13.9	21.3	31.8	10.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	423	1217	713	1031	503	824
V/C Ratio(X)	0.92	0.33	0.40	0.50	0.92	0.29
Avail Cap(c_a), veh/h	638	1217	713	1031	847	1131
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.7	9.7	28.3	10.7	43.8	17.1
Incr Delay (d2), s/veh	13.6	0.7	1.7	1.7	8.3	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.4	5.0	6.6	14.9	15.1	12.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	60.3	10.5	30.0	12.4	52.0	17.2
LnGrp LOS	E	B	C	B	D	B
Approach Vol, veh/h		789	796		704	
Approach Delay, s/veh		35.1	18.7		40.2	
Approach LOS		D	B		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.0		39.7	33.9	52.1
Change Period (Y+Rc), s		4.2		4.2	4.0	4.2
Max Green Setting (Gmax), s		81.8		59.8	45.0	32.8
Max Q Clear Time (g_c+I1), s		13.9		33.8	28.8	23.3
Green Ext Time (p_c), s		1.7		1.7	1.1	1.7
Intersection Summary						
HCM 7th Control Delay, s/veh			30.9			
HCM 7th LOS			C			

HCM 7th Signalized Intersection Summary

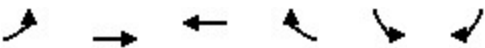
Existing+Proj AM

9: Marsh Road & Bay Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	51	4	45	12	179	1	798	70	245	760	80
Future Volume (veh/h)	106	51	4	45	12	179	1	798	70	245	760	80
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	55	4	49	13	195	1	867	76	266	826	87
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	89	5	284	66	829	45	987	86	599	2243	236
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.31	0.31	0.31	0.34	0.69	0.69
Sat Flow, veh/h	715	464	28	1060	346	1542	1	3229	283	1781	3235	341
Grp Volume(v), veh/h	174	0	0	62	0	195	502	0	442	266	454	459
Grp Sat Flow(s),veh/h/ln	1207	0	0	1407	0	1542	1869	0	1643	1781	1777	1799
Q Serve(g_s), s	8.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.4	9.3	8.4	8.4
Cycle Q Clear(g_c), s	11.4	0.0	0.0	2.9	0.0	0.0	20.4	0.0	20.4	9.3	8.4	8.4
Prop In Lane	0.66		0.02	0.79		1.00	0.00		0.17	1.00		0.19
Lane Grp Cap(c), veh/h	306	0	0	350	0	829	617	0	502	599	1232	1247
V/C Ratio(X)	0.57	0.00	0.00	0.18	0.00	0.24	0.81	0.00	0.88	0.44	0.37	0.37
Avail Cap(c_a), veh/h	500	0	0	558	0	1054	659	0	540	599	1232	1247
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.84	0.84	0.84
Uniform Delay (d), s/veh	31.2	0.0	0.0	27.2	0.0	10.2	26.4	0.0	26.4	20.7	5.1	5.1
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.2	0.0	0.1	11.3	0.0	19.2	0.2	0.7	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.3	0.0	0.0	1.0	0.0	1.7	10.4	0.0	10.1	3.7	2.6	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.4	0.0	0.0	27.4	0.0	10.3	37.7	0.0	45.6	20.9	5.8	5.8
LnGrp LOS	C			C		B	D		D	C	A	A
Approach Vol, veh/h	174			257			944			1179		
Approach Delay, s/veh	32.4			14.4			41.4			9.2		
Approach LOS	C			B			D			A		
Timer - Assigned Phs	2			4		5	6	8				
Phs Duration (G+Y+Rc), s	60.1			19.9		31.5	28.6	19.9				
Change Period (Y+Rc), s	4.6			4.6		4.6	* 4.1	4.6				
Max Green Setting (Gmax), s	43.8			27.0		13.9	* 26	27.0				
Max Q Clear Time (g_c+I1), s	10.4			13.4		11.3	22.4	4.9				
Green Ext Time (p_c), s	7.0			0.7		0.1	2.0	0.7				
Intersection Summary												
HCM 7th Control Delay, s/veh				23.2								
HCM 7th LOS				C								
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 7th Signalized Intersection Summary 10: El Camino Avenue & 5th Avenue

Existing+Proj AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰↰	↑↑↑	↑↑↑		↰	↰↰
Traffic Volume (veh/h)	688	1596	649	234	420	547
Future Volume (veh/h)	688	1596	649	234	420	547
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	748	1735	705	254	457	595
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	844	2911	995	353	563	1562
Arrive On Green	0.24	0.57	0.27	0.27	0.32	0.32
Sat Flow, veh/h	3456	5274	3868	1313	1781	2790
Grp Volume(v), veh/h	748	1735	648	311	457	595
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1608	1781	1395
Q Serve(g_s), s	14.7	15.5	12.1	12.3	16.6	8.4
Cycle Q Clear(g_c), s	14.7	15.5	12.1	12.3	16.6	8.4
Prop In Lane	1.00			0.82	1.00	1.00
Lane Grp Cap(c), veh/h	844	2911	915	432	563	1562
V/C Ratio(X)	0.89	0.60	0.71	0.72	0.81	0.38
Avail Cap(c_a), veh/h	886	2911	915	432	812	1953
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	9.8	23.2	23.3	22.1	8.6
Incr Delay (d2), s/veh	10.4	0.9	4.6	9.9	4.1	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	4.9	5.0	5.5	7.1	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	36.0	10.7	27.8	33.2	26.2	8.8
LnGrp LOS	D	B	C	C	C	A
Approach Vol, veh/h		2483	959		1052	
Approach Delay, s/veh		18.4	29.5		16.4	
Approach LOS		B	C		B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	21.1	22.9			44.0	26.2
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	18.0	18.0			40.0	32.0
Max Q Clear Time (g_c+I1), s	16.7	14.3			17.5	18.6
Green Ext Time (p_c), s	0.5	2.0			13.6	3.6
Intersection Summary						
HCM 7th Control Delay, s/veh			20.3			
HCM 7th LOS			C			

HCM 7th Signalized Intersection Summary 11: Marsh Road & Florence Street/Bohannon Drive

Existing+Proj AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	490	31	132	41	24	17	103	756	45	31	995	418
Future Volume (veh/h)	490	31	132	41	24	17	103	756	45	31	995	418
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	557	0	143	45	26	18	112	822	49	34	1082	454
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	625	0	278	87	50	35	544	2295	1080	44	1283	849
Arrive On Green	0.18	0.00	0.18	0.05	0.05	0.05	0.61	1.00	1.00	0.02	0.36	0.36
Sat Flow, veh/h	3563	0	1585	1781	1029	713	1781	3554	1552	1781	3554	1581
Grp Volume(v), veh/h	557	0	143	45	0	44	112	822	49	34	1082	454
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1742	1781	1777	1552	1781	1777	1581
Q Serve(g_s), s	24.4	0.0	13.1	3.9	0.0	3.9	4.5	0.0	0.0	3.0	44.8	29.9
Cycle Q Clear(g_c), s	24.4	0.0	13.1	3.9	0.0	3.9	4.5	0.0	0.0	3.0	44.8	29.9
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	625	0	278	87	0	85	544	2295	1080	44	1283	849
V/C Ratio(X)	0.89	0.00	0.51	0.52	0.00	0.52	0.21	0.36	0.05	0.78	0.84	0.53
Avail Cap(c_a), veh/h	846	0	376	310	0	303	544	2295	1080	67	1342	875
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	64.5	0.0	59.8	74.2	0.0	74.2	22.5	0.0	0.0	77.6	47.0	24.1
Incr Delay (d2), s/veh	8.5	0.0	1.1	3.5	0.0	3.5	0.1	0.4	0.1	12.4	6.9	2.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	11.9	0.0	5.4	1.9	0.0	1.9	1.8	0.1	0.0	1.6	21.1	16.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	73.0	0.0	60.9	77.7	0.0	77.7	22.5	0.4	0.1	90.0	53.8	26.5
LnGrp LOS	E		E	E		E	C	A	A	F	D	C
Approach Vol, veh/h	700				89				983			
Approach Delay, s/veh	70.5				77.7				2.9			
Approach LOS	E				E				A			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	107.9		12.0	53.5	62.4		32.1				
Change Period (Y+Rc), s	4.0	4.6		4.2	4.6	* 4.6		4.0				
Max Green Setting (Gmax), s	6.0	71.4		27.8	17.0	* 60		38.0				
Max Q Clear Time (g_c+I1), s	5.0	2.0		5.9	6.5	46.8		26.4				
Green Ext Time (p_c), s	0.0	16.0		0.2	0.1	11.0		1.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	39.6											
HCM 7th LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	26	3	15	37	60	3	82	21	57	121	43
Future Vol, veh/h	38	26	3	15	37	60	3	82	21	57	121	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	28	3	16	40	65	3	89	23	62	132	47
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.6	8.4	8.4	9.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	57%	13%	26%
Vol Thru, %	77%	39%	33%	55%
Vol Right, %	20%	4%	54%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	106	67	112	221
LT Vol	3	38	15	57
Through Vol	82	26	37	121
RT Vol	21	3	60	43
Lane Flow Rate	115	73	122	240
Geometry Grp	1	1	1	1
Degree of Util (X)	0.146	0.101	0.154	0.298
Departure Headway (Hd)	4.558	4.983	4.546	4.466
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	785	717	786	805
Service Time	2.595	3.026	2.585	2.498
HCM Lane V/C Ratio	0.146	0.102	0.155	0.298
HCM Control Delay, s/veh	8.4	8.6	8.4	9.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.3	0.5	1.3

HCM 7th AWSC
2: 5th Avenue & Edison Way

Existing+Proj PM

Intersection

Intersection Delay, s/veh 26.9

Intersection LOS D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	89	60	66	40	80	124	59	259	33	55	299	59
Future Vol, veh/h	89	60	66	40	80	124	59	259	33	55	299	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	97	65	72	43	87	135	64	282	36	60	325	64
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	17.7	18.5	27.2	36.5
HCM LOS	C	C	D	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	41%	16%	13%
Vol Thru, %	74%	28%	33%	72%
Vol Right, %	9%	31%	51%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	351	215	244	413
LT Vol	59	89	40	55
Through Vol	259	60	80	299
RT Vol	33	66	124	59
Lane Flow Rate	382	234	265	449
Geometry Grp	1	1	1	1
Degree of Util (X)	0.737	0.49	0.536	0.843
Departure Headway (Hd)	6.958	7.548	7.278	6.764
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	519	474	493	534
Service Time	5.033	5.633	5.359	4.833
HCM Lane V/C Ratio	0.736	0.494	0.538	0.841
HCM Control Delay, s/veh	27.2	17.7	18.5	36.5
HCM Lane LOS	D	C	C	E
HCM 95th-tile Q	6.2	2.6	3.1	8.7

Intersection	
Intersection Delay, s/veh	13.7
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	40	328	61	52	304	18	50	91	53	32	102	28
Future Vol, veh/h	40	328	61	52	304	18	50	91	53	32	102	28
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	357	66	57	330	20	54	99	58	35	111	30
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	14	13.6	13.7	13.1
HCM LOS	B	B	B	B

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	20%	0%	25%	0%	20%
Vol Thru, %	47%	80%	73%	75%	89%	63%
Vol Right, %	27%	0%	27%	0%	11%	17%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	194	204	225	204	170	162
LT Vol	50	40	0	52	0	32
Through Vol	91	164	164	152	152	102
RT Vol	53	0	61	0	18	28
Lane Flow Rate	211	222	245	222	185	176
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.385	0.413	0.435	0.419	0.339	0.329
Departure Headway (Hd)	6.579	6.703	6.409	6.81	6.604	6.727
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	546	539	565	530	547	534
Service Time	4.62	4.415	4.121	4.524	4.318	4.771
HCM Lane V/C Ratio	0.386	0.412	0.434	0.419	0.338	0.33
HCM Control Delay, s/veh	13.7	14.1	14	14.4	12.7	13.1
HCM Lane LOS	B	B	B	B	B	B
HCM 95th-tile Q	1.8	2	2.2	2.1	1.5	1.4

HCM 7th TWSC
3: Fair Oaks Avenue & Edison Way

Existing+Proj PM

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	14	110	5	23	0	129	0	3	0	0	0
Future Vol, veh/h	0	14	110	5	23	0	129	0	3	0	0	0
Conflicting Peds, #/hr	17	0	6	10	0	21	6	0	10	21	0	17
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	120	5	25	0	140	0	3	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	46	0	0	145	0	0	138	142	106	93	202	63
Stage 1	-	-	-	-	-	-	85	85	-	57	57	-
Stage 2	-	-	-	-	-	-	53	57	-	36	145	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1562	-	-	1437	-	-	833	749	948	891	694	1002
Stage 1	-	-	-	-	-	-	923	824	-	955	847	-
Stage 2	-	-	-	-	-	-	960	847	-	979	777	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1534	-	-	1426	-	-	811	727	924	853	674	970
Mov Cap-2 Maneuver	-	-	-	-	-	-	811	727	-	853	674	-
Stage 1	-	-	-	-	-	-	915	818	-	935	829	-
Stage 2	-	-	-	-	-	-	942	829	-	959	771	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			1.35			10.37			0		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	813	1534	-	-	321	-	-	-				
HCM Lane V/C Ratio	0.176	-	-	-	0.004	-	-	-				
HCM Ctrl Dly (s/v)	10.4	0	-	-	7.5	0	-	0				
HCM Lane LOS	B	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	-				

HCM 7th TWSC
4: Marsh Road & Fair Oaks Avenue

Existing+Proj PM

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	21	20	883	706	67
Future Vol, veh/h	35	21	20	883	706	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	23	22	960	767	73

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1771	767	840
Stage 1	767	-	-
Stage 2	1003	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	92	402	795
Stage 1	458	-	-
Stage 2	355	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	86	402	795
Mov Cap-2 Maneuver	272	-	-
Stage 1	431	-	-
Stage 2	355	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	19.46	0.21	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	40	-	309	-	-
HCM Lane V/C Ratio	0.027	-	0.197	-	-
HCM Ctrl Dly (s/v)	9.7	0	19.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

HCM 7th TWSC
18: Middlefield Road & 2nd Avenue

Existing+Proj PM

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	47	397	23	30	436	32	10	9	22	29	7	65
Future Vol, veh/h	47	397	23	30	436	32	10	9	22	29	7	65
Conflicting Peds, #/hr	40	0	61	61	0	40	61	0	61	40	0	40
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	432	25	33	474	35	11	10	24	32	8	71
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	549	0	0	518	0	0	974	1221	350	980	1216	355
Stage 1	-	-	-	-	-	-	607	607	-	597	597	-
Stage 2	-	-	-	-	-	-	367	614	-	384	620	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	1017	-	-	1045	-	-	206	178	646	204	180	641
Stage 1	-	-	-	-	-	-	450	484	-	457	490	-
Stage 2	-	-	-	-	-	-	625	481	-	611	478	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	983	-	-	991	-	-	141	148	582	153	149	588
Mov Cap-2 Maneuver	-	-	-	-	-	-	141	148	-	153	149	-
Stage 1	-	-	-	-	-	-	402	432	-	425	455	-
Stage 2	-	-	-	-	-	-	493	447	-	511	427	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.26			0.79			23.22			24.72		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	242	337	-	-	198	-	-	291				
HCM Lane V/C Ratio	0.184	0.052	-	-	0.033	-	-	0.378				
HCM Ctrl Dly (s/v)	23.2	8.9	0.4	-	8.8	0.3	-	24.7				
HCM Lane LOS	C	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	0.7	0.2	-	-	0.1	-	-	1.7				

HCM 7th TWSC
22: Palmer Lane & Fair Oaks Avenue

Existing+Proj PM

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	40	8	6	66	2	17	17	5	0	8	17
Future Vol, veh/h	6	40	8	6	66	2	17	17	5	0	8	17
Conflicting Peds, #/hr	3	0	4	4	0	3	4	0	4	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	43	9	7	72	2	18	18	5	0	9	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	77	0	0	56	0	0	158	155	56	159	158	80
Stage 1	-	-	-	-	-	-	65	65	-	89	89	-
Stage 2	-	-	-	-	-	-	93	90	-	70	69	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1522	-	-	1549	-	-	808	737	1011	807	734	980
Stage 1	-	-	-	-	-	-	946	841	-	919	821	-
Stage 2	-	-	-	-	-	-	914	820	-	940	837	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1518	-	-	1543	-	-	771	726	1004	771	723	975
Mov Cap-2 Maneuver	-	-	-	-	-	-	771	726	-	771	723	-
Stage 1	-	-	-	-	-	-	938	834	-	912	816	-
Stage 2	-	-	-	-	-	-	880	815	-	907	831	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.82			0.6			9.93			9.24		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	773	194	-	-	145	-	-	877				
HCM Lane V/C Ratio	0.055	0.004	-	-	0.004	-	-	0.031				
HCM Ctrl Dly (s/v)	9.9	7.4	0	-	7.3	0	-	9.2				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

HCM 7th Signalized Intersection Summary 5: 5th Avenue & Semicircular Road

Existing+Proj PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	288	23	500	391	0	514
Future Volume (veh/h)	288	23	500	391	0	514
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	313	25	543	0	0	559
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	392	31	1391		0	1391
Arrive On Green	0.24	0.24	0.39	0.00	0.00	0.39
Sat Flow, veh/h	1630	130	3741	0	0	3741
Grp Volume(v), veh/h	339	0	543	0	0	559
Grp Sat Flow(s),veh/h/ln	1765	0	1777	0	0	1777
Q Serve(g_s), s	3.7	0.0	2.2	0.0	0.0	2.3
Cycle Q Clear(g_c), s	3.7	0.0	2.2	0.0	0.0	2.3
Prop In Lane	0.92	0.07		0.00	0.00	
Lane Grp Cap(c), veh/h	424	0	1391		0	1391
V/C Ratio(X)	0.80	0.00	0.39		0.00	0.40
Avail Cap(c_a), veh/h	1127	0	3402		0	3402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	0.0	4.5	0.0	0.0	4.5
Incr Delay (d2), s/veh	1.3	0.0	0.2	0.0	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.2	0.0	0.0	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.6	0.0	4.7	0.0	0.0	4.7
LnGrp LOS	A		A			A
Approach Vol, veh/h	339		543			559
Approach Delay, s/veh	8.6		4.7			4.7
Approach LOS	A		A			A
Timer - Assigned Phs	2		4		6	
Phs Duration (G+Y+Rc), s	12.5		7.9		12.5	
Change Period (Y+Rc), s	4.5		3.0		4.5	
Max Green Setting (Gmax), s	19.5		13.0		19.5	
Max Q Clear Time (g_c+l1), s	4.2		5.7		4.3	
Green Ext Time (p_c), s	3.8		0.1		3.2	
Intersection Summary						
HCM 7th Control Delay, s/veh			5.6			
HCM 7th LOS			A			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

HCM 7th Signalized Intersection Summary 6: Middlefield Road & 5th Avenue

Existing+Proj PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	210	209	18	281	69	212	264	13	51	279	47
Future Volume (veh/h)	31	210	209	18	281	69	212	264	13	51	279	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.91	1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	228	227	20	305	75	230	287	14	55	303	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	226	287	286	157	480	118	253	316	476	68	373	353
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.31	0.31	0.31	0.24	0.24	0.24
Sat Flow, veh/h	1003	849	845	936	1417	348	814	1016	1529	285	1571	1490
Grp Volume(v), veh/h	34	0	455	20	0	380	517	0	14	358	0	51
Grp Sat Flow(s),veh/h/ln	1003	0	1693	936	0	1766	1830	0	1529	1856	0	1490
Q Serve(g_s), s	3.1	0.0	25.8	2.1	0.0	19.3	28.8	0.0	0.7	19.4	0.0	2.9
Cycle Q Clear(g_c), s	22.4	0.0	25.8	27.9	0.0	19.3	28.8	0.0	0.7	19.4	0.0	2.9
Prop In Lane	1.00		0.50	1.00		0.20	0.44		1.00	0.15		1.00
Lane Grp Cap(c), veh/h	226	0	574	157	0	598	569	0	476	440	0	353
V/C Ratio(X)	0.15	0.00	0.79	0.13	0.00	0.64	0.91	0.00	0.03	0.81	0.00	0.14
Avail Cap(c_a), veh/h	226	0	574	157	0	598	671	0	561	751	0	603
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	39.1	0.0	31.8	44.4	0.0	29.6	35.1	0.0	25.4	38.3	0.0	32.0
Incr Delay (d2), s/veh	1.4	0.0	10.8	1.7	0.0	5.1	14.7	0.0	0.0	3.7	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	12.1	0.6	0.0	8.9	15.1	0.0	0.3	9.3	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.5	0.0	42.6	46.1	0.0	34.7	49.9	0.0	25.5	42.0	0.0	32.2
LnGrp LOS	D		D	D		C	D		C	D		C
Approach Vol, veh/h	489			400			531			409		
Approach Delay, s/veh	42.4			35.3			49.2			40.8		
Approach LOS	D			D			D			D		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	40.0			37.1			40.0			29.2		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	36.0			39.0			36.0			43.0		
Max Q Clear Time (g_c+I1), s	27.8			30.8			29.9			21.4		
Green Ext Time (p_c), s	2.0			2.2			1.3			2.5		
Intersection Summary												
HCM 7th Control Delay, s/veh	42.5											
HCM 7th LOS	D											

HCM 7th Signalized Intersection Summary 8: Middlefield Road & Marsh Road

Existing+Proj PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	347	224	324	546	393	340
Future Volume (veh/h)	347	224	324	546	393	340
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	377	243	352	593	427	370
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	404	1256	773	1051	468	776
Arrive On Green	0.23	0.67	0.41	0.41	0.26	0.26
Sat Flow, veh/h	1781	1870	1870	1535	1781	1585
Grp Volume(v), veh/h	377	243	352	593	427	370
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1535	1781	1585
Q Serve(g_s), s	26.5	6.3	17.4	26.1	29.7	19.9
Cycle Q Clear(g_c), s	26.5	6.3	17.4	26.1	29.7	19.9
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	404	1256	773	1051	468	776
V/C Ratio(X)	0.93	0.19	0.46	0.56	0.91	0.48
Avail Cap(c_a), veh/h	572	1256	773	1051	639	928
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	7.9	27.1	10.9	45.7	21.7
Incr Delay (d2), s/veh	15.3	0.3	1.9	2.2	13.4	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	2.6	8.2	18.0	14.8	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	63.7	8.3	29.0	13.1	59.0	22.0
LnGrp LOS	E	A	C	B	E	C
Approach Vol, veh/h		620	945		797	
Approach Delay, s/veh		42.0	19.0		41.9	
Approach LOS		D	B		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		90.0		37.7	33.0	57.0
Change Period (Y+Rc), s		4.2		4.2	4.0	4.2
Max Green Setting (Gmax), s		85.8		45.8	41.0	40.8
Max Q Clear Time (g_c+I1), s		8.3		31.7	28.5	28.1
Green Ext Time (p_c), s		1.0		1.8	0.5	2.4
Intersection Summary						
HCM 7th Control Delay, s/veh			32.8			
HCM 7th LOS			C			

HCM 7th Signalized Intersection Summary

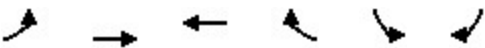
Existing+Proj PM

9: Marsh Road & Bay Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	81	20	3	55	20	163	1	844	46	141	726	48
Future Volume (veh/h)	81	20	3	55	20	163	1	844	46	141	726	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	88	22	3	60	22	177	1	917	50	153	789	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	155	35	4	213	71	920	26	1077	59	762	2634	174
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.32	0.32	0.32	0.43	0.78	0.78
Sat Flow, veh/h	698	222	25	1078	458	1547	0	3355	183	1781	3384	223
Grp Volume(v), veh/h	113	0	0	82	0	177	511	0	457	153	414	427
Grp Sat Flow(s),veh/h/ln	945	0	0	1536	0	1547	1870	0	1669	1781	1777	1830
Q Serve(g_s), s	11.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	35.8	7.5	9.4	9.4
Cycle Q Clear(g_c), s	17.7	0.0	0.0	6.5	0.0	0.0	35.8	0.0	35.8	7.5	9.4	9.4
Prop In Lane	0.78		0.03	0.73		1.00	0.00		0.11	1.00		0.12
Lane Grp Cap(c), veh/h	193	0	0	284	0	920	626	0	536	762	1383	1424
V/C Ratio(X)	0.59	0.00	0.00	0.29	0.00	0.19	0.82	0.00	0.85	0.20	0.30	0.30
Avail Cap(c_a), veh/h	271	0	0	374	0	1014	998	0	869	762	1383	1424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.83	0.83	0.83
Uniform Delay (d), s/veh	59.7	0.0	0.0	52.6	0.0	13.6	44.4	0.0	44.4	25.1	4.5	4.5
Incr Delay (d2), s/veh	2.1	0.0	0.0	0.4	0.0	0.1	11.3	0.0	15.7	0.0	0.5	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	0.0	2.6	0.0	2.7	18.4	0.0	17.0	3.2	3.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.8	0.0	0.0	53.0	0.0	13.7	55.7	0.0	60.1	25.1	4.9	4.9
LnGrp LOS	E			D		B	E		E	C	A	A
Approach Vol, veh/h	113				259				968			
Approach Delay, s/veh	61.8				26.1				57.8			
Approach LOS	E				C				E			
Timer - Assigned Phs	2			4	5	6	8					
Phs Duration (G+Y+Rc), s	113.6			26.4	64.5	49.1	26.4					
Change Period (Y+Rc), s	4.6			4.6	4.6	* 4.1	4.6					
Max Green Setting (Gmax), s	100.4			30.4	23.9	* 73	30.4					
Max Q Clear Time (g_c+I1), s	11.4			19.7	9.5	37.8	8.5					
Green Ext Time (p_c), s	6.5			0.3	0.2	7.2	0.8					
Intersection Summary												
HCM 7th Control Delay, s/veh	33.3											
HCM 7th LOS	C											
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 7th Signalized Intersection Summary 10: El Camino Avenue & 5th Avenue

Existing+Proj PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰↰	↑↑↑	↑↑↑		↰	↰↰
Traffic Volume (veh/h)	586	793	1294	335	253	621
Future Volume (veh/h)	586	793	1294	335	253	621
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	637	862	1407	364	275	675
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	739	3394	1577	406	391	1209
Arrive On Green	0.21	0.66	0.39	0.39	0.22	0.22
Sat Flow, veh/h	3456	5274	4179	1033	1781	2790
Grp Volume(v), veh/h	637	862	1193	578	275	675
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1639	1781	1395
Q Serve(g_s), s	12.3	4.7	22.7	22.9	9.9	12.5
Cycle Q Clear(g_c), s	12.3	4.7	22.7	22.9	9.9	12.5
Prop In Lane	1.00			0.63	1.00	1.00
Lane Grp Cap(c), veh/h	739	3394	1339	644	391	1209
V/C Ratio(X)	0.86	0.25	0.89	0.90	0.70	0.56
Avail Cap(c_a), veh/h	799	3394	1339	644	412	1241
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	4.7	19.6	19.7	24.9	14.7
Incr Delay (d2), s/veh	9.1	0.2	9.3	17.6	5.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	1.2	9.6	10.8	4.5	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	35.3	4.9	28.9	37.2	29.9	15.2
LnGrp LOS	D	A	C	D	C	B
Approach Vol, veh/h		1499	1771		950	
Approach Delay, s/veh		17.8	31.6		19.5	
Approach LOS		B	C		B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.8	31.2			50.0	19.2
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	16.0	26.0			46.0	16.0
Max Q Clear Time (g_c+I1), s	14.3	24.9			6.7	14.5
Green Ext Time (p_c), s	0.5	1.0			7.0	0.7
Intersection Summary						
HCM 7th Control Delay, s/veh			24.0			
HCM 7th LOS			C			

HCM 7th Signalized Intersection Summary 11: Marsh Road & Florence Street/Bohannon Drive

Existing+Proj PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	387	26	98	57	29	71	135	819	26	35	714	354
Future Volume (veh/h)	387	26	98	57	29	71	135	819	26	35	714	354
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	441	0	107	62	32	77	147	890	28	38	776	385
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	565	0	250	158	43	104	125	1982	1025	48	1829	1067
Arrive On Green	0.16	0.00	0.16	0.09	0.09	0.09	0.07	0.56	0.56	0.03	0.51	0.51
Sat Flow, veh/h	3563	0	1573	1781	487	1172	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	441	0	107	62	0	109	147	890	28	38	776	385
Grp Sat Flow(s),veh/h/ln	1781	0	1573	1781	0	1659	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	11.9	0.0	6.1	3.3	0.0	6.4	7.0	14.8	0.6	2.1	13.6	10.5
Cycle Q Clear(g_c), s	11.9	0.0	6.1	3.3	0.0	6.4	7.0	14.8	0.6	2.1	13.6	10.5
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	565	0	250	158	0	147	125	1982	1025	48	1829	1067
V/C Ratio(X)	0.78	0.00	0.43	0.39	0.00	0.74	1.18	0.45	0.03	0.79	0.42	0.36
Avail Cap(c_a), veh/h	998	0	440	481	0	448	125	1982	1025	71	1829	1067
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.90	0.90	0.90	1.00	1.00	1.00
Uniform Delay (d), s/veh	40.4	0.0	38.0	43.0	0.0	44.4	46.5	13.1	6.4	48.4	15.1	7.1
Incr Delay (d2), s/veh	1.8	0.0	0.9	1.2	0.0	5.3	132.5	0.7	0.0	17.3	0.7	0.9
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.3	0.0	2.4	1.5	0.0	2.8	7.7	5.8	0.3	1.2	5.4	5.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.2	0.0	38.8	44.2	0.0	49.7	179.0	13.7	6.4	65.7	15.8	8.0
LnGrp LOS	D		D	D		D	F	B	A	E	B	A
Approach Vol, veh/h	548		171			1065			1199			
Approach Delay, s/veh	41.5		47.7			36.3			14.9			
Approach LOS	D		D			D			B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	60.4		13.1	11.0	56.1		19.9				
Change Period (Y+Rc), s	4.0	4.6		4.2	4.0	4.6		4.0				
Max Green Setting (Gmax), s	4.0	24.2		27.0	7.0	21.2		28.0				
Max Q Clear Time (g_c+I1), s	4.1	16.8		8.4	9.0	15.6		13.9				
Green Ext Time (p_c), s	0.0	5.0		0.6	0.0	4.3		1.3				
Intersection Summary												
HCM 7th Control Delay, s/veh	29.3											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Existing+Proj PM
Hexagon

Synchro 12 Report
12/05/2024

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	45	39	8	9	26	41	1	76	9	133	181	73
Future Vol, veh/h	45	39	8	9	26	41	1	76	9	133	181	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	42	9	10	28	45	1	83	10	145	197	79
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9.3	8.7	8.6	12.3
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	49%	12%	34%
Vol Thru, %	88%	42%	34%	47%
Vol Right, %	10%	9%	54%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	92	76	387
LT Vol	1	45	9	133
Through Vol	76	39	26	181
RT Vol	9	8	41	73
Lane Flow Rate	93	100	83	421
Geometry Grp	1	1	1	1
Degree of Util (X)	0.125	0.147	0.114	0.522
Departure Headway (Hd)	4.816	5.274	4.96	4.468
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	739	676	717	803
Service Time	2.876	3.338	3.027	2.51
HCM Lane V/C Ratio	0.126	0.148	0.116	0.524
HCM Control Delay, s/veh	8.6	9.3	8.7	12.3
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	0.4	0.5	0.4	3.1

Intersection	
Intersection Delay, s/veh	26.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	74	101	68	24	55	90	40	244	44	93	305	50
Future Vol, veh/h	74	101	68	24	55	90	40	244	44	93	305	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	80	110	74	26	60	98	43	265	48	101	332	54
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	17.8	14.5	21.9	38.5
HCM LOS	C	B	C	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	30%	14%	21%
Vol Thru, %	74%	42%	33%	68%
Vol Right, %	13%	28%	53%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	328	243	169	448
LT Vol	40	74	24	93
Through Vol	244	101	55	305
RT Vol	44	68	90	50
Lane Flow Rate	357	264	184	487
Geometry Grp	1	1	1	1
Degree of Util (X)	0.663	0.523	0.369	0.871
Departure Headway (Hd)	6.694	7.123	7.24	6.438
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	542	504	494	565
Service Time	4.718	5.191	5.317	4.457
HCM Lane V/C Ratio	0.659	0.524	0.372	0.862
HCM Control Delay, s/veh	21.9	17.8	14.5	38.5
HCM Lane LOS	C	C	B	E
HCM 95th-tile Q	4.9	3	1.7	9.7

Intersection	
Intersection Delay, s/veh	20.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	33	272	51	79	457	41	90	142	59	33	106	66
Future Vol, veh/h	33	272	51	79	457	41	90	142	59	33	106	66
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	296	55	86	497	45	98	154	64	36	115	72
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	16.2	23.8	23.2	17.4
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	31%	20%	0%	26%	0%	16%
Vol Thru, %	49%	80%	73%	74%	85%	52%
Vol Right, %	20%	0%	27%	0%	15%	32%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	291	169	187	308	270	205
LT Vol	90	33	0	79	0	33
Through Vol	142	136	136	229	229	106
RT Vol	59	0	51	0	41	66
Lane Flow Rate	316	184	203	334	293	223
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.648	0.405	0.431	0.704	0.597	0.472
Departure Headway (Hd)	7.372	7.94	7.641	7.584	7.342	7.623
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	487	450	470	475	489	470
Service Time	5.454	5.733	5.434	5.373	5.13	5.718
HCM Lane V/C Ratio	0.649	0.409	0.432	0.703	0.599	0.474
HCM Control Delay, s/veh	23.2	16.1	16.2	26.6	20.5	17.4
HCM Lane LOS	C	C	C	D	C	C
HCM 95th-tile Q	4.5	1.9	2.1	5.4	3.8	2.5

HCM 7th TWSC
3: Fairoaks Avenue & Edison Way

Bkgrd No Proj AM

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	22	91	1	12	0	133	0	1	0	0	0
Future Vol, veh/h	0	22	91	1	12	0	133	0	1	0	0	0
Conflicting Peds, #/hr	9	0	2	2	0	9	2	0	2	9	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	99	1	13	0	145	0	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	22	0	0	125	0	0	100	100	84	57	149	31
Stage 1	-	-	-	-	-	-	75	75	-	24	24	-
Stage 2	-	-	-	-	-	-	24	24	-	33	125	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1593	-	-	1462	-	-	882	790	975	940	742	1043
Stage 1	-	-	-	-	-	-	934	832	-	994	875	-
Stage 2	-	-	-	-	-	-	994	875	-	983	793	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1581	-	-	1459	-	-	873	783	966	924	735	1028
Mov Cap-2 Maneuver	-	-	-	-	-	-	873	783	-	924	735	-
Stage 1	-	-	-	-	-	-	932	831	-	986	868	-
Stage 2	-	-	-	-	-	-	986	868	-	975	791	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			0.57			9.94			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	874	1581	-	-	138	-	-	-				
HCM Lane V/C Ratio	0.167	-	-	-	0.001	-	-	-				
HCM Ctrl Dly (s/v)	9.9	0	-	-	7.5	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	-				

HCM 7th TWSC
4: Marsh Road & Fair Oaks Avenue

Bkgrd No Proj AM

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	18	9	9	841	597	116
Future Vol, veh/h	18	9	9	841	597	116
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	10	10	914	649	126
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1583	649	775	0	-	0
Stage 1	649	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	120	470	841	-	-	-
Stage 1	520	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	117	470	841	-	-	-
Mov Cap-2 Maneuver	309	-	-	-	-	-
Stage 1	508	-	-	-	-	-
Stage 2	383	-	-	-	-	-
Approach	EB	NB		SB		
HCM Ctrl Dly, s/v	16.28	0.1		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	19	-	349	-	-	
HCM Lane V/C Ratio	0.012	-	0.084	-	-	
HCM Ctrl Dly (s/v)	9.3	0	16.3	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.3	-	-	

HCM 7th TWSC
18: Middlefield Road & 2nd Avenue

Bkgrd No Proj AM

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	335	7	11	305	28	8	9	17	37	11	65
Future Vol, veh/h	22	335	7	11	305	28	8	9	17	37	11	65
Conflicting Peds, #/hr	46	0	59	54	0	41	59	0	54	41	0	46
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	364	8	12	332	30	9	10	18	40	12	71

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	408	0	0	431	0	0	895	907	481	888	895	452
Stage 1	-	-	-	-	-	-	475	475	-	417	417	-
Stage 2	-	-	-	-	-	-	420	432	-	471	479	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1151	-	-	1129	-	-	261	276	585	265	280	608
Stage 1	-	-	-	-	-	-	571	557	-	613	591	-
Stage 2	-	-	-	-	-	-	611	582	-	573	555	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1107	-	-	1073	-	-	190	244	531	218	248	556
Mov Cap-2 Maneuver	-	-	-	-	-	-	190	244	-	218	248	-
Stage 1	-	-	-	-	-	-	531	519	-	583	562	-
Stage 2	-	-	-	-	-	-	490	554	-	507	516	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.5	0.27	18.35	21.36
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	306	1107	-	-	1073	-	-	341
HCM Lane V/C Ratio	0.121	0.022	-	-	0.011	-	-	0.36
HCM Ctrl Dly (s/v)	18.4	8.3	-	-	8.4	-	-	21.4
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	1.6

HCM 7th TWSC
22: Palmer Lane & Fair Oaks Avenue

Bkgrd No Proj AM

Intersection												
Int Delay, s/veh	7.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	9	15	40	40	2	17	10	2	0	95	50
Future Vol, veh/h	10	9	15	40	40	2	17	10	2	0	95	50
Conflicting Peds, #/hr	11	0	2	3	0	12	2	0	3	12	0	11
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	10	16	43	43	2	18	11	2	0	103	54
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	58	0	0	29	0	0	236	187	33	192	194	68
Stage 1	-	-	-	-	-	-	43	43	-	144	144	-
Stage 2	-	-	-	-	-	-	193	145	-	49	51	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1547	-	-	1584	-	-	719	707	1041	767	701	996
Stage 1	-	-	-	-	-	-	972	859	-	859	778	-
Stage 2	-	-	-	-	-	-	809	777	-	964	853	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1531	-	-	1580	-	-	550	674	1028	713	668	977
Mov Cap-2 Maneuver	-	-	-	-	-	-	550	674	-	713	668	-
Stage 1	-	-	-	-	-	-	962	851	-	827	749	-
Stage 2	-	-	-	-	-	-	634	748	-	934	844	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	2.17			3.58			11.24			11.08		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	608	471	-	-	870	-	-	750				
HCM Lane V/C Ratio	0.052	0.007	-	-	0.028	-	-	0.21				
HCM Ctrl Dly (s/v)	11.2	7.4	0	-	7.3	0	-	11.1				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.8				

HCM 7th Signalized Intersection Summary 5: 5th Avenue & Semicircular Road

Bkgrd No Proj AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	 		 			 
Traffic Volume (veh/h)	399	14	416	465	0	565
Future Volume (veh/h)	399	14	416	465	0	565
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	434	15	452	0	0	614
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	545	19	1127		0	1127
Arrive On Green	0.32	0.32	0.32	0.00	0.00	0.32
Sat Flow, veh/h	1711	59	3741	0	0	3741
Grp Volume(v), veh/h	450	0	452	0	0	614
Grp Sat Flow(s),veh/h/ln	1774	0	1777	0	0	1777
Q Serve(g_s), s	5.4	0.0	2.3	0.0	0.0	3.3
Cycle Q Clear(g_c), s	5.4	0.0	2.3	0.0	0.0	3.3
Prop In Lane	0.96	0.03		0.00	0.00	
Lane Grp Cap(c), veh/h	565	0	1127		0	1127
V/C Ratio(X)	0.80	0.00	0.40		0.00	0.54
Avail Cap(c_a), veh/h	761	0	1753		0	1753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	0.0	6.2	0.0	0.0	6.6
Incr Delay (d2), s/veh	4.3	0.0	0.3	0.0	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.4	0.0	0.0	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	11.6	0.0	6.5	0.0	0.0	7.1
LnGrp LOS	B		A			A
Approach Vol, veh/h	450		452			614
Approach Delay, s/veh	11.6		6.5			7.1
Approach LOS	B		A			A
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	11.9				11.9	11.4
Change Period (Y+Rc), s	4.5				4.5	4.0
Max Green Setting (Gmax), s	11.5				11.5	10.0
Max Q Clear Time (g_c+I1), s	4.3				5.3	7.4
Green Ext Time (p_c), s	1.9				2.1	0.4
Intersection Summary						
HCM 7th Control Delay, s/veh			8.2			
HCM 7th LOS			A			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

Bkgrd No Proj AM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 6: Middlefield Road & 5th Avenue

Bkgrd No Proj AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	230	245	10	194	52	160	284	23	44	304	25
Future Volume (veh/h)	15	230	245	10	194	52	160	284	23	44	304	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.86	1.00		0.87	1.00		0.91	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	250	266	11	211	57	174	309	25	48	330	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	309	259	275	85	465	126	195	346	423	59	404	368
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.29	0.29	0.29	0.25	0.25	0.25
Sat Flow, veh/h	1089	760	809	885	1367	369	662	1175	1438	236	1623	1479
Grp Volume(v), veh/h	16	0	516	11	0	268	483	0	25	378	0	27
Grp Sat Flow(s),veh/h/ln	1089	0	1569	885	0	1736	1837	0	1438	1859	0	1479
Q Serve(g_s), s	1.2	0.0	33.3	1.3	0.0	12.4	25.9	0.0	1.3	19.7	0.0	1.4
Cycle Q Clear(g_c), s	13.6	0.0	33.3	34.6	0.0	12.4	25.9	0.0	1.3	19.7	0.0	1.4
Prop In Lane	1.00		0.52	1.00		0.21	0.36		1.00	0.13		1.00
Lane Grp Cap(c), veh/h	309	0	534	85	0	590	541	0	423	462	0	368
V/C Ratio(X)	0.05	0.00	0.97	0.13	0.00	0.45	0.89	0.00	0.06	0.82	0.00	0.07
Avail Cap(c_a), veh/h	309	0	534	85	0	590	678	0	531	813	0	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.8	0.0	33.4	50.4	0.0	26.5	34.8	0.0	26.1	36.4	0.0	29.6
Incr Delay (d2), s/veh	0.3	0.0	31.6	3.1	0.0	2.5	12.2	0.0	0.1	3.6	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	17.0	0.4	0.0	5.5	13.3	0.0	0.5	9.4	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.1	0.0	65.0	53.5	0.0	29.0	46.9	0.0	26.1	40.0	0.0	29.7
LnGrp LOS	C		E	D		C	D		C	D		C
Approach Vol, veh/h	532			279			508			405		
Approach Delay, s/veh	64.0			30.0			45.9			39.4		
Approach LOS	E			C			D			D		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	39.0			34.3			39.0			29.6		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	35.0			38.0			35.0			45.0		
Max Q Clear Time (g_c+I1), s	35.3			27.9			36.6			21.7		
Green Ext Time (p_c), s	0.0			2.4			0.0			2.6		
Intersection Summary												
HCM 7th Control Delay, s/veh	47.4											
HCM 7th LOS	D											

Bkgrd No Proj AM
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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 8: Middlefield Road & Marsh Road

Bkgrd No Proj AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	361	368	260	462	421	235
Future Volume (veh/h)	361	368	260	462	421	235
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	392	400	283	502	458	255
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	427	1222	715	1028	498	822
Arrive On Green	0.24	0.65	0.38	0.38	0.28	0.28
Sat Flow, veh/h	1781	1870	1870	1530	1781	1585
Grp Volume(v), veh/h	392	400	283	502	458	255
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1530	1781	1585
Q Serve(g_s), s	26.9	11.8	13.8	20.7	31.2	11.5
Cycle Q Clear(g_c), s	26.9	11.8	13.8	20.7	31.2	11.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	427	1222	715	1028	498	822
V/C Ratio(X)	0.92	0.33	0.40	0.49	0.92	0.31
Avail Cap(c_a), veh/h	640	1222	715	1028	851	1137
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.4	9.6	28.2	10.7	43.7	17.3
Incr Delay (d2), s/veh	13.7	0.7	1.6	1.7	7.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	4.9	6.5	14.4	14.7	13.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	60.1	10.3	29.8	12.3	51.5	17.4
LnGrp LOS	E	B	C	B	D	B
Approach Vol, veh/h		792	785		713	
Approach Delay, s/veh		34.9	18.6		39.3	
Approach LOS		C	B		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.0		39.2	34.0	52.0
Change Period (Y+Rc), s		4.2		4.2	4.0	4.2
Max Green Setting (Gmax), s		81.8		59.8	45.0	32.8
Max Q Clear Time (g_c+I1), s		13.8		33.2	28.9	22.7
Green Ext Time (p_c), s		1.7		1.8	1.1	1.7
Intersection Summary						
HCM 7th Control Delay, s/veh			30.7			
HCM 7th LOS			C			

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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary

Bkgrd No Proj AM

9: Marsh Road & Bay Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	106	51	4	45	12	185	1	788	69	265	758	74
Future Volume (veh/h)	106	51	4	45	12	185	1	788	69	265	758	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	115	55	4	49	13	201	1	857	75	288	824	80
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	212	89	5	284	66	832	45	980	86	602	2262	220
Arrive On Green	0.19	0.19	0.19	0.19	0.19	0.19	0.30	0.30	0.30	0.34	0.69	0.69
Sat Flow, veh/h	713	462	28	1060	346	1542	1	3230	282	1781	3264	317
Grp Volume(v), veh/h	174	0	0	62	0	201	497	0	436	288	449	455
Grp Sat Flow(s),veh/h/ln	1203	0	0	1406	0	1542	1869	0	1643	1781	1777	1804
Q Serve(g_s), s	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.2	10.2	8.3	8.3
Cycle Q Clear(g_c), s	11.4	0.0	0.0	2.9	0.0	0.0	20.1	0.0	20.2	10.2	8.3	8.3
Prop In Lane	0.66		0.02	0.79		1.00	0.00		0.17	1.00		0.18
Lane Grp Cap(c), veh/h	306	0	0	351	0	832	613	0	499	602	1231	1250
V/C Ratio(X)	0.57	0.00	0.00	0.18	0.00	0.24	0.81	0.00	0.87	0.48	0.36	0.36
Avail Cap(c_a), veh/h	498	0	0	558	0	1056	659	0	540	602	1231	1250
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.81	0.81	0.81
Uniform Delay (d), s/veh	31.2	0.0	0.0	27.2	0.0	10.1	26.4	0.0	26.4	20.9	5.0	5.0
Incr Delay (d2), s/veh	1.2	0.0	0.0	0.2	0.0	0.1	11.1	0.0	18.9	0.2	0.7	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.2	0.0	0.0	1.0	0.0	1.8	10.3	0.0	10.0	4.1	2.6	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.4	0.0	0.0	27.4	0.0	10.2	37.5	0.0	45.3	21.1	5.7	5.7
LnGrp LOS	C			C		B	D		D	C	A	A
Approach Vol, veh/h	174			263			933			1192		
Approach Delay, s/veh	32.4			14.3			41.2			9.4		
Approach LOS	C			B			D			A		
Timer - Assigned Phs	2			4		5	6	8				
Phs Duration (G+Y+Rc), s	60.0			20.0		31.6	28.4	20.0				
Change Period (Y+Rc), s	4.6			4.6		4.6	* 4.1	4.6				
Max Green Setting (Gmax), s	43.8			27.0		13.9	* 26	27.0				
Max Q Clear Time (g_c+I1), s	10.3			13.4		12.2	22.2	4.9				
Green Ext Time (p_c), s	6.9			0.7		0.1	2.1	0.8				
Intersection Summary												
HCM 7th Control Delay, s/veh				23.0								
HCM 7th LOS				C								
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

Bkgrd No Proj AM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 10: El Camino Avenue & 5th Avenue

Bkgrd No Proj AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	678	1596	652	237	410	535
Future Volume (veh/h)	678	1596	652	237	410	535
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	737	1735	709	258	446	582
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	838	2935	1013	363	553	1542
Arrive On Green	0.24	0.57	0.27	0.27	0.31	0.31
Sat Flow, veh/h	3456	5274	3857	1322	1781	2790
Grp Volume(v), veh/h	737	1735	654	313	446	582
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1606	1781	1395
Q Serve(g_s), s	14.3	15.2	12.0	12.2	16.0	8.2
Cycle Q Clear(g_c), s	14.3	15.2	12.0	12.2	16.0	8.2
Prop In Lane	1.00			0.82	1.00	1.00
Lane Grp Cap(c), veh/h	838	2935	935	441	553	1542
V/C Ratio(X)	0.88	0.59	0.70	0.71	0.81	0.38
Avail Cap(c_a), veh/h	894	2935	935	441	819	1959
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	9.5	22.7	22.7	22.1	8.8
Incr Delay (d2), s/veh	9.6	0.9	4.3	9.3	3.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	4.7	5.0	5.4	6.8	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	35.0	10.4	27.0	32.1	25.8	8.9
LnGrp LOS	D	B	C	C	C	A
Approach Vol, veh/h		2472	967		1028	
Approach Delay, s/veh		17.8	28.6		16.3	
Approach LOS		B	C		B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.9	23.1			44.0	25.6
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	18.0	18.0			40.0	32.0
Max Q Clear Time (g_c+I1), s	16.3	14.2			17.2	18.0
Green Ext Time (p_c), s	0.6	2.1			13.7	3.6
Intersection Summary						
HCM 7th Control Delay, s/veh			19.8			
HCM 7th LOS			B			

Bkgrd No Proj AM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary
11: Marsh Road & Florence Street/Bohannon Drive

Bkgrd No Proj AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	540	31	134	41	24	17	125	762	46	34	1013	459
Future Volume (veh/h)	540	31	134	41	24	17	125	762	46	34	1013	459
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	611	0	146	45	26	18	136	828	50	37	1101	499
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	678	0	302	87	50	35	513	2235	1054	48	1294	877
Arrive On Green	0.19	0.00	0.19	0.05	0.05	0.05	0.58	1.00	1.00	0.03	0.36	0.36
Sat Flow, veh/h	3563	0	1585	1781	1029	713	1781	3554	1552	1781	3554	1581
Grp Volume(v), veh/h	611	0	146	45	0	44	136	828	50	37	1101	499
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1742	1781	1777	1552	1781	1777	1581
Q Serve(g_s), s	26.8	0.0	13.1	3.9	0.0	3.9	6.1	0.0	0.0	3.3	45.7	32.9
Cycle Q Clear(g_c), s	26.8	0.0	13.1	3.9	0.0	3.9	6.1	0.0	0.0	3.3	45.7	32.9
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	678	0	302	87	0	85	513	2235	1054	48	1294	877
V/C Ratio(X)	0.90	0.00	0.48	0.52	0.00	0.52	0.27	0.37	0.05	0.78	0.85	0.57
Avail Cap(c_a), veh/h	846	0	376	310	0	303	513	2235	1054	67	1342	898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.82	0.82	0.82	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.3	0.0	57.8	74.2	0.0	74.2	25.5	0.0	0.0	77.4	46.9	23.2
Incr Delay (d2), s/veh	10.4	0.0	0.9	3.5	0.0	3.5	0.1	0.4	0.1	19.7	7.2	2.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.2	0.0	5.4	1.9	0.0	1.9	2.5	0.1	0.0	1.8	21.5	19.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	73.7	0.0	58.7	77.7	0.0	77.7	25.6	0.4	0.1	97.1	54.1	25.9
LnGrp LOS	E		E	E		E	C	A	A	F	D	C
Approach Vol, veh/h	757			89			1014			1637		
Approach Delay, s/veh	70.8			77.7			3.7			46.4		
Approach LOS	E			E			A			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	105.2		12.0	50.7	62.8		34.5				
Change Period (Y+Rc), s	4.0	4.6		4.2	4.6	* 4.6		4.0				
Max Green Setting (Gmax), s	6.0	71.4		27.8	17.0	* 60		38.0				
Max Q Clear Time (g_c+I1), s	5.3	2.0		5.9	8.1	47.7		28.8				
Green Ext Time (p_c), s	0.0	16.2		0.2	0.1	10.6		1.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	40.1											
HCM 7th LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

Bkgrd No Proj AM
Hexagon

Synchro 12 Report
12/05/2024

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	26	3	6	37	59	3	82	12	56	121	43
Future Vol, veh/h	38	26	3	6	37	59	3	82	12	56	121	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	28	3	7	40	64	3	89	13	61	132	47
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.5	8.2	8.3	9.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	57%	6%	25%
Vol Thru, %	85%	39%	36%	55%
Vol Right, %	12%	4%	58%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	67	102	220
LT Vol	3	38	6	56
Through Vol	82	26	37	121
RT Vol	12	3	59	43
Lane Flow Rate	105	73	111	239
Geometry Grp	1	1	1	1
Degree of Util (X)	0.134	0.1	0.138	0.294
Departure Headway (Hd)	4.568	4.941	4.478	4.423
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	783	724	799	813
Service Time	2.602	2.979	2.514	2.452
HCM Lane V/C Ratio	0.134	0.101	0.139	0.294
HCM Control Delay, s/veh	8.3	8.5	8.2	9.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.3	0.5	1.2

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	82	40	47	40	59	124	40	259	33	55	299	52
Future Vol, veh/h	82	40	47	40	59	124	40	259	33	55	299	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	43	51	43	64	135	43	282	36	60	325	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14	14.9	19.6	25.4
HCM LOS	B	B	C	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	49%	18%	14%
Vol Thru, %	78%	24%	26%	74%
Vol Right, %	10%	28%	56%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	332	169	223	406
LT Vol	40	82	40	55
Through Vol	259	40	59	299
RT Vol	33	47	124	52
Lane Flow Rate	361	184	242	441
Geometry Grp	1	1	1	1
Degree of Util (X)	0.63	0.357	0.444	0.75
Departure Headway (Hd)	6.285	6.99	6.599	6.116
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	570	511	543	587
Service Time	4.36	5.08	4.681	4.185
HCM Lane V/C Ratio	0.633	0.36	0.446	0.751
HCM Control Delay, s/veh	19.6	14	14.9	25.4
HCM Lane LOS	C	B	B	D
HCM 95th-tile Q	4.4	1.6	2.3	6.6

Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	389	78	52	292	20	53	99	53	12	139	100
Future Vol, veh/h	41	389	78	52	292	20	53	99	53	12	139	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	423	85	57	317	22	58	108	58	13	151	109
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	18.1	15.4	16.1	17.6
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	17%	0%	26%	0%	5%
Vol Thru, %	48%	83%	71%	74%	88%	55%
Vol Right, %	26%	0%	29%	0%	12%	40%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	205	236	273	198	166	251
LT Vol	53	41	0	52	0	12
Through Vol	99	195	195	146	146	139
RT Vol	53	0	78	0	20	100
Lane Flow Rate	223	256	296	215	180	273
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.448	0.515	0.572	0.45	0.366	0.528
Departure Headway (Hd)	7.246	7.242	6.947	7.522	7.299	6.964
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	495	497	518	478	491	516
Service Time	5.322	5.011	4.716	5.294	5.072	5.033
HCM Lane V/C Ratio	0.451	0.515	0.571	0.45	0.367	0.529
HCM Control Delay, s/veh	16.1	17.5	18.7	16.4	14.3	17.6
HCM Lane LOS	C	C	C	C	B	C
HCM 95th-tile Q	2.3	2.9	3.6	2.3	1.7	3

HCM 7th TWSC
3: Fair Oaks Avenue & Edison Way

Bkgrd No Proj PM

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	14	90	5	23	0	108	0	3	0	0	0
Future Vol, veh/h	0	14	90	5	23	0	108	0	3	0	0	0
Conflicting Peds, #/hr	17	0	6	10	0	21	6	0	10	21	0	17
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	98	5	25	0	117	0	3	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	46	0	0	123	0	0	127	131	95	93	180	63
Stage 1	-	-	-	-	-	-	74	74	-	57	57	-
Stage 2	-	-	-	-	-	-	53	57	-	36	123	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1562	-	-	1464	-	-	846	760	961	891	714	1002
Stage 1	-	-	-	-	-	-	935	833	-	955	847	-
Stage 2	-	-	-	-	-	-	960	847	-	979	794	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1534	-	-	1452	-	-	824	737	937	853	693	970
Mov Cap-2 Maneuver	-	-	-	-	-	-	824	737	-	853	693	-
Stage 1	-	-	-	-	-	-	927	826	-	935	829	-
Stage 2	-	-	-	-	-	-	943	829	-	959	787	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	1.34	10.09	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	827	1534	-	-	321	-	-	-
HCM Lane V/C Ratio	0.146	-	-	-	0.004	-	-	-
HCM Ctrl Dly (s/v)	10.1	0	-	-	7.5	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	-

HCM 7th TWSC
4: Marsh Road & Fair Oaks Avenue

Bkgrd No Proj PM

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	15	14	883	706	55
Future Vol, veh/h	28	15	14	883	706	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	16	15	960	767	60

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1758	767	827
Stage 1	767	-	-
Stage 2	990	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	93	402	804
Stage 1	458	-	-
Stage 2	360	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	89	402	804
Mov Cap-2 Maneuver	277	-	-
Stage 1	440	-	-
Stage 2	360	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	18.64	0.15	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	28	-	311	-	-
HCM Lane V/C Ratio	0.019	-	0.151	-	-
HCM Ctrl Dly (s/v)	9.6	0	18.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Bkgrd No Proj PM
Hexagon

Synchro 12 Report
12/18/2024

HCM 7th TWSC
18: Middlefield Road & 2nd Avenue

Bkgrd No Proj PM

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	417	24	30	457	32	12	9	22	29	7	58
Future Vol, veh/h	40	417	24	30	457	32	12	9	22	29	7	58
Conflicting Peds, #/hr	40	0	61	61	0	40	61	0	61	40	0	40
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	453	26	33	497	35	13	10	24	32	8	63
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	572	0	0	540	0	0	993	1251	362	999	1247	367
Stage 1	-	-	-	-	-	-	614	614	-	619	619	-
Stage 2	-	-	-	-	-	-	378	637	-	379	627	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	997	-	-	1024	-	-	200	171	635	198	172	630
Stage 1	-	-	-	-	-	-	446	481	-	443	478	-
Stage 2	-	-	-	-	-	-	615	470	-	614	474	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	964	-	-	972	-	-	139	143	572	148	144	578
Mov Cap-2 Maneuver	-	-	-	-	-	-	139	143	-	148	144	-
Stage 1	-	-	-	-	-	-	401	433	-	411	444	-
Stage 2	-	-	-	-	-	-	491	436	-	518	427	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.08			0.78			24.7			25.87		
HCM LOS							C			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	229	278	-	-	191	-	-	273				
HCM Lane V/C Ratio	0.204	0.045	-	-	0.034	-	-	0.374				
HCM Ctrl Dly (s/v)	24.7	8.9	0.4	-	8.8	0.3	-	25.9				
HCM Lane LOS	C	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0.1	-	-	1.7				

Bkgrd No Proj PM
Hexagon

Synchro 12 Report
12/18/2024

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	27	8	6	49	2	17	17	5	0	8	17
Future Vol, veh/h	6	27	8	6	49	2	17	17	5	0	8	17
Conflicting Peds, #/hr	3	0	4	4	0	3	4	0	4	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	29	9	7	53	2	18	18	5	0	9	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	58	0	0	42	0	0	125	122	42	126	125	61
Stage 1	-	-	-	-	-	-	51	51	-	70	70	-
Stage 2	-	-	-	-	-	-	75	71	-	56	55	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1546	-	-	1567	-	-	848	768	1029	848	765	1004
Stage 1	-	-	-	-	-	-	962	853	-	939	836	-
Stage 2	-	-	-	-	-	-	935	835	-	957	849	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1542	-	-	1562	-	-	811	757	1022	811	754	998
Mov Cap-2 Maneuver	-	-	-	-	-	-	811	757	-	811	754	-
Stage 1	-	-	-	-	-	-	955	846	-	933	831	-
Stage 2	-	-	-	-	-	-	901	830	-	924	842	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.07			0.77			9.71			9.1		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	807	252	-	-	188	-	-	904				
HCM Lane V/C Ratio	0.053	0.004	-	-	0.004	-	-	0.03				
HCM Ctrl Dly (s/v)	9.7	7.3	0	-	7.3	0	-	9.1				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

HCM 7th Signalized Intersection Summary 5: 5th Avenue & Semicircular Road

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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	288	23	483	391	0	497
Future Volume (veh/h)	288	23	483	391	0	497
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	313	25	525	0	0	540
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	392	31	1371		0	1371
Arrive On Green	0.24	0.24	0.39	0.00	0.00	0.39
Sat Flow, veh/h	1630	130	3741	0	0	3741
Grp Volume(v), veh/h	339	0	525	0	0	540
Grp Sat Flow(s),veh/h/ln	1765	0	1777	0	0	1777
Q Serve(g_s), s	3.6	0.0	2.1	0.0	0.0	2.2
Cycle Q Clear(g_c), s	3.6	0.0	2.1	0.0	0.0	2.2
Prop In Lane	0.92	0.07		0.00	0.00	
Lane Grp Cap(c), veh/h	425	0	1371		0	1371
V/C Ratio(X)	0.80	0.00	0.38		0.00	0.39
Avail Cap(c_a), veh/h	1144	0	3453		0	3453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	7.2	0.0	4.4	0.0	0.0	4.5
Incr Delay (d2), s/veh	1.3	0.0	0.2	0.0	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.2	0.0	0.0	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.5	0.0	4.7	0.0	0.0	4.7
LnGrp LOS	A		A			A
Approach Vol, veh/h	339		525			540
Approach Delay, s/veh	8.5		4.7			4.7
Approach LOS	A		A			A
Timer - Assigned Phs	2		4		6	
Phs Duration (G+Y+Rc), s	12.2		7.8		12.2	
Change Period (Y+Rc), s	4.5		3.0		4.5	
Max Green Setting (Gmax), s	19.5		13.0		19.5	
Max Q Clear Time (g_c+I1), s	4.1		5.6		4.2	
Green Ext Time (p_c), s	3.6		0.1		3.1	
Intersection Summary						
HCM 7th Control Delay, s/veh			5.6			
HCM 7th LOS			A			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 6: Middlefield Road & 5th Avenue

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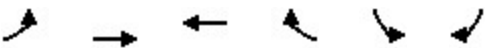
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	262	245	18	300	69	215	247	13	51	262	47
Future Volume (veh/h)	31	262	245	18	300	69	215	247	13	51	262	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.91	1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	285	266	20	326	75	234	268	14	55	285	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	304	284	96	498	115	260	298	467	70	363	348
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.31	0.31	0.31	0.23	0.23	0.23
Sat Flow, veh/h	984	879	820	857	1440	331	852	976	1528	300	1555	1489
Grp Volume(v), veh/h	34	0	551	20	0	401	502	0	14	340	0	51
Grp Sat Flow(s),veh/h/ln	984	0	1699	857	0	1771	1828	0	1528	1855	0	1489
Q Serve(g_s), s	3.2	0.0	32.7	2.4	0.0	19.9	27.4	0.0	0.7	17.9	0.0	2.8
Cycle Q Clear(g_c), s	23.1	0.0	32.7	35.1	0.0	19.9	27.4	0.0	0.7	17.9	0.0	2.8
Prop In Lane	1.00		0.48	1.00		0.19	0.47		1.00	0.16		1.00
Lane Grp Cap(c), veh/h	221	0	588	96	0	613	558	0	467	433	0	348
V/C Ratio(X)	0.15	0.00	0.94	0.21	0.00	0.65	0.90	0.00	0.03	0.78	0.00	0.15
Avail Cap(c_a), veh/h	221	0	588	96	0	613	685	0	573	766	0	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.5	0.0	33.0	49.9	0.0	28.8	34.6	0.0	25.3	37.4	0.0	31.7
Incr Delay (d2), s/veh	1.5	0.0	24.6	4.8	0.0	5.4	13.0	0.0	0.0	3.2	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	17.1	0.6	0.0	9.2	14.1	0.0	0.2	8.5	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.0	0.0	57.6	54.8	0.0	34.2	47.6	0.0	25.4	40.6	0.0	31.9
LnGrp LOS	D		E	D		C	D		C	D		C
Approach Vol, veh/h	585			421			516			391		
Approach Delay, s/veh	56.5			35.1			47.0			39.5		
Approach LOS	E			D			D			D		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	40.0			35.8			40.0			28.3		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	36.0			39.0			36.0			43.0		
Max Q Clear Time (g_c+I1), s	34.7			29.4			37.1			19.9		
Green Ext Time (p_c), s	0.5			2.4			0.0			2.4		
Intersection Summary												
HCM 7th Control Delay, s/veh	45.8											
HCM 7th LOS	D											

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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 8: Middlefield Road & Marsh Road

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	353	231	324	540	392	342
Future Volume (veh/h)	353	231	324	540	392	342
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	384	251	352	587	426	372
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	411	1257	767	1044	467	781
Arrive On Green	0.23	0.67	0.41	0.41	0.26	0.26
Sat Flow, veh/h	1781	1870	1870	1535	1781	1585
Grp Volume(v), veh/h	384	251	352	587	426	372
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1535	1781	1585
Q Serve(g_s), s	27.0	6.5	17.5	25.9	29.6	19.8
Cycle Q Clear(g_c), s	27.0	6.5	17.5	25.9	29.6	19.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	411	1257	767	1044	467	781
V/C Ratio(X)	0.93	0.20	0.46	0.56	0.91	0.48
Avail Cap(c_a), veh/h	572	1257	767	1044	639	935
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.1	7.9	27.4	11.1	45.7	21.4
Incr Delay (d2), s/veh	15.9	0.4	2.0	2.2	13.3	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.8	2.7	8.2	17.8	14.7	19.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	64.0	8.3	29.4	13.3	58.9	21.8
LnGrp LOS	E	A	C	B	E	C
Approach Vol, veh/h		635	939		798	
Approach Delay, s/veh		42.0	19.3		41.6	
Approach LOS		D	B		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		90.0		37.7	33.5	56.5
Change Period (Y+Rc), s		4.2		4.2	4.0	4.2
Max Green Setting (Gmax), s		85.8		45.8	41.0	40.8
Max Q Clear Time (g_c+I1), s		8.5		31.6	29.0	27.9
Green Ext Time (p_c), s		1.0		1.8	0.5	2.4
Intersection Summary						
HCM 7th Control Delay, s/veh			32.9			
HCM 7th LOS			C			

HCM 7th Signalized Intersection Summary

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9: Marsh Road & Bay Road

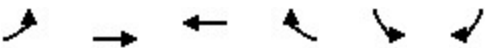
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	79	20	3	55	21	180	1	851	46	142	733	41
Future Volume (veh/h)	79	20	3	55	21	180	1	851	46	142	733	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	86	22	3	60	23	196	1	925	50	154	797	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	35	4	210	74	916	26	1086	59	758	2661	150
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.32	0.32	0.32	0.43	0.78	0.78
Sat Flow, veh/h	681	223	25	1062	473	1547	0	3357	181	1781	3419	193
Grp Volume(v), veh/h	111	0	0	83	0	196	516	0	460	154	414	428
Grp Sat Flow(s),veh/h/ln	929	0	0	1535	0	1547	1870	0	1669	1781	1777	1835
Q Serve(g_s), s	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.1	7.6	9.4	9.4
Cycle Q Clear(g_c), s	17.7	0.0	0.0	6.6	0.0	0.0	36.0	0.0	36.1	7.6	9.4	9.4
Prop In Lane	0.77		0.03	0.72		1.00	0.00		0.11	1.00		0.11
Lane Grp Cap(c), veh/h	191	0	0	284	0	916	631	0	540	758	1383	1429
V/C Ratio(X)	0.58	0.00	0.00	0.29	0.00	0.21	0.82	0.00	0.85	0.20	0.30	0.30
Avail Cap(c_a), veh/h	268	0	0	374	0	1010	998	0	869	758	1383	1429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.77	0.77	0.77
Uniform Delay (d), s/veh	59.7	0.0	0.0	52.6	0.0	14.0	44.2	0.0	44.2	25.3	4.5	4.5
Incr Delay (d2), s/veh	2.1	0.0	0.0	0.4	0.0	0.1	11.3	0.0	15.6	0.0	0.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	0.0	2.7	0.0	3.0	18.5	0.0	17.1	3.3	3.3	3.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.8	0.0	0.0	53.0	0.0	14.1	55.5	0.0	59.8	25.3	4.9	4.9
LnGrp LOS	E			D		B	E		E	C	A	A
Approach Vol, veh/h	111				279				976			
Approach Delay, s/veh	61.8				25.7				57.5			
Approach LOS	E				C				E			
Timer - Assigned Phs	2			4	5	6	8					
Phs Duration (G+Y+Rc), s	113.6			26.4	64.2	49.4	26.4					
Change Period (Y+Rc), s	4.6			4.6	4.6	* 4.1	4.6					
Max Green Setting (Gmax), s	100.4			30.4	23.9	* 73	30.4					
Max Q Clear Time (g_c+I1), s	11.4			19.7	9.6	38.1	8.6					
Green Ext Time (p_c), s	6.6			0.3	0.2	7.2	0.8					
Intersection Summary												
HCM 7th Control Delay, s/veh	33.1											
HCM 7th LOS	C											
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 10: El Camino Avenue & 5th Avenue

Bkgrd No Proj PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰↰	↑↑↑	↑↑↑		↰	↰↰
Traffic Volume (veh/h)	579	795	1292	326	262	614
Future Volume (veh/h)	579	795	1292	326	262	614
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	629	864	1404	354	285	667
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	733	3399	1597	401	389	1201
Arrive On Green	0.21	0.67	0.40	0.40	0.22	0.22
Sat Flow, veh/h	3456	5274	4203	1013	1781	2790
Grp Volume(v), veh/h	629	864	1184	574	285	667
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1643	1781	1395
Q Serve(g_s), s	12.1	4.7	22.3	22.4	10.3	12.4
Cycle Q Clear(g_c), s	12.1	4.7	22.3	22.4	10.3	12.4
Prop In Lane	1.00			0.62	1.00	1.00
Lane Grp Cap(c), veh/h	733	3399	1347	650	389	1201
V/C Ratio(X)	0.86	0.25	0.88	0.88	0.73	0.56
Avail Cap(c_a), veh/h	800	3399	1347	650	412	1237
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	4.6	19.3	19.4	25.1	14.7
Incr Delay (d2), s/veh	8.7	0.2	8.4	16.0	6.2	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	1.2	9.3	10.4	4.8	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	35.0	4.8	27.7	35.4	31.3	15.2
LnGrp LOS	C	A	C	D	C	B
Approach Vol, veh/h		1493	1758		952	
Approach Delay, s/veh		17.5	30.2		20.1	
Approach LOS		B	C		C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.7	31.3			50.0	19.1
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	16.0	26.0			46.0	16.0
Max Q Clear Time (g_c+I1), s	14.1	24.4			6.7	14.4
Green Ext Time (p_c), s	0.5	1.4			7.0	0.7
Intersection Summary						
HCM 7th Control Delay, s/veh			23.4			
HCM 7th LOS			C			

HCM 7th Signalized Intersection Summary

11: Marsh Road & Florence Street/Bohannon Drive

Bkgrd No Proj PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	452	29	109	57	30	73	150	816	26	35	714	369
Future Volume (veh/h)	452	29	109	57	30	73	150	816	26	35	714	369
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	514	0	118	62	33	79	163	887	28	38	776	401
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	637	0	281	162	44	106	125	1904	993	48	1750	1064
Arrive On Green	0.18	0.00	0.18	0.09	0.09	0.09	0.07	0.54	0.54	0.03	0.49	0.49
Sat Flow, veh/h	3563	0	1574	1781	489	1171	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	514	0	118	62	0	112	163	887	28	38	776	401
Grp Sat Flow(s),veh/h/ln	1781	0	1574	1781	0	1660	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	13.8	0.0	6.7	3.3	0.0	6.6	7.0	15.4	0.7	2.1	14.2	11.1
Cycle Q Clear(g_c), s	13.8	0.0	6.7	3.3	0.0	6.6	7.0	15.4	0.7	2.1	14.2	11.1
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	637	0	281	162	0	151	125	1904	993	48	1750	1064
V/C Ratio(X)	0.81	0.00	0.42	0.38	0.00	0.74	1.31	0.47	0.03	0.79	0.44	0.38
Avail Cap(c_a), veh/h	998	0	441	481	0	448	125	1904	993	71	1750	1064
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	0.0	36.5	42.8	0.0	44.3	46.5	14.4	7.1	48.4	16.5	7.2
Incr Delay (d2), s/veh	2.2	0.0	0.7	1.1	0.0	5.3	180.2	0.7	0.0	17.3	0.8	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	2.6	1.5	0.0	2.9	9.3	6.1	0.3	1.2	5.8	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.6	0.0	37.2	43.9	0.0	49.6	226.7	15.1	7.2	65.7	17.3	8.3
LnGrp LOS	D		D	D		D	F	B	A	E	B	A
Approach Vol, veh/h	632		174			1078			1215			
Approach Delay, s/veh	40.7		47.6			46.9			15.8			
Approach LOS	D		D			D			B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	58.2		13.3	11.0	53.9		21.9				
Change Period (Y+Rc), s	4.0	4.6		4.2	4.0	4.6		4.0				
Max Green Setting (Gmax), s	4.0	24.2		27.0	7.0	21.2		28.0				
Max Q Clear Time (g_c+I1), s	4.1	17.4		8.6	9.0	16.2		15.8				
Green Ext Time (p_c), s	0.0	4.6		0.6	0.0	3.9		1.5				
Intersection Summary												
HCM 7th Control Delay, s/veh	33.5											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Bkgrd No Proj PM
Hexagon

Synchro 12 Report
12/05/2024

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	45	39	8	19	26	42	1	76	20	134	181	73
Future Vol, veh/h	45	39	8	19	26	42	1	76	20	134	181	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	42	9	21	28	46	1	83	22	146	197	79
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9.3	8.9	8.7	12.6
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	49%	22%	35%
Vol Thru, %	78%	42%	30%	47%
Vol Right, %	21%	9%	48%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	92	87	388
LT Vol	1	45	19	134
Through Vol	76	39	26	181
RT Vol	20	8	42	73
Lane Flow Rate	105	100	95	422
Geometry Grp	1	1	1	1
Degree of Util (X)	0.141	0.148	0.133	0.529
Departure Headway (Hd)	4.798	5.326	5.048	4.516
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	741	668	704	793
Service Time	2.864	3.402	3.124	2.565
HCM Lane V/C Ratio	0.142	0.15	0.135	0.532
HCM Control Delay, s/veh	8.7	9.3	8.9	12.6
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	0.5	0.5	0.5	3.2

HCM 7th AWSC
2: 5th Avenue & Edison Way

Bkgrd + Proj AM

Intersection	
Intersection Delay, s/veh	43.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	123	89	24	82	90	65	244	44	93	305	60
Future Vol, veh/h	82	123	89	24	82	90	65	244	44	93	305	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	134	97	26	89	98	71	265	48	101	332	65
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	27.7	19.1	36.1	70
HCM LOS	D	C	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	28%	12%	20%
Vol Thru, %	69%	42%	42%	67%
Vol Right, %	12%	30%	46%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	353	294	196	458
LT Vol	65	82	24	93
Through Vol	244	123	82	305
RT Vol	44	89	90	60
Lane Flow Rate	384	320	213	498
Geometry Grp	1	1	1	1
Degree of Util (X)	0.811	0.702	0.49	1.008
Departure Headway (Hd)	7.61	7.907	8.272	7.288
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	476	457	432	498
Service Time	5.69	5.986	6.366	5.359
HCM Lane V/C Ratio	0.807	0.7	0.493	1
HCM Control Delay, s/veh	36.1	27.7	19.1	70
HCM Lane LOS	E	D	C	F
HCM 95th-tile Q	7.6	5.4	2.6	13.8

Intersection	
Intersection Delay, s/veh	21.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	282	52	79	465	41	91	142	59	33	106	66
Future Vol, veh/h	33	282	52	79	465	41	91	142	59	33	106	66
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	307	57	86	505	45	99	154	64	36	115	72
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	16.6	24.7	23.7	17.7
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	31%	19%	0%	25%	0%	16%
Vol Thru, %	49%	81%	73%	75%	85%	52%
Vol Right, %	20%	0%	27%	0%	15%	32%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	292	174	193	312	274	205
LT Vol	91	33	0	79	0	33
Through Vol	142	141	141	233	233	106
RT Vol	59	0	52	0	41	66
Lane Flow Rate	317	189	210	339	297	223
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.655	0.419	0.448	0.718	0.611	0.476
Departure Headway (Hd)	7.433	7.978	7.685	7.633	7.394	7.694
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	482	448	466	471	485	466
Service Time	5.518	5.772	5.479	5.423	5.184	5.793
HCM Lane V/C Ratio	0.658	0.422	0.451	0.72	0.612	0.479
HCM Control Delay, s/veh	23.7	16.5	16.6	27.7	21.2	17.7
HCM Lane LOS	C	C	C	D	C	C
HCM 95th-tile Q	4.6	2	2.3	5.7	4	2.5

HCM 7th TWSC
3: Fair Oaks Avenue & Edison Way

Bkgrd+Proj AM

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	22	113	1	12	0	160	0	1	0	0	0
Future Vol, veh/h	0	22	113	1	12	0	160	0	1	0	0	0
Conflicting Peds, #/hr	9	0	2	2	0	9	2	0	2	9	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	123	1	13	0	174	0	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	22	0	0	149	0	0	112	112	96	57	173	31
Stage 1	-	-	-	-	-	-	87	87	-	24	24	-
Stage 2	-	-	-	-	-	-	24	24	-	33	149	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1593	-	-	1433	-	-	866	779	960	940	720	1043
Stage 1	-	-	-	-	-	-	920	822	-	994	875	-
Stage 2	-	-	-	-	-	-	994	875	-	983	774	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1581	-	-	1430	-	-	858	771	951	924	713	1028
Mov Cap-2 Maneuver	-	-	-	-	-	-	858	771	-	924	713	-
Stage 1	-	-	-	-	-	-	919	821	-	985	868	-
Stage 2	-	-	-	-	-	-	985	868	-	975	773	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			0.58			10.27			0		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	858	1581	-	-	138	-	-	-				
HCM Lane V/C Ratio	0.204	-	-	-	0.001	-	-	-				
HCM Ctrl Dly (s/v)	10.3	0	-	-	7.5	0	-	0				
HCM Lane LOS	B	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	-				

HCM 7th TWSC
4: Marsh Road & Fair Oaks Avenue

Bkgrd+Proj AM

Intersection

Int Delay, s/veh 0.5

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 26 15 16 841 597 132

Future Vol, veh/h 26 15 16 841 597 132

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - 0

Veh in Median Storage, # 2 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 28 16 17 914 649 143

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 1598 649 792 0 - 0

Stage 1 649 - - - - -

Stage 2 949 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 117 470 828 - - -

Stage 1 520 - - - - -

Stage 2 376 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 112 470 828 - - -

Mov Cap-2 Maneuver 303 - - - - -

Stage 1 498 - - - - -

Stage 2 376 - - - - -

Approach EB NB SB

HCM Ctrl Dly, s/v 16.86 0.18 0

HCM LOS C

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 34 - 348 - -

HCM Lane V/C Ratio 0.021 - 0.128 - -

HCM Ctrl Dly (s/v) 9.4 0 16.9 - -

HCM Lane LOS A A C - -

HCM 95th %tile Q(veh) 0.1 - 0.4 - -

HCM 7th TWSC
18: Middlefield Road & 2nd Avenue

Bkgrd+Proj AM

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	338	7	11	307	28	8	9	17	37	11	75
Future Vol, veh/h	33	338	7	11	307	28	8	9	17	37	11	75
Conflicting Peds, #/hr	46	0	59	54	0	41	59	0	54	41	0	46
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	367	8	12	334	30	9	10	18	40	12	82
Major/Minor	Major1		Major2			Minor1			Minor2			
Conflicting Flow All	410	0	0	434	0	0	925	936	484	917	925	454
Stage 1	-	-	-	-	-	-	502	502	-	419	419	-
Stage 2	-	-	-	-	-	-	423	434	-	498	506	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1149	-	-	1126	-	-	250	265	583	253	269	606
Stage 1	-	-	-	-	-	-	552	542	-	612	590	-
Stage 2	-	-	-	-	-	-	609	581	-	554	540	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1105	-	-	1070	-	-	175	232	529	206	235	554
Mov Cap-2 Maneuver	-	-	-	-	-	-	175	232	-	206	235	-
Stage 1	-	-	-	-	-	-	507	499	-	582	561	-
Stage 2	-	-	-	-	-	-	478	553	-	485	497	-
Approach	EB		WB			NB			SB			
HCM Ctrl Dly, s/v	0.73		0.27			19.13			22.3			
HCM LOS						C			C			
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	292	1105	-	-	1070	-	-	340				
HCM Lane V/C Ratio	0.127	0.032	-	-	0.011	-	-	0.393				
HCM Ctrl Dly (s/v)	19.1	8.4	-	-	8.4	-	-	22.3				
HCM Lane LOS	C	A	-	-	A	-	-	C				
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	1.8				

HCM 7th TWSC
22: Palmer Lane & Fair Oaks Avenue

Bkgrd+Proj AM

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	23	15	40	63	2	17	10	2	0	95	50
Future Vol, veh/h	10	23	15	40	63	2	17	10	2	0	95	50
Conflicting Peds, #/hr	11	0	2	3	0	12	2	0	3	12	0	11
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	25	16	43	68	2	18	11	2	0	103	54
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	83	0	0	44	0	0	276	228	48	233	235	93
Stage 1	-	-	-	-	-	-	58	58	-	169	169	-
Stage 2	-	-	-	-	-	-	218	170	-	64	66	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1515	-	-	1564	-	-	676	672	1021	722	666	965
Stage 1	-	-	-	-	-	-	954	847	-	833	759	-
Stage 2	-	-	-	-	-	-	784	758	-	947	840	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1499	-	-	1560	-	-	511	640	1008	669	634	946
Mov Cap-2 Maneuver	-	-	-	-	-	-	511	640	-	669	634	-
Stage 1	-	-	-	-	-	-	944	838	-	801	730	-
Stage 2	-	-	-	-	-	-	611	729	-	916	832	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.55			2.81			11.68			11.45		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	570	348	-	-	682	-	-	715				
HCM Lane V/C Ratio	0.055	0.007	-	-	0.028	-	-	0.22				
HCM Ctrl Dly (s/v)	11.7	7.4	0	-	7.4	0	-	11.5				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.8				

HCM 7th Signalized Intersection Summary 5: 5th Avenue & Semicircular Road

Bkgrd+Proj AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	399	14	438	465	0	583
Future Volume (veh/h)	399	14	438	465	0	583
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	434	15	476	0	0	634
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	543	19	1143		0	1143
Arrive On Green	0.32	0.32	0.32	0.00	0.00	0.32
Sat Flow, veh/h	1711	59	3741	0	0	3741
Grp Volume(v), veh/h	450	0	476	0	0	634
Grp Sat Flow(s),veh/h/ln	1774	0	1777	0	0	1777
Q Serve(g_s), s	5.5	0.0	2.5	0.0	0.0	3.5
Cycle Q Clear(g_c), s	5.5	0.0	2.5	0.0	0.0	3.5
Prop In Lane	0.96	0.03		0.00	0.00	
Lane Grp Cap(c), veh/h	564	0	1143		0	1143
V/C Ratio(X)	0.80	0.00	0.42		0.00	0.55
Avail Cap(c_a), veh/h	753	0	1735		0	1735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	0.0	6.3	0.0	0.0	6.6
Incr Delay (d2), s/veh	4.5	0.0	0.3	0.0	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.5	0.0	0.0	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	11.8	0.0	6.6	0.0	0.0	7.1
LnGrp LOS	B		A			A
Approach Vol, veh/h	450		476			634
Approach Delay, s/veh	11.8		6.6			7.1
Approach LOS	B		A			A
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	12.1		12.1		11.5	
Change Period (Y+Rc), s	4.5		4.5		4.0	
Max Green Setting (Gmax), s	11.5		11.5		10.0	
Max Q Clear Time (g_c+I1), s	4.5		5.5		7.5	
Green Ext Time (p_c), s	2.0		2.1		0.4	
Intersection Summary						
HCM 7th Control Delay, s/veh			8.3			
HCM 7th LOS			A			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

Bkgrd+Proj AM
Hexagon

Synchro 12 Report
12/05/2024

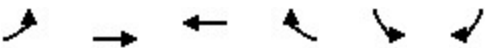
HCM 7th Signalized Intersection Summary 6: Middlefield Road & 5th Avenue

Bkgrd+Proj AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	230	245	10	194	52	160	306	23	44	322	27
Future Volume (veh/h)	18	230	245	10	194	52	160	306	23	44	322	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.86	1.00		0.86	1.00		0.91	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	250	266	11	211	57	174	333	25	48	350	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	251	267	69	452	122	192	368	439	56	411	372
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.30	0.30	0.30	0.25	0.25	0.25
Sat Flow, veh/h	1091	758	807	885	1365	369	631	1208	1442	224	1635	1480
Grp Volume(v), veh/h	20	0	516	11	0	268	507	0	25	398	0	29
Grp Sat Flow(s),veh/h/ln	1091	0	1565	885	0	1734	1839	0	1442	1859	0	1480
Q Serve(g_s), s	1.6	0.0	34.8	0.2	0.0	12.9	28.0	0.0	1.3	21.6	0.0	1.6
Cycle Q Clear(g_c), s	14.5	0.0	34.8	35.0	0.0	12.9	28.0	0.0	1.3	21.6	0.0	1.6
Prop In Lane	1.00		0.52	1.00		0.21	0.34		1.00	0.12		1.00
Lane Grp Cap(c), veh/h	295	0	518	69	0	574	560	0	439	468	0	372
V/C Ratio(X)	0.07	0.00	1.00	0.16	0.00	0.47	0.91	0.00	0.06	0.85	0.00	0.08
Avail Cap(c_a), veh/h	295	0	518	69	0	574	660	0	518	791	0	629
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.8	0.0	35.4	52.9	0.0	28.0	35.4	0.0	26.1	37.7	0.0	30.2
Incr Delay (d2), s/veh	0.4	0.0	38.8	4.8	0.0	2.7	14.6	0.0	0.1	4.6	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	18.5	0.4	0.0	5.8	14.7	0.0	0.5	10.4	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.2	0.0	74.2	57.7	0.0	30.8	50.0	0.0	26.1	42.3	0.0	30.3
LnGrp LOS	C		E	E		C	D		C	D		C
Approach Vol, veh/h	536			279			532			427		
Approach Delay, s/veh	72.7			31.8			48.9			41.5		
Approach LOS	E			C			D			D		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	39.0			36.2			39.0			30.6		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	35.0			38.0			35.0			45.0		
Max Q Clear Time (g_c+I1), s	36.8			30.0			37.0			23.6		
Green Ext Time (p_c), s	0.0			2.2			0.0			2.7		
Intersection Summary												
HCM 7th Control Delay, s/veh	51.6											
HCM 7th LOS	D											

HCM 7th Signalized Intersection Summary 8: Middlefield Road & Marsh Road

Bkgrd+Proj AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	361	368	260	470	427	235
Future Volume (veh/h)	361	368	260	470	427	235
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	392	400	283	511	464	255
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	426	1217	710	1029	503	827
Arrive On Green	0.24	0.65	0.38	0.38	0.28	0.28
Sat Flow, veh/h	1781	1870	1870	1530	1781	1585
Grp Volume(v), veh/h	392	400	283	511	464	255
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1530	1781	1585
Q Serve(g_s), s	27.0	12.0	13.9	21.3	31.8	11.5
Cycle Q Clear(g_c), s	27.0	12.0	13.9	21.3	31.8	11.5
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	426	1217	710	1029	503	827
V/C Ratio(X)	0.92	0.33	0.40	0.50	0.92	0.31
Avail Cap(c_a), veh/h	638	1217	710	1029	847	1133
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	46.6	9.8	28.5	10.8	43.7	17.1
Incr Delay (d2), s/veh	13.8	0.7	1.7	1.7	8.2	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.5	5.0	6.6	14.9	15.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	60.5	10.5	30.2	12.5	52.0	17.3
LnGrp LOS	E	B	C	B	D	B
Approach Vol, veh/h		792	794		719	
Approach Delay, s/veh		35.2	18.8		39.7	
Approach LOS		D	B		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.0		39.7	34.1	51.9
Change Period (Y+Rc), s		4.2		4.2	4.0	4.2
Max Green Setting (Gmax), s		81.8		59.8	45.0	32.8
Max Q Clear Time (g_c+I1), s		14.0		33.8	29.0	23.3
Green Ext Time (p_c), s		1.7		1.8	1.1	1.7
Intersection Summary						
HCM 7th Control Delay, s/veh			30.9			
HCM 7th LOS			C			

HCM 7th Signalized Intersection Summary

Bkgrd+Proj AM

9: Marsh Road & Bay Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	51	4	45	12	185	1	796	69	265	774	78
Future Volume (veh/h)	114	51	4	45	12	185	1	796	69	265	774	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	124	55	4	49	13	201	1	865	75	288	841	85
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	222	87	5	294	69	830	45	986	85	586	2228	225
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.31	0.31	0.31	0.33	0.69	0.69
Sat Flow, veh/h	735	434	26	1070	346	1543	1	3232	280	1781	3250	328
Grp Volume(v), veh/h	183	0	0	62	0	201	501	0	440	288	460	466
Grp Sat Flow(s),veh/h/ln	1196	0	0	1416	0	1543	1869	0	1644	1781	1777	1802
Q Serve(g_s), s	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.3	10.4	8.8	8.8
Cycle Q Clear(g_c), s	12.0	0.0	0.0	2.8	0.0	0.0	20.3	0.0	20.3	10.4	8.8	8.8
Prop In Lane	0.68		0.02	0.79		1.00	0.00		0.17	1.00		0.18
Lane Grp Cap(c), veh/h	314	0	0	363	0	830	615	0	501	586	1218	1235
V/C Ratio(X)	0.58	0.00	0.00	0.17	0.00	0.24	0.81	0.00	0.88	0.49	0.38	0.38
Avail Cap(c_a), veh/h	495	0	0	560	0	1042	659	0	540	586	1218	1235
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.80	0.80	0.80
Uniform Delay (d), s/veh	30.9	0.0	0.0	26.7	0.0	10.2	26.4	0.0	26.4	21.5	5.3	5.3
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.2	0.0	0.1	11.3	0.0	19.1	0.2	0.7	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.0	1.0	0.0	1.8	10.4	0.0	10.1	4.2	2.8	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.2	0.0	0.0	26.9	0.0	10.3	37.6	0.0	45.5	21.7	6.1	6.0
LnGrp LOS	C			C		B	D		D	C	A	A
Approach Vol, veh/h	183			263			941			1214		
Approach Delay, s/veh	32.2			14.2			41.3			9.8		
Approach LOS	C			B			D			A		
Timer - Assigned Phs	2			4		5	6	8				
Phs Duration (G+Y+Rc), s	59.4			20.6		30.9	28.5	20.6				
Change Period (Y+Rc), s	4.6			4.6		4.6	* 4.1	4.6				
Max Green Setting (Gmax), s	43.8			27.0		13.9	* 26	27.0				
Max Q Clear Time (g_c+I1), s	10.8			14.0		12.4	22.3	4.8				
Green Ext Time (p_c), s	7.1			0.7		0.1	2.1	0.8				
Intersection Summary												
HCM 7th Control Delay, s/veh				23.2								
HCM 7th LOS				C								
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

HCM 7th Signalized Intersection Summary 10: El Camino Avenue & 5th Avenue

Bkgrd+Proj AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	688	1596	652	248	420	544
Future Volume (veh/h)	688	1596	652	248	420	544
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	748	1735	709	270	457	591
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	844	2911	978	367	562	1562
Arrive On Green	0.24	0.57	0.27	0.27	0.32	0.32
Sat Flow, veh/h	3456	5274	3805	1364	1781	2790
Grp Volume(v), veh/h	748	1735	663	316	457	591
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1597	1781	1395
Q Serve(g_s), s	14.6	15.5	12.4	12.7	16.6	8.3
Cycle Q Clear(g_c), s	14.6	15.5	12.4	12.7	16.6	8.3
Prop In Lane	1.00			0.85	1.00	1.00
Lane Grp Cap(c), veh/h	844	2911	916	430	562	1562
V/C Ratio(X)	0.89	0.60	0.72	0.74	0.81	0.38
Avail Cap(c_a), veh/h	887	2911	916	430	813	1954
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	9.8	23.3	23.4	22.1	8.6
Incr Delay (d2), s/veh	10.4	0.9	5.0	10.7	4.1	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	4.9	5.2	5.7	7.1	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	36.0	10.7	28.2	34.1	26.2	8.8
LnGrp LOS	D	B	C	C	C	A
Approach Vol, veh/h		2483	979		1048	
Approach Delay, s/veh		18.3	30.1		16.4	
Approach LOS		B	C		B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	21.1	22.9			44.0	26.2
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	18.0	18.0			40.0	32.0
Max Q Clear Time (g_c+I1), s	16.6	14.7			17.5	18.6
Green Ext Time (p_c), s	0.5	1.9			13.6	3.6
Intersection Summary						
HCM 7th Control Delay, s/veh			20.4			
HCM 7th LOS			C			

HCM 7th Signalized Intersection Summary
11: Marsh Road & Florence Street/Bohannon Drive

Bkgrd+Proj AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	540	31	134	41	24	17	125	778	46	34	1032	459
Future Volume (veh/h)	540	31	134	41	24	17	125	778	46	34	1032	459
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	611	0	146	45	26	18	136	846	50	37	1122	499
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	678	0	302	87	50	35	509	2235	1054	48	1302	881
Arrive On Green	0.19	0.00	0.19	0.05	0.05	0.05	0.57	1.00	1.00	0.03	0.37	0.37
Sat Flow, veh/h	3563	0	1585	1781	1029	713	1781	3554	1552	1781	3554	1581
Grp Volume(v), veh/h	611	0	146	45	0	44	136	846	50	37	1122	499
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1742	1781	1777	1552	1781	1777	1581
Q Serve(g_s), s	26.8	0.0	13.1	3.9	0.0	3.9	6.2	0.0	0.0	3.3	46.8	32.7
Cycle Q Clear(g_c), s	26.8	0.0	13.1	3.9	0.0	3.9	6.2	0.0	0.0	3.3	46.8	32.7
Prop In Lane	1.00		1.00	1.00		0.41	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	678	0	302	87	0	85	509	2235	1054	48	1302	881
V/C Ratio(X)	0.90	0.00	0.48	0.52	0.00	0.52	0.27	0.38	0.05	0.78	0.86	0.57
Avail Cap(c_a), veh/h	846	0	376	310	0	303	509	2235	1054	67	1342	898
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.81	0.81	0.81	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.3	0.0	57.8	74.2	0.0	74.2	25.8	0.0	0.0	77.4	47.0	23.0
Incr Delay (d2), s/veh	10.4	0.0	0.9	3.5	0.0	3.5	0.1	0.4	0.1	19.7	7.7	2.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.2	0.0	5.4	1.9	0.0	1.9	2.5	0.1	0.0	1.8	22.1	19.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	73.7	0.0	58.7	77.7	0.0	77.7	25.9	0.4	0.1	97.1	54.6	25.6
LnGrp LOS	E		E	E		E	C	A	A	F	D	C
Approach Vol, veh/h	757				89		1032				1658	
Approach Delay, s/veh	70.8				77.7		3.7				46.9	
Approach LOS	E				E		A				D	
Timer - Assigned Phs	1	2			4	5	6	8				
Phs Duration (G+Y+Rc), s	8.3	105.2			12.0	50.3	63.2	34.5				
Change Period (Y+Rc), s	4.0	4.6			4.2	4.6	* 4.6	4.0				
Max Green Setting (Gmax), s	6.0	71.4			27.8	17.0	* 60	38.0				
Max Q Clear Time (g_c+I1), s	5.3	2.0			5.9	8.2	48.8	28.8				
Green Ext Time (p_c), s	0.0	16.8			0.2	0.1	9.8	1.6				
Intersection Summary												
HCM 7th Control Delay, s/veh	40.2											
HCM 7th LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

Bkgrd+Proj AM
Hexagon

Synchro 12 Report
12/05/2024

Intersection

Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	26	3	15	37	60	3	82	21	57	121	43
Future Vol, veh/h	38	26	3	15	37	60	3	82	21	57	121	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	28	3	16	40	65	3	89	23	62	132	47
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.6	8.4	8.4	9.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	57%	13%	26%
Vol Thru, %	77%	39%	33%	55%
Vol Right, %	20%	4%	54%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	106	67	112	221
LT Vol	3	38	15	57
Through Vol	82	26	37	121
RT Vol	21	3	60	43
Lane Flow Rate	115	73	122	240
Geometry Grp	1	1	1	1
Degree of Util (X)	0.146	0.101	0.154	0.298
Departure Headway (Hd)	4.558	4.983	4.546	4.466
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	785	717	786	805
Service Time	2.595	3.026	2.585	2.498
HCM Lane V/C Ratio	0.146	0.102	0.155	0.298
HCM Control Delay, s/veh	8.4	8.6	8.4	9.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.3	0.5	1.3

Intersection	
Intersection Delay, s/veh	26.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	89	60	66	40	80	124	59	259	33	55	299	59
Future Vol, veh/h	89	60	66	40	80	124	59	259	33	55	299	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	97	65	72	43	87	135	64	282	36	60	325	64
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	17.7	18.5	27.2	36.5
HCM LOS	C	C	D	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	41%	16%	13%
Vol Thru, %	74%	28%	33%	72%
Vol Right, %	9%	31%	51%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	351	215	244	413
LT Vol	59	89	40	55
Through Vol	259	60	80	299
RT Vol	33	66	124	59
Lane Flow Rate	382	234	265	449
Geometry Grp	1	1	1	1
Degree of Util (X)	0.737	0.49	0.536	0.843
Departure Headway (Hd)	6.958	7.548	7.278	6.764
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	519	474	493	534
Service Time	5.033	5.633	5.359	4.833
HCM Lane V/C Ratio	0.736	0.494	0.538	0.841
HCM Control Delay, s/veh	27.2	17.7	18.5	36.5
HCM Lane LOS	D	C	C	E
HCM 95th-tile Q	6.2	2.6	3.1	8.7

Intersection	
Intersection Delay, s/veh	17.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	396	79	52	299	20	54	99	53	12	139	100
Future Vol, veh/h	41	396	79	52	299	20	54	99	53	12	139	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	430	86	57	325	22	59	108	58	13	151	109
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	18.6	15.7	16.4	17.9
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	17%	0%	26%	0%	5%
Vol Thru, %	48%	83%	71%	74%	88%	55%
Vol Right, %	26%	0%	29%	0%	12%	40%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	206	239	277	202	170	251
LT Vol	54	41	0	52	0	12
Through Vol	99	198	198	150	150	139
RT Vol	53	0	79	0	20	100
Lane Flow Rate	224	260	301	219	184	273
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.454	0.525	0.584	0.46	0.375	0.532
Departure Headway (Hd)	7.298	7.275	6.982	7.554	7.336	7.016
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	493	494	515	475	488	513
Service Time	5.375	5.049	4.755	5.331	5.113	5.087
HCM Lane V/C Ratio	0.454	0.526	0.584	0.461	0.377	0.532
HCM Control Delay, s/veh	16.4	17.9	19.2	16.7	14.5	17.9
HCM Lane LOS	C	C	C	C	B	C
HCM 95th-tile Q	2.3	3	3.7	2.4	1.7	3.1

HCM 7th TWSC
3: Fair Oaks Avenue & Edison Way

Bkgrd+Proj PM

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	14	110	5	23	0	129	0	3	0	0	0
Future Vol, veh/h	0	14	110	5	23	0	129	0	3	0	0	0
Conflicting Peds, #/hr	17	0	6	10	0	21	6	0	10	21	0	17
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	120	5	25	0	140	0	3	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	46	0	0	145	0	0	138	142	106	93	202	63
Stage 1	-	-	-	-	-	-	85	85	-	57	57	-
Stage 2	-	-	-	-	-	-	53	57	-	36	145	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1562	-	-	1437	-	-	833	749	948	891	694	1002
Stage 1	-	-	-	-	-	-	923	824	-	955	847	-
Stage 2	-	-	-	-	-	-	960	847	-	979	777	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1534	-	-	1426	-	-	811	727	924	853	674	970
Mov Cap-2 Maneuver	-	-	-	-	-	-	811	727	-	853	674	-
Stage 1	-	-	-	-	-	-	915	818	-	935	829	-
Stage 2	-	-	-	-	-	-	942	829	-	959	771	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			1.35			10.37			0		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	813	1534	-	-	321	-	-	-				
HCM Lane V/C Ratio	0.176	-	-	-	0.004	-	-	-				
HCM Ctrl Dly (s/v)	10.4	0	-	-	7.5	0	-	0				
HCM Lane LOS	B	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	-				

HCM 7th TWSC
4: Marsh Road & Fair Oaks Avenue

Bkgrd+Proj PM

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	21	20	883	706	67
Future Vol, veh/h	35	21	20	883	706	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	23	22	960	767	73

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1771	767	840
Stage 1	767	-	-
Stage 2	1003	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	92	402	795
Stage 1	458	-	-
Stage 2	355	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	86	402	795
Mov Cap-2 Maneuver	272	-	-
Stage 1	431	-	-
Stage 2	355	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	19.46	0.21	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	40	-	309	-	-
HCM Lane V/C Ratio	0.027	-	0.197	-	-
HCM Ctrl Dly (s/v)	9.7	0	19.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

HCM 7th TWSC
18: Middlefield Road & 2nd Avenue

Bkgrd+Proj PM

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	49	419	24	30	459	32	12	9	22	29	7	67
Future Vol, veh/h	49	419	24	30	459	32	12	9	22	29	7	67
Conflicting Peds, #/hr	40	0	61	61	0	40	61	0	61	40	0	40
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	455	26	33	499	35	13	10	24	32	8	73
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	574	0	0	543	0	0	1015	1275	363	1022	1271	368
Stage 1	-	-	-	-	-	-	636	636	-	622	622	-
Stage 2	-	-	-	-	-	-	379	639	-	400	649	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	995	-	-	1022	-	-	192	166	634	190	167	629
Stage 1	-	-	-	-	-	-	433	470	-	441	477	-
Stage 2	-	-	-	-	-	-	614	469	-	597	464	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	962	-	-	970	-	-	129	137	571	141	137	577
Mov Cap-2 Maneuver	-	-	-	-	-	-	129	137	-	141	137	-
Stage 1	-	-	-	-	-	-	384	418	-	410	443	-
Stage 2	-	-	-	-	-	-	481	435	-	497	412	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.29			0.78			25.96			26.66		
HCM LOS							D			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	218	333	-	-	190	-	-	276				
HCM Lane V/C Ratio	0.214	0.055	-	-	0.034	-	-	0.406				
HCM Ctrl Dly (s/v)	26	9	0.5	-	8.8	0.3	-	26.7				
HCM Lane LOS	D	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	0.8	0.2	-	-	0.1	-	-	1.9				

HCM 7th TWSC
22: Palmer Lane & Fair Oaks Avenue

Bkgrd+Proj PM

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	40	8	6	66	2	17	17	5	0	8	17
Future Vol, veh/h	6	40	8	6	66	2	17	17	5	0	8	17
Conflicting Peds, #/hr	3	0	4	4	0	3	4	0	4	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	43	9	7	72	2	18	18	5	0	9	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	77	0	0	56	0	0	158	155	56	159	158	80
Stage 1	-	-	-	-	-	-	65	65	-	89	89	-
Stage 2	-	-	-	-	-	-	93	90	-	70	69	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1522	-	-	1549	-	-	808	737	1011	807	734	980
Stage 1	-	-	-	-	-	-	946	841	-	919	821	-
Stage 2	-	-	-	-	-	-	914	820	-	940	837	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1518	-	-	1543	-	-	771	726	1004	771	723	975
Mov Cap-2 Maneuver	-	-	-	-	-	-	771	726	-	771	723	-
Stage 1	-	-	-	-	-	-	938	834	-	912	816	-
Stage 2	-	-	-	-	-	-	880	815	-	907	831	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.82			0.6			9.93			9.24		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	773	194	-	-	145	-	-	877				
HCM Lane V/C Ratio	0.055	0.004	-	-	0.004	-	-	0.031				
HCM Ctrl Dly (s/v)	9.9	7.4	0	-	7.3	0	-	9.2				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

HCM 7th Signalized Intersection Summary 5: 5th Avenue & Semicircular Road

Bkgrd+Proj PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	288	23	500	391	0	514
Future Volume (veh/h)	288	23	500	391	0	514
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	313	25	543	0	0	559
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	392	31	1391		0	1391
Arrive On Green	0.24	0.24	0.39	0.00	0.00	0.39
Sat Flow, veh/h	1630	130	3741	0	0	3741
Grp Volume(v), veh/h	339	0	543	0	0	559
Grp Sat Flow(s),veh/h/ln	1765	0	1777	0	0	1777
Q Serve(g_s), s	3.7	0.0	2.2	0.0	0.0	2.3
Cycle Q Clear(g_c), s	3.7	0.0	2.2	0.0	0.0	2.3
Prop In Lane	0.92	0.07		0.00	0.00	
Lane Grp Cap(c), veh/h	424	0	1391		0	1391
V/C Ratio(X)	0.80	0.00	0.39		0.00	0.40
Avail Cap(c_a), veh/h	1127	0	3402		0	3402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	0.0	4.5	0.0	0.0	4.5
Incr Delay (d2), s/veh	1.3	0.0	0.2	0.0	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.2	0.0	0.0	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.6	0.0	4.7	0.0	0.0	4.7
LnGrp LOS	A		A			A
Approach Vol, veh/h	339		543			559
Approach Delay, s/veh	8.6		4.7			4.7
Approach LOS	A		A			A
Timer - Assigned Phs	2		4		6	
Phs Duration (G+Y+Rc), s	12.5		7.9		12.5	
Change Period (Y+Rc), s	4.5		3.0		4.5	
Max Green Setting (Gmax), s	19.5		13.0		19.5	
Max Q Clear Time (g_c+I1), s	4.2		5.7		4.3	
Green Ext Time (p_c), s	3.8		0.1		3.2	
Intersection Summary						
HCM 7th Control Delay, s/veh			5.6			
HCM 7th LOS			A			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

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Hexagon

Synchro 12 Report
12/05/2024

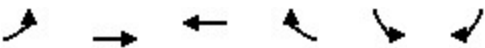
HCM 7th Signalized Intersection Summary 6: Middlefield Road & 5th Avenue

Bkgrd+Proj PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	262	245	18	300	69	215	264	13	51	279	49
Future Volume (veh/h)	33	262	245	18	300	69	215	264	13	51	279	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.91	1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	285	266	20	326	75	234	287	14	55	303	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	297	277	84	486	112	257	315	479	68	372	353
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.31	0.31	0.31	0.24	0.24	0.24
Sat Flow, veh/h	984	879	820	857	1439	331	822	1008	1529	285	1571	1490
Grp Volume(v), veh/h	36	0	551	20	0	401	521	0	14	358	0	53
Grp Sat Flow(s),veh/h/ln	984	0	1699	857	0	1771	1829	0	1529	1856	0	1490
Q Serve(g_s), s	3.5	0.0	33.9	2.1	0.0	20.7	29.2	0.0	0.7	19.4	0.0	3.0
Cycle Q Clear(g_c), s	24.1	0.0	33.9	36.0	0.0	20.7	29.2	0.0	0.7	19.4	0.0	3.0
Prop In Lane	1.00		0.48	1.00		0.19	0.45		1.00	0.15		1.00
Lane Grp Cap(c), veh/h	209	0	573	84	0	598	573	0	479	440	0	353
V/C Ratio(X)	0.17	0.00	0.96	0.24	0.00	0.67	0.91	0.00	0.03	0.81	0.00	0.15
Avail Cap(c_a), veh/h	209	0	573	84	0	598	669	0	559	748	0	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.6	0.0	34.6	52.4	0.0	30.2	35.2	0.0	25.4	38.5	0.0	32.2
Incr Delay (d2), s/veh	1.8	0.0	29.1	6.5	0.0	5.9	15.1	0.0	0.0	3.7	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	18.3	0.7	0.0	9.7	15.3	0.0	0.3	9.3	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.4	0.0	63.7	59.0	0.0	36.1	50.3	0.0	25.4	42.2	0.0	32.4
LnGrp LOS	D		E	E		D	D		C	D		C
Approach Vol, veh/h	587			421			535			411		
Approach Delay, s/veh	62.4			37.2			49.7			40.9		
Approach LOS	E			D			D			D		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	40.0			37.4			40.0			29.3		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	36.0			39.0			36.0			43.0		
Max Q Clear Time (g_c+I1), s	35.9			31.2			38.0			21.4		
Green Ext Time (p_c), s	0.0			2.2			0.0			2.5		
Intersection Summary												
HCM 7th Control Delay, s/veh	49.0											
HCM 7th LOS	D											

HCM 7th Signalized Intersection Summary 8: Middlefield Road & Marsh Road

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	353	231	324	546	398	342
Future Volume (veh/h)	353	231	324	546	398	342
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	384	251	352	593	433	372
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	411	1251	761	1045	473	787
Arrive On Green	0.23	0.67	0.41	0.41	0.27	0.27
Sat Flow, veh/h	1781	1870	1870	1535	1781	1585
Grp Volume(v), veh/h	384	251	352	593	433	372
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1535	1781	1585
Q Serve(g_s), s	27.1	6.6	17.6	26.5	30.3	19.8
Cycle Q Clear(g_c), s	27.1	6.6	17.6	26.5	30.3	19.8
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	411	1251	761	1045	473	787
V/C Ratio(X)	0.93	0.20	0.46	0.57	0.91	0.47
Avail Cap(c_a), veh/h	569	1251	761	1045	636	932
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	48.4	8.1	27.8	11.2	45.7	21.2
Incr Delay (d2), s/veh	16.1	0.4	2.0	2.2	13.9	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.8	2.7	8.3	18.3	15.2	20.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	64.5	8.5	29.8	13.4	59.6	21.6
LnGrp LOS	E	A	C	B	E	C
Approach Vol, veh/h		635	945		805	
Approach Delay, s/veh		42.4	19.5		42.0	
Approach LOS		D	B		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		90.0		38.3	33.6	56.4
Change Period (Y+Rc), s		4.2		4.2	4.0	4.2
Max Green Setting (Gmax), s		85.8		45.8	41.0	40.8
Max Q Clear Time (g_c+I1), s		8.6		32.3	29.1	28.5
Green Ext Time (p_c), s		1.0		1.8	0.5	2.3
Intersection Summary						
HCM 7th Control Delay, s/veh			33.2			
HCM 7th LOS			C			

HCM 7th Signalized Intersection Summary 9: Marsh Road & Bay Road

Bkgrd+Proj PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	86	20	3	55	21	180	1	858	46	142	745	43
Future Volume (veh/h)	86	20	3	55	21	180	1	858	46	142	745	43
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	93	22	3	60	23	196	1	933	50	154	810	47
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	159	34	4	217	76	912	26	1095	59	746	2642	153
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.33	0.33	0.33	0.42	0.77	0.77
Sat Flow, veh/h	702	210	24	1076	476	1547	0	3359	180	1781	3413	198
Grp Volume(v), veh/h	118	0	0	83	0	196	520	0	464	154	422	435
Grp Sat Flow(s),veh/h/ln	936	0	0	1552	0	1547	1869	0	1669	1781	1777	1835
Q Serve(g_s), s	12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.3	7.7	9.8	9.8
Cycle Q Clear(g_c), s	18.5	0.0	0.0	6.5	0.0	0.0	36.3	0.0	36.3	7.7	9.8	9.8
Prop In Lane	0.79		0.03	0.72		1.00	0.00		0.11	1.00		0.11
Lane Grp Cap(c), veh/h	196	0	0	293	0	912	635	0	544	746	1375	1420
V/C Ratio(X)	0.60	0.00	0.00	0.28	0.00	0.22	0.82	0.00	0.85	0.21	0.31	0.31
Avail Cap(c_a), veh/h	267	0	0	377	0	1000	998	0	869	746	1375	1420
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	59.5	0.0	0.0	52.0	0.0	14.2	44.0	0.0	44.0	25.9	4.7	4.7
Incr Delay (d2), s/veh	2.2	0.0	0.0	0.4	0.0	0.1	11.2	0.0	15.5	0.0	0.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.2	0.0	0.0	2.6	0.0	3.0	18.6	0.0	17.2	3.3	3.4	3.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.7	0.0	0.0	52.4	0.0	14.2	55.2	0.0	59.6	25.9	5.1	5.1
LnGrp LOS	E			D		B	E		E	C	A	A
Approach Vol, veh/h	118			279			984			1011		
Approach Delay, s/veh	61.7			25.6			57.3			8.3		
Approach LOS	E			C			E			A		
Timer - Assigned Phs	2			4	5	6	8					
Phs Duration (G+Y+Rc), s	113.0			27.0	63.2	49.7	27.0					
Change Period (Y+Rc), s	4.6			4.6	4.6	* 4.1	4.6					
Max Green Setting (Gmax), s	100.4			30.4	23.9	* 73	30.4					
Max Q Clear Time (g_c+I1), s	11.8			20.5	9.7	38.3	8.5					
Green Ext Time (p_c), s	6.7			0.4	0.2	7.3	0.8					
Intersection Summary												
HCM 7th Control Delay, s/veh	33.1											
HCM 7th LOS	C											
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 10: El Camino Avenue & 5th Avenue

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	586	795	1292	335	271	622
Future Volume (veh/h)	586	795	1292	335	271	622
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	637	864	1404	364	295	676
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	739	3393	1575	407	392	1210
Arrive On Green	0.21	0.66	0.39	0.39	0.22	0.22
Sat Flow, veh/h	3456	5274	4176	1034	1781	2790
Grp Volume(v), veh/h	637	864	1191	577	295	676
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1638	1781	1395
Q Serve(g_s), s	12.3	4.7	22.6	22.8	10.7	12.5
Cycle Q Clear(g_c), s	12.3	4.7	22.6	22.8	10.7	12.5
Prop In Lane	1.00			0.63	1.00	1.00
Lane Grp Cap(c), veh/h	739	3393	1338	644	392	1210
V/C Ratio(X)	0.86	0.25	0.89	0.90	0.75	0.56
Avail Cap(c_a), veh/h	799	3393	1338	644	412	1241
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	4.7	19.6	19.7	25.2	14.7
Incr Delay (d2), s/veh	9.1	0.2	9.2	17.5	7.3	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	1.2	9.6	10.7	5.1	3.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	35.3	4.9	28.8	37.1	32.6	15.2
LnGrp LOS	D	A	C	D	C	B
Approach Vol, veh/h		1501	1768		971	
Approach Delay, s/veh		17.8	31.5		20.5	
Approach LOS		B	C		C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.8	31.2			50.0	19.2
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	16.0	26.0			46.0	16.0
Max Q Clear Time (g_c+I1), s	14.3	24.8			6.7	14.5
Green Ext Time (p_c), s	0.5	1.0			7.0	0.7
Intersection Summary						
HCM 7th Control Delay, s/veh			24.1			
HCM 7th LOS			C			

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Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary
11: Marsh Road & Florence Street/Bohannon Drive

Bkgrd+Proj PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	452	29	109	57	30	73	150	830	26	35	729	369
Future Volume (veh/h)	452	29	109	57	30	73	150	830	26	35	729	369
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	514	0	118	62	33	79	163	902	28	38	792	401
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	637	0	281	162	44	106	125	1904	993	48	1750	1064
Arrive On Green	0.18	0.00	0.18	0.09	0.09	0.09	0.07	0.54	0.54	0.03	0.49	0.49
Sat Flow, veh/h	3563	0	1574	1781	489	1171	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	514	0	118	62	0	112	163	902	28	38	792	401
Grp Sat Flow(s),veh/h/ln	1781	0	1574	1781	0	1660	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	13.8	0.0	6.7	3.3	0.0	6.6	7.0	15.8	0.7	2.1	14.6	11.1
Cycle Q Clear(g_c), s	13.8	0.0	6.7	3.3	0.0	6.6	7.0	15.8	0.7	2.1	14.6	11.1
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	637	0	281	162	0	151	125	1904	993	48	1750	1064
V/C Ratio(X)	0.81	0.00	0.42	0.38	0.00	0.74	1.31	0.47	0.03	0.79	0.45	0.38
Avail Cap(c_a), veh/h	998	0	441	481	0	448	125	1904	993	71	1750	1064
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.89	0.89	0.89	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	0.0	36.5	42.8	0.0	44.3	46.5	14.4	7.1	48.4	16.6	7.2
Incr Delay (d2), s/veh	2.2	0.0	0.7	1.1	0.0	5.3	180.2	0.8	0.0	17.3	0.8	1.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	2.6	1.5	0.0	2.9	9.3	6.3	0.3	1.2	5.9	6.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.6	0.0	37.2	43.9	0.0	49.6	226.7	15.2	7.2	65.7	17.4	8.3
LnGrp LOS	D		D	D		D	F	B	A	E	B	A
Approach Vol, veh/h	632		174			1093			1231			
Approach Delay, s/veh	40.7		47.6			46.5			15.9			
Approach LOS	D		D			D			B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.7	58.2		13.3	11.0	53.9		21.9				
Change Period (Y+Rc), s	4.0	4.6		4.2	4.0	4.6		4.0				
Max Green Setting (Gmax), s	4.0	24.2		27.0	7.0	21.2		28.0				
Max Q Clear Time (g_c+I1), s	4.1	17.8		8.6	9.0	16.6		15.8				
Green Ext Time (p_c), s	0.0	4.4		0.6	0.0	3.6		1.5				
Intersection Summary												
HCM 7th Control Delay, s/veh	33.4											
HCM 7th LOS	C											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Bkgrd+Proj PM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th AWSC
1: 2nd Avenue & Edison Way

Cumul No Proj AM

Intersection	
Intersection Delay, s/veh	10.9
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	45	39	8	9	26	41	1	76	9	133	181	73
Future Vol, veh/h	45	39	8	9	26	41	1	76	9	133	181	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	42	9	10	28	45	1	83	10	145	197	79
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9.3	8.7	8.6	12.3
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	49%	12%	34%
Vol Thru, %	88%	42%	34%	47%
Vol Right, %	10%	9%	54%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	86	92	76	387
LT Vol	1	45	9	133
Through Vol	76	39	26	181
RT Vol	9	8	41	73
Lane Flow Rate	93	100	83	421
Geometry Grp	1	1	1	1
Degree of Util (X)	0.125	0.147	0.114	0.522
Departure Headway (Hd)	4.816	5.274	4.96	4.468
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	739	676	717	803
Service Time	2.876	3.338	3.027	2.51
HCM Lane V/C Ratio	0.126	0.148	0.116	0.524
HCM Control Delay, s/veh	8.6	9.3	8.7	12.3
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	0.4	0.5	0.4	3.1

HCM 7th AWSC
2: 5th Avenue & Edison Way

Cumul No Proj AM

Intersection	
Intersection Delay, s/veh	26.3
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	74	101	68	24	55	90	40	244	44	93	305	50
Future Vol, veh/h	74	101	68	24	55	90	40	244	44	93	305	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	80	110	74	26	60	98	43	265	48	101	332	54
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	17.8	14.5	21.9	38.5
HCM LOS	C	B	C	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	30%	14%	21%
Vol Thru, %	74%	42%	33%	68%
Vol Right, %	13%	28%	53%	11%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	328	243	169	448
LT Vol	40	74	24	93
Through Vol	244	101	55	305
RT Vol	44	68	90	50
Lane Flow Rate	357	264	184	487
Geometry Grp	1	1	1	1
Degree of Util (X)	0.663	0.523	0.369	0.871
Departure Headway (Hd)	6.694	7.123	7.24	6.438
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	542	504	494	565
Service Time	4.718	5.191	5.317	4.457
HCM Lane V/C Ratio	0.659	0.524	0.372	0.862
HCM Control Delay, s/veh	21.9	17.8	14.5	38.5
HCM Lane LOS	C	C	B	E
HCM 95th-tile Q	4.9	3	1.7	9.7

Intersection	
Intersection Delay, s/veh	20.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	33	272	51	79	457	41	90	142	59	33	106	66
Future Vol, veh/h	33	272	51	79	457	41	90	142	59	33	106	66
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	296	55	86	497	45	98	154	64	36	115	72
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	16.2	23.8	23.2	17.4
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	31%	20%	0%	26%	0%	16%
Vol Thru, %	49%	80%	73%	74%	85%	52%
Vol Right, %	20%	0%	27%	0%	15%	32%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	291	169	187	308	270	205
LT Vol	90	33	0	79	0	33
Through Vol	142	136	136	229	229	106
RT Vol	59	0	51	0	41	66
Lane Flow Rate	316	184	203	334	293	223
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.648	0.405	0.431	0.704	0.597	0.472
Departure Headway (Hd)	7.372	7.94	7.641	7.584	7.342	7.623
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	487	450	470	475	489	470
Service Time	5.454	5.733	5.434	5.373	5.13	5.718
HCM Lane V/C Ratio	0.649	0.409	0.432	0.703	0.599	0.474
HCM Control Delay, s/veh	23.2	16.1	16.2	26.6	20.5	17.4
HCM Lane LOS	C	C	C	D	C	C
HCM 95th-tile Q	4.5	1.9	2.1	5.4	3.8	2.5

HCM 7th TWSC
3: Fairoaks Avenue & Edison Way

Cumul No Proj AM

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	22	91	1	12	0	133	0	1	0	0	0
Future Vol, veh/h	0	22	91	1	12	0	133	0	1	0	0	0
Conflicting Peds, #/hr	9	0	2	2	0	9	2	0	2	9	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	99	1	13	0	145	0	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	22	0	0	125	0	0	100	100	84	57	149	31
Stage 1	-	-	-	-	-	-	75	75	-	24	24	-
Stage 2	-	-	-	-	-	-	24	24	-	33	125	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1593	-	-	1462	-	-	882	790	975	940	742	1043
Stage 1	-	-	-	-	-	-	934	832	-	994	875	-
Stage 2	-	-	-	-	-	-	994	875	-	983	793	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1581	-	-	1459	-	-	873	783	966	924	735	1028
Mov Cap-2 Maneuver	-	-	-	-	-	-	873	783	-	924	735	-
Stage 1	-	-	-	-	-	-	932	831	-	986	868	-
Stage 2	-	-	-	-	-	-	986	868	-	975	791	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			0.57			9.94			0		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	874	1581	-	-	138	-	-	-				
HCM Lane V/C Ratio	0.167	-	-	-	0.001	-	-	-				
HCM Ctrl Dly (s/v)	9.9	0	-	-	7.5	0	-	0				
HCM Lane LOS	A	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	-				

Cumul No Proj AM
Hexagon

Synchro 12 Report
12/18/2024

HCM 7th TWSC
4: Marsh Road & Fair Oaks Avenue

Cumul No Proj AM

Intersection

Int Delay, s/veh 0.3

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations 

Traffic Vol, veh/h 18 9 9 841 597 116

Future Vol, veh/h 18 9 9 841 597 116

Conflicting Peds, #/hr 0 0 0 0 0 0

Sign Control Stop Stop Free Free Free Free

RT Channelized - None - None - None

Storage Length 0 - - - - 0

Veh in Median Storage, # 2 - - 0 0 -

Grade, % 0 - - 0 0 -

Peak Hour Factor 92 92 92 92 92 92

Heavy Vehicles, % 2 2 2 2 2 2

Mvmt Flow 20 10 10 914 649 126

Major/Minor Minor2 Major1 Major2

Conflicting Flow All 1583 649 775 0 - 0

Stage 1 649 - - - - -

Stage 2 934 - - - - -

Critical Hdwy 6.42 6.22 4.12 - - -

Critical Hdwy Stg 1 5.42 - - - - -

Critical Hdwy Stg 2 5.42 - - - - -

Follow-up Hdwy 3.518 3.318 2.218 - - -

Pot Cap-1 Maneuver 120 470 841 - - -

Stage 1 520 - - - - -

Stage 2 383 - - - - -

Platoon blocked, % - - -

Mov Cap-1 Maneuver 117 470 841 - - -

Mov Cap-2 Maneuver 309 - - - - -

Stage 1 508 - - - - -

Stage 2 383 - - - - -

Approach EB NB SB

HCM Ctrl Dly, s/v 16.28 0.1 0

HCM LOS C

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h) 19 - 349 - -

HCM Lane V/C Ratio 0.012 - 0.084 - -

HCM Ctrl Dly (s/v) 9.3 0 16.3 - -

HCM Lane LOS A A C - -

HCM 95th %tile Q(veh) 0 - 0.3 - -

Cumul No Proj AM
Hexagon

Synchro 12 Report
12/18/2024

HCM 7th TWSC
18: Middlefield Road & 2nd Avenue

Cumul No Proj AM

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	335	7	11	305	28	8	9	17	37	11	65
Future Vol, veh/h	22	335	7	11	305	28	8	9	17	37	11	65
Conflicting Peds, #/hr	46	0	59	54	0	41	59	0	54	41	0	46
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	364	8	12	332	30	9	10	18	40	12	71

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	408	0	0	431	0	0	895	907	481	888	895	452
Stage 1	-	-	-	-	-	-	475	475	-	417	417	-
Stage 2	-	-	-	-	-	-	420	432	-	471	479	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1151	-	-	1129	-	-	261	276	585	265	280	608
Stage 1	-	-	-	-	-	-	571	557	-	613	591	-
Stage 2	-	-	-	-	-	-	611	582	-	573	555	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1107	-	-	1073	-	-	190	244	531	218	248	556
Mov Cap-2 Maneuver	-	-	-	-	-	-	190	244	-	218	248	-
Stage 1	-	-	-	-	-	-	531	519	-	583	562	-
Stage 2	-	-	-	-	-	-	490	554	-	507	516	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0.5	0.27	18.35	21.36
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	306	1107	-	-	1073	-	-	341
HCM Lane V/C Ratio	0.121	0.022	-	-	0.011	-	-	0.36
HCM Ctrl Dly (s/v)	18.4	8.3	-	-	8.4	-	-	21.4
HCM Lane LOS	C	A	-	-	A	-	-	C
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	1.6

Cumul No Proj AM
Hexagon

Synchro 12 Report
12/18/2024

HCM 7th TWSC
22: Palmer Lane & Fair Oaks Avenue

Cumul No Proj AM

Intersection												
Int Delay, s/veh	7.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	9	15	40	40	2	17	10	2	0	95	50
Future Vol, veh/h	10	9	15	40	40	2	17	10	2	0	95	50
Conflicting Peds, #/hr	11	0	2	3	0	12	2	0	3	12	0	11
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	10	16	43	43	2	18	11	2	0	103	54
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	58	0	0	29	0	0	236	187	33	192	194	68
Stage 1	-	-	-	-	-	-	43	43	-	144	144	-
Stage 2	-	-	-	-	-	-	193	145	-	49	51	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1547	-	-	1584	-	-	719	707	1041	767	701	996
Stage 1	-	-	-	-	-	-	972	859	-	859	778	-
Stage 2	-	-	-	-	-	-	809	777	-	964	853	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1531	-	-	1580	-	-	550	674	1028	713	668	977
Mov Cap-2 Maneuver	-	-	-	-	-	-	550	674	-	713	668	-
Stage 1	-	-	-	-	-	-	962	851	-	827	749	-
Stage 2	-	-	-	-	-	-	634	748	-	934	844	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	2.17			3.58			11.24			11.08		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	608	471	-	-	870	-	-	750				
HCM Lane V/C Ratio	0.052	0.007	-	-	0.028	-	-	0.21				
HCM Ctrl Dly (s/v)	11.2	7.4	0	-	7.3	0	-	11.1				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.8				

Cumul No Proj AM
Hexagon

Synchro 12 Report
12/18/2024

HCM 7th Signalized Intersection Summary 5: 5th Avenue & Semicircular Road

Cumul No Proj AM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	399	14	416	465	0	565
Future Volume (veh/h)	399	14	416	465	0	565
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	434	15	452	0	0	614
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	545	19	1127		0	1127
Arrive On Green	0.32	0.32	0.32	0.00	0.00	0.32
Sat Flow, veh/h	1711	59	3741	0	0	3741
Grp Volume(v), veh/h	450	0	452	0	0	614
Grp Sat Flow(s),veh/h/ln	1774	0	1777	0	0	1777
Q Serve(g_s), s	5.4	0.0	2.3	0.0	0.0	3.3
Cycle Q Clear(g_c), s	5.4	0.0	2.3	0.0	0.0	3.3
Prop In Lane	0.96	0.03		0.00	0.00	
Lane Grp Cap(c), veh/h	565	0	1127		0	1127
V/C Ratio(X)	0.80	0.00	0.40		0.00	0.54
Avail Cap(c_a), veh/h	761	0	1753		0	1753
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	0.0	6.2	0.0	0.0	6.6
Incr Delay (d2), s/veh	4.3	0.0	0.3	0.0	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	0.0	0.4	0.0	0.0	0.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	11.6	0.0	6.5	0.0	0.0	7.1
LnGrp LOS	B		A		A	
Approach Vol, veh/h	450		452		614	
Approach Delay, s/veh	11.6		6.5		7.1	
Approach LOS	B		A		A	
Timer - Assigned Phs	2				6	8
Phs Duration (G+Y+Rc), s	11.9				11.9	11.4
Change Period (Y+Rc), s	4.5				4.5	4.0
Max Green Setting (Gmax), s	11.5				11.5	10.0
Max Q Clear Time (g_c+I1), s	4.3				5.3	7.4
Green Ext Time (p_c), s	1.9				2.1	0.4
Intersection Summary						
HCM 7th Control Delay, s/veh			8.2			
HCM 7th LOS			A			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

Cumul No Proj AM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 6: Middlefield Road & 5th Avenue

Cumul No Proj AM

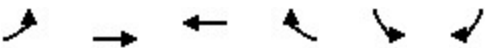
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	230	245	10	194	52	160	284	23	44	304	25
Future Volume (veh/h)	15	230	245	10	194	52	160	284	23	44	304	25
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.86	1.00		0.87	1.00		0.91	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	250	266	11	211	57	174	309	25	48	330	27
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	309	259	275	85	465	126	195	346	423	59	404	368
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.29	0.29	0.29	0.25	0.25	0.25
Sat Flow, veh/h	1089	760	809	885	1367	369	662	1175	1438	236	1623	1479
Grp Volume(v), veh/h	16	0	516	11	0	268	483	0	25	378	0	27
Grp Sat Flow(s),veh/h/ln	1089	0	1569	885	0	1736	1837	0	1438	1859	0	1479
Q Serve(g_s), s	1.2	0.0	33.3	1.3	0.0	12.4	25.9	0.0	1.3	19.7	0.0	1.4
Cycle Q Clear(g_c), s	13.6	0.0	33.3	34.6	0.0	12.4	25.9	0.0	1.3	19.7	0.0	1.4
Prop In Lane	1.00		0.52	1.00		0.21	0.36		1.00	0.13		1.00
Lane Grp Cap(c), veh/h	309	0	534	85	0	590	541	0	423	462	0	368
V/C Ratio(X)	0.05	0.00	0.97	0.13	0.00	0.45	0.89	0.00	0.06	0.82	0.00	0.07
Avail Cap(c_a), veh/h	309	0	534	85	0	590	678	0	531	813	0	647
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.8	0.0	33.4	50.4	0.0	26.5	34.8	0.0	26.1	36.4	0.0	29.6
Incr Delay (d2), s/veh	0.3	0.0	31.6	3.1	0.0	2.5	12.2	0.0	0.1	3.6	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	17.0	0.4	0.0	5.5	13.3	0.0	0.5	9.4	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.1	0.0	65.0	53.5	0.0	29.0	46.9	0.0	26.1	40.0	0.0	29.7
LnGrp LOS	C		E	D		C	D		C	D		C
Approach Vol, veh/h	532			279			508			405		
Approach Delay, s/veh	64.0			30.0			45.9			39.4		
Approach LOS	E			C			D			D		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	39.0			34.3			39.0			29.6		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	35.0			38.0			35.0			45.0		
Max Q Clear Time (g_c+I1), s	35.3			27.9			36.6			21.7		
Green Ext Time (p_c), s	0.0			2.4			0.0			2.6		
Intersection Summary												
HCM 7th Control Delay, s/veh	47.4											
HCM 7th LOS	D											

Cumul No Proj AM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 8: Middlefield Road & Marsh Road

Cumul No Proj AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	366	368	260	504	495	236
Future Volume (veh/h)	366	368	260	504	495	236
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	398	400	283	548	538	257
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	430	1149	641	1035	575	894
Arrive On Green	0.24	0.61	0.34	0.34	0.32	0.32
Sat Flow, veh/h	1781	1870	1870	1528	1781	1585
Grp Volume(v), veh/h	398	400	283	548	538	257
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1528	1781	1585
Q Serve(g_s), s	29.1	14.0	15.6	24.9	39.0	11.2
Cycle Q Clear(g_c), s	29.1	14.0	15.6	24.9	39.0	11.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	430	1149	641	1035	575	894
V/C Ratio(X)	0.93	0.35	0.44	0.53	0.94	0.29
Avail Cap(c_a), veh/h	602	1149	641	1035	800	1094
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.3	12.6	33.9	11.6	43.8	15.1
Incr Delay (d2), s/veh	16.4	0.8	2.2	1.9	13.9	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.9	6.1	7.5	18.9	19.3	13.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	65.7	13.4	36.1	13.6	57.7	15.2
LnGrp LOS	E	B	D	B	E	B
Approach Vol, veh/h		798	831		795	
Approach Delay, s/veh		39.5	21.2		44.0	
Approach LOS		D	C		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.0		47.2	36.1	49.9
Change Period (Y+Rc), s		4.2		4.2	4.0	4.2
Max Green Setting (Gmax), s		81.8		59.8	45.0	32.8
Max Q Clear Time (g_c+I1), s		16.0		41.0	31.1	26.9
Green Ext Time (p_c), s		1.7		1.9	1.1	1.4
Intersection Summary						
HCM 7th Control Delay, s/veh			34.7			
HCM 7th LOS			C			

Cumul No Proj AM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary

Cumul No Proj AM

9: Marsh Road & Bay Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	51	4	46	12	206	1	835	69	284	833	75
Future Volume (veh/h)	111	51	4	46	12	206	1	835	69	284	833	75
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	121	55	4	50	13	224	1	908	75	309	905	82
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	218	87	5	294	68	817	45	1016	84	573	2254	204
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.31	0.31	0.31	0.32	0.69	0.69
Sat Flow, veh/h	715	436	26	1070	339	1543	0	3247	268	1781	3287	298
Grp Volume(v), veh/h	180	0	0	63	0	224	523	0	461	309	489	498
Grp Sat Flow(s),veh/h/ln	1178	0	0	1409	0	1543	1869	0	1646	1781	1777	1808
Q Serve(g_s), s	9.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.4	11.4	9.6	9.6
Cycle Q Clear(g_c), s	12.0	0.0	0.0	2.9	0.0	0.0	21.4	0.0	21.4	11.4	9.6	9.6
Prop In Lane	0.67		0.02	0.79		1.00	0.00		0.16	1.00		0.16
Lane Grp Cap(c), veh/h	310	0	0	362	0	817	630	0	515	573	1218	1240
V/C Ratio(X)	0.58	0.00	0.00	0.17	0.00	0.27	0.83	0.00	0.89	0.54	0.40	0.40
Avail Cap(c_a), veh/h	489	0	0	559	0	1030	659	0	541	573	1218	1240
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.76	0.76	0.76
Uniform Delay (d), s/veh	30.9	0.0	0.0	26.7	0.0	10.7	26.2	0.0	26.2	22.3	5.5	5.5
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.2	0.0	0.1	12.1	0.0	20.7	0.4	0.8	0.7
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	0.0	0.0	1.0	0.0	2.0	11.0	0.0	10.7	4.6	3.0	3.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.2	0.0	0.0	26.9	0.0	10.8	38.3	0.0	46.9	22.7	6.2	6.2
LnGrp LOS	C			C		B	D		D	C	A	A
Approach Vol, veh/h	180			287			984			1296		
Approach Delay, s/veh	32.2			14.4			42.3			10.1		
Approach LOS	C			B			D			B		
Timer - Assigned Phs	2			4	5	6	8					
Phs Duration (G+Y+Rc), s	59.4			20.6	30.3	29.1	20.6					
Change Period (Y+Rc), s	4.6			4.6	4.6	* 4.1	4.6					
Max Green Setting (Gmax), s	43.8			27.0	13.9	* 26	27.0					
Max Q Clear Time (g_c+I1), s	11.6			14.0	13.4	23.4	4.9					
Green Ext Time (p_c), s	7.7			0.7	0.0	1.7	0.8					
Intersection Summary												
HCM 7th Control Delay, s/veh				23.6								
HCM 7th LOS				C								
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

Cumul No Proj AM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 10: El Camino Avenue & 5th Avenue

Cumul No Proj AM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	678	1601	658	237	410	535
Future Volume (veh/h)	678	1601	658	237	410	535
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	737	1740	715	258	446	582
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	838	2935	1016	361	553	1542
Arrive On Green	0.24	0.57	0.27	0.27	0.31	0.31
Sat Flow, veh/h	3456	5274	3865	1315	1781	2790
Grp Volume(v), veh/h	737	1740	658	315	446	582
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1608	1781	1395
Q Serve(g_s), s	14.3	15.3	12.1	12.3	16.0	8.2
Cycle Q Clear(g_c), s	14.3	15.3	12.1	12.3	16.0	8.2
Prop In Lane	1.00			0.82	1.00	1.00
Lane Grp Cap(c), veh/h	838	2935	935	442	553	1542
V/C Ratio(X)	0.88	0.59	0.70	0.71	0.81	0.38
Avail Cap(c_a), veh/h	894	2935	935	442	819	1959
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.4	9.5	22.7	22.8	22.1	8.8
Incr Delay (d2), s/veh	9.6	0.9	4.4	9.5	3.7	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.5	4.7	5.0	5.4	6.8	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	35.0	10.4	27.1	32.2	25.8	8.9
LnGrp LOS	D	B	C	C	C	A
Approach Vol, veh/h		2477	973		1028	
Approach Delay, s/veh		17.8	28.8		16.3	
Approach LOS		B	C		B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.9	23.1			44.0	25.6
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	18.0	18.0			40.0	32.0
Max Q Clear Time (g_c+I1), s	16.3	14.3			17.3	18.0
Green Ext Time (p_c), s	0.6	2.1			13.8	3.6
Intersection Summary						
HCM 7th Control Delay, s/veh			19.8			
HCM 7th LOS			B			

Cumul No Proj AM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 11: Marsh Road & Florence Street/Bohannon Drive

Cumul No Proj AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	545	31	166	41	24	20	134	811	46	35	1069	460
Future Volume (veh/h)	545	31	166	41	24	20	134	811	46	35	1069	460
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	616	0	180	45	26	22	146	882	50	38	1162	500
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	684	0	304	88	46	39	499	2225	1050	49	1315	889
Arrive On Green	0.19	0.00	0.19	0.05	0.05	0.05	0.56	1.00	1.00	0.03	0.37	0.37
Sat Flow, veh/h	3563	0	1585	1781	936	792	1781	3554	1552	1781	3554	1581
Grp Volume(v), veh/h	616	0	180	45	0	48	146	882	50	38	1162	500
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1728	1781	1777	1552	1781	1777	1581
Q Serve(g_s), s	27.0	0.0	16.6	3.9	0.0	4.3	6.9	0.0	0.0	3.4	49.0	32.4
Cycle Q Clear(g_c), s	27.0	0.0	16.6	3.9	0.0	4.3	6.9	0.0	0.0	3.4	49.0	32.4
Prop In Lane	1.00		1.00	1.00		0.46	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	684	0	304	88	0	85	499	2225	1050	49	1315	889
V/C Ratio(X)	0.90	0.00	0.59	0.51	0.00	0.56	0.29	0.40	0.05	0.78	0.88	0.56
Avail Cap(c_a), veh/h	846	0	376	310	0	300	499	2225	1050	67	1342	901
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.78	0.78	0.78	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.1	0.0	58.9	74.2	0.0	74.4	26.9	0.0	0.0	77.3	47.2	22.4
Incr Delay (d2), s/veh	10.5	0.0	1.4	3.4	0.0	4.3	0.1	0.4	0.1	21.7	8.9	2.6
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	0.0	6.8	1.9	0.0	2.0	2.7	0.1	0.0	1.9	23.3	19.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	73.6	0.0	60.3	77.6	0.0	78.7	27.0	0.4	0.1	99.0	56.1	25.0
LnGrp LOS	E		E	E		E	C	A	A	F	E	C
Approach Vol, veh/h	796			93			1078			1700		
Approach Delay, s/veh	70.6			78.2			4.0			47.9		
Approach LOS	E			E			A			D		
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	104.8		12.1	49.4	63.8		34.7				
Change Period (Y+Rc), s	4.0	4.6		4.2	4.6	* 4.6		4.0				
Max Green Setting (Gmax), s	6.0	71.4		27.8	17.0	* 60		38.0				
Max Q Clear Time (g_c+I1), s	5.4	2.0		6.3	8.9	51.0		29.0				
Green Ext Time (p_c), s	0.0	17.8		0.2	0.1	8.2		1.7				

Intersection Summary

HCM 7th Control Delay, s/veh 40.7
HCM 7th LOS D

Notes

User approved volume balancing among the lanes for turning movement.

* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.

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Synchro 12 Report
12/05/2024

HCM 7th AWSC
1: 2nd Avenue & Edison Way

Cumul No Proj PM

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	26	3	6	37	59	3	82	12	56	121	43
Future Vol, veh/h	38	26	3	6	37	59	3	82	12	56	121	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	28	3	7	40	64	3	89	13	61	132	47
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.5	8.2	8.3	9.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	57%	6%	25%
Vol Thru, %	85%	39%	36%	55%
Vol Right, %	12%	4%	58%	20%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	67	102	220
LT Vol	3	38	6	56
Through Vol	82	26	37	121
RT Vol	12	3	59	43
Lane Flow Rate	105	73	111	239
Geometry Grp	1	1	1	1
Degree of Util (X)	0.134	0.1	0.138	0.294
Departure Headway (Hd)	4.568	4.941	4.478	4.423
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	783	724	799	813
Service Time	2.602	2.979	2.514	2.452
HCM Lane V/C Ratio	0.134	0.101	0.139	0.294
HCM Control Delay, s/veh	8.3	8.5	8.2	9.3
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.3	0.5	1.2

HCM 7th AWSC
2: 5th Avenue & Edison Way

Cumul No Proj PM

Intersection	
Intersection Delay, s/veh	19.9
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	82	40	47	40	59	124	40	259	33	55	299	52
Future Vol, veh/h	82	40	47	40	59	124	40	259	33	55	299	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	43	51	43	64	135	43	282	36	60	325	57
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	14	14.9	19.6	25.4
HCM LOS	B	B	C	D

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	12%	49%	18%	14%
Vol Thru, %	78%	24%	26%	74%
Vol Right, %	10%	28%	56%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	332	169	223	406
LT Vol	40	82	40	55
Through Vol	259	40	59	299
RT Vol	33	47	124	52
Lane Flow Rate	361	184	242	441
Geometry Grp	1	1	1	1
Degree of Util (X)	0.63	0.357	0.444	0.75
Departure Headway (Hd)	6.285	6.99	6.599	6.116
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	570	511	543	587
Service Time	4.36	5.08	4.681	4.185
HCM Lane V/C Ratio	0.633	0.36	0.446	0.751
HCM Control Delay, s/veh	19.6	14	14.9	25.4
HCM Lane LOS	C	B	B	D
HCM 95th-tile Q	4.4	1.6	2.3	6.6

Intersection	
Intersection Delay, s/veh	17
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	41	389	78	52	292	20	53	99	53	12	139	100
Future Vol, veh/h	41	389	78	52	292	20	53	99	53	12	139	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	423	85	57	317	22	58	108	58	13	151	109
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	18.1	15.4	16.1	17.6
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	17%	0%	26%	0%	5%
Vol Thru, %	48%	83%	71%	74%	88%	55%
Vol Right, %	26%	0%	29%	0%	12%	40%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	205	236	273	198	166	251
LT Vol	53	41	0	52	0	12
Through Vol	99	195	195	146	146	139
RT Vol	53	0	78	0	20	100
Lane Flow Rate	223	256	296	215	180	273
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.448	0.515	0.572	0.45	0.366	0.528
Departure Headway (Hd)	7.246	7.242	6.947	7.522	7.299	6.964
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	495	497	518	478	491	516
Service Time	5.322	5.011	4.716	5.294	5.072	5.033
HCM Lane V/C Ratio	0.451	0.515	0.571	0.45	0.367	0.529
HCM Control Delay, s/veh	16.1	17.5	18.7	16.4	14.3	17.6
HCM Lane LOS	C	C	C	C	B	C
HCM 95th-tile Q	2.3	2.9	3.6	2.3	1.7	3

HCM 7th TWSC
3: Fair Oaks Avenue & Edison Way

Cumul No Proj PM

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	14	90	5	23	0	108	0	3	0	0	0
Future Vol, veh/h	0	14	90	5	23	0	108	0	3	0	0	0
Conflicting Peds, #/hr	17	0	6	10	0	21	6	0	10	21	0	17
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	98	5	25	0	117	0	3	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	46	0	0	123	0	0	127	131	95	93	180	63
Stage 1	-	-	-	-	-	-	74	74	-	57	57	-
Stage 2	-	-	-	-	-	-	53	57	-	36	123	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1562	-	-	1464	-	-	846	760	961	891	714	1002
Stage 1	-	-	-	-	-	-	935	833	-	955	847	-
Stage 2	-	-	-	-	-	-	960	847	-	979	794	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1534	-	-	1452	-	-	824	737	937	853	693	970
Mov Cap-2 Maneuver	-	-	-	-	-	-	824	737	-	853	693	-
Stage 1	-	-	-	-	-	-	927	826	-	935	829	-
Stage 2	-	-	-	-	-	-	943	829	-	959	787	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	1.34	10.09	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	827	1534	-	-	321	-	-	-
HCM Lane V/C Ratio	0.146	-	-	-	0.004	-	-	-
HCM Ctrl Dly (s/v)	10.1	0	-	-	7.5	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0	-	-	0	-	-	-

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Synchro 12 Report
12/18/2024

HCM 7th TWSC
4: Marsh Road & Fair Oaks Avenue

Cumul No Proj PM

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	28	15	14	883	706	55
Future Vol, veh/h	28	15	14	883	706	55
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	30	16	15	960	767	60

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1758	767	827
Stage 1	767	-	-
Stage 2	990	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	93	402	804
Stage 1	458	-	-
Stage 2	360	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	89	402	804
Mov Cap-2 Maneuver	277	-	-
Stage 1	440	-	-
Stage 2	360	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	18.64	0.15	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	28	-	311	-	-
HCM Lane V/C Ratio	0.019	-	0.151	-	-
HCM Ctrl Dly (s/v)	9.6	0	18.6	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

HCM 7th TWSC
18: Middlefield Road & 2nd Avenue

Cumul No Proj PM

Intersection												
Int Delay, s/veh	3.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	40	417	24	30	457	32	12	9	22	29	7	58
Future Vol, veh/h	40	417	24	30	457	32	12	9	22	29	7	58
Conflicting Peds, #/hr	40	0	61	61	0	40	61	0	61	40	0	40
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	453	26	33	497	35	13	10	24	32	8	63
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	572	0	0	540	0	0	993	1251	362	999	1247	367
Stage 1	-	-	-	-	-	-	614	614	-	619	619	-
Stage 2	-	-	-	-	-	-	378	637	-	379	627	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	997	-	-	1024	-	-	200	171	635	198	172	630
Stage 1	-	-	-	-	-	-	446	481	-	443	478	-
Stage 2	-	-	-	-	-	-	615	470	-	614	474	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	964	-	-	972	-	-	139	143	572	148	144	578
Mov Cap-2 Maneuver	-	-	-	-	-	-	139	143	-	148	144	-
Stage 1	-	-	-	-	-	-	401	433	-	411	444	-
Stage 2	-	-	-	-	-	-	491	436	-	518	427	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.08			0.78			24.7			25.87		
HCM LOS							C			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	229	278	-	-	191	-	-	273				
HCM Lane V/C Ratio	0.204	0.045	-	-	0.034	-	-	0.374				
HCM Ctrl Dly (s/v)	24.7	8.9	0.4	-	8.8	0.3	-	25.9				
HCM Lane LOS	C	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	0.7	0.1	-	-	0.1	-	-	1.7				

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Synchro 12 Report
12/18/2024

HCM 7th TWSC
22: Palmer Lane & Fair Oaks Avenue

Cumul No Proj PM

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	27	8	6	49	2	17	17	5	0	8	17
Future Vol, veh/h	6	27	8	6	49	2	17	17	5	0	8	17
Conflicting Peds, #/hr	3	0	4	4	0	3	4	0	4	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	29	9	7	53	2	18	18	5	0	9	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	58	0	0	42	0	0	125	122	42	126	125	61
Stage 1	-	-	-	-	-	-	51	51	-	70	70	-
Stage 2	-	-	-	-	-	-	75	71	-	56	55	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1546	-	-	1567	-	-	848	768	1029	848	765	1004
Stage 1	-	-	-	-	-	-	962	853	-	939	836	-
Stage 2	-	-	-	-	-	-	935	835	-	957	849	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1542	-	-	1562	-	-	811	757	1022	811	754	998
Mov Cap-2 Maneuver	-	-	-	-	-	-	811	757	-	811	754	-
Stage 1	-	-	-	-	-	-	955	846	-	933	831	-
Stage 2	-	-	-	-	-	-	901	830	-	924	842	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.07			0.77			9.71			9.1		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	807	252	-	-	188	-	-	904				
HCM Lane V/C Ratio	0.053	0.004	-	-	0.004	-	-	0.03				
HCM Ctrl Dly (s/v)	9.7	7.3	0	-	7.3	0	-	9.1				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

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Hexagon

Synchro 12 Report
12/18/2024

HCM 7th Signalized Intersection Summary 5: 5th Avenue & Semicircular Road

Cumul No Proj PM

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	288	23	483	391	0	497
Future Volume (veh/h)	288	23	483	391	0	497
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	313	25	525	0	0	540
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	392	31	1371		0	1371
Arrive On Green	0.24	0.24	0.39	0.00	0.00	0.39
Sat Flow, veh/h	1630	130	3741	0	0	3741
Grp Volume(v), veh/h	339	0	525	0	0	540
Grp Sat Flow(s),veh/h/ln	1765	0	1777	0	0	1777
Q Serve(g_s), s	3.6	0.0	2.1	0.0	0.0	2.2
Cycle Q Clear(g_c), s	3.6	0.0	2.1	0.0	0.0	2.2
Prop In Lane	0.92	0.07		0.00	0.00	
Lane Grp Cap(c), veh/h	425	0	1371		0	1371
V/C Ratio(X)	0.80	0.00	0.38		0.00	0.39
Avail Cap(c_a), veh/h	1144	0	3453		0	3453
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	7.2	0.0	4.4	0.0	0.0	4.5
Incr Delay (d2), s/veh	1.3	0.0	0.2	0.0	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.2	0.0	0.0	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.5	0.0	4.7	0.0	0.0	4.7
LnGrp LOS	A		A			A
Approach Vol, veh/h	339		525			540
Approach Delay, s/veh	8.5		4.7			4.7
Approach LOS	A		A			A
Timer - Assigned Phs	2		4		6	
Phs Duration (G+Y+Rc), s	12.2		7.8		12.2	
Change Period (Y+Rc), s	4.5		3.0		4.5	
Max Green Setting (Gmax), s	19.5		13.0		19.5	
Max Q Clear Time (g_c+I1), s	4.1		5.6		4.2	
Green Ext Time (p_c), s	3.6		0.1		3.1	
Intersection Summary						
HCM 7th Control Delay, s/veh			5.6			
HCM 7th LOS			A			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

Cumul No Proj PM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 6: Middlefield Road & 5th Avenue

Cumul No Proj PM

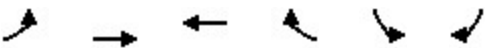
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	31	262	245	18	300	69	215	247	13	51	262	47
Future Volume (veh/h)	31	262	245	18	300	69	215	247	13	51	262	47
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.91	1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	34	285	266	20	326	75	234	268	14	55	285	51
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	221	304	284	96	498	115	260	298	467	70	363	348
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.31	0.31	0.31	0.23	0.23	0.23
Sat Flow, veh/h	984	879	820	857	1440	331	852	976	1528	300	1555	1489
Grp Volume(v), veh/h	34	0	551	20	0	401	502	0	14	340	0	51
Grp Sat Flow(s),veh/h/ln	984	0	1699	857	0	1771	1828	0	1528	1855	0	1489
Q Serve(g_s), s	3.2	0.0	32.7	2.4	0.0	19.9	27.4	0.0	0.7	17.9	0.0	2.8
Cycle Q Clear(g_c), s	23.1	0.0	32.7	35.1	0.0	19.9	27.4	0.0	0.7	17.9	0.0	2.8
Prop In Lane	1.00		0.48	1.00		0.19	0.47		1.00	0.16		1.00
Lane Grp Cap(c), veh/h	221	0	588	96	0	613	558	0	467	433	0	348
V/C Ratio(X)	0.15	0.00	0.94	0.21	0.00	0.65	0.90	0.00	0.03	0.78	0.00	0.15
Avail Cap(c_a), veh/h	221	0	588	96	0	613	685	0	573	766	0	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	38.5	0.0	33.0	49.9	0.0	28.8	34.6	0.0	25.3	37.4	0.0	31.7
Incr Delay (d2), s/veh	1.5	0.0	24.6	4.8	0.0	5.4	13.0	0.0	0.0	3.2	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	17.1	0.6	0.0	9.2	14.1	0.0	0.2	8.5	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	40.0	0.0	57.6	54.8	0.0	34.2	47.6	0.0	25.4	40.6	0.0	31.9
LnGrp LOS	D		E	D		C	D		C	D		C
Approach Vol, veh/h	585			421			516			391		
Approach Delay, s/veh	56.5			35.1			47.0			39.5		
Approach LOS	E			D			D			D		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	40.0			35.8			40.0			28.3		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	36.0			39.0			36.0			43.0		
Max Q Clear Time (g_c+I1), s	34.7			29.4			37.1			19.9		
Green Ext Time (p_c), s	0.5			2.4			0.0			2.4		
Intersection Summary												
HCM 7th Control Delay, s/veh	45.8											
HCM 7th LOS	D											

Cumul No Proj PM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 8: Middlefield Road & Marsh Road

Cumul No Proj PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	355	231	324	628	421	348
Future Volume (veh/h)	355	231	324	628	421	348
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	386	251	352	683	458	378
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	413	1229	738	1047	497	809
Arrive On Green	0.23	0.66	0.39	0.39	0.28	0.28
Sat Flow, veh/h	1781	1870	1870	1534	1781	1585
Grp Volume(v), veh/h	386	251	352	683	458	378
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1534	1781	1585
Q Serve(g_s), s	27.8	6.9	18.3	34.2	32.6	20.0
Cycle Q Clear(g_c), s	27.8	6.9	18.3	34.2	32.6	20.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	413	1229	738	1047	497	809
V/C Ratio(X)	0.94	0.20	0.48	0.65	0.92	0.47
Avail Cap(c_a), veh/h	559	1229	738	1047	625	923
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.2	8.9	29.5	12.6	45.7	20.6
Incr Delay (d2), s/veh	17.1	0.4	2.2	3.2	16.2	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.3	2.9	8.7	23.7	16.6	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	66.4	9.3	31.7	15.7	61.9	20.9
LnGrp LOS	E	A	C	B	E	C
Approach Vol, veh/h		637	1035		836	
Approach Delay, s/veh		43.9	21.1		43.4	
Approach LOS		D	C		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		90.0		40.6	34.2	55.8
Change Period (Y+Rc), s		4.2		4.2	4.0	4.2
Max Green Setting (Gmax), s		85.8		45.8	41.0	40.8
Max Q Clear Time (g_c+I1), s		8.9		34.6	29.8	36.2
Green Ext Time (p_c), s		1.0		1.8	0.5	1.5
Intersection Summary						
HCM 7th Control Delay, s/veh			34.3			
HCM 7th LOS			C			

Cumul No Proj PM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary

Cumul No Proj PM

9: Marsh Road & Bay Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	80	20	3	56	21	198	1	941	47	160	768	46
Future Volume (veh/h)	80	20	3	56	21	198	1	941	47	160	768	46
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	87	22	3	61	23	215	1	1023	51	174	835	50
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	152	34	4	213	74	867	26	1194	59	700	2645	158
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.35	0.35	0.35	0.39	0.78	0.78
Sat Flow, veh/h	674	217	25	1069	467	1547	0	3373	168	1781	3406	204
Grp Volume(v), veh/h	112	0	0	84	0	215	568	0	507	174	436	449
Grp Sat Flow(s),veh/h/ln	916	0	0	1536	0	1547	1870	0	1672	1781	1777	1833
Q Serve(g_s), s	11.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.4	9.2	10.2	10.2
Cycle Q Clear(g_c), s	18.1	0.0	0.0	6.6	0.0	0.0	39.4	0.0	39.4	9.2	10.2	10.2
Prop In Lane	0.78		0.03	0.73		1.00	0.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	190	0	0	287	0	867	688	0	592	700	1380	1424
V/C Ratio(X)	0.59	0.00	0.00	0.29	0.00	0.25	0.83	0.00	0.86	0.25	0.32	0.32
Avail Cap(c_a), veh/h	264	0	0	375	0	959	998	0	870	700	1380	1424
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.65	0.65	0.65
Uniform Delay (d), s/veh	59.7	0.0	0.0	52.4	0.0	16.3	41.9	0.0	41.9	28.6	4.6	4.6
Incr Delay (d2), s/veh	2.1	0.0	0.0	0.4	0.0	0.1	10.9	0.0	14.9	0.0	0.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	0.0	0.0	2.7	0.0	3.6	20.0	0.0	18.5	4.0	3.5	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.8	0.0	0.0	52.8	0.0	16.4	52.8	0.0	56.8	28.6	5.0	5.0
LnGrp LOS	E			D		B	D		E	C	A	A
Approach Vol, veh/h	112				299			1075			1059	
Approach Delay, s/veh	61.8				26.6			54.7			8.9	
Approach LOS	E				C			D			A	
Timer - Assigned Phs	2			4	5	6	8					
Phs Duration (G+Y+Rc), s	113.3			26.7	59.6	53.7	26.7					
Change Period (Y+Rc), s	4.6			4.6	4.6	* 4.1	4.6					
Max Green Setting (Gmax), s	100.4			30.4	23.9	* 73	30.4					
Max Q Clear Time (g_c+I1), s	12.2			20.1	11.2	41.4	8.6					
Green Ext Time (p_c), s	7.0			0.3	0.2	8.1	0.9					
Intersection Summary												
HCM 7th Control Delay, s/veh	32.7											
HCM 7th LOS	C											
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

Cumul No Proj PM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 10: El Camino Avenue & 5th Avenue

Cumul No Proj PM

						
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	579	797	1294	326	262	614
Future Volume (veh/h)	579	797	1294	326	262	614
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	629	866	1407	354	285	667
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	733	3399	1598	400	389	1201
Arrive On Green	0.21	0.67	0.40	0.40	0.22	0.22
Sat Flow, veh/h	3456	5274	4205	1011	1781	2790
Grp Volume(v), veh/h	629	866	1186	575	285	667
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1644	1781	1395
Q Serve(g_s), s	12.1	4.7	22.3	22.5	10.3	12.4
Cycle Q Clear(g_c), s	12.1	4.7	22.3	22.5	10.3	12.4
Prop In Lane	1.00			0.62	1.00	1.00
Lane Grp Cap(c), veh/h	733	3399	1347	651	389	1201
V/C Ratio(X)	0.86	0.25	0.88	0.88	0.73	0.56
Avail Cap(c_a), veh/h	800	3399	1347	651	412	1237
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	4.7	19.4	19.4	25.1	14.7
Incr Delay (d2), s/veh	8.7	0.2	8.5	16.2	6.2	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.5	1.2	9.3	10.4	4.8	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	35.0	4.8	27.8	35.6	31.3	15.2
LnGrp LOS	C	A	C	D	C	B
Approach Vol, veh/h		1495	1761		952	
Approach Delay, s/veh		17.5	30.4		20.1	
Approach LOS		B	C		C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.7	31.3			50.0	19.1
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	16.0	26.0			46.0	16.0
Max Q Clear Time (g_c+I1), s	14.1	24.5			6.7	14.4
Green Ext Time (p_c), s	0.5	1.3			7.0	0.7
Intersection Summary						
HCM 7th Control Delay, s/veh			23.5			
HCM 7th LOS			C			

Cumul No Proj PM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary
11: Marsh Road & Florence Street/Bohannon Drive

Cumul No Proj PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	453	29	118	57	30	74	177	892	26	37	755	375
Future Volume (veh/h)	453	29	118	57	30	74	177	892	26	37	755	375
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	515	0	128	62	33	80	192	970	28	40	821	408
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	638	0	282	163	44	107	125	1894	990	51	1746	1063
Arrive On Green	0.18	0.00	0.18	0.09	0.09	0.09	0.07	0.53	0.53	0.03	0.49	0.49
Sat Flow, veh/h	3563	0	1574	1781	484	1174	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	515	0	128	62	0	113	192	970	28	40	821	408
Grp Sat Flow(s),veh/h/ln	1781	0	1574	1781	0	1659	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	13.9	0.0	7.3	3.3	0.0	6.6	7.0	17.5	0.7	2.2	15.3	11.4
Cycle Q Clear(g_c), s	13.9	0.0	7.3	3.3	0.0	6.6	7.0	17.5	0.7	2.2	15.3	11.4
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	638	0	282	163	0	152	125	1894	990	51	1746	1063
V/C Ratio(X)	0.81	0.00	0.45	0.38	0.00	0.75	1.54	0.51	0.03	0.79	0.47	0.38
Avail Cap(c_a), veh/h	998	0	441	481	0	448	125	1894	990	71	1746	1063
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	0.0	36.7	42.8	0.0	44.3	46.5	15.0	7.2	48.3	16.8	7.3
Incr Delay (d2), s/veh	2.2	0.0	0.8	1.1	0.0	5.3	274.3	0.9	0.0	21.2	0.9	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	2.8	1.5	0.0	2.9	12.6	6.9	0.3	1.3	6.2	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.5	0.0	37.5	43.9	0.0	49.6	320.8	15.9	7.2	69.5	17.7	8.4
LnGrp LOS	D		D	D		D	F	B	A	E	B	A
Approach Vol, veh/h	643		175			1190			1269			
Approach Delay, s/veh	40.7		47.6			64.8			16.3			
Approach LOS	D		D			E			B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	57.9		13.3	11.0	53.7		21.9				
Change Period (Y+Rc), s	4.0	4.6		4.2	4.0	4.6		4.0				
Max Green Setting (Gmax), s	4.0	24.2		27.0	7.0	21.2		28.0				
Max Q Clear Time (g_c+I1), s	4.2	19.5		8.6	9.0	17.3		15.9				
Green Ext Time (p_c), s	0.0	3.5		0.6	0.0	3.2		1.5				
Intersection Summary												
HCM 7th Control Delay, s/veh	40.4											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Cumul No Proj PM
Hexagon

Synchro 12 Report
12/05/2024

HCM 7th AWSC
1: 2nd Avenue & Edison Way

Cumul + Proj AM

Intersection	
Intersection Delay, s/veh	11.1
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	45	39	8	19	26	42	1	76	20	134	181	73
Future Vol, veh/h	45	39	8	19	26	42	1	76	20	134	181	73
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	49	42	9	21	28	46	1	83	22	146	197	79
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	9.3	8.9	8.7	12.6
HCM LOS	A	A	A	B

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	1%	49%	22%	35%
Vol Thru, %	78%	42%	30%	47%
Vol Right, %	21%	9%	48%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	97	92	87	388
LT Vol	1	45	19	134
Through Vol	76	39	26	181
RT Vol	20	8	42	73
Lane Flow Rate	105	100	95	422
Geometry Grp	1	1	1	1
Degree of ility	0.141	0.148	0.133	0.529
Departure Headway (Hd)	4.798	5.326	5.048	4.516
Convergence, ility/N	les	les	les	les
Cap	741	668	704	793
Service Time	2.864	3.402	3.124	2.565
HCM Lane V/C Ratio	0.142	0.15	0.135	0.532
HCM Control Delay, s/veh	8.7	9.3	8.9	12.6
HCM Lane LOS	A	A	A	B
HCM 95th-tile Q	0.5	0.5	0.5	3.2

HCM 7th AWSC
2: 5th Avenue & Edison Way

Cumul + Proj AM

Intersection	
Intersection Delay, s/veh	43.6
Intersection LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	82	123	89	24	82	90	65	244	44	93	305	60
Future Vol, veh/h	82	123	89	24	82	90	65	244	44	93	305	60
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	89	134	97	26	89	98	71	265	48	101	332	65
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	27.7	19.1	36.1	70
HCM LOS	D	C	E	F

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	18%	28%	12%	20%
Vol Thru, %	69%	42%	42%	67%
Vol Right, %	12%	30%	46%	13%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	353	294	196	458
LT Vol	65	82	24	93
Through Vol	244	123	82	305
RT Vol	44	89	90	60
Lane Flow Rate	384	320	213	498
Geometry Grp	1	1	1	1
Degree of ility (I)	0.811	0.702	0.49	1.008
Departure Headway (Hd)	7.61	7.907	8.272	7.288
Convergence, I/N	les	les	les	les
Cap	476	457	432	498
Service Time	5.69	5.986	6.366	5.359
HCM Lane V/C Ratio	0.807	0.7	0.493	1
HCM Control Delay, s/veh	36.1	27.7	19.1	70
HCM Lane LOS	E	D	C	F
HCM 95th-tile Q	7.6	5.4	2.6	13.8

Intersection	
Intersection Delay, s/veh	21.5
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	33	282	52	79	465	41	91	142	59	33	106	66
Future Vol, veh/h	33	282	52	79	465	41	91	142	59	33	106	66
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	307	57	86	505	45	99	154	64	36	115	72
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	16.6	24.7	23.7	17.7
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	31%	19%	0%	25%	0%	16%
Vol Thru, %	49%	81%	73%	75%	85%	52%
Vol Right, %	20%	0%	27%	0%	15%	32%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	292	174	193	312	274	205
LT Vol	91	33	0	79	0	33
Through Vol	142	141	141	233	233	106
RT Vol	59	0	52	0	41	66
Lane Flow Rate	317	189	210	339	297	223
Geometry Grp	2	5	5	5	5	2
Degree of Util (U)	0.655	0.419	0.448	0.718	0.611	0.476
Departure Headway (Hd)	7.433	7.978	7.685	7.633	7.394	7.694
Convergence, U/N	les	les	les	les	les	les
Cap	482	448	466	471	485	466
Service Time	5.518	5.772	5.479	5.423	5.184	5.793
HCM Lane V/C Ratio	0.658	0.422	0.451	0.72	0.612	0.479
HCM Control Delay, s/veh	23.7	16.5	16.6	27.7	21.2	17.7
HCM Lane LOS	C	C	C	D	C	C
HCM 95th-tile Q	4.6	2	2.3	5.7	4	2.5

HCM 7th TWSC
3: Fairoaks Avenue & Edison Way

Cumul+Proj AM

Intersection												
Int Delay, s/veh	5.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	22	113	1	12	0	160	0	1	0	0	0
Future Vol, veh/h	0	22	113	1	12	0	160	0	1	0	0	0
Conflicting Peds, #/hr	9	0	2	2	0	9	2	0	2	9	0	9
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	24	123	1	13	0	174	0	1	0	0	0
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	22	0	0	149	0	0	112	112	96	57	173	31
Stage 1	-	-	-	-	-	-	87	87	-	24	24	-
Stage 2	-	-	-	-	-	-	24	24	-	33	149	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1593	-	-	1433	-	-	866	779	960	940	720	1043
Stage 1	-	-	-	-	-	-	920	822	-	994	875	-
Stage 2	-	-	-	-	-	-	994	875	-	983	774	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1581	-	-	1430	-	-	858	771	951	924	713	1028
Mov Cap-2 Maneuver	-	-	-	-	-	-	858	771	-	924	713	-
Stage 1	-	-	-	-	-	-	919	821	-	985	868	-
Stage 2	-	-	-	-	-	-	985	868	-	975	773	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0			0.58			10.27			0		
HCM LOS							B			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	858	1581	-	-	138	-	-	-				
HCM Lane V/C Ratio	0.204	-	-	-	0.001	-	-	-				
HCM Ctrl Dly (s/v)	10.3	0	-	-	7.5	0	-	0				
HCM Lane LOS	B	A	-	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.8	0	-	-	0	-	-	-				

4: Marsh Road & Fair Oaks Avenue

Intersection

Int Delay, s/veh 0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
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Lane Configurations						
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Traffic Vol, veh/h	26	15	16	841	597	132
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Future Vol, veh/h	26	15	16	841	597	132
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Conflicting Peds, #/hr	0	0	0	0	0	0
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Sign Control	Stop	Stop	Free	Free	Free	Free
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RT Channelized	-	None	-	None	-	None
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Storage Length	0	-	-	-	-	0
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Veh in Median Storage, #	2	-	-	0	0	-
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Grade, %	0	-	-	0	0	-
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Peak Hour Factor	92	92	92	92	92	92
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Heavy Vehicles, %	2	2	2	2	2	2
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Mvmt Flow	28	16	17	914	649	143
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Major/Minor	Minor2	Major1	Major2
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Conflicting Flow All	1598	649	792
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Stage 1	649	-	-
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Stage 2	949	-	-
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Critical Hdwy	6.42	6.22	4.12
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Critical Hdwy Stg 1	5.42	-	-
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Critical Hdwy Stg 2	5.42	-	-
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Follow-up Hdwy	3.518	3.318	2.218
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Pot Cap-1 Maneuver	117	470	828
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Stage 1	520	-	-
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Stage 2	376	-	-
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Platoon blocked, %			
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Mov Cap-1 Maneuver	112	470	828
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Mov Cap-2 Maneuver	303	-	-
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Stage 1	498	-	-
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Stage 2	376	-	-
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Approach	EB	NB	SB
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HCM Ctrl Dly, s/v	16.86	0.18	0
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HCM LOS	C		
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Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
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Capacity (veh/h)	34	-	348	-	-
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HCM Lane V/C Ratio	0.021	-	0.128	-	-
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HCM Ctrl Dly (s/v)	9.4	0	16.9	-	-
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HCM Lane LOS	A	A	C	-	-
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HCM 95th %tile Q(veh)	0.1	-	0.4	-	-
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HCM 7th TWSC
18: Middlefield Road & 2nd Avenue

Cumul+Proj AM

Intersection												
Int Delay, s/veh	4.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	33	338	7	11	307	28	8	9	17	37	11	75
Future Vol, veh/h	33	338	7	11	307	28	8	9	17	37	11	75
Conflicting Peds, #/hr	46	0	59	54	0	41	59	0	54	41	0	46
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	0	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	36	367	8	12	334	30	9	10	18	40	12	82
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	410	0	0	434	0	0	925	936	484	917	925	454
Stage 1	-	-	-	-	-	-	502	502	-	419	419	-
Stage 2	-	-	-	-	-	-	423	434	-	498	506	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1149	-	-	1126	-	-	250	265	583	253	269	606
Stage 1	-	-	-	-	-	-	552	542	-	612	590	-
Stage 2	-	-	-	-	-	-	609	581	-	554	540	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1105	-	-	1070	-	-	175	232	529	206	235	554
Mov Cap-2 Maneuver	-	-	-	-	-	-	175	232	-	206	235	-
Stage 1	-	-	-	-	-	-	507	499	-	582	561	-
Stage 2	-	-	-	-	-	-	478	553	-	485	497	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.73			0.27			19.13			22.3		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	292	1105	-	-	1070	-	-	340				
HCM Lane V/C Ratio	0.127	0.032	-	-	0.011	-	-	0.393				
HCM Ctrl Dly (s/v)	19.1	8.4	-	-	8.4	-	-	22.3				
HCM Lane LOS	C	A	-	-	A	-	-	C				
HCM 95th %tile Q(veh)	0.4	0.1	-	-	0	-	-	1.8				

Cumul+Proj AM
Hexagon

Synchro 12 Report
12/18/2024

HCM 7th TWSC
22: Palmer Lane & Fair Oaks Avenue

Cumul+Proj AM

Intersection												
Int Delay, s/veh	7.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	10	23	15	40	63	2	17	10	2	0	95	50
Future Vol, veh/h	10	23	15	40	63	2	17	10	2	0	95	50
Conflicting Peds, #/hr	11	0	2	3	0	12	2	0	3	12	0	11
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	25	16	43	68	2	18	11	2	0	103	54
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	83	0	0	44	0	0	276	228	48	233	235	93
Stage 1	-	-	-	-	-	-	58	58	-	169	169	-
Stage 2	-	-	-	-	-	-	218	170	-	64	66	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1515	-	-	1564	-	-	676	672	1021	722	666	965
Stage 1	-	-	-	-	-	-	954	847	-	833	759	-
Stage 2	-	-	-	-	-	-	784	758	-	947	840	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1499	-	-	1560	-	-	511	640	1008	669	634	946
Mov Cap-2 Maneuver	-	-	-	-	-	-	511	640	-	669	634	-
Stage 1	-	-	-	-	-	-	944	838	-	801	730	-
Stage 2	-	-	-	-	-	-	611	729	-	916	832	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.55			2.81			11.68			11.45		
HCM LOS							B			B		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	570	348	-	-	682	-	-	715				
HCM Lane V/C Ratio	0.055	0.007	-	-	0.028	-	-	0.22				
HCM Ctrl Dly (s/v)	11.7	7.4	0	-	7.4	0	-	11.5				
HCM Lane LOS	B	A	A	-	A	A	-	B				
HCM 95th %tile Q(veh)	0.2	0	-	-	0.1	-	-	0.8				

HCM 7th Signalized Intersection Summary

5: 5th Avenue & Semicircular Road

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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	399	14	438	465	0	583
Future Volume (veh/h)	399	14	438	465	0	583
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	434	15	476	0	0	634
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	543	19	1143		0	1143
Arrive On Green	0.32	0.32	0.32	0.00	0.00	0.32
Sat Flow, veh/h	1711	59	3741	0	0	3741
Grp Volume(v), veh/h	450	0	476	0	0	634
Grp Sat Flow(s),veh/h/ln	1774	0	1777	0	0	1777
Q Serve(g_s), s	5.5	0.0	2.5	0.0	0.0	3.5
Cycle Q Clear(g_c), s	5.5	0.0	2.5	0.0	0.0	3.5
Prop In Lane	0.96	0.03		0.00	0.00	
Lane Grp Cap(c), veh/h	564	0	1143		0	1143
V/C Ratio(X)	0.80	0.00	0.42		0.00	0.55
Avail Cap(c_a), veh/h	753	0	1735		0	1735
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	0.0	6.3	0.0	0.0	6.6
Incr Delay (d2), s/veh	4.5	0.0	0.3	0.0	0.0	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.0	0.5	0.0	0.0	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	11.8	0.0	6.6	0.0	0.0	7.1
LnGrp LOS	B		A			A
Approach Vol, veh/h	450		476			634
Approach Delay, s/veh	11.8		6.6			7.1
Approach LOS	B		A			A
Timer - Assigned Phs	2		6		8	
Phs Duration (G+Y+Rc), s	12.1		12.1		11.5	
Change Period (Y+Rc), s	4.5		4.5		4.0	
Max Green Setting (Gmax), s	11.5		11.5		10.0	
Max Q Clear Time (g_c+I1), s	4.5		5.5		7.5	
Green Ext Time (p_c), s	2.0		2.1		0.4	
Intersection Summary						
HCM 7th Control Delay, s/veh			8.3			
HCM 7th LOS			A			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 6: Middlefield Road & 5th Avenue

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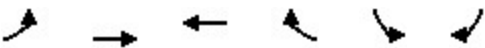
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	230	245	10	194	52	160	306	23	44	322	27
Future Volume (veh/h)	18	230	245	10	194	52	160	306	23	44	322	27
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.98		0.86	1.00		0.86	1.00		0.91	1.00		0.93
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	20	250	266	11	211	57	174	333	25	48	350	29
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	295	251	267	69	452	122	192	368	439	56	411	372
Arrive On Green	0.33	0.33	0.33	0.33	0.33	0.33	0.30	0.30	0.30	0.25	0.25	0.25
Sat Flow, veh/h	1091	758	807	885	1365	369	631	1208	1442	224	1635	1480
Grp Volume(v), veh/h	20	0	516	11	0	268	507	0	25	398	0	29
Grp Sat Flow(s),veh/h/ln	1091	0	1565	885	0	1734	1839	0	1442	1859	0	1480
Q Serve(g_s), s	1.6	0.0	34.8	0.2	0.0	12.9	28.0	0.0	1.3	21.6	0.0	1.6
Cycle Q Clear(g_c), s	14.5	0.0	34.8	35.0	0.0	12.9	28.0	0.0	1.3	21.6	0.0	1.6
Prop In Lane	1.00		0.52	1.00		0.21	0.34		1.00	0.12		1.00
Lane Grp Cap(c), veh/h	295	0	518	69	0	574	560	0	439	468	0	372
V/C Ratio(X)	0.07	0.00	1.00	0.16	0.00	0.47	0.91	0.00	0.06	0.85	0.00	0.08
Avail Cap(c_a), veh/h	295	0	518	69	0	574	660	0	518	791	0	629
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.8	0.0	35.4	52.9	0.0	28.0	35.4	0.0	26.1	37.7	0.0	30.2
Incr Delay (d2), s/veh	0.4	0.0	38.8	4.8	0.0	2.7	14.6	0.0	0.1	4.6	0.0	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	0.0	18.5	0.4	0.0	5.8	14.7	0.0	0.5	10.4	0.0	0.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	34.2	0.0	74.2	57.7	0.0	30.8	50.0	0.0	26.1	42.3	0.0	30.3
LnGrp LOS	C		E	E		C	D		C	D		C
Approach Vol, veh/h	536			279			532			427		
Approach Delay, s/veh	72.7			31.8			48.9			41.5		
Approach LOS	E			C			D			D		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	39.0			36.2			39.0			30.6		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	35.0			38.0			35.0			45.0		
Max Q Clear Time (g_c+I1), s	36.8			30.0			37.0			23.6		
Green Ext Time (p_c), s	0.0			2.2			0.0			2.7		
Intersection Summary												
HCM 7th Control Delay, s/veh	51.6											
HCM 7th LOS	D											

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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 8: Middlefield Road & Marsh Road

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	366	368	260	512	501	236
Future Volume (veh/h)	366	368	260	512	501	236
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	398	400	283	557	545	257
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	430	1143	635	1036	581	900
Arrive On Green	0.24	0.61	0.34	0.34	0.33	0.33
Sat Flow, veh/h	1781	1870	1870	1527	1781	1585
Grp Volume(v), veh/h	398	400	283	557	545	257
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1527	1781	1585
Q Serve(g_s), s	29.2	14.2	15.8	25.7	39.8	11.2
Cycle Q Clear(g_c), s	29.2	14.2	15.8	25.7	39.8	11.2
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	430	1143	635	1036	581	900
V/C Ratio(X)	0.93	0.35	0.45	0.54	0.94	0.29
Avail Cap(c_a), veh/h	599	1143	635	1036	796	1090
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.6	12.9	34.4	11.7	43.8	14.9
Incr Delay (d2), s/veh	16.6	0.8	2.3	2.0	14.4	0.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	15.0	6.2	7.6	19.6	19.7	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	66.2	13.7	36.6	13.7	58.2	15.1
LnGrp LOS	E	B	D	B	E	B
Approach Vol, veh/h		798	840		802	
Approach Delay, s/veh		39.9	21.5		44.4	
Approach LOS		D	C		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		86.0		47.9	36.3	49.7
Change Period (Y+Rc), s		4.2		4.2	4.0	4.2
Max Green Setting (Gmax), s		81.8		59.8	45.0	32.8
Max Q Clear Time (g_c+I1), s		16.2		41.8	31.2	27.7
Green Ext Time (p_c), s		1.7		1.9	1.1	1.3
Intersection Summary						
HCM 7th Control Delay, s/veh			35.0			
HCM 7th LOS			D			

HCM 7th Signalized Intersection Summary

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9: Marsh Road & Bay Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	119	51	4	46	12	206	1	843	69	284	849	79
Future Volume (veh/h)	119	51	4	46	12	206	1	843	69	284	849	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	1.00		0.97	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	129	55	4	50	13	224	1	916	75	309	923	86
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	227	85	5	303	70	815	45	1021	84	558	2225	207
Arrive On Green	0.21	0.21	0.21	0.21	0.21	0.21	0.31	0.31	0.31	0.31	0.68	0.68
Sat Flow, veh/h	734	414	25	1079	340	1544	0	3250	266	1781	3278	305
Grp Volume(v), veh/h	188	0	0	63	0	224	527	0	465	309	500	509
Grp Sat Flow(s),veh/h/ln	1173	0	0	1419	0	1544	1869	0	1647	1781	1777	1806
Q Serve(g_s), s	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	21.6	11.5	10.1	10.1
Cycle Q Clear(g_c), s	12.6	0.0	0.0	2.8	0.0	0.0	21.5	0.0	21.6	11.5	10.1	10.1
Prop In Lane	0.69		0.02	0.79		1.00	0.00		0.16	1.00		0.17
Lane Grp Cap(c), veh/h	318	0	0	373	0	815	632	0	517	558	1206	1226
V/C Ratio(X)	0.59	0.00	0.00	0.17	0.00	0.27	0.83	0.00	0.90	0.55	0.41	0.41
Avail Cap(c_a), veh/h	487	0	0	561	0	1018	659	0	541	558	1206	1226
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.75	0.75	0.75
Uniform Delay (d), s/veh	30.7	0.0	0.0	26.3	0.0	10.8	26.2	0.0	26.2	22.8	5.7	5.7
Incr Delay (d2), s/veh	1.3	0.0	0.0	0.2	0.0	0.1	12.3	0.0	21.0	0.5	0.8	0.8
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.0	1.0	0.0	2.1	11.1	0.0	10.9	4.7	3.2	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	32.0	0.0	0.0	26.4	0.0	10.9	38.5	0.0	47.2	23.3	6.5	6.5
LnGrp LOS	C			C		B	D		D	C	A	A
Approach Vol, veh/h	188			287			992			1318		
Approach Delay, s/veh	32.0			14.3			42.6			10.5		
Approach LOS	C			B			D			B		
Timer - Assigned Phs	2			4		5	6	8				
Phs Duration (G+Y+Rc), s	58.9			21.1		29.7	29.2	21.1				
Change Period (Y+Rc), s	4.6			4.6		4.6	* 4.1	4.6				
Max Green Setting (Gmax), s	43.8			27.0		13.9	* 26	27.0				
Max Q Clear Time (g_c+l1), s	12.1			14.6		13.5	23.6	4.8				
Green Ext Time (p_c), s	7.9			0.8		0.0	1.6	0.8				
Intersection Summary												
HCM 7th Control Delay, s/veh				23.8								
HCM 7th LOS				C								
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 10: El Camino Avenue & 5th Avenue

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	688	1601	658	248	420	544
Future Volume (veh/h)	688	1601	658	248	420	544
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.98	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	748	1740	715	270	457	591
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	844	2911	981	365	562	1562
Arrive On Green	0.24	0.57	0.27	0.27	0.32	0.32
Sat Flow, veh/h	3456	5274	3814	1357	1781	2790
Grp Volume(v), veh/h	748	1740	667	318	457	591
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1599	1781	1395
Q Serve(g_s), s	14.6	15.6	12.5	12.7	16.6	8.3
Cycle Q Clear(g_c), s	14.6	15.6	12.5	12.7	16.6	8.3
Prop In Lane	1.00			0.85	1.00	1.00
Lane Grp Cap(c), veh/h	844	2911	916	430	562	1562
V/C Ratio(X)	0.89	0.60	0.73	0.74	0.81	0.38
Avail Cap(c_a), veh/h	887	2911	916	430	813	1954
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.6	9.8	23.3	23.4	22.1	8.6
Incr Delay (d2), s/veh	10.4	0.9	5.1	10.9	4.1	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	4.9	5.3	5.7	7.1	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	36.0	10.7	28.4	34.3	26.2	8.8
LnGrp LOS	D	B	C	C	C	A
Approach Vol, veh/h		2488	985		1048	
Approach Delay, s/veh		18.3	30.3		16.4	
Approach LOS		B	C		B	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	21.1	22.9			44.0	26.2
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	18.0	18.0			40.0	32.0
Max Q Clear Time (g_c+I1), s	16.6	14.7			17.6	18.6
Green Ext Time (p_c), s	0.5	1.9			13.6	3.6
Intersection Summary						
HCM 7th Control Delay, s/veh			20.5			
HCM 7th LOS			C			

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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 11: Marsh Road & Florence Street/Bohannon Drive

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	545	31	166	41	24	20	134	827	46	35	1088	460
Future Volume (veh/h)	545	31	166	41	24	20	134	827	46	35	1088	460
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No				No				No			
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	616	0	180	45	26	22	146	899	50	38	1183	500
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	684	0	304	88	46	39	496	2225	1050	49	1321	892
Arrive On Green	0.19	0.00	0.19	0.05	0.05	0.05	0.56	1.00	1.00	0.03	0.37	0.37
Sat Flow, veh/h	3563	0	1585	1781	936	792	1781	3554	1552	1781	3554	1581
Grp Volume(v), veh/h	616	0	180	45	0	48	146	899	50	38	1183	500
Grp Sat Flow(s),veh/h/ln	1781	0	1585	1781	0	1728	1781	1777	1552	1781	1777	1581
Q Serve(g_s), s	27.0	0.0	16.6	3.9	0.0	4.3	7.0	0.0	0.0	3.4	50.2	32.3
Cycle Q Clear(g_c), s	27.0	0.0	16.6	3.9	0.0	4.3	7.0	0.0	0.0	3.4	50.2	32.3
Prop In Lane	1.00		1.00	1.00		0.46	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	684	0	304	88	0	85	496	2225	1050	49	1321	892
V/C Ratio(X)	0.90	0.00	0.59	0.51	0.00	0.56	0.29	0.40	0.05	0.78	0.90	0.56
Avail Cap(c_a), veh/h	846	0	376	310	0	300	496	2225	1050	67	1342	901
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.77	0.77	0.77	1.00	1.00	1.00
Uniform Delay (d), s/veh	63.1	0.0	58.9	74.2	0.0	74.4	27.1	0.0	0.0	77.3	47.3	22.3
Incr Delay (d2), s/veh	10.5	0.0	1.4	3.4	0.0	4.3	0.1	0.4	0.1	21.7	9.7	2.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	13.3	0.0	6.8	1.9	0.0	2.0	2.8	0.1	0.0	1.9	24.0	18.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	73.6	0.0	60.3	77.6	0.0	78.7	27.2	0.4	0.1	99.0	57.1	24.8
LnGrp LOS	E		E	E		E	C	A	A	F	E	C
Approach Vol, veh/h	796				93				1095			
Approach Delay, s/veh	70.6				78.2				4.0			
Approach LOS	E				E				A			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.4	104.8		12.1	49.1	64.1		34.7				
Change Period (Y+Rc), s	4.0	4.6		4.2	4.6	* 4.6		4.0				
Max Green Setting (Gmax), s	6.0	71.4		27.8	17.0	* 60		38.0				
Max Q Clear Time (g_c+I1), s	5.4	2.0		6.3	9.0	52.2		29.0				
Green Ext Time (p_c), s	0.0	18.4		0.2	0.1	7.3		1.7				
Intersection Summary												
HCM 7th Control Delay, s/veh	40.9											
HCM 7th LOS	D											
Notes												
User approved volume balancing among the lanes for turning movement.												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

Cumul+Proj AM
Hexagon

Synchro 12 Report
12/05/2024

Intersection	
Intersection Delay, s/veh	8.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	38	26	3	15	37	60	3	82	21	57	121	43
Future Vol, veh/h	38	26	3	15	37	60	3	82	21	57	121	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	41	28	3	16	40	65	3	89	23	62	132	47
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	8.6	8.4	8.4	9.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	3%	57%	13%	26%
Vol Thru, %	77%	39%	33%	55%
Vol Right, %	20%	4%	54%	19%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	106	67	112	221
LT Vol	3	38	15	57
Through Vol	82	26	37	121
RT Vol	21	3	60	43
Lane Flow Rate	115	73	122	240
Geometry Grp	1	1	1	1
Degree of Util (X)	0.146	0.101	0.154	0.298
Departure Headway (Hd)	4.558	4.983	4.546	4.466
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	785	717	786	805
Service Time	2.595	3.026	2.585	2.498
HCM Lane V/C Ratio	0.146	0.102	0.155	0.298
HCM Control Delay, s/veh	8.4	8.6	8.4	9.4
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.5	0.3	0.5	1.3

HCM 7th AWSC
2: 5th Avenue & Edison Way

Cumul+Proj PM

Intersection	
Intersection Delay, s/veh	26.9
Intersection LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	89	60	66	40	80	124	59	259	33	55	299	59
Future Vol, veh/h	89	60	66	40	80	124	59	259	33	55	299	59
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	97	65	72	43	87	135	64	282	36	60	325	64
Number of Lanes	0	1	0	0	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	1	1	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	1	1
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	1	1
HCM Control Delay, s/veh	17.7	18.5	27.2	36.5
HCM LOS	C	C	D	E

Lane	NBLn1	EBLn1	WBLn1	SBLn1
Vol Left, %	17%	41%	16%	13%
Vol Thru, %	74%	28%	33%	72%
Vol Right, %	9%	31%	51%	14%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	351	215	244	413
LT Vol	59	89	40	55
Through Vol	259	60	80	299
RT Vol	33	66	124	59
Lane Flow Rate	382	234	265	449
Geometry Grp	1	1	1	1
Degree of Util (X)	0.737	0.49	0.536	0.843
Departure Headway (Hd)	6.958	7.548	7.278	6.764
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	519	474	493	534
Service Time	5.033	5.633	5.359	4.833
HCM Lane V/C Ratio	0.736	0.494	0.538	0.841
HCM Control Delay, s/veh	27.2	17.7	18.5	36.5
HCM Lane LOS	D	C	C	E
HCM 95th-tile Q	6.2	2.6	3.1	8.7

Intersection	
Intersection Delay, s/veh	17.3
Intersection LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	396	79	52	299	20	54	99	53	12	139	100
Future Vol, veh/h	41	396	79	52	299	20	54	99	53	12	139	100
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	430	86	57	325	22	59	108	58	13	151	109
Number of Lanes	0	2	0	0	2	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay, s/veh	18.6	15.7	16.4	17.9
HCM LOS	C	C	C	C

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	26%	17%	0%	26%	0%	5%
Vol Thru, %	48%	83%	71%	74%	88%	55%
Vol Right, %	26%	0%	29%	0%	12%	40%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	206	239	277	202	170	251
LT Vol	54	41	0	52	0	12
Through Vol	99	198	198	150	150	139
RT Vol	53	0	79	0	20	100
Lane Flow Rate	224	260	301	219	184	273
Geometry Grp	2	5	5	5	5	2
Degree of Util (X)	0.454	0.525	0.584	0.46	0.375	0.532
Departure Headway (Hd)	7.298	7.275	6.982	7.554	7.336	7.016
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	493	494	515	475	488	513
Service Time	5.375	5.049	4.755	5.331	5.113	5.087
HCM Lane V/C Ratio	0.454	0.526	0.584	0.461	0.377	0.532
HCM Control Delay, s/veh	16.4	17.9	19.2	16.7	14.5	17.9
HCM Lane LOS	C	C	C	C	B	C
HCM 95th-tile Q	2.3	3	3.7	2.4	1.7	3.1

HCM 7th TWSC
3: Fair Oaks Avenue & Edison Way

Cumul+Proj PM

Intersection												
Int Delay, s/veh	5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	14	110	5	23	0	129	0	3	0	0	0
Future Vol, veh/h	0	14	110	5	23	0	129	0	3	0	0	0
Conflicting Peds, #/hr	17	0	6	10	0	21	6	0	10	21	0	17
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	120	5	25	0	140	0	3	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	46	0	0	145	0	0	138	142	106	93	202	63
Stage 1	-	-	-	-	-	-	85	85	-	57	57	-
Stage 2	-	-	-	-	-	-	53	57	-	36	145	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1562	-	-	1437	-	-	833	749	948	891	694	1002
Stage 1	-	-	-	-	-	-	923	824	-	955	847	-
Stage 2	-	-	-	-	-	-	960	847	-	979	777	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1534	-	-	1426	-	-	811	727	924	853	674	970
Mov Cap-2 Maneuver	-	-	-	-	-	-	811	727	-	853	674	-
Stage 1	-	-	-	-	-	-	915	818	-	935	829	-
Stage 2	-	-	-	-	-	-	942	829	-	959	771	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	0	1.35	10.37	0
HCM LOS			B	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	813	1534	-	-	321	-	-	-
HCM Lane V/C Ratio	0.176	-	-	-	0.004	-	-	-
HCM Ctrl Dly (s/v)	10.4	0	-	-	7.5	0	-	0
HCM Lane LOS	B	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.6	0	-	-	0	-	-	-

HCM 7th TWSC
4: Marsh Road & Fair Oaks Avenue

Cumul+Proj PM

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	35	21	20	883	706	67
Future Vol, veh/h	35	21	20	883	706	67
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	0
Veh in Median Storage, #	2	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	23	22	960	767	73

Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	1771	767	840
Stage 1	767	-	-
Stage 2	1003	-	-
Critical Hdwy	6.42	6.22	4.12
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3.518	3.318	2.218
Pot Cap-1 Maneuver	92	402	795
Stage 1	458	-	-
Stage 2	355	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	86	402	795
Mov Cap-2 Maneuver	272	-	-
Stage 1	431	-	-
Stage 2	355	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	19.46	0.21	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	40	-	309	-	-
HCM Lane V/C Ratio	0.027	-	0.197	-	-
HCM Ctrl Dly (s/v)	9.7	0	19.5	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

HCM 7th TWSC
18: Middlefield Road & 2nd Avenue

Cumul+Proj PM

Intersection												
Int Delay, s/veh	4.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	49	419	24	30	459	32	12	9	22	29	7	67
Future Vol, veh/h	49	419	24	30	459	32	12	9	22	29	7	67
Conflicting Peds, #/hr	40	0	61	61	0	40	61	0	61	40	0	40
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	53	455	26	33	499	35	13	10	24	32	8	73
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	574	0	0	543	0	0	1015	1275	363	1022	1271	368
Stage 1	-	-	-	-	-	-	636	636	-	622	622	-
Stage 2	-	-	-	-	-	-	379	639	-	400	649	-
Critical Hdwy	4.14	-	-	4.14	-	-	7.54	6.54	6.94	7.54	6.54	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3.52	4.02	3.32	3.52	4.02	3.32
Pot Cap-1 Maneuver	995	-	-	1022	-	-	192	166	634	190	167	629
Stage 1	-	-	-	-	-	-	433	470	-	441	477	-
Stage 2	-	-	-	-	-	-	614	469	-	597	464	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	962	-	-	970	-	-	129	137	571	141	137	577
Mov Cap-2 Maneuver	-	-	-	-	-	-	129	137	-	141	137	-
Stage 1	-	-	-	-	-	-	384	418	-	410	443	-
Stage 2	-	-	-	-	-	-	481	435	-	497	412	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	1.29			0.78			25.96			26.66		
HCM LOS							D			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	218	333	-	-	190	-	-	276				
HCM Lane V/C Ratio	0.214	0.055	-	-	0.034	-	-	0.406				
HCM Ctrl Dly (s/v)	26	9	0.5	-	8.8	0.3	-	26.7				
HCM Lane LOS	D	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	0.8	0.2	-	-	0.1	-	-	1.9				

HCM 7th TWSC
22: Palmer Lane & Fair Oaks Avenue

Cumul+Proj PM

Intersection												
Int Delay, s/veh	3.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	6	40	8	6	66	2	17	17	5	0	8	17
Future Vol, veh/h	6	40	8	6	66	2	17	17	5	0	8	17
Conflicting Peds, #/hr	3	0	4	4	0	3	4	0	4	3	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	43	9	7	72	2	18	18	5	0	9	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	77	0	0	56	0	0	158	155	56	159	158	80
Stage 1	-	-	-	-	-	-	65	65	-	89	89	-
Stage 2	-	-	-	-	-	-	93	90	-	70	69	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1522	-	-	1549	-	-	808	737	1011	807	734	980
Stage 1	-	-	-	-	-	-	946	841	-	919	821	-
Stage 2	-	-	-	-	-	-	914	820	-	940	837	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1518	-	-	1543	-	-	771	726	1004	771	723	975
Mov Cap-2 Maneuver	-	-	-	-	-	-	771	726	-	771	723	-
Stage 1	-	-	-	-	-	-	938	834	-	912	816	-
Stage 2	-	-	-	-	-	-	880	815	-	907	831	-
Approach	EB			WB			NB			SB		
HCM Ctrl Dly, s/v	0.82			0.6			9.93			9.24		
HCM LOS							A			A		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	773	194	-	-	145	-	-	877				
HCM Lane V/C Ratio	0.055	0.004	-	-	0.004	-	-	0.031				
HCM Ctrl Dly (s/v)	9.9	7.4	0	-	7.3	0	-	9.2				
HCM Lane LOS	A	A	A	-	A	A	-	A				
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.1				

HCM 7th Signalized Intersection Summary 5: 5th Avenue & Semicircular Road

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Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	288	23	500	391	0	514
Future Volume (veh/h)	288	23	500	391	0	514
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	0	1870
Adj Flow Rate, veh/h	313	25	543	0	0	559
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	2
Cap, veh/h	392	31	1391		0	1391
Arrive On Green	0.24	0.24	0.39	0.00	0.00	0.39
Sat Flow, veh/h	1630	130	3741	0	0	3741
Grp Volume(v), veh/h	339	0	543	0	0	559
Grp Sat Flow(s),veh/h/ln	1765	0	1777	0	0	1777
Q Serve(g_s), s	3.7	0.0	2.2	0.0	0.0	2.3
Cycle Q Clear(g_c), s	3.7	0.0	2.2	0.0	0.0	2.3
Prop In Lane	0.92	0.07		0.00	0.00	
Lane Grp Cap(c), veh/h	424	0	1391		0	1391
V/C Ratio(X)	0.80	0.00	0.39		0.00	0.40
Avail Cap(c_a), veh/h	1127	0	3402		0	3402
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	7.3	0.0	4.5	0.0	0.0	4.5
Incr Delay (d2), s/veh	1.3	0.0	0.2	0.0	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.0	0.2	0.0	0.0	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	8.6	0.0	4.7	0.0	0.0	4.7
LnGrp LOS	A		A			A
Approach Vol, veh/h	339		543			559
Approach Delay, s/veh	8.6		4.7			4.7
Approach LOS	A		A			A
Timer - Assigned Phs	2		4		6	
Phs Duration (G+Y+Rc), s	12.5		7.9		12.5	
Change Period (Y+Rc), s	4.5		3.0		4.5	
Max Green Setting (Gmax), s	19.5		13.0		19.5	
Max Q Clear Time (g_c+I1), s	4.2		5.7		4.3	
Green Ext Time (p_c), s	3.8		0.1		3.2	
Intersection Summary						
HCM 7th Control Delay, s/veh			5.6			
HCM 7th LOS			A			
Notes						
Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.						

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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 6: Middlefield Road & 5th Avenue

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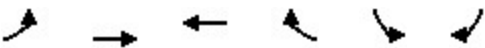
												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	33	262	245	18	300	69	215	264	13	51	279	49
Future Volume (veh/h)	33	262	245	18	300	69	215	264	13	51	279	49
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.91	1.00		0.96	1.00		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	36	285	266	20	326	75	234	287	14	55	303	53
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	209	297	277	84	486	112	257	315	479	68	372	353
Arrive On Green	0.34	0.34	0.34	0.34	0.34	0.34	0.31	0.31	0.31	0.24	0.24	0.24
Sat Flow, veh/h	984	879	820	857	1439	331	822	1008	1529	285	1571	1490
Grp Volume(v), veh/h	36	0	551	20	0	401	521	0	14	358	0	53
Grp Sat Flow(s),veh/h/ln	984	0	1699	857	0	1771	1829	0	1529	1856	0	1490
Q Serve(g_s), s	3.5	0.0	33.9	2.1	0.0	20.7	29.2	0.0	0.7	19.4	0.0	3.0
Cycle Q Clear(g_c), s	24.1	0.0	33.9	36.0	0.0	20.7	29.2	0.0	0.7	19.4	0.0	3.0
Prop In Lane	1.00		0.48	1.00		0.19	0.45		1.00	0.15		1.00
Lane Grp Cap(c), veh/h	209	0	573	84	0	598	573	0	479	440	0	353
V/C Ratio(X)	0.17	0.00	0.96	0.24	0.00	0.67	0.91	0.00	0.03	0.81	0.00	0.15
Avail Cap(c_a), veh/h	209	0	573	84	0	598	669	0	559	748	0	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	40.6	0.0	34.6	52.4	0.0	30.2	35.2	0.0	25.4	38.5	0.0	32.2
Incr Delay (d2), s/veh	1.8	0.0	29.1	6.5	0.0	5.9	15.1	0.0	0.0	3.7	0.0	0.2
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	18.3	0.7	0.0	9.7	15.3	0.0	0.3	9.3	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	42.4	0.0	63.7	59.0	0.0	36.1	50.3	0.0	25.4	42.2	0.0	32.4
LnGrp LOS	D		E	E		D	D		C	D		C
Approach Vol, veh/h	587			421			535			411		
Approach Delay, s/veh	62.4			37.2			49.7			40.9		
Approach LOS	E			D			D			D		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	40.0			37.4			40.0			29.3		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	36.0			39.0			36.0			43.0		
Max Q Clear Time (g_c+I1), s	35.9			31.2			38.0			21.4		
Green Ext Time (p_c), s	0.0			2.2			0.0			2.5		
Intersection Summary												
HCM 7th Control Delay, s/veh	49.0											
HCM 7th LOS	D											

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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 8: Middlefield Road & Marsh Road

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	355	231	324	634	427	348
Future Volume (veh/h)	355	231	324	634	427	348
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	386	251	352	689	464	378
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	412	1223	733	1048	502	814
Arrive On Green	0.23	0.65	0.39	0.39	0.28	0.28
Sat Flow, veh/h	1781	1870	1870	1534	1781	1585
Grp Volume(v), veh/h	386	251	352	689	464	378
Grp Sat Flow(s),veh/h/ln	1781	1870	1870	1534	1781	1585
Q Serve(g_s), s	27.9	7.0	18.5	34.9	33.2	20.0
Cycle Q Clear(g_c), s	27.9	7.0	18.5	34.9	33.2	20.0
Prop In Lane	1.00			1.00	1.00	1.00
Lane Grp Cap(c), veh/h	412	1223	733	1048	502	814
V/C Ratio(X)	0.94	0.21	0.48	0.66	0.92	0.46
Avail Cap(c_a), veh/h	557	1223	733	1048	622	920
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	49.4	9.1	29.9	12.7	45.7	20.4
Incr Delay (d2), s/veh	17.4	0.4	2.2	3.2	16.8	0.3
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	14.4	2.9	8.8	24.0	16.9	20.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	66.8	9.4	32.1	15.9	62.5	20.7
LnGrp LOS	E	A	C	B	E	C
Approach Vol, veh/h		637	1041		842	
Approach Delay, s/veh		44.2	21.4		43.8	
Approach LOS		D	C		D	
Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		90.0		41.2	34.4	55.6
Change Period (Y+Rc), s		4.2		4.2	4.0	4.2
Max Green Setting (Gmax), s		85.8		45.8	41.0	40.8
Max Q Clear Time (g_c+I1), s		9.0		35.2	29.9	36.9
Green Ext Time (p_c), s		1.0		1.8	0.5	1.4
Intersection Summary						
HCM 7th Control Delay, s/veh			34.6			
HCM 7th LOS			C			

HCM 7th Signalized Intersection Summary

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9: Marsh Road & Bay Road

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	87	20	3	56	21	198	1	948	47	160	780	48
Future Volume (veh/h)	87	20	3	56	21	198	1	948	47	160	780	48
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.99		0.98	0.99		0.98	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	95	22	3	61	23	215	1	1030	51	174	848	52
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	33	4	221	77	864	26	1202	59	688	2624	161
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.36	0.36	0.36	0.39	0.77	0.77
Sat Flow, veh/h	697	203	23	1085	471	1547	0	3374	167	1781	3401	209
Grp Volume(v), veh/h	120	0	0	84	0	215	571	0	511	174	443	457
Grp Sat Flow(s),veh/h/ln	923	0	0	1555	0	1547	1870	0	1672	1781	1777	1833
Q Serve(g_s), s	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	39.7	9.3	10.6	10.6
Cycle Q Clear(g_c), s	19.0	0.0	0.0	6.5	0.0	0.0	39.6	0.0	39.7	9.3	10.6	10.6
Prop In Lane	0.79		0.02	0.73		1.00	0.00		0.10	1.00		0.11
Lane Grp Cap(c), veh/h	196	0	0	298	0	864	692	0	595	688	1371	1414
V/C Ratio(X)	0.61	0.00	0.00	0.28	0.00	0.25	0.83	0.00	0.86	0.25	0.32	0.32
Avail Cap(c_a), veh/h	263	0	0	378	0	948	998	0	870	688	1371	1414
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	0.63	0.63	0.63
Uniform Delay (d), s/veh	59.5	0.0	0.0	51.7	0.0	16.5	41.8	0.0	41.8	29.2	4.9	4.9
Incr Delay (d2), s/veh	2.3	0.0	0.0	0.4	0.0	0.1	10.9	0.0	14.8	0.0	0.4	0.4
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	0.0	0.0	2.7	0.0	3.7	20.1	0.0	18.6	4.1	3.7	3.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	61.7	0.0	0.0	52.1	0.0	16.6	52.6	0.0	56.6	29.3	5.3	5.3
LnGrp LOS	E			D		B	D		E	C	A	A
Approach Vol, veh/h	120			299			1082			1074		
Approach Delay, s/veh	61.7			26.6			54.5			9.2		
Approach LOS	E			C			D			A		
Timer - Assigned Phs	2			4		5	6	8				
Phs Duration (G+Y+Rc), s	112.6			27.4		58.7	54.0	27.4				
Change Period (Y+Rc), s	4.6			4.6		4.6	* 4.1	4.6				
Max Green Setting (Gmax), s	100.4			30.4		23.9	* 73	30.4				
Max Q Clear Time (g_c+I1), s	12.6			21.0		11.3	41.7	8.5				
Green Ext Time (p_c), s	7.2			0.4		0.2	8.2	0.9				
Intersection Summary												
HCM 7th Control Delay, s/veh				32.7								
HCM 7th LOS				C								
Notes												
* HCM 7th computational engine requires equal clearance times for the phases crossing the barrier.												

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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 10: El Camino Avenue & 5th Avenue

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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	586	797	1294	335	271	622
Future Volume (veh/h)	586	797	1294	335	271	622
Initial Q (Qb), veh	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00			0.96	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	637	866	1407	364	295	676
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	739	3393	1576	406	392	1210
Arrive On Green	0.21	0.66	0.39	0.39	0.22	0.22
Sat Flow, veh/h	3456	5274	4179	1033	1781	2790
Grp Volume(v), veh/h	637	866	1193	578	295	676
Grp Sat Flow(s),veh/h/ln	1728	1702	1702	1639	1781	1395
Q Serve(g_s), s	12.3	4.7	22.7	22.9	10.7	12.5
Cycle Q Clear(g_c), s	12.3	4.7	22.7	22.9	10.7	12.5
Prop In Lane	1.00			0.63	1.00	1.00
Lane Grp Cap(c), veh/h	739	3393	1338	644	392	1210
V/C Ratio(X)	0.86	0.26	0.89	0.90	0.75	0.56
Avail Cap(c_a), veh/h	799	3393	1338	644	412	1241
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	26.2	4.7	19.6	19.7	25.2	14.7
Incr Delay (d2), s/veh	9.1	0.2	9.3	17.6	7.3	0.5
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	1.2	9.6	10.8	5.1	3.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d), s/veh	35.3	4.9	28.9	37.3	32.6	15.2
LnGrp LOS	D	A	C	D	C	B
Approach Vol, veh/h		1503	1771		971	
Approach Delay, s/veh		17.8	31.7		20.5	
Approach LOS		B	C		C	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	18.8	31.2			50.0	19.2
Change Period (Y+Rc), s	4.0	4.0			4.0	4.0
Max Green Setting (Gmax), s	16.0	26.0			46.0	16.0
Max Q Clear Time (g_c+I1), s	14.3	24.9			6.7	14.5
Green Ext Time (p_c), s	0.5	1.0			7.0	0.7
Intersection Summary						
HCM 7th Control Delay, s/veh			24.2			
HCM 7th LOS			C			

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Synchro 12 Report
12/05/2024

HCM 7th Signalized Intersection Summary 11: Marsh Road & Florence Street/Bohannon Drive

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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	453	29	118	57	30	74	177	906	26	37	770	375
Future Volume (veh/h)	453	29	118	57	30	74	177	906	26	37	770	375
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	515	0	128	62	33	80	192	985	28	40	837	408
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	638	0	282	163	44	107	125	1894	990	51	1746	1063
Arrive On Green	0.18	0.00	0.18	0.09	0.09	0.09	0.07	0.53	0.53	0.03	0.49	0.49
Sat Flow, veh/h	3563	0	1574	1781	484	1174	1781	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	515	0	128	62	0	113	192	985	28	40	837	408
Grp Sat Flow(s),veh/h/ln	1781	0	1574	1781	0	1659	1781	1777	1585	1781	1777	1585
Q Serve(g_s), s	13.9	0.0	7.3	3.3	0.0	6.6	7.0	17.9	0.7	2.2	15.7	11.4
Cycle Q Clear(g_c), s	13.9	0.0	7.3	3.3	0.0	6.6	7.0	17.9	0.7	2.2	15.7	11.4
Prop In Lane	1.00		1.00	1.00		0.71	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	638	0	282	163	0	152	125	1894	990	51	1746	1063
V/C Ratio(X)	0.81	0.00	0.45	0.38	0.00	0.75	1.54	0.52	0.03	0.79	0.48	0.38
Avail Cap(c_a), veh/h	998	0	441	481	0	448	125	1894	990	71	1746	1063
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	0.86	0.86	0.86	1.00	1.00	1.00
Uniform Delay (d), s/veh	39.4	0.0	36.7	42.8	0.0	44.3	46.5	15.1	7.2	48.3	16.9	7.3
Incr Delay (d2), s/veh	2.2	0.0	0.8	1.1	0.0	5.3	274.3	0.9	0.0	21.2	0.9	1.1
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.2	0.0	2.8	1.5	0.0	2.9	12.6	7.1	0.3	1.3	6.4	6.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	41.5	0.0	37.5	43.9	0.0	49.6	320.8	16.0	7.2	69.5	17.9	8.4
LnGrp LOS	D		D	D		D	F	B	A	E	B	A
Approach Vol, veh/h	643		175			1205			1285			
Approach Delay, s/veh	40.7		47.6			64.3			16.5			
Approach LOS	D		D			E			B			
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.8	57.9		13.3	11.0	53.7		21.9				
Change Period (Y+Rc), s	4.0	4.6		4.2	4.0	4.6		4.0				
Max Green Setting (Gmax), s	4.0	24.2		27.0	7.0	21.2		28.0				
Max Q Clear Time (g_c+I1), s	4.2	19.9		8.6	9.0	17.7		15.9				
Green Ext Time (p_c), s	0.0	3.3		0.6	0.0	2.9		1.5				
Intersection Summary												
HCM 7th Control Delay, s/veh	40.3											
HCM 7th LOS	D											
Notes												
User approved pedestrian interval to be less than phase max green.												
User approved volume balancing among the lanes for turning movement.												

Cumul+Proj PM
Hexagon

Synchro 12 Report
12/05/2024

Intersection Level of Service Calculations with Mitigations

HCM 7th Signalized Intersection Summary

2: 5th Avenue & Edison Way

Existing+Proj AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	123	89	24	82	90	65	244	44	93	305	60
Future Volume (veh/h)	82	123	89	24	82	90	65	244	44	93	305	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.97		0.98	0.99		0.93	0.98		0.97	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	134	97	26	89	98	71	265	48	101	332	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	253	152	164	244	233	221	548	89	239	511	91
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	308	805	484	94	777	742	188	1308	214	226	1221	217
Grp Volume(v), veh/h	320	0	0	213	0	0	384	0	0	498	0	0
Grp Sat Flow(s),veh/h/ln	1596	0	0	1613	0	0	1711	0	0	1664	0	0
Q Serve(g_s), s	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0
Cycle Q Clear(g_c), s	4.9	0.0	0.0	3.0	0.0	0.0	4.7	0.0	0.0	7.0	0.0	0.0
Prop In Lane	0.28		0.30	0.12		0.46	0.18		0.12	0.20		0.13
Lane Grp Cap(c), veh/h	656	0	0	642	0	0	858	0	0	841	0	0
V/C Ratio(X)	0.49	0.00	0.00	0.33	0.00	0.00	0.45	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	988	0	0	984	0	0	1299	0	0	1285	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.6	0.0	0.0	8.1	0.0	0.0	6.4	0.0	0.0	7.0	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.8	0.0	0.0	1.2	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.2	0.0	0.0	8.4	0.0	0.0	6.8	0.0	0.0	7.7	0.0	0.0
LnGrp LOS	A			A			A			A		
Approach Vol, veh/h	320			213			384			498		
Approach Delay, s/veh	9.2			8.4			6.8			7.7		
Approach LOS	A			A			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	16.5			13.4			16.5			13.4		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	21.0			16.0			21.0			16.0		
Max Q Clear Time (g_c+I1), s	6.7			6.9			9.0			5.0		
Green Ext Time (p_c), s	2.3			1.4			2.8			0.9		
Intersection Summary												
HCM 7th Control Delay, s/veh	7.9											
HCM 7th LOS	A											

HCM 7th Signalized Intersection Summary 2: 5th Avenue & Edison Way

Existing+Proj PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	60	66	40	80	124	59	259	33	55	299	59
Future Volume (veh/h)	89	60	66	40	80	124	59	259	33	55	299	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.95		0.94	0.96		0.90	0.96		0.96	0.99		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	65	72	43	87	135	64	282	36	60	325	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	209	163	181	220	277	201	543	63	182	517	94
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	450	593	464	134	624	787	168	1386	162	130	1321	241
Grp Volume(v), veh/h	234	0	0	265	0	0	382	0	0	449	0	0
Grp Sat Flow(s),veh/h/ln	1507	0	0	1546	0	0	1717	0	0	1692	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0
Cycle Q Clear(g_c), s	3.1	0.0	0.0	4.0	0.0	0.0	5.0	0.0	0.0	6.6	0.0	0.0
Prop In Lane	0.41		0.31	0.16		0.51	0.17		0.09	0.13		0.14
Lane Grp Cap(c), veh/h	694	0	0	678	0	0	807	0	0	793	0	0
V/C Ratio(X)	0.34	0.00	0.00	0.39	0.00	0.00	0.47	0.00	0.00	0.57	0.00	0.00
Avail Cap(c_a), veh/h	913	0	0	918	0	0	998	0	0	990	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.6	0.0	0.0	7.8	0.0	0.0	7.3	0.0	0.0	7.7	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	1.0	0.0	0.0	1.3	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.9	0.0	0.0	8.2	0.0	0.0	7.7	0.0	0.0	8.4	0.0	0.0
LnGrp LOS	A			A			A			A		
Approach Vol, veh/h	234			265			382			449		
Approach Delay, s/veh	7.9			8.2			7.7			8.4		
Approach LOS	A			A			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	16.2			15.0			16.2			15.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	16.0			16.0			16.0			16.0		
Max Q Clear Time (g_c+I1), s	7.0			5.1			8.6			6.0		
Green Ext Time (p_c), s	1.7			1.1			1.8			1.2		
Intersection Summary												
HCM 7th Control Delay, s/veh	8.1											
HCM 7th LOS	A											

HCM 7th Signalized Intersection Summary 2: 5th Avenue & Edison Way

Bkgrd+Proj AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	123	89	24	82	90	65	244	44	93	305	60
Future Volume (veh/h)	82	123	89	24	82	90	65	244	44	93	305	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.97		0.98	0.99		0.93	0.98		0.97	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	134	97	26	89	98	71	265	48	101	332	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	253	152	164	244	233	221	548	89	239	511	91
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	308	805	484	94	777	742	188	1308	214	226	1221	217
Grp Volume(v), veh/h	320	0	0	213	0	0	384	0	0	498	0	0
Grp Sat Flow(s),veh/h/ln	1596	0	0	1613	0	0	1711	0	0	1664	0	0
Q Serve(g_s), s	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0
Cycle Q Clear(g_c), s	4.9	0.0	0.0	3.0	0.0	0.0	4.7	0.0	0.0	7.0	0.0	0.0
Prop In Lane	0.28		0.30	0.12		0.46	0.18		0.12	0.20		0.13
Lane Grp Cap(c), veh/h	656	0	0	642	0	0	858	0	0	841	0	0
V/C Ratio(X)	0.49	0.00	0.00	0.33	0.00	0.00	0.45	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	988	0	0	984	0	0	1299	0	0	1285	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.6	0.0	0.0	8.1	0.0	0.0	6.4	0.0	0.0	7.0	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.8	0.0	0.0	1.2	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.2	0.0	0.0	8.4	0.0	0.0	6.8	0.0	0.0	7.7	0.0	0.0
LnGrp LOS	A			A			A			A		
Approach Vol, veh/h	320			213			384			498		
Approach Delay, s/veh	9.2			8.4			6.8			7.7		
Approach LOS	A			A			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	16.5			13.4			16.5			13.4		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	21.0			16.0			21.0			16.0		
Max Q Clear Time (g_c+I1), s	6.7			6.9			9.0			5.0		
Green Ext Time (p_c), s	2.3			1.4			2.8			0.9		
Intersection Summary												
HCM 7th Control Delay, s/veh	7.9											
HCM 7th LOS	A											

Bkgrd+Proj AM
Hexagon

Synchro 12 Report
12/10/2024

HCM 7th Signalized Intersection Summary 2: 5th Avenue & Edison Way

Bkgrd+Proj PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	60	66	40	80	124	59	259	33	55	299	59
Future Volume (veh/h)	89	60	66	40	80	124	59	259	33	55	299	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.95		0.94	0.96		0.90	0.96		0.96	0.99		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	65	72	43	87	135	64	282	36	60	325	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	209	163	181	220	277	201	543	63	182	517	94
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	450	593	464	134	624	787	168	1386	162	130	1321	241
Grp Volume(v), veh/h	234	0	0	265	0	0	382	0	0	449	0	0
Grp Sat Flow(s),veh/h/ln	1507	0	0	1546	0	0	1717	0	0	1692	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0
Cycle Q Clear(g_c), s	3.1	0.0	0.0	4.0	0.0	0.0	5.0	0.0	0.0	6.6	0.0	0.0
Prop In Lane	0.41		0.31	0.16		0.51	0.17		0.09	0.13		0.14
Lane Grp Cap(c), veh/h	694	0	0	678	0	0	807	0	0	793	0	0
V/C Ratio(X)	0.34	0.00	0.00	0.39	0.00	0.00	0.47	0.00	0.00	0.57	0.00	0.00
Avail Cap(c_a), veh/h	913	0	0	918	0	0	998	0	0	990	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.6	0.0	0.0	7.8	0.0	0.0	7.3	0.0	0.0	7.7	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	1.0	0.0	0.0	1.3	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.9	0.0	0.0	8.2	0.0	0.0	7.7	0.0	0.0	8.4	0.0	0.0
LnGrp LOS	A			A			A			A		
Approach Vol, veh/h	234			265			382			449		
Approach Delay, s/veh	7.9			8.2			7.7			8.4		
Approach LOS	A			A			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	16.2			15.0			16.2			15.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	16.0			16.0			16.0			16.0		
Max Q Clear Time (g_c+I1), s	7.0			5.1			8.6			6.0		
Green Ext Time (p_c), s	1.7			1.1			1.8			1.2		
Intersection Summary												
HCM 7th Control Delay, s/veh			8.1									
HCM 7th LOS			A									

HCM 7th Signalized Intersection Summary

2: 5th Avenue & Edison Way

Cumul+Proj AM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	82	123	89	24	82	90	65	244	44	93	305	60
Future Volume (veh/h)	82	123	89	24	82	90	65	244	44	93	305	60
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.97		0.98	0.99		0.93	0.98		0.97	0.99		0.94
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	89	134	97	26	89	98	71	265	48	101	332	65
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	250	253	152	164	244	233	221	548	89	239	511	91
Arrive On Green	0.31	0.31	0.31	0.31	0.31	0.31	0.42	0.42	0.42	0.42	0.42	0.42
Sat Flow, veh/h	308	805	484	94	777	742	188	1308	214	226	1221	217
Grp Volume(v), veh/h	320	0	0	213	0	0	384	0	0	498	0	0
Grp Sat Flow(s),veh/h/ln	1596	0	0	1613	0	0	1711	0	0	1664	0	0
Q Serve(g_s), s	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	0.0	0.0
Cycle Q Clear(g_c), s	4.9	0.0	0.0	3.0	0.0	0.0	4.7	0.0	0.0	7.0	0.0	0.0
Prop In Lane	0.28		0.30	0.12		0.46	0.18		0.12	0.20		0.13
Lane Grp Cap(c), veh/h	656	0	0	642	0	0	858	0	0	841	0	0
V/C Ratio(X)	0.49	0.00	0.00	0.33	0.00	0.00	0.45	0.00	0.00	0.59	0.00	0.00
Avail Cap(c_a), veh/h	988	0	0	984	0	0	1299	0	0	1285	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	8.6	0.0	0.0	8.1	0.0	0.0	6.4	0.0	0.0	7.0	0.0	0.0
Incr Delay (d2), s/veh	0.6	0.0	0.0	0.3	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.3	0.0	0.0	0.8	0.0	0.0	1.2	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	9.2	0.0	0.0	8.4	0.0	0.0	6.8	0.0	0.0	7.7	0.0	0.0
LnGrp LOS	A			A			A			A		
Approach Vol, veh/h	320			213			384			498		
Approach Delay, s/veh	9.2			8.4			6.8			7.7		
Approach LOS	A			A			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	16.5			13.4			16.5			13.4		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	21.0			16.0			21.0			16.0		
Max Q Clear Time (g_c+I1), s	6.7			6.9			9.0			5.0		
Green Ext Time (p_c), s	2.3			1.4			2.8			0.9		
Intersection Summary												
HCM 7th Control Delay, s/veh	7.9											
HCM 7th LOS	A											

Cumul+Proj AM
Hexagon

Synchro 12 Report
12/10/2024

HCM 7th Signalized Intersection Summary 2: 5th Avenue & Edison Way

Cumul+Proj PM

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	89	60	66	40	80	124	59	259	33	55	299	59
Future Volume (veh/h)	89	60	66	40	80	124	59	259	33	55	299	59
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Lane Width Adj.	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped-Bike Adj(A_pbT)	0.95		0.94	0.96		0.90	0.96		0.96	0.99		0.89
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	97	65	72	43	87	135	64	282	36	60	325	64
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	209	163	181	220	277	201	543	63	182	517	94
Arrive On Green	0.35	0.35	0.35	0.35	0.35	0.35	0.39	0.39	0.39	0.39	0.39	0.39
Sat Flow, veh/h	450	593	464	134	624	787	168	1386	162	130	1321	241
Grp Volume(v), veh/h	234	0	0	265	0	0	382	0	0	449	0	0
Grp Sat Flow(s),veh/h/ln	1507	0	0	1546	0	0	1717	0	0	1692	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0.0
Cycle Q Clear(g_c), s	3.1	0.0	0.0	4.0	0.0	0.0	5.0	0.0	0.0	6.6	0.0	0.0
Prop In Lane	0.41		0.31	0.16		0.51	0.17		0.09	0.13		0.14
Lane Grp Cap(c), veh/h	694	0	0	678	0	0	807	0	0	793	0	0
V/C Ratio(X)	0.34	0.00	0.00	0.39	0.00	0.00	0.47	0.00	0.00	0.57	0.00	0.00
Avail Cap(c_a), veh/h	913	0	0	918	0	0	998	0	0	990	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	7.6	0.0	0.0	7.8	0.0	0.0	7.3	0.0	0.0	7.7	0.0	0.0
Incr Delay (d2), s/veh	0.3	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.6	0.0	0.0
Initial Q Delay(d3), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	0.0	0.0	1.0	0.0	0.0	1.3	0.0	0.0	1.7	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	7.9	0.0	0.0	8.2	0.0	0.0	7.7	0.0	0.0	8.4	0.0	0.0
LnGrp LOS	A			A			A			A		
Approach Vol, veh/h	234			265			382			449		
Approach Delay, s/veh	7.9			8.2			7.7			8.4		
Approach LOS	A			A			A			A		
Timer - Assigned Phs	2			4			6			8		
Phs Duration (G+Y+Rc), s	16.2			15.0			16.2			15.0		
Change Period (Y+Rc), s	4.0			4.0			4.0			4.0		
Max Green Setting (Gmax), s	16.0			16.0			16.0			16.0		
Max Q Clear Time (g_c+I1), s	7.0			5.1			8.6			6.0		
Green Ext Time (p_c), s	1.7			1.1			1.8			1.2		
Intersection Summary												
HCM 7th Control Delay, s/veh	8.1											
HCM 7th LOS	A											

Cumul+Proj PM
Hexagon

Synchro 12 Report
12/10/2024

Appendix D

Signal Warrant Check

Synapse School New Campus TIA

TRAFFIC SIGNAL WARRANTS WORKSHEET

Major Street: 5th Avenue
Minor Street: Edison Way

Analyst: LJ date: 12/9/24
Critical Approach Speed* (mph) 25
Critical Approach Speed* (mph) 25
*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)..... ☐ }
or } Rural (R)
In built up area of isolated community of < 10,000 population..... ☐
☒ Urban (U)

AM PEAK PERIOD

Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

		AM PEAK PERIOD						
		Existing	Existing + Project					
Minor Street Approach Direction w/ Highest Delay		EB	EB					
Highest Minor Street Average Delay (sec/veh)		17.8	27.7					
Corresponding Minor Street Approach Volume (veh/hr)		243	294					
Minor Street Total Delay (veh-hrs)		1.2	2.3					
Total Entering Volume (veh/hr)		1188	1301					
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; <u>AND</u>		No	No					
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; <u>AND</u>		Yes	Yes					
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.		Yes	Yes					
Signal Warranted based on Part A?		No	No					

PART B

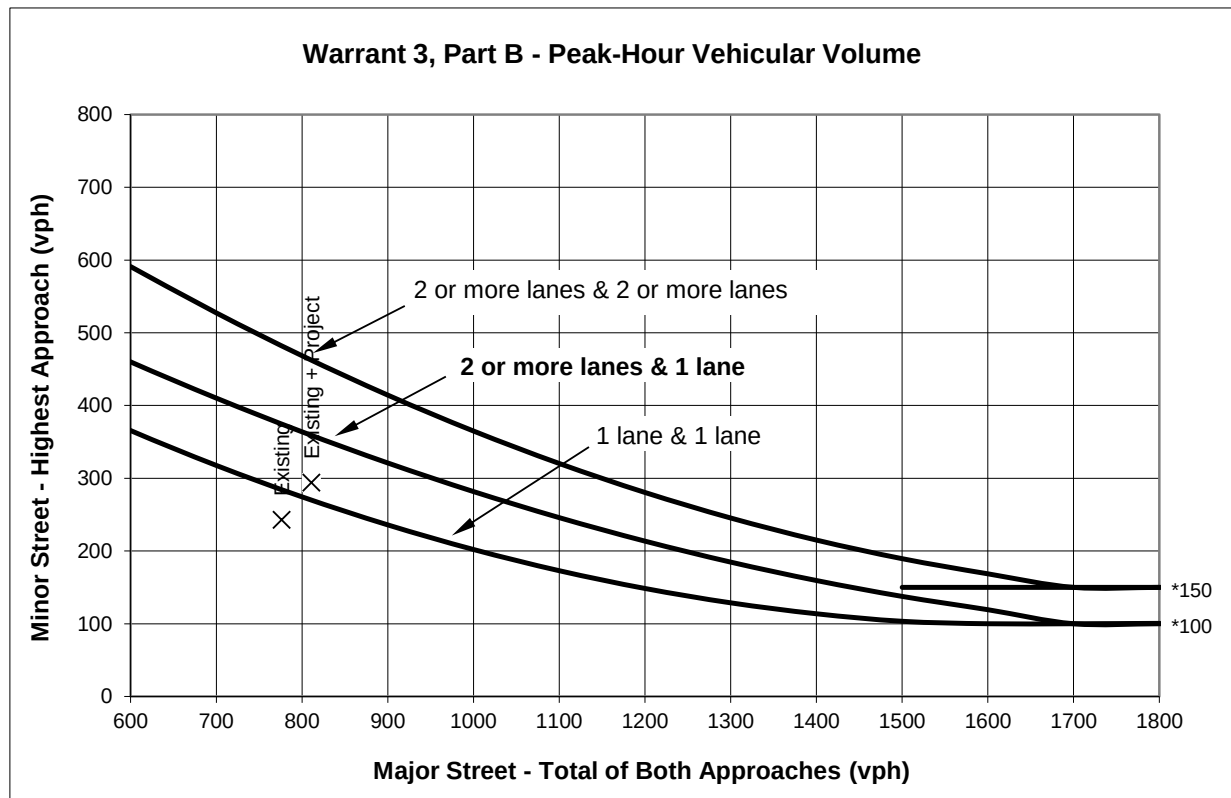
		AM PEAK PERIOD						
		Approach Lanes		Existing	Existing + Project			
		One	2 or More					
Major Street - Both Approaches	5th Avenue	X		776	811			
Minor Street - Highest Approach	Edison Way	X		243	294			
Signal Warranted based on Part B?		No	Yes					

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Synapse School New Campus TIA
5th Avenue & Edison Way

AM PEAK PERIOD



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways* (FHWA's MUTCD 2009 Edition, as amended for use in California).

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

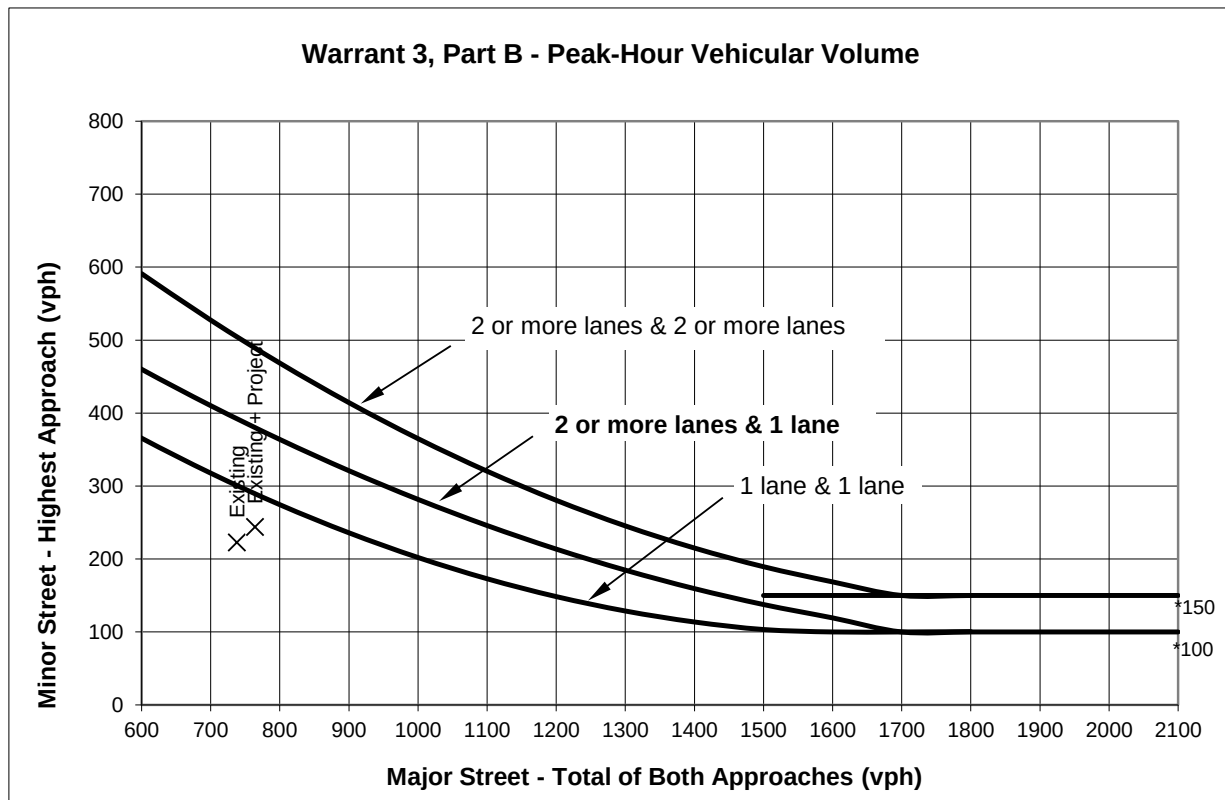
Warrant 3, Part B - Peak-Hour Vehicular Volume

				AM PEAK PERIOD						
				Approach Lanes		Existing	Existing + Project			
				One	Two or More					
Major Street - Both Approaches	5th Avenue	X				776	811			
Minor Street - Highest Approach	Edison Way	X				243	294			
Signal Warranted Based on Part B - Peak-Hour Volumes?						No	Yes			

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Synapse School New Campus TIA
5th Avenue & Edison Way

PM PEAK HOUR



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)*.

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

				PM PEAK HOUR						
				Existing	Existing + Project					
Approach Lanes										
				2 or One	More					
Major Street - Both Approaches	5th Avenue	X		738	764					
Minor Street - Highest Approach	Edison Way	X		223	244					
Signal Warranted Based on Part B - Peak-Hour Volumes?				No	No					

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Synapse School New Campus TIA
TRAFFIC SIGNAL WARRANTS WORKSHEET

Major Street: 5th Avenue
Minor Street: Edison Way

Analyst: LJ date: 12/9/24
Critical Approach Speed* (mph) 25
Critical Approach Speed* (mph) 25
*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)..... ☐ } Rural (R)
or
In built up area of isolated community of < 10,000 population..... ☐ }
☒ Urban (U)

AM PEAK PERIOD
Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

		AM PEAK PERIOD						
		Background	Bkgd+Project					
Minor Street Approach Direction w/ Highest Delay		EB	EB					
Highest Minor Street Average Delay (sec/veh)		17.8	27.7					
Corresponding Minor Street Approach Volume (veh/hr)		243	294					
Minor Street Total Delay (veh-hrs)		1.2	2.3					
Total Entering Volume (veh/hr)		1188	1301					
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; <u>AND</u>		No	No					
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; <u>AND</u>		Yes	Yes					
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.		Yes	Yes					
Signal Warranted based on Part A?		No	No					

PART B

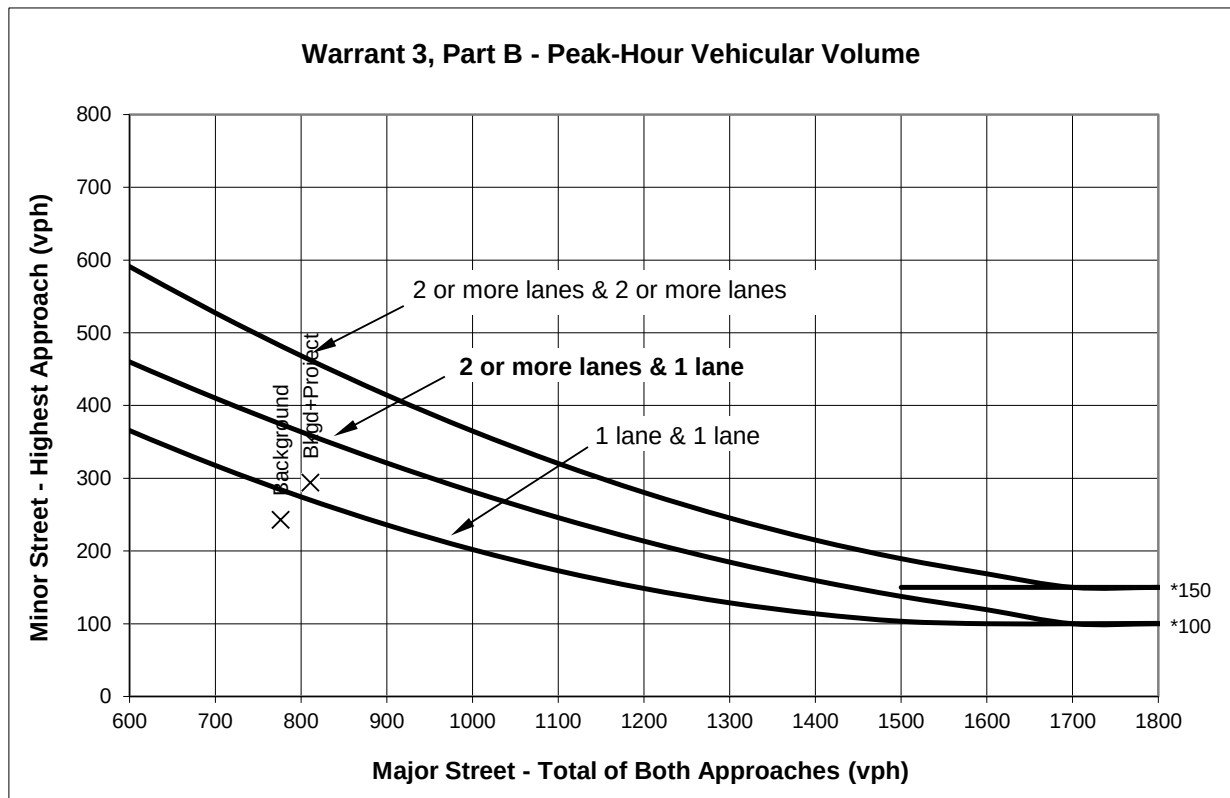
		AM PEAK PERIOD						
		Approach Lanes		Background	Bkgd+Project			
		One	2 or More					
Major Street - Both Approaches	5th Avenue	X		776	811			
Minor Street - Highest Approach	Edison Way	X		243	294			
Signal Warranted based on Part B?		No	Yes					

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Synapse School New Campus TIA
5th Avenue & Edison Way

AM PEAK PERIOD



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)*.

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

				Approach Lanes	AM PEAK PERIOD								
					Background	Bkgd+Project							
													One
Major Street - Both Approaches	5th Avenue		X		776	811							
Minor Street - Highest Approach	Edison Way		X		243	294							
Signal Warranted Based on Part B - Peak-Hour Volumes?					No	Yes							

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Synapse School New Campus TIA
TRAFFIC SIGNAL WARRANTS WORKSHEET

Major Street: 5th Avenue
Minor Street: Edison Way

Analyst: LJ date: 12/9/24
Critical Approach Speed* (mph) 25
Critical Approach Speed* (mph) 25
*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)..... ☐ } Rural (R)
or
In built up area of isolated community of < 10,000 population..... ☐ }
☒ Urban (U)

PM PEAK HOUR
Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

PM PEAK HOUR							
	Background	Bkgd+Project					
Minor Street Approach Direction w/ Highest Delay	WB	WB					
Highest Minor Street Average Delay (sec/veh)	14.9	18.5					
Corresponding Minor Street Approach Volume (veh/hr)	223	244					
Minor Street Total Delay (veh-hrs)	0.9	1.3					
Total Entering Volume (veh/hr)	1130	1223					
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; <u>AND</u>	No	No					
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; <u>AND</u>	Yes	Yes					
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes					
Signal Warranted based on Part A?	No	No					

PART B

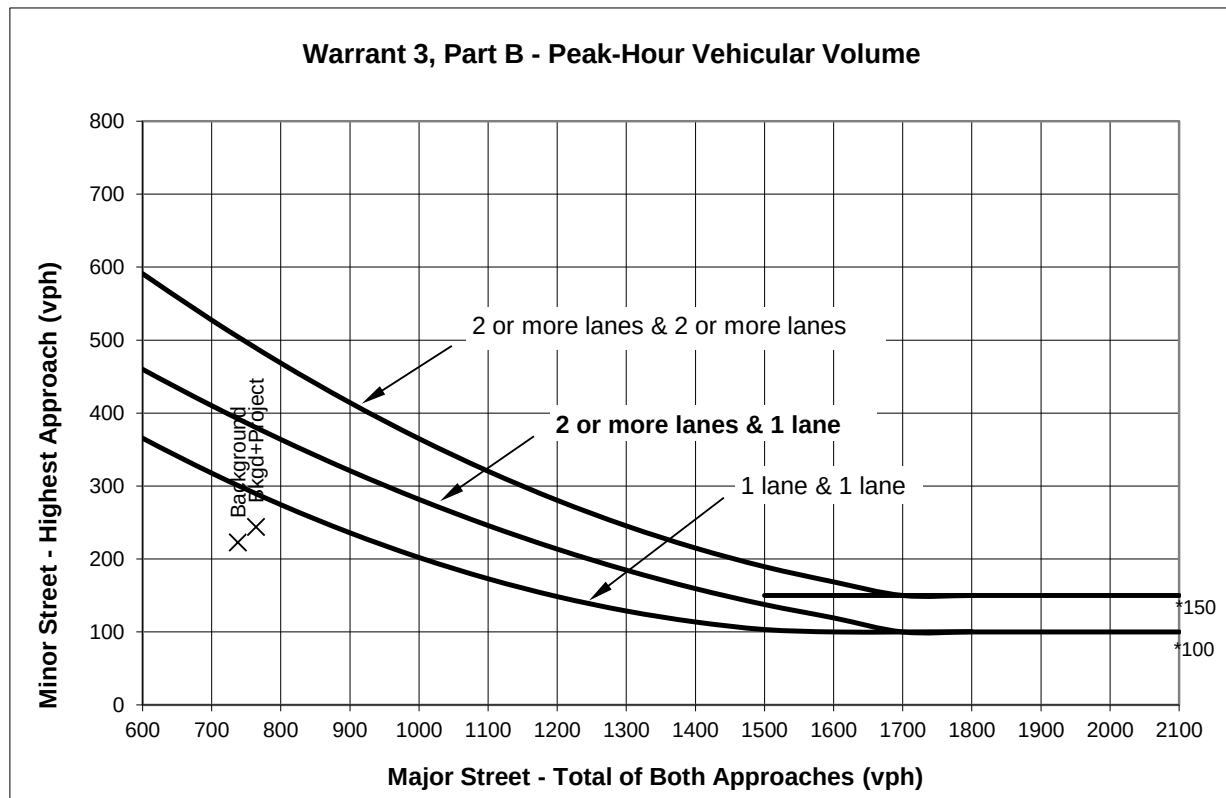
PM PEAK HOUR							
		Approach Lanes		Background	Bkgd+Project		
		One	2 or More				
Major Street - Both Approaches	5th Avenue	X		738	764		
Minor Street - Highest Approach	Edison Way	X		223	244		
Signal Warranted based on Part B?				No	No		

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Synapse School New Campus TIA
5th Avenue & Edison Way

PM PEAK HOUR



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)*.

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

				PM PEAK HOUR						
				Approach Lanes		Background	Bkgd+Project			
				One	2 or More					
Major Street - Both Approaches	5th Avenue	X				738	764			
Minor Street - Highest Approach	Edison Way	X				223	244			
Signal Warranted Based on Part B - Peak-Hour Volumes?						No	No			

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Synapse School New Campus TIA
TRAFFIC SIGNAL WARRANTS WORKSHEET

Major Street: 5th Avenue
 Minor Street: Edison Way

Analyst: LJ date: 12/9/24
 Critical Approach Speed* (mph) 25
 Critical Approach Speed* (mph) 25
 *Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)..... ☐ }
 or } **Rural (R)**
 In built up area of isolated community of < 10,000 population..... ☐
☒ **Urban (U)**

AM PEAK PERIOD
Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

AM PEAK PERIOD							
	Cumulative	Cum+Project					
Minor Street Approach Direction w/ Highest Delay	EB	EB					
Highest Minor Street Average Delay (sec/veh)	17.8	27.7					
Corresponding Minor Street Approach Volume (veh/hr)	243	294					
Minor Street Total Delay (veh-hrs)	1.2	2.3					
Total Entering Volume (veh/hr)	1188	1301					
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; <u>AND</u>	No	No					
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; <u>AND</u>	Yes	Yes					
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes					
Signal Warranted based on Part A?	No	No					

PART B

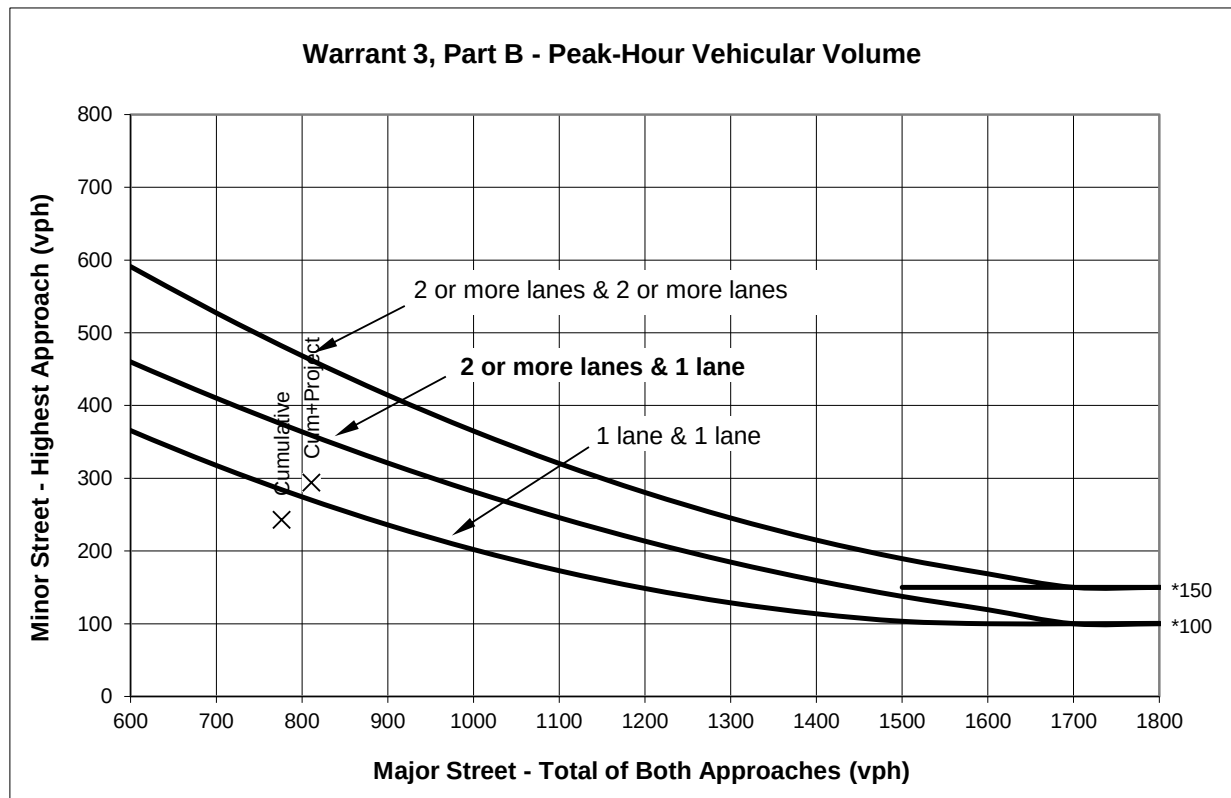
AM PEAK PERIOD							
		Approach Lanes		Cumulative	Cum+Project		
		One	2 or More				
Major Street - Both Approaches	5th Avenue	X		776	811		
Minor Street - Highest Approach	Edison Way	X		243	294		
Signal Warranted based on Part B?				No	Yes		

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Synapse School New Campus TIA
5th Avenue & Edison Way

AM PEAK PERIOD



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)*.

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

				AM PEAK PERIOD						
				Approach Lanes	Cumulative	Cum+Project				
				One	2 or More					
Major Street - Both Approaches	5th Avenue	X				776	811			
Minor Street - Highest Approach	Edison Way	X				243	294			
Signal Warranted Based on Part B - Peak-Hour Volumes?						No	Yes			

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Synapse School New Campus TIA
TRAFFIC SIGNAL WARRANTS WORKSHEET

Major Street: 5th Avenue
Minor Street: Edison Way

Analyst: LJ date: 12/9/24
Critical Approach Speed* (mph) 25
Critical Approach Speed* (mph) 25
*Posted Speed.

Critical speed of major street traffic > 50 mph (64 km/h)..... ☐

In built up area of isolated community of < 10,000 population..... ☐

☐ or ☐ } Rural (R)

☒ Urban (U)

PM PEAK HOUR
Warrant 3 - Peak Hour

The need for a traffic control signal should be considered if an engineering study finds that the criteria in either of the following two categories (Parts A and B) are met:

PART A

(All parts 1, 2, and 3 below must be satisfied)

PM PEAK HOUR							
	Cumulative	Cum+Project					
Minor Street Approach Direction w/ Highest Delay	WB	WB					
Highest Minor Street Average Delay (sec/veh)	14.9	18.5					
Corresponding Minor Street Approach Volume (veh/hr)	223	244					
Minor Street Total Delay (veh-hrs)	0.9	1.3					
Total Entering Volume (veh/hr)	1130	1223					
1. The total delay experienced for traffic on one minor street approach controlled by a STOP sign equals or exceeds 4 vehicle-hours for a 1-lane approach and 5 vehicle-hours for a 2-lane approach; <u>AND</u>	No	No					
2. The volume on the same minor street approach equals or exceeds 100 vph for 1 moving lane of traffic or 150 vph for 2 moving lanes; <u>AND</u>	Yes	Yes					
3. The total entering volume serviced during the hour equals or exceeds 800 vph for intersections with 4 or more approaches or 650 vph for intersections with 3 approaches.	Yes	Yes					
Signal Warranted based on Part A?	No	No					

PART B

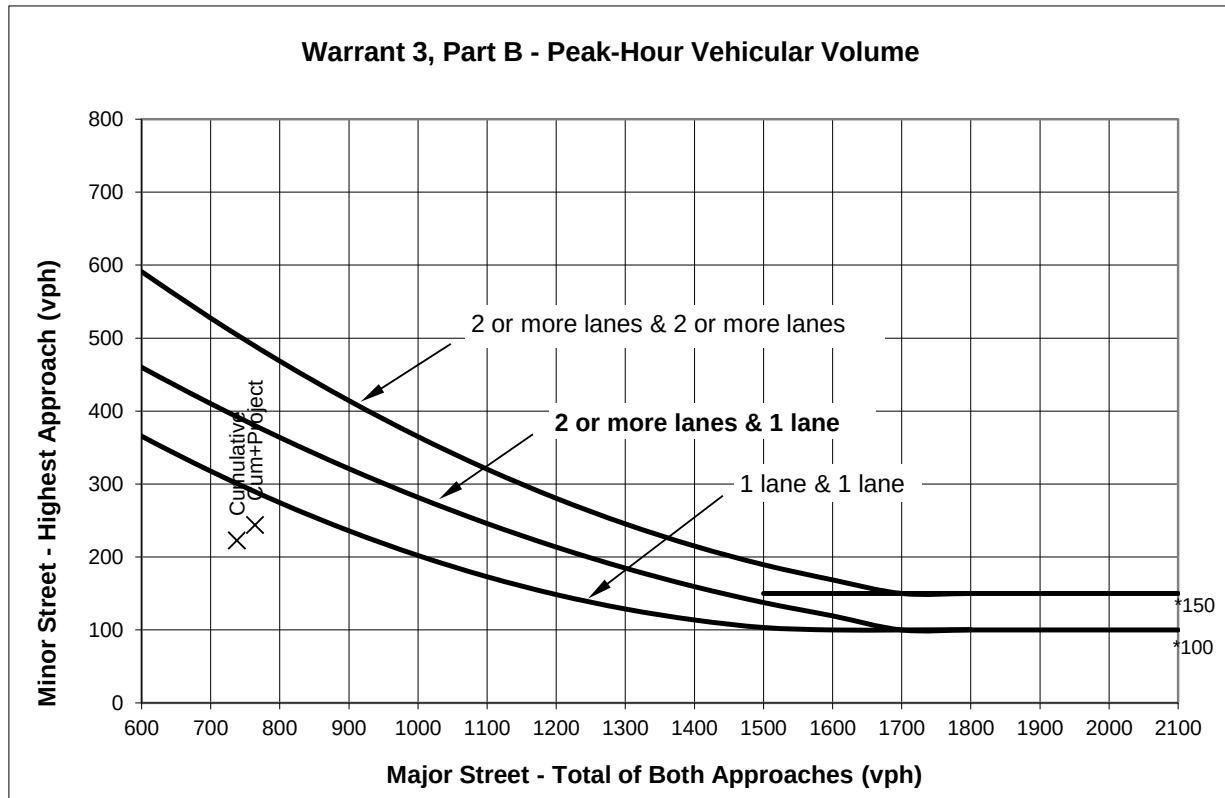
PM PEAK HOUR							
		Approach Lanes		Cumulative	Cum+Project		
		One	2 or More				
Major Street - Both Approaches	5th Avenue	X		738	764		
Minor Street - Highest Approach	Edison Way	X		223	244		
Signal Warranted based on Part B?				No	No		

The Warrant is satisfied if the plotted point for vehicles per hour on the major street (both approaches) and the corresponding per hour higher vehicle volume minor street approach (one direction only) for one hour (any four consecutive 15-minute periods) fall above the applicable curves in California MUTCD Figure 4C-3 or 4C-4.

Source: California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California).

Synapse School New Campus TIA
5th Avenue & Edison Way

PM PEAK HOUR



Source: Figure 4C-3 *California Manual on Uniform Traffic Control Devices for Streets and Highways (FHWA's MUTCD 2009 Edition, as amended for use in California)*.

* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3, Part B - Peak-Hour Vehicular Volume

				PM PEAK HOUR						
				Approach Lanes	Cumulative	Cum+Project				
				2 or One						
Major Street - Both Approaches	5th Avenue	X			738	764				
Minor Street - Highest Approach	Edison Way	X			223	244				
Signal Warranted Based on Part B - Peak-Hour Volumes?					No	No				

*Warrant is satisfied if plotted points fall above the appropriate curve in graph above.

Appendix E

C/CAG TDM Checklist

About this Form

Any new development project anticipated to generate at least 100 average daily trips is subject to the C/CAG TDM Policy and must complete a TDM Checklist and implement associated measures to mitigate traffic impacts. [Read more at ccagtdm.org](https://ccagtdm.org)

Questions?
support@ccagtdm.org

A Applicant Information

Project Address Synaps School New Campus TIA		Contact First and Last Name
Parcel Number 060-041-100	Application Date D D M M Y Y Y Y	Contact Phone Address
Project Jurisdiction		Contact Email Address

B Trip Reduction Target

Select one option based on your project's distance to high quality transit

Read more about high quality transit at ccagtdm.org/high-quality-transit

Identify your project type

☐ **TOD**
 Less than 1/2-mile from high quality transit service
25% Trip Reduction Required

☒ **Transit Proximate**
 1/2 to 3 miles from high quality transit service
35% Trip Reduction Required

☐ **Non-Transit Proximate**
 More than 3 miles from high quality transit service
35% Trip Reduction Required

C Required Measures

You must select all measures that apply for your project type

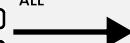
[Click on each measure's title for more information](#)

Measure	Project Types	Percentage	Yes
1 M1 - Free/Preferential Parking for Carpools Provide free or preferential parking, including reserved spaces or spaces near an entrance or other desirable location, to incentivize ridesharing.	ALL	1%	☒
2 M3 - TDM Coordinator/Contact Person Provide TDM coordinator/liaison for tenants. May be contracted through 3rd party provider, such as Commute.org.	ALL	0.5%	☒
3 M4 - Actively Participate in Commute.org or Transportation Management Association (TMA) Equivalent Obtain certification of registration from Commute.org or equivalent TMA incorporation documents. Select only one based on Project Type	TOD & Non-transit Proximate	6.5%	☐
	Transit Proximate	16.5%	☒
4 M5 - Carpool or Vanpool Program Establish carpool/vanpool program for tenants and register program with Commute.org.	ALL	2%	☒
5 M6 - Transit or Ridesharing Passes/Subsidies Offer tenants passes or subsidies for monthly public transit or ridesharing costs incurred, equivalent to 30% of value of whichever is lower.		10%	☒
		4%	
6 M7 - Pre-Tax Transportation Benefits Offer option for tenants to participate in a pre-tax transit program to encourage the use of sustainable transportation. Leverage pre-tax income to pay for commute trip costs.		1%	☒
7 M8 - Secure Bicycle Storage Comply with CalGREEN minimum bicycle parking requirements.		1%	☒
8 M9 - Design Streets to Encourage Bike/Ped Access Design adjacent streets or roadways to facilitate multimodal travel.	ALL	1%	☒
9 M25 - Showers, Lockers, and Changing Rooms for Cyclists These amenities serve as end of trip facilities for employees arriving by bike or other active transportation forms.	ALL	2%	☒
10	Total from Required Measures Sum percentages from each selected measure from rows 1-9		29%

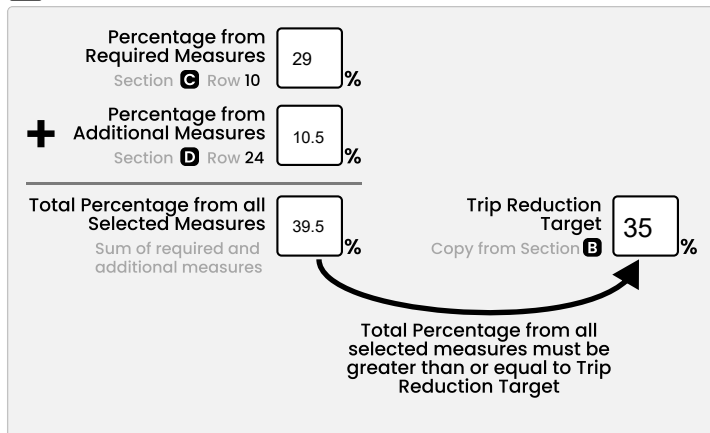
Only apply to future school employees and therefore only applied a 4% reduction

Form Continues on Page 2 →

D Additional Recommended Select enough to meet the trip reduction target from section B [Click on each measure's title for more information](#)

Measure	Project Types	Percentage	Yes
11 M12 – Flex Time, Compressed Work Week, Telecommute Flex time allows employees some flexibility in their daily work schedules. Compressed work week allows employees to work fewer but longer days. Telecommuting functions similarly, allowing employees to work from home rather than the office, reducing vehicle travel on the days they work remotely.	ALL	5%	☐
12 M14 – Paid Parking at Market Rate Offer hourly/daily parking rates proportional to monthly rate or equivalent to cost of transit fare.	ALL	25%	☐
13 M15 – Reduced Parking Provide off-street parking at least 10% below locally-required minimums, or else below the locally-permitted parking maximums. Consideration may be required of potential spillover parking into surrounding areas.	ALL	10%	☐
14 M16 – Short-Term Daily Parking Offer daily or hourly parking rates that are proportional to the monthly rate or approximately the cost of a transit fare.	ALL	2%	☐
15 M17 – Developer TDM Fee/TDM Fund Voluntary impact fee payment on a per unit or square footage basis, to fund the implementation of TDM programs.	ALL	4%	☐
16 M18 – Car Share On-Site Provide on-site car share or vehicle fleets.	ALL	1%	☐
17 M19 – Land Dedication or Capital Improvements for Transit Contribute space on, or adjacent to, the project site for transit improvements. Select one or more	Bus Pullout Space 1% ☐ Bus Shelter 1% ☐ Visual/Electrical Improvements (i.e., Lighting, Signage) 1% ☐ Other (i.e., Micromobility Parking Zone, TNC Loading Zone) 1% ☐	ALL  % Total percentages selected	☐
18 M20 – Shuttle Program/Shuttle Consortium/Fund Transit Service Establish a shuttle service to regional transit hubs or commercial centers. Shuttle service should be provided free of charge to employees and guests.	Non-transit Proximate	10%	☒
19 M21 – Bike/Scooter Share On-Site Allocate space for bike/scooter share parking.	All	1%	☐
20 M22 – Active Transportation Subsidies Offer biking/walking incentives to tenants, such as gift card/product raffles.	All	2%	☐
21 M23 – Gap Closure Construct or enhance quality of biking and walking facilities to/from site to existing trails, bikeways, and/or adjacent streets.	All	7%	☐
22 M24 – Bike Repair Station Offer on-site bike repair space/tools in visible, secure area.	All	0.5%	☒
23 M26 – Pedestrian Oriented Uses & Amenities on Ground Floor Provide on-site, visible amenities to tenants and guests, such as cafes, gyms, childcare, retail.	All	3%	☐
24	Total from Additional Measures Sum percentages from each selected measure from rows 11 – 23		10.5 %

E Project Totals



F Submit Checklist

 See ccagtdm.org/submission for how to submit this form.

Questions?

 **Email Us**
support@ccagtdm.org

 **Visit Our Website**
ccagtdm.org