County of Santa Cruz

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CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)
INITIAL STUDY/ENVIRONMENTAL CHECKLIST

Date: March 8, 2021 **Application Number:** 191157

Project Name: Dominican Master Plan **Staff Planner:** Nathan MacBeth

I. OVERVIEW AND ENVIRONMENTAL DETERMINATION

APPLICANT: Hamilton Land Planning **APN(s):** 025-481-01, 025-081-02 & 025-081-03

OWNER: Dignity Health **SUPERVISORAL DISTRICT:** First District

PROJECT LOCATION: The project is located on the north side of Soquel Drive approximately ¼ mile north east of the intersection of Soquel Drive and Highway one within the community of Soquel in unincorporated Santa Cruz County. Santa Cruz County is bounded on the north by San Mateo County, on the south by Monterey and San Benito counties, on the east by Santa Clara County, and on the south and west by the Monterey Bay and the Pacific Ocean.

SUMMARY PROJECT DESCRIPTION:

Proposal to amend Master Plan (88-0065) for Dominican Hospital by establishing a Planned Unit Development (PUD) for construction of an approximately 84,000 square foot addition to the existing hospital facility. Project includes construction of a new surgery center, reconfiguring the existing emergency room and construction of a three story parking structure. Requires a PUD to increase the maximum height of 35 feet to 62 feet and an amendment to Master Plan 88-0065.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: *All of the following potential environmental impacts are evaluated in this Initial Study. Categories that are marked have been analyzed in greater detail based on project specific information.*

☒ Aesthetics and Visual Resources	☐ Mineral Resources
☐ Agriculture and Forestry Resources	☒ Noise
☒ Air Quality	☐ Population and Housing
☐ Biological Resources	☐ Public Services
☐ Cultural Resources	☐ Recreation
☐ Energy	☒ Transportation

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED: *All of the following potential environmental impacts are evaluated in this Initial Study. Categories that are marked have been analyzed in greater detail based on project specific information.*

- ☒ Geology and Soils
- ☒ Greenhouse Gas Emissions
- ☒ Hazards and Hazardous Materials
- ☒ Hydrology/Water Supply/Water Quality
- ☒ Land Use and Planning
- ☐ Tribal Cultural Resources
- ☒ Utilities and Service Systems
- ☐ Wildfire
- ☐ Mandatory Findings of Significance

DISCRETIONARY APPROVAL(S) BEING CONSIDERED:

- ☐ General Plan Amendment
- ☐ Land Division
- ☐ Rezoning
- ☒ Development Permit
- ☐ Sewer Connection Permit
- ☐ Coastal Development Permit
- ☒ Grading Permit
- ☐ Riparian Exception
- ☐ LAFCO Annexation
- ☒ Planned Unit Development (PUD)

OTHER PUBLIC AGENCIES WHOSE APPROVAL IS REQUIRED (e.g., permits, financing approval, or participation agreement):

Permit Type/Action	Agency
Building Permit	OSHPD
SWPP	RWQCB Central Coast

CONSULTATION WITH NATIVE AMERICAN TRIBES: *Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?*

No California Native American tribes traditionally and culturally affiliated with the area of Santa Cruz County have requested consultation pursuant to Public Resources Code section 21080.3.1.

DETERMINATION:

On the basis of this initial evaluation:

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

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

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

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

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

__________________________________ ________________________
Matthew Johnston, Environmental Coordinator Date

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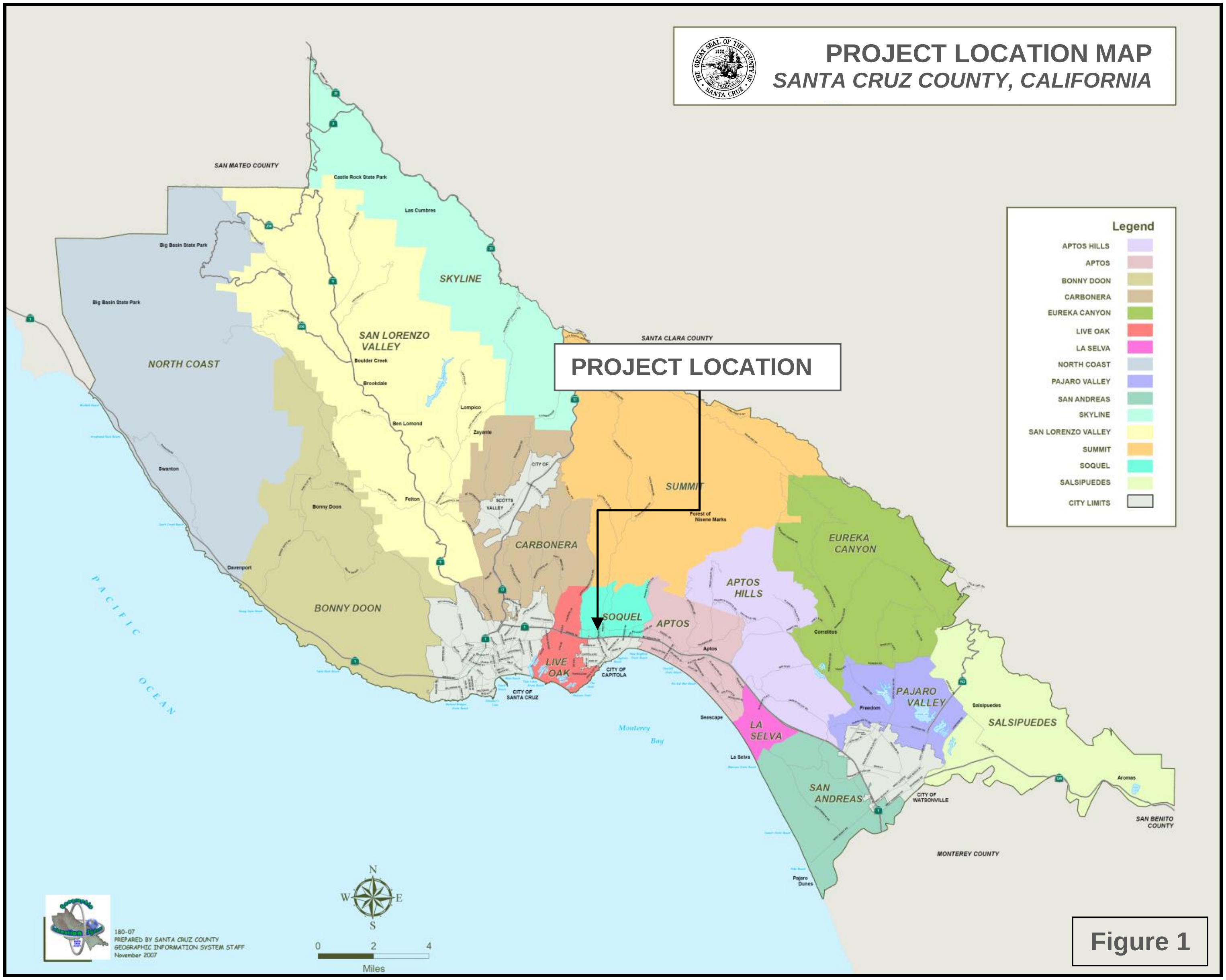
PROJECT LOCATION MAP
SANTA CRUZ COUNTY, CALIFORNIA
PROJECT LOCATION
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APTOS
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CARBONERA
EUREKA CANYON
LIVE OAK
LA SELVA
NORTH COAST
PAJARO VALLEY
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SALSIPUEDES
CITY LIMITS
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LA SELVA
PAJARO VALLEY
SALSIPUEDES
SAN ANDREAS
SAN MATEO COUNTY
SANTA CLARA COUNTY
MONTEREY COUNTY
SAN BENITO COUNTY
PACIFIC OCEAN
Monterey Bay
CITY OF SANTA CRUZ
CITY OF CAPITOLA
CITY OF WATSONVILLE
180-07
PREPARED BY SANTA CRUZ COUNTY
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Figure 1

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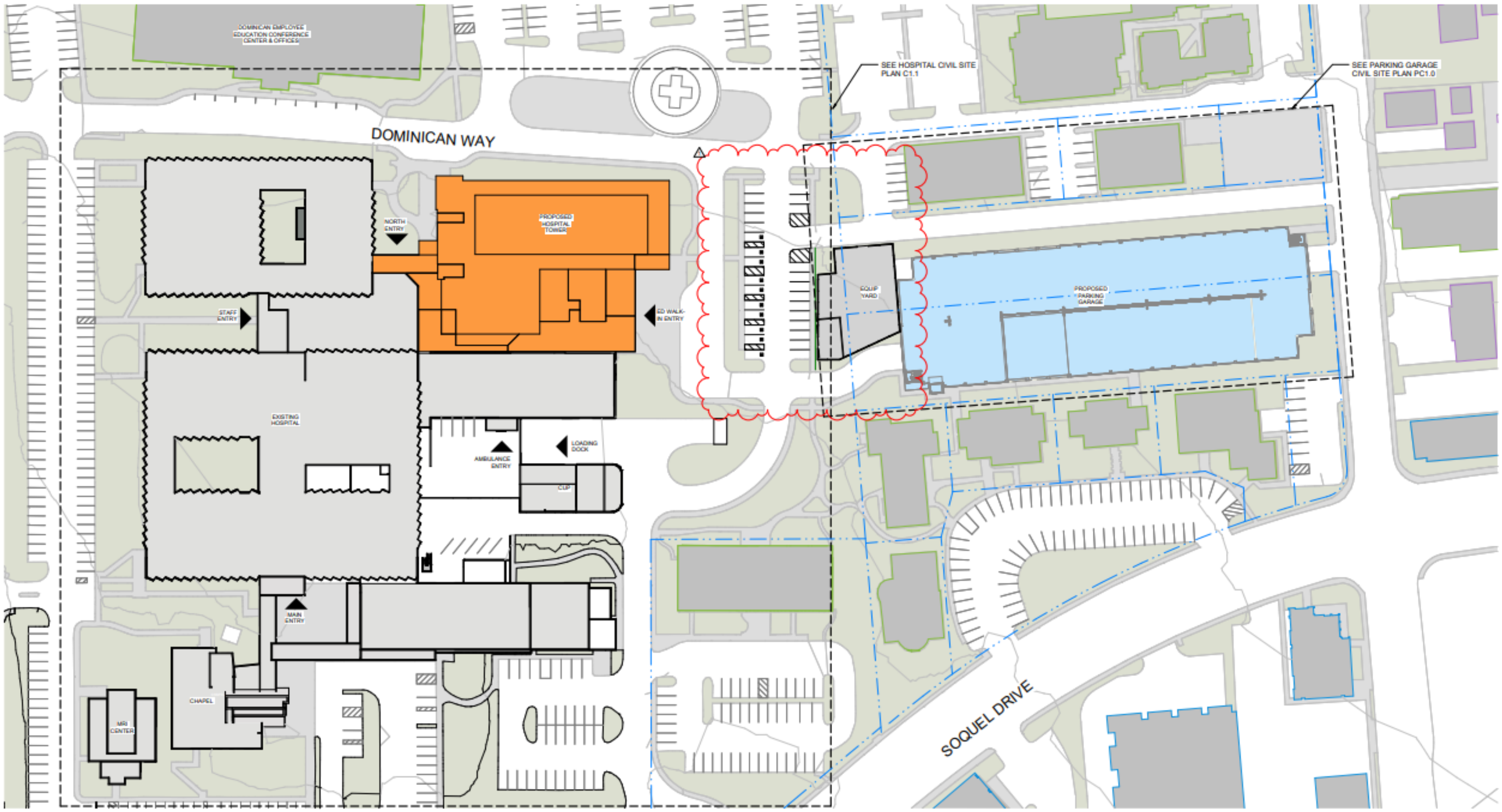

DOMINICAN HOSPITAL EXPANSION & RENOVATION

Dignity Health. Dominican Hospital
1555 SOQUEL DRIVE,
SANTA CRUZ, CA 95065

McCARTHY | Devenney GROUP

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EMAIL: DCAMPBELL@DEVENNEYGROUP.COM

ASSESSOR'S PARCEL NUMBER
025-481-01

REVISION SCHEDULE

REV #	DESCRIPTION	DATE
1	BACKCHECK 1	11/20/2019

SITE PLAN

DATE PREPARED
11/20/2019

Scale: 1" = 40'-0"

A001

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II. BACKGROUND INFORMATION

EXISTING SITE CONDITIONS:

Parcel Size (acres):	Approximately 18.5 acres
Existing Land Use:	Hospital
Vegetation:	Sparsely vegetated/mature landscaping
Slope in area affected by project:	☒ 0 - 30% ☐ 31 – 100% ☐ N/A
Nearby Watercourse:	Arana Gulch
Distance To:	Approximately 900 feet west of the project site.

ENVIRONMENTAL RESOURCES AND CONSTRAINTS:

Water Supply Watershed:	No	Fault Zone:	No
Groundwater Recharge:	No	Scenic Corridor:	Outside
Timber or Mineral:	No	Historic:	No
Agricultural Resource:	No	Archaeology:	Not mapped
Biologically Sensitive Habitat:	No	Noise Constraint:	No
Fire Hazard:	No	Electric Power Lines:	Overhead
Floodplain:	No	Solar Access:	Yes
Erosion:	Low	Solar Orientation:	South
Landslide:	No	Hazardous Materials:	Yes
Liquefaction:	Low	Other:	N/A

SERVICES:

Fire Protection:	Central Fire	Drainage District:	Zone 5
School District:	Soquel	Project Access:	Soquel Drive
Sewage Disposal:	County of Santa Cruz	Water Supply:	City of Santa Cruz

PLANNING POLICIES:

Zone District:	PF & PA	Special Designation:	N/A
General Plan:	P & C-O		
Urban Services Line:	☒ Inside	☐ Outside	
Coastal Zone:	☐ Inside	☒ Outside	

ENVIRONMENTAL SETTING AND SURROUNDING LAND USES:

Natural Environment

Santa Cruz County is uniquely situated along the northern end of Monterey Bay approximately 55 miles south of the City of San Francisco along the Central Coast. The Pacific Ocean and Monterey Bay to the west and south, the mountains inland, and the prime agricultural lands along both the northern and southern coast of the county create limitations on the style and amount of building that can take place. Simultaneously, these natural features create an environment that attracts both visitors and new residents every year. The natural landscape provides the basic features that set Santa Cruz apart from the surrounding counties and require specific accommodations to ensure building is done in a safe, responsible and environmentally respectful manner.

The California Coastal Zone affects nearly one third of the land in the urbanized area of the unincorporated County with special restrictions, regulations, and processing procedures required for development within that area. Steep hillsides require extensive review and engineering to ensure that slopes remain stable, buildings are safe, and water quality is not impacted by increased erosion. The farmland in Santa Cruz County is among the best in the world, and the agriculture industry is a primary economic generator for the County. Preserving this industry in the face of population growth requires that soils best suited to commercial agriculture remain active in crop production rather than converting to other land uses.

PROJECT BACKGROUND:

The project site is located within the area identified in the Sustainable Santa Cruz County plan as the medical district/flea market focus area. The site is bound by Soquel Drive to the south, Paul Sweet Road to the west, Mission Drive to the east, with Dominican Way bisecting the project site. Much of the development north of Soquel Drive surrounding the project consists of medical and professional offices. To the south, across Soquel Drive, is a furniture store, gas station, miscellaneous office and retail service establishments. Further south is Highway 1 which is designated as a scenic road in the County's General Plan (Policy 5.10.10).

The project site consists of three contiguous parcels. The primary parcel (APN 025-481-01) is developed with the existing Dominican hospital facilities which include the primary hospital consisting of an emergency room, labor and delivery, surgical center, and outpatient care. The broader hospital campus contains a number of additional detached administrative buildings including education center, community center, and medical professional offices and specialists. The two additional parcels (APNs 025-081-02 and 03) are currently utilized for staff parking and otherwise undeveloped. These two parcels abut the main hospital campus with primary access off Mission Drive at the east side of the hospital site.

DETAILED PROJECT DESCRIPTION:

This is a proposal to amend the Master Plan for Dominican Hospital approved under Development permit number 88-0065, by establishing a Planned Unit Development (PUD) authorizing construction of structural additions to the existing facilities including an approximately 84,000 square foot three story modernization of the existing hospital facility. Project includes construction of a new surgery center, reconfiguring the existing emergency room, and construction of a three story parking structure. The project will include rerouting of internal driveways, relocation of a utility area, new lighting, landscaping throughout the project area and modernization of the existing signage. The project does not result in an increase in number of hospital beds. Requires a PUD to increase the maximum height of 35 feet to 62 feet and an amendment to Master Plan 88-0065.

The project will be constructed in two stages which include all site preparation and grading associated with the proposed parking garage on APNs 025-081-02 and 03. During the construction of the parking garage, there will be a need for implementation of a temporary parking plan (Attachment 2) due to the displacement of approximately 140 employee parking spaces. The applicant has arranged with a nearby property owners to accommodate the temporary displacement of employee parking during the construction of the parking garage.

A condition of approval for the Master Plan would require the two adjoining parcels containing the proposed parking garage, to be either combined with the primary parcel or deed restricted such that the parking demand associated with the hospital will be provided in perpetuity. Per condition of approval for Development Permit 4071-U, 163 parking spaces will continue to be designated for use on the Dominican campus by adjoining medical office located at 1595 Soquel Drive. It is anticipated that these parking spaces will be located within the proposed parking garage.

Upon completion of the parking structure, construction of the primary hospital expansion will commence. The County of Santa Cruz Planning and Building department will review of proposed accessibility improvements for ADA compliance and consistency with the proposed Master Plan amendment and PUD. Construction drawings for the hospital expansion are required be reviewed by the Office of Statewide Health Planning and Development (OSHPD). Improvements to the existing facilities include construction of a new hospital wing, site improvements, and a parking garage. The hospital wing will provide for additional surgical facilities and private patient rooms.

The project proposes approximately 65,000 square feet of new/replacement impervious area. The project will be conditioned to comply with the Department of Public Works Design Criteria to ensure the project would not result in downstream impacts as it relates to stormwater management. Off-site drainage improvements may include but are not limited to the upsizing of an existing culvert located on the 76 gas station property which runs under Highway one located south of the project site, east of the Soquel Drive overpass.

Though the project will increase the size of the existing hospital by approximately 85,000 square feet, the project will not result in an increase in the existing number of licensed hospital beds (222 beds). Traffic analysis prepared by Fehr & Peers, dated October 2020 (Attachment 3) was submitted to the Department of Public Works for review. The traffic analysis indicated that 901 new daily trips would be generated based on the size of the proposed addition to the hospital. This increase in traffic will result in an operational deficiency at Soquel Ave/Driveway and Soquel Drive. The Department of Public Works established the following improvements to address operations and design of the project: install an additional northbound right turn lane on Soquel Avenue with at least 60 feet of storage.

The project is anticipated to result in a small increase in Vehicle Miles Traveled (VMT) (Attachment 4) which will be mitigated by the implementation of Mitigation Measure TR-1—participation in the regional Cruz511 travel demand management program, hiring of a transportation coordinator to market the program, incentivizing and gamification of participation in the program, and provision of an emergency guaranteed ride home. Impacts would be less than significant with this mitigation measure incorporated. The project will also provide 92 bicycle parking facilities and bicycle circulation throughout the site as well as connecting to nearby facilities.

III. ENVIRONMENTAL REVIEW CHECKLIST

A. AESTHETICS AND VISUAL RESOURCES

Except as provided in Public Resources Code section 21099, would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐

Discussion: The project is located in within the area identified in the Sustainable Santa Cruz County plan as the medical district/flea market focus area. The 18.5 acre project site is developed with an existing hospital and is surrounded by medical facilities. Primary access to the project site is off Soquel Drive which is an arterial road containing a mix of commercial services.

The project proposes a maximum height of 62 feet for a portion of the proposed hospital facility. The proposed increase in height requires approval of a Planned Unit Development (PUD). While much of the structures on the project site and surrounding area have a maximum height of no more than 35 feet or as appropriate for screening of roof mounted HVAC equipment, the location of the proposed structure with increased height will be sufficiently set back from adjoining property lines and so as not to deprive adjoining properties access to light, air, and opens space and the structure would be properly proportioned to the size of the project site. The project is located outside the viewshed of Highway 1 which is designated as a scenic road in the County's General Plan. The project would not directly impact any public scenic vistas in the area therefore impacts will be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☒	☐

Discussion: The project is located within .25 miles of Highway One, a County-designated scenic corridor. However, the project will not be visible from public viewpoints within the Highway One scenic corridor, and impacts will be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐

Discussion: The project is located in an urbanized area and designed to be consistent with

County Code sections that regulate height, bulk, density, setback, landscaping, and design of new structures in the County, including County Code Chapter 13.11, Site, Architectural and Landscape Design Review, and all applicable design guidelines. The project is designed and landscaped so as to fit into this setting. The project proposes an increase in height from 35 feet to 62 feet for construction of the proposed hospital expansion. The location of the structure for which the increased height is proposed will be sufficiently setback from adjoining property boundaries and properly proportioned to the 18-acre project site. The increased height is appropriate due to the nature of the proposed use as a hospital where it is necessary for interior spaces to be much taller to accommodate more modern equipment and technology.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Discussion: The project would contribute an incremental amount of night lighting to the visual environment. However, the following project conditions will reduce this potential impact to a less than significant level:

- All site, building, security and landscape lighting shall be directed onto the site and away from adjacent properties.
- All lighting shall meet energy code requirements of the California Building Code.
- Light sources shall not be visible from adjacent properties. Light sources can be shielded by landscaping, structure, fixture design or other physical means. Building and security lighting shall be integrated into the building design.
- Final plans shall include a lighting plan which demonstrates site lighting does not result in glare or excess light leaving the subject property (no spill over).
- All lighted parking and circulation areas shall utilize low-rise light standards or light fixtures attached to the building. Light standards to a maximum height of 15 feet are allowed.
- In the event that site lighting results in off-site glare as determined by the Planning Director, the following measures shall be implemented to the extent necessary to reduce glare:
    - Reduction in the total effective light emitted (change in wattage or bulb intensity,
    - Change in the type or method of lighting (change in bulb or illumination type),
    - Removal of lighting creating the off-site glare.

B. AGRICULTURE AND FORESTRY RESOURCES

In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment Project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

Discussion: The project site does not contain any lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. In addition, the project does not contain Farmland of Local Importance. Therefore, no Prime Farmland, Unique Farmland, Farmland of Statewide or Farmland of Local Importance would be converted to a non-agricultural use. No impact would occur from project implementation.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

Discussion: The project site is zoned Public Facilities (PF) and Professional and Administrative offices (PA), which are not considered to be an agricultural zone. Additionally, the project site's land is not under a Williamson Act contract. Therefore, the project does not conflict with existing zoning for agricultural use, or a Williamson Act contract. No impact is anticipated.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section	☐	☐	☐	☒

51104(g))?

Discussion: The project is not located near land designated as Timber Resource. Therefore, the project would not affect the resource or access to harvest the resource in the future. The timber resource may only be harvested in accordance with California Department of Forestry timber harvest rules and regulations.

4. *Result in the loss of forest land or conversion of forest land to non-forest use?*	☐	☐	☐	☒

Discussion: No forest land occurs on the project site or in the immediate vicinity. See discussion under B-3 above. No impact is anticipated.

5. *Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?*	☐	☐	☐	☒

Discussion: The project site and surrounding area within a radius of 1.5 miles does not contain any lands designated as Prime Farmland, Unique Farmland, Farmland of Statewide Importance or Farmland of Local Importance as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency. Therefore, no Prime Farmland, Unique Farmland, Farmland of Statewide, or Farmland of Local Importance would be converted to a non-agricultural use. In addition, the project site contains no forest land, and no forest land occurs within 1.5 miles of the project site. Therefore, no impacts are anticipated.

C. AIR QUALITY

The significance criteria established by the Monterey Bay Air Resources District (MBARD)[1] has been relied upon to make the following determinations. Would the project:

1. *Conflict with or obstruct implementation of the applicable air quality plan?*	☐	☐	☒	☐

Discussion: The project would not conflict with or obstruct any long-range air quality plans of MBARD, including the District's Air Quality Management Plan (AQMP). Santa Cruz County is located within the North Central Coast Air Basin (NCCAB). The NCCAB does not meet state standards for ozone (reactive organic gases [ROGs] and nitrogen oxides [NOx]) and fine particulate matter (PM_{10}). Therefore, the regional pollutants of concern that would be

[1] Formerly known as the Monterey Bay Unified Air Pollution Control District (MBUAPCD).

emitted by the project are ozone precursors and PM_{10}.

The primary sources of ROG within the air basin are on- and off-road motor vehicles, petroleum production and marketing, solvent evaporation, and prescribed burning. The primary sources of NOx are on- and off-road motor vehicles, stationary source fuel combustion, and industrial processes. In 2010, daily emissions of ROGs were estimated at 63 tons per day. Of this, area-wide sources represented 49%, mobile sources represented 36%, and stationary sources represented 15%. Daily emissions of NOx were estimated at 54 tons per day with 69% from mobile sources, 22% from stationary sources, and 9% from area-wide sources. In addition, the region is "NOx sensitive," meaning that ozone formation due to local emissions is more limited by the availability of NOx as opposed to the availability of ROGs (MBUAPCD, 2013b).

PM_{10} is the other major pollutant of concern for the NCCAB. In the NCCAB, highest particulate levels and most frequent violations occur in the coastal corridor. In this area, fugitive dust from various geological and man-made sources combines to exceed the standard. The majority of NCCAB exceedances occur at coastal sites, where sea salt is often the main factor causing exceedance. In 2005, daily emissions of PM_{10} were estimated at 102 tons per day. Of this, entrained road dust represented 35% of all PM_{10} emission, windblown dust 20%, agricultural tilling operations 15%, waste burning 17%, construction 4%, and mobile sources, industrial processes, and other sources made up 9% (MBUAPCD, 2008).

The hospital provides services to the existing community, and construction of the hospital addition will not result in additional population or significant new employment, and therefore the project will not exceed the growth assumptions in the AQMP. In addition, construction projects using typical construction equipment such as dump trucks, scrapers, bulldozers, compactors, and front-end loaders that temporarily emit precursors of ozone (i.e., volatile organic compounds [VOC] or oxides of nitrogen [NOx]), are accommodated in the emission inventories of state- and federally required air quality management plans and typically would not have a significant impact on the attainment and maintenance of ozone ambient air quality standard (AAQS) (MBUAPCD 2008). Impacts would be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐

Discussion: The primary pollutants of concern for the NCCAB are ozone and PM_{10}, as those are the pollutants for which the NCCAB is in nonattainment under state standards. Emissions from construction activities represent temporary impacts that are typically short in duration, depending on the size, phasing, and type of project. Air quality impacts can nevertheless be acute during construction periods, resulting in significant localized impacts to air quality. Table 1 summarizes the threshold of significance for construction activities.

Table 1: Construction Activity with Potentially Significant Impacts from Pollutant PM_{10}	
Activity	**Potential Threshold***
Construction site with minimal earthmoving	8.1 acres per day
Construction site with earthmoving (grading, excavation)	2.2 acres per day

*Based on Midwest Research Institute, Improvement of Specific Emission Factors (1995). Assumes 21.75 working weekdays per month and daily watering of site.

Note: Construction projects below the screening level thresholds shown above are assumed to be below the **82 lb/day threshold of significance**, while projects with activity levels higher than those above may have a significant impact on air quality. Additional mitigation and analysis of the project impact may be necessary for those construction activities.

Source: Monterey Bay Unified Air Pollution Control District, 2008.

As required by the MBARD, construction activities (e.g., excavation, grading, on-site vehicles) that exceed 2.2 acres per day and directly generate 82 pounds per day or more of PM_{10} would have a significant impact on local air quality when they are located nearby and upwind of sensitive receptors. Construction projects below the screening level thresholds shown in Table 1 are assumed to be below the 82 lb/day threshold of significance, while projects with activity levels higher than those thresholds may have a significant impact on air quality.

MBARD's CEQA Guidelines also contains thresholds applicable to operational impacts. Table 2 shows these thresholds.

Table 2: Thresholds of Significance for Operational Impacts	
Pollutant Source	**Threshold***
VOC and NO_X	137 pounds per day each
PM10	82 pounds per day
CO	550 lb per day; Level of Service (LOS) degradation from D to E or F; volume to capacity ratio increases by 0.05 or more: delay increases at E or F intersections by 10 seconds or more
SOx	150 pounds per day

Source; MBUAPCD, 2008

Impacts

Construction

Construction of the hospital addition, the parking garage, as well as the area between the two structures require grading on the site. Grading activities will be phased with construction of the parking garage taking place as a first phase before construction of the hospital addition. Project construction, including grading and the use of construction vehicles, may result in a short-term, localized decrease in air quality due to generation of PM_{10}, VOCs, and NOx. Standard dust control best management practices (BMPs), such as periodic watering, would be implemented during construction to avoid significant air quality impacts to both local and cumulative air quality from the generation of PM_{10} (see BMP list below).

The following BMPs will be implemented during all site excavation and grading.

- Water all active construction areas at least twice daily as necessary and indicated by soil and air conditions.
- Prohibit all grading during periods of high wind (over 15 mph).
- Apply chemical soil stabilizers on inactive construction areas (disturbed lands within construction projects that are unused for at least four consecutive days)
- Apply non-toxic binders (e.g., latex acrylic copolymer) to exposed areas after cut and fill operations and hydroseed areas.
- Haul trucks shall maintain at least 2' 0" freeboard.
- Cover all trucks hauling soil, sand, and other loose materials.
- Plant vegetative ground cover in disturbed areas as quickly as possible.
- Cover inactive storage piles.
- Install wheel washers at the entrance to construction sites for all existing trucks.
- Pave all roads on construction sites.
- Sweep streets if visible soil material is carried out from the construction site.
- Post a publicly visible sign that specifies the telephone number and person to contact regarding dust complaints. This person shall respond to complaints and corrective action within 48 hours. The phone number of the Monterey Bay Air Resources District shall be visible to ensure compliance with Rule 402 (Nuisance),
- Limit the area under construction at any one time.

Implementation of the above recommended BMPs for the control of construction-related emissions would further reduce construction-related particulate emissions. These types of measures are commonly included as conditions of approval associated with development permits approved by the County.

All project construction equipment would be required to comply with the California Air Resources Board (CARB) emissions requirements for construction equipment, such as imposing limits on idling and requiring older engines and equipment to be retired, replaced, or repowered. In addition, although not a mitigation measure per se (i.e., required by law), California ultralow sulfur diesel fuel with a maximum sulfur content of 15 parts per million (ppm) by weight will be used in all diesel-powered equipment, which minimizes sulfur dioxide and particulate matter. With the phasing of construction activities, implementation of BMPs and state requirements, construction impacts will be temporary and less than significant.

Operation

The project involves a new hospital wing, site improvements, and a parking garage. The hospital wing will provide for additional surgical facilities and private patient rooms. Emissions associated with project operation would be long term and include electricity and natural gas use (energy sources), water use, landscape maintenance equipment, consumer products, and architectural coating on buildings. The building itself will be designed to meet state energy requirements, as well as more stringent energy usage requirements of Dignity Health, and is not expected to exceed MBARD's operational thresholds.

The project also includes a parking garage, which will allow for a concentrated area of motor vehicles that may idle and temporarily cause an increase in localized emissions. However, the garage is not designed to significantly increase the automobile activity on the site (according to the project traffic study, 54 additional parking spaces will be provided, an increase of less than five percent). Instead, the project concentrates the parking stalls in order to provide more efficient use of the site.

Mobile sources include vehicle trips to and from the site. As discussed in Section Q – Transportation, the project is expected to increase vehicle trips by 901 trips per day and vehicle miles traveled (VMT) by 0.02%. There is one intersection in the transportation study area that operates at LOS D or lower: Soquel Avenue and Soquel Drive, located approximately 0.5 mile west of the project site. The Soquel Avenue and Soquel Drive intersection currently operates at LOS E during the AM peak hour, which is already unacceptable according to County of Santa Cruz General Plan Policy 3.12.1. As discussed in Section Q—Transportation, the project would increase delay at this intersection under Cumulative conditions.

According to the traffic analysis by Fehr & Peers (see Attachment 3), the addition of vehicle trips to the intersection of Soquel Drive/Soquel Avenue would not increase the volume-to-capacity ratio by five percent or more during either the a.m. or p.m. peak hours. In addition, the addition of project traffic would not cause an increase in delay of 10 seconds or more at the intersection, and the reserve capacity would not decrease by 50 or more with the project traffic. Therefore, no significant impact would occur from CO "hot spots," and impacts resulting from mobile sources during operations will be less than significant.

		Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3.	*Expose sensitive receptors to substantial pollutant concentrations?*	☐	☐	☒	☐

Discussion: There are several sensitive receptors near the project site, including the project site itself, which is a hospital. Additionally, there are other medical office buildings adjacent to and on the same site as the hospital that provide services to a population considered to be sensitive receptors. Dominican Oaks, a retirement community, is just north of the project site and immediately north of construction activity. Single family residences are located in neighborhoods near the hospital (to the north, east, and west), and the closest residence is approximately 170 feet to the northeast of the parking garage location. De La Vega Elementary

School is 0.6 mile west of the project site, and Harbor High School is 0.8 mile to the west of the project site.

Diesel exhaust contains substances (diesel particulate matter [DPM], toxic air contaminants [TACs], mobile source air toxics [MSATs]) that are suspected carcinogens, along with pulmonary irritants and hazardous compounds, which may affect sensitive receptors such as young children, senior citizens, or those susceptible to respiratory disease. Where construction activity occurs in proximity to long-term sensitive receptors, a potential could exist for unhealthful exposure of those receptors to diesel exhaust, including residential receptors.

<u>Impacts</u>

Potential sensitive receptors include visitors to the hospital and the adjacent medical offices. The nearest residence is approximately 170 feet from the project area. Construction will be phased and is anticipated to occur over approximately four years. Construction of the garage will be 11 months, and construction of the hospital expansion will be 42 months (additional renovation of the existing facility over another two years). Sensitive receptors would be affected less than six percent of the 70-year maximum exposed individual criteria used for assessing public health risk due to emissions of certain air pollutants (MBUAPCD 2008). Due to the intermittent and short-term temporary nature of construction activities, emissions of DPM, TACs, or MSATs would not be sufficient to pose a significant risk to sensitive receptors from construction equipment operations during the course of the project.

Areas with high vehicle density, such as congested intersections and parking garages, have the potential to create high concentrations of CO, known as CO "hot spots," which can expose sensitive receptors to substantial pollutant concentrations. See Question 2 for CO hot spots analysis. The project would not be expected to expose sensitive receptors to substantial pollutant concentrations over a sustained period of time, and therefore pollutant effects on health would be less than significant.

4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Discussion: Land uses typically producing objectionable odors include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The proposed project does not include any uses that would be associated with objectionable odors. Odor emissions from the proposed project would be limited to odors associated with vehicle and engine exhaust and idling from cars entering, parking, and exiting the facility. The project does not include any known sources of objectionable odors associated with the long-term operations phase.

During construction activities, only short-term, temporary odors from vehicle exhaust and construction equipment engines would occur. California ultralow sulfur diesel fuel with a maximum sulfur content of 15 ppm by weight would be used in all diesel-powered equipment, which minimizes emissions of sulfurous gases (sulfur dioxide, hydrogen sulfide, carbon disulfide, and carbonyl sulfide). As the project site is in a coastal area that contains coastal breezes off of the Monterey Bay, construction-related odors would disperse and dissipate and would not cause substantial odors at the closest sensitive receptors (visitors to the site and adjacent medical facilities and residences located within approximately 170 feet of the project site). Construction-related odors would be short-term and would cease upon completion. Therefore, no objectionable odors are anticipated from construction activities associated with the project.

Operation of the project will be similar to the current land use, and is not expected to produce additional odors. The project would not create objectionable odors affecting a substantial number of people; therefore, the project is not expected to result in significant impacts related to objectionable odors during construction or operation.

D. BIOLOGICAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife, or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

Discussion: A query was conducted of the California Natural Diversity Database (CNDDB), maintained by the California Department of Fish and Wildlife. The site is mapped for Pentachaeta bellidiflora common name white-rayed pentachaeta, Trimerotropis infantilis common name Zayante band-winged grasshopper, and Coturnicops noveboracensis common name yellow rail. White-rayed pentachaeta tend to grow on rocky slopes and grassy areas. The Zayante band-winged grasshopper is endemic to open habitat characteristic of sand parkland within the Santa Cruz Sandhills. Yellow rail tend to inhabit densely vegetated sedge meadows and marshes that are seasonally flooded with water. There is no potential for these species to occur on the project site in that the site does not support rocky slopes, grasslands, Santa Cruz Sandhills, marshes or meadows. Rendering this site unsuitable habitat for the listed species. Species was not observed during field surveys and is not expected to occur due to the lack of suitable habitat. No impact is anticipated.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Have a substantial adverse effect on any riparian habitat or sensitive natural community identified in local or regional	☐	☐	☐	☒

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
plans, policies, regulations (e.g., wetland, native grassland, special forests, intertidal zone, etc.) or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?				

Discussion: There is no mapped or designated riparian habitat or other sensitive natural community on or adjacent to the project site.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

Discussion: There are no mapped or designated federally protected wetlands on or adjacent to the project site. Therefore, no impacts would occur from project implementation.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. Interfere substantially with the movement of any native resident or migratory fish or wildlife species or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒

Discussion: The project does not involve any activities that would interfere with the movements or migrations of fish or wildlife or impede use of a known wildlife nursery site.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
5. Conflict with any local policies or ordinances protecting biological resources (such as the Sensitive Habitat Ordinance, Riparian and Wetland Protection Ordinance, and the Significant Tree Protection Ordinance)?	☐	☐	☐	☒

Discussion: The project would not conflict with any local policies or ordinances.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
6. Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

Discussion: The project would not conflict with the provisions of any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. Therefore, no impact would occur.

E. CULTURAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?*	☐	☐	☐	☒

Discussion: The existing structure(s) on the property is/are not designated as a historic resource on any federal, state or local inventory. As a result, no impacts to historical resources would occur from project implementation.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?*	☐	☐	☒	☐

Discussion: No archaeological resources have been identified in the project area. Pursuant to SCCC section 16.40.040, if at any time in the preparation for or process of excavating or otherwise disturbing the ground, or any artifact or other evidence of a Native American cultural site which reasonably appears to exceed 100 years of age are discovered, the responsible persons shall immediately cease and desist from all further site excavation and comply with the notification procedures given in SCCC Chapter 16.40.040.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. *Disturb any human remains, including those interred outside of dedicated cemeteries?*	☐	☐	☒	☐

Discussion: Impacts are expected to be less than significant. However, pursuant to section 16.40.040 of the SCCC, and California Health and Safety Code sections 7050.5-7054, if at any time during site preparation, excavation, or other ground disturbance associated with this project, human remains are discovered, the responsible persons shall immediately cease and desist from all further site excavation and notify the Sheriff-Coroner and the Planning Director. If the coroner determines that the remains are not of recent origin, a full archaeological report shall be prepared, and representatives of local Native American Indian groups shall be contacted. If it is determined that the remains are Native American, the Native American Heritage Commission will be notified as required by law. The Commission will designate a Most Likely Descendant who will be authorized to provide recommendations for management of the Native American human remains. Pursuant to Public Resources Code section 5097, the descendants shall complete their inspection and make recommendations or preferences for treatment within 48 hours of being granted access to the site. Disturbance shall not resume until the significance of the resource is determined and appropriate mitigations to preserve the resource on the site are established.

F. ENERGY

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐

Discussion: The project, like all development, would be responsible for an incremental increase in the consumption of energy resources during site grading and construction. All project construction equipment would be required to comply with the California Air Resources Board (CARB) emissions requirements for construction equipment, which includes measures to reduce fuel-consumption, such as imposing limits on idling and requiring older engines and equipment to be retired, replaced, or repowered. In addition, the project would comply with General Plan policy 8.2.2, which requires all new development to be sited and designed to minimize site disturbance and grading. As a result, impacts associated with the small temporary increase in consumption of fuel during construction are expected to be less than significant.

The project's permanent operational energy use is also expected to be minimized through its conformance with the Office of Statewide Health Planning and Development (OSHPD) requirements. The project involves a new hospital wing, site improvements, and a parking garage. The hospital wing will provide for additional surgical facilities and private patient rooms. Energy impacts were analyzed in the Traffic Impact Analysis prepared by Fehr & Peers, dated October 2020 (Attachment 3). It was determined based on the results of the analysis that with mitigation TRA-1, the project would not result in an increase in vehicle miles travelled (VMT) or increase in greenhouse gas emissions.

In addition, the County has strategies to help reduce energy consumption and greenhouse gas (GHG) emissions. These strategies included in the *County of Santa Cruz Climate Action Strategy* (County of Santa Cruz, 2013) are outlined below.

<u>Strategies for the Reduction of Energy Use and GHG Emissions</u>

- Develop a Community Choice Aggregation (CCA) Program, if feasible.[2]

[2] Monterey Bay Community Power (MBCP) was formed in 2017 to provide carbon-free electricity. All Pacific Gas & Electric Company (PG&E) customers in unincorporated Santa Cruz County were automatically enrolled in the MBCP in 2018.

- Increase energy efficiency in new and existing buildings and facilities.
- Enhance and expand the Green Business Program.
- Increase local renewable energy generation.
- Public education about climate change and impacts of individual actions.
- Continue to improve the Green Building Program by exceeding the minimum standards of the state green building code (Cal Green).
- Form partnerships and cooperative agreements among local governments, educational institutions, nongovernmental organizations, and private businesses as a cost-effective way to facilitate mitigation and adaptation.
- Reduce energy use for water supply through water conservation strategies.

<u>Strategies for the Reduction of Energy Consumption and GHG Emissions from Transportation</u>

- Reduce vehicle miles traveled (VMT) through County and regional long-range planning efforts.
- Increase bicycle ridership and walking through incentive programs and investment in bicycle and pedestrian infrastructure and safety programs.
- Provide infrastructure to support zero and low emissions vehicles (plug in, hybrid plug-in vehicles).
- Increase employee use of alternative commute modes: bus transit, walking, bicycling, carpooling, etc.
- Increase the number of electric and alternative fuels vehicles in the County fleet.

Therefore, the project will not result in wasteful, inefficient, or unnecessary consumption of energy resources. Impacts are expected to be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Discussion: AMBAG's 2040 Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) recommends policies that achieve statewide goals established by CARB, the California Transportation Plan 2040, and other transportation-related policies and state senate bills. The SCS element of the MTP targets transportation-related greenhouse gas (GHG) emissions in particular, which can also serve to address energy use by coordinating land use and transportation planning decisions to create a more energy efficient transportation system.

The Santa Cruz County Regional Transportation Commission (SCCRTC) prepares a County-specific regional transportation plan (RTP) in conformance with the latest AMBAG

MTP/SCS. The 2040 RTP establishes targets to implement statewide policies at the local level, such as reducing vehicle miles traveled and improving speed consistency to reduce fuel consumption.

In 2013, Santa Cruz County adopted a Climate Action Strategy (CAS) focused on reducing the emission of greenhouse gases, which is dependent on increasing energy efficiency and the use of renewable energy. The strategy intends to reduce energy consumption and greenhouse gas emissions by implementing a number of measures such as reducing vehicle miles traveled through County and regional long-range planning efforts, increasing energy efficiency in new and existing buildings and facilities, increasing local renewable energy generation, improving the Green Building Program by exceeding minimum state standards, reducing energy use for water supply through water conservation strategies, and providing infrastructure to support zero and low emission vehicles that reduce gasoline and diesel consumption, such as plug in electric and hybrid plug in vehicles.

In addition, the Santa Cruz County General Plan has historically placed a priority on "smart growth" by focusing growth in the urban areas through the creation and maintenance of an urban services line. Objective 2.1 (Urban/Rural Distinction) directs most residential development to the urban areas, limits growth, supports compact development, and helps reduce sprawl. The Circulation Element of the General Plan further establishes a more efficient transportation system through goals that promote the wise use of energy resources, reducing vehicle miles traveled, and transit and active transportation options.

Energy efficiency is a major priority throughout the County's General Plan. Measure C was adopted by the voters of Santa Cruz County in 1990 and explicitly established energy conservation as one of the County's objectives. The initiative was implemented by Objective 5.17 (Energy Conservation) and includes policies that support energy efficiency, conservation, and encourage the development of renewable energy resources. Goal 6 of the Housing Element also promotes energy efficient building code standards for residential structures constructed in the County.

The project will be consistent with the AMBAG 2040 MTP/SCS and the SCCRTC 2040 RTP. The project would also be required to comply with the Santa Cruz County General Plan and any implemented policies and programs established through the CAS. In addition, the project design would be required to comply with CALGreen, the state of California's green building code, to meet all mandatory energy efficiency standards. Therefore, the project would not conflict with or obstruct any state or local plan for renewable energy or energy efficiency.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

G. GEOLOGY AND SOILS

Would the project:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐
B. Strong seismic ground shaking?	☐	☐	☒	☐
C. Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
D. Landslides?	☐	☐	☒	☐

Discussion (A through D): All of Santa Cruz County is subject to some hazard from earthquakes, and there are several faults within the County. While the San Andreas fault is larger and considered more active, each fault is capable of generating moderate to severe ground shaking from a major earthquake. Consequently, large earthquakes can be expected in the future. The October 17, 1989 Loma Prieta earthquake (magnitude 7.1) was the second largest earthquake in central California history.

The project site is located outside of the limits of the State Alquist-Priolo Special Studies Zone or any County-mapped fault zone (County of Santa Cruz GIS Mapping, California Division of Mines and Geology, 2001). The project site is located approximately 8.5 miles southwest of the San Andreas fault zone, and approximately 5.5 miles southwest of the Zayante fault zone. A geotechnical investigation for the project was performed by Rutherford and Chekene, dated October 31, 2019 (Attachment 5). The report concluded that there is a high probability for seismic shaking due to the project's proximity to know faults, moderate to high probability for potential liquefaction, moderate to high potential for compaction settlement and soil corrosivity. All other geologic hazards are anticipated to have a low probability of occurring on the project site. The project has been designed to mitigate potential geologic hazards identified by the project Geotechnical Engineer and include specific foundation design recommendations. These recommendation include but are not limited to the use of a mat foundation and or spread footing or use of a drilled pier foundation. Implementation of the additional requirements included in the review letter prepared by Environmental Planning staff dated January 8, 2020 (Attachment 6) will serve to further reduce the potential risk of seismic shaking. Therefore, impacts will be less than significant.

2. Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

Discussion: Some potential for erosion exists during the construction phase of the project, however, this potential is minimal because of the relatively flat topography of the project site and standard erosion controls are a required condition of the project. Prior to approval of a grading or building permit, the project must have an approved stormwater pollution control plan (SCCC Section 7.79.100), which would specify detailed erosion and sedimentation control measures. The plan would include provisions for disturbed areas to be planted with ground cover and to be maintained to minimize surface erosion. Impacts from soil erosion or loss of topsoil would be considered less than significant.

3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☒	☐

Discussion: The report cited above (see discussion under G-1) concluded that there is a potential risk from seismic shaking, liquefaction, compaction settlement, and soil corrosivity. The recommendations contained in the geotechnical report, will be implemented to reduce this potential hazard to a less than significant level.

4. Be located on expansive soil, as defined in section 1803.5.3 of the California Building Code (2016), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐

Discussion: According to the geotechnical report for the project there are indications of expansive soils in the project area. The recommendations contained in the geotechnical report, shall be implemented to adequately reduce this potential hazard to a less than significant level.

5. Have soils incapable of adequately supporting the use of septic tanks, leach fields, or alternative waste water disposal systems where sewers are not available	☐	☐	☐	☒

for the disposal of waste water?

Discussion: No septic systems are proposed. The project would connect to the Santa Cruz County Sanitation District, and the applicant would be required to pay standard sewer connection and service fees that fund sanitation improvements within the district as a Condition of Approval for the project.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
6. *Directly or indirectly destroy a unique paleontological resource or site of unique geologic feature?*	☐	☐	☐	☒

Discussion: No unique paleontological resources or sites or unique geologic features are known to occur in the vicinity of the project. A query was conducted of the mapping of identified geologic/paleontological resources maintained by the County of Santa Cruz Planning Department, and there are no records of paleontological or geological resources in the vicinity of the project parcel. No direct or indirect impacts are anticipated.

H. GREENHOUSE GAS EMISSIONS

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?*	☐	☐	☒	☐

Discussion: Greenhouse gas (GHG) emissions can be divided into those produced during construction and those produced during operations. Construction GHG emissions include emissions produced as a result of material processing, emissions produced by onsite construction equipment, and emissions arising from traffic delays due to construction. These emissions would be produced at different levels throughout the construction phase; their frequency and occurrence can be reduced through innovations in plans and specifications and by implementing better traffic management during construction phases. The project would result in relatively small, temporary increases in GHG emissions during construction.

As noted in Section C—Air Quality, some emissions can be expected due to operation of the facility over time. Emissions associated with project operation would be long term and include electricity and natural gas use (energy sources), water use, landscape maintenance equipment, as well as emissions associated with increased traffic. The building itself will be designed to meet state energy requirements, as well as more stringent energy usage requirements of Dignity Health, and is not expected to exceed MBARD's operational thresholds for air pollutants. In addition, electric customers in Santa Cruz County are served by Central Coast Community Energy, which was formed in 2017 to provide carbon-free electricity, greatly reducing the impact of building operations on GHG production.

Traffic associated with the project once in operation includes an additional 901 daily trips, a source of GHG emissions. The project also includes a parking garage, which will allow for a concentrated area of motor vehicles that may idle and temporarily cause an increase in localized emissions. However, the garage is not designed to significantly increase the automobile activity on the site (according to the project traffic study, 54 additional parking spaces will be provided, an increase of less than five percent). Rather concentrates the parking stalls in order to provide more efficient use of the site. Automobile emissions associated with operation of the project will cause a small incremental increase in GHG, which are not expected to be significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?*	☐	☐	☐	☒

Discussion: In 2013, Santa Cruz County adopted a Climate Action Strategy (CAS) intended to establish specific emission reduction goals and necessary actions to reduce GHG levels to pre-1990 levels as required under Assembly Bill (AB) 32 legislation. The strategy intends to reduce GHG emissions and energy consumption by implementing measures such as reducing vehicle miles traveled through the County and regional long-range planning efforts and increasing energy efficiency in new and existing buildings and facilities. See section F – Energy for a discussion on the strategies included in the County's CAS that help reduce GHG emissions countywide. In addition, the project is not expected to conflict with any statewide or regional plans. No significant impacts are anticipated.

I. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?*	☐	☐	☒	☐

Discussion: The project would not create a significant hazard to the public or the environment. No routine transport or disposal of hazardous materials is proposed. However, during construction, fuel would be used at the project site. In addition, fueling may occur within the limits of the staging area. Best management practices would be used to ensure that no impacts would occur. Impacts are expected to be less than significant.

Medical waste generated on-site would be handled and stored separately in the building and removed by a medical waste company as approved by the County Environmental Health Department. Impacts are expected to be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐

Discussion: See discussion under I-1 above. Project impacts would be considered less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

Discussion: The Harbor High School is located at 290 La Fonda Avenue in Santa Cruz, approximately 0.5 miles south west of the project site. Although fueling of equipment is likely to occur within the staging area, BMPs to contain spills would be implemented. No impacts are anticipated.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☒	☐

Discussion: The project site is included on the December 3, 2018 list of hazardous sites in Santa Cruz County compiled pursuant to Government Code section 65962.5. In 1967, a 7,500 gallon fuel oil underground storage tank (UST) was installed at the property in the sub-grade area of the Hospitals' Emergency Room. In the early 1990s, in an attempt to propose in-place closure of the fuel oil tank due to its proximity to building footings, soil samples were collected from beneath the fill end the of the fuel tank at 15.5 feet below grade (fbg), which detected elevated concentrations of petroleum hydrocarbons. Additional soil sampling and groundwater sampling confirmed elevated concentrations of petroleum hydrocarbon contamination in the soil and water beneath the fill end of the fuel UST. Three groundwater monitoring wells for the UST were already installed. Groundwater samples were collected from these monitoring wells and only low levels of diesel fuel were reported in groundwater at 28.5 fbg. Groundwater direction is towards the south-southeast. The tank was removed and in 1995, approximately 2,500 gallons of water were extracted from the UST pit, and approximately 80 cubic yards of contaminated soils were removed. The consultant concluded that contaminated UST pit water was not hydraulically connected to the shallow groundwater beneath the site and recommended no further action. In April 1997, Environmental Health issued a no further action letter for this site.

It should be noted, that in 1993, a newer 10,000 gallon diesel UST was installed to replace the 7,500 gallon fuel oil UST that was removed. The new UST was installed approximately 150 feet east of the old UST.

Due to the history of potential contaminated soils, the project will be conditioned to ensure that if during the construction, any evidence of underground storage tanks or evidence of a petroleum release, are uncovered, Environmental Health must be contacted immediately and work on the site must cease, until approval to resume is given by Environmental Health. Impacts are anticipated to be less than significant from project implementation.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
5. *For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?*	☐	☐	☐	☒

Discussion: The project is not located within two miles of a public airport or public use airport. No impact is anticipated.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
6. *Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?*	☐	☐	☐	☒

Discussion: The project would not conflict with implementation of the County of Santa Cruz Local Hazard Mitigation Plan 2015-2020 (County of Santa Cruz, 2020). Therefore, no impacts to an adopted emergency response plan or evacuation plan would occur from project implementation.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
7. *Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?*	☐	☐	☒	☐

Discussion: See discussion under Wildfire Question T-2. Impacts would be less than significant.

J. HYDROLOGY, WATER SUPPLY, AND WATER QUALITY

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?*	☐	☐	☒	☐

Discussion: The project would not discharge runoff either directly or indirectly into a public or private water supply. No commercial or industrial activities are proposed that would generate a substantial amount of contaminants. However, runoff from this project may contain small amounts of chemicals and other contaminants, such as pathogens, pesticides, trash, and nutrients. The parking and driveway associated with the project would incrementally contribute urban pollutants to the environment; however, the contribution would be small, given the size of the driveway and parking area. Potential siltation from the project would be addressed through implementation of erosion control BMPs. No water quality standards or waste discharge requirements would be violated and surface or ground water quality would not otherwise be substantially degraded.

The BMPs will include, but are not limited to, the following.

- All earthwork or foundation activities involving rivers, ephemeral drainages, and culverts, will occur in the dry season (generally between June 1 and October 15).
- Equipment used in and around drainages will be in good working order and free of dripping or leaking engine fluids. All vehicle maintenance will be performed at least 300 feet from all drainages. Any necessary equipment washing will be carried out where the water cannot flow into drainages.
- Develop a hazardous material spill prevention control and countermeasure plan before construction begins that will minimize the potential for and the effects of hazardous or toxic substances spills during construction. The plan will include storage and containment procedures to prevent and respond to spills and will identify the parties responsible for monitoring the spill response. During construction, any spills will be cleaned up immediately according to the spill prevention and countermeasure plan. The County will review and approve the contractors' toxic materials spill prevention control and countermeasure plan before allowing construction to begin. Prohibit the following types of materials from being rinsed or washed into the streets, shoulder areas, or gutters: concrete; solvents and adhesives; thinners; paints; fuels; sawdust; dirt; gasoline; asphalt and concrete saw slurry; heavily chlorinated water.
- Any surplus concrete rubble, asphalt, or other rubble from construction will be taken to a local landfill.
- An erosion and sediment control plan will be prepared and implemented for the project. It will include the following provisions and protocols. The Storm Water Pollution Prevention Plan (SWPPP) for the project will detail the applications and type of measures and the allowable exposure of unprotected soils.
  - Discharge from dewatering operations, if needed, and runoff from disturbed

areas will be made to conform to the water quality requirements of the waste discharge permit issued by the RWQCB.

- Temporary erosion control measures, such as sandbagged silt fences, will be applied throughout construction of the project and will be removed after the working area is stabilized or as directed by the engineer. Soil exposure will be minimized through use of temporary BMPs, groundcover, and stabilization measures. Exposed dust-producing surfaces will be sprinkled daily, if necessary, until wet; this measure will be controlled to avoid producing runoff. Paved streets will be swept daily following construction activities.
- The contractor will conduct periodic maintenance of erosion and sediment control measures.
- An appropriate seed mix of native species will be planted on disturbed areas upon completion of construction.
- Cover or apply nontoxic soil stabilizers to inactive construction areas (previously graded areas inactive for 10 days or more) that could contribute sediment to waterways.
- Enclose and cover exposed stockpiles of dirt or other loose, granular construction materials that could contribute sediment to waterways. Material stockpiles will be located in non-traffic areas only. Side slopes will not be steeper than 2:1. All stockpile areas will be surrounded by a filter fabric fence and interceptor dike.
- Contain soil and filter runoff from disturbed areas by berms, vegetated filters, silt fencing, straw wattle, plastic sheeting, catch basins, or other means necessary to prevent the escape of sediment from the disturbed area.
- Use other temporary erosion control measures (such as silt fences, staked straw bales/wattles, silt/sediment basins and traps, check dams, geofabric, sandbag dikes, and temporary re-vegetation or other ground cover) to control erosion from disturbed areas as necessary.
- Avoid earth or organic material from being deposited or placed where it may be directly carried into the channel.
- Ensure all areas that are disturbed/compacted during construction are stabilized, vegetated, and de-compacted as necessary, so that runoff rates from landscaped and pervious areas do not exceed those from pre-disturbed/natural conditions.

Implementation of the above BMPs would ensure that water quality impacts are less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐

Discussion: The project would obtain water from the City of Santa Cruz Water department and would not rely on private well water. Although the project would incrementally increase water demand, Santa Cruz has indicated that adequate supplies are available to serve the project (Attachment 7). The project is not located in a mapped groundwater recharge area or water supply watershed and will not substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin. Impacts would be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
A. result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
B. substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
C. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or;	☐	☐	☒	☐
D. impede or redirect flood flows?	☐	☐	☒	☐

Discussion: Drainage calculations prepared by Bowman and Williams, dated November 18, 2019, (Attachment 8) have been reviewed for potential drainage impacts and accepted by the County Department of Public Works Stormwater Management Section staff. The calculations show that the project will result in the redevelopment/replacement of approximately 136,000 square feet of impervious area. The runoff rate from the property would be controlled by detention and flow control structures as well as retention facilities and bioswales (where retention is not feasible) to improve water quality. The project engineer evaluated (see Downstream Drainage Analysis by Bowman and Williams dated October 28, 2019) the downstream system from the project site to the open conveyance on Caltrans property in the landscaped area between Commercial Way and Highway 1. The analysis determined that existing storm drain facilities are not adequate to meet current County flood control standards. To ensure compliance with the Department of Public Works Design Criteria and County General Plan, the project will be required to contribute to fund these upgrades in County road right-of-way, private property, and Caltrans right-of-way. Compliance with County Design Criteria will ensure the project impacts are less than significant

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒

***Discussion*:**

Flood Hazards:

According to the Federal Emergency Management Agency (FEMA) National Flood Insurance Rate Map, dated May 16, 2012, no portion of the project site lies within a flood hazard zone, and there would be no impact.

Tsunami and Seiche Zones:

There are two primary types of tsunami vulnerability in Santa Cruz County. The first is a teletsunami or distant source tsunami from elsewhere in the Pacific Ocean. This type of tsunami is capable of causing significant destruction in Santa Cruz County. However, this type of tsunami would usually allow time for the Tsunami Warning System for the Pacific Ocean to warn threatened coastal areas in time for evacuation (County of Santa Cruz 2010).

A greater risk to the County of Santa Cruz is a tsunami generated as the result of an earthquake along one of the many earthquake faults in the region. Even a moderate earthquake could cause a local source tsunami from submarine landsliding in Monterey Bay. A local source tsunami generated by an earthquake on any of the faults affecting Santa Cruz County would arrive just minutes after the initial shock. The lack of warning time from such a nearby event would result in higher causalities than if it were a distant tsunami (County of Santa Cruz 2010).

Seiches are recurrent waves oscillating back and forth in an enclosed or semi-enclosed body of water. They are typically caused by strong winds, storm fronts, or earthquakes.

The project site is located approximately two miles inland, approximately 1/2 to one mile beyond the effects of a tsunami. The project site is located approximately 0.8 miles from

Arana Gulch and would not be affected by a seiche. Therefore, there would be no impact.

5. *Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?*	☐	☐	☐	☒

Discussion: All County water agencies are experiencing a lack of sustainable water supply due to groundwater overdraft and diminished availability of streamflow. Because of this, coordinated water resource management has been of primary concern to the County and to the various water agencies. As required by state law, each of the County's water agencies serving more than 3,000 connections must update their Urban Water Management Plans (UWMPs) every five years, with the most recent updates completed in 2016.

County staff are working with the water agencies on various integrated regional water management programs to provide for sustainable water supply and protection of the environment. Effective water conservation programs have reduced overall water demand in the past 15 years, despite continuing growth. In August 2014, the Board of Supervisors and other agencies adopted the Santa Cruz Integrated Regional Water Management (IRWM) Plan Update 2014, which identifies various strategies and projects to address the current water resource challenges of the region. Other efforts underway or under consideration are stormwater management, groundwater recharge enhancement, increased wastewater reuse, and transfer of water among agencies to provide for more efficient and reliable use.

The County is also working closely with water agencies to implement the Sustainable Groundwater Management Act (SGMA) of 2014. By January 2020, Groundwater Sustainability Plans will be developed for two basins in Santa Cruz County that are designated as critically overdrafted, Santa Cruz Mid-County and Corralitos - Pajaro Valley. These plans will require management actions by all users of each basin to reduce pumping, develop supplemental supplies, and take management actions to achieve groundwater sustainability by 2040. A management plan for the Santa Margarita Basin will be completed by 2022, with sustainability to be achieved by 2042.

The project is located in the Santa Cruz Mid-County Ground water basin. In 2016, Soquel Creek Water District (SqCWD), Central Water District (CWD), County, and City of Santa Cruz adopted a Joint Powers Agreement to form the Santa Cruz Mid-County Groundwater Agency for management of the Mid-County Basin under SGMA. SqCWD developed its own Community Water Plan and has been actively evaluating supplemental supply and demand reduction options.

Since the sustainable groundwater management plan is still being developed, the project will comply with SCCC Chapters 13.13 (Water Conservation – Water Efficient

Landscaping), 7.69 (Water Conservation) and 7.70 (Water Wells), as well as Chapter 7.71 (Water Systems) section 7.71.130 (Water use measurement and reporting), to ensure that it will not conflict with or obstruct implementation of current water quality control plans or sustainable groundwater management plans such as the Santa Cruz IRWMP and UWMP for City of Santa Cruz Water District.

K. LAND USE AND PLANNING

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Physically divide an established community?*	☐	☐	☐	☒

Discussion: The project does not include any element that would physically divide an established community. No impact would occur.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?*	☐	☐	☒	☐

Discussion: The project site is located within the area identified in the Sustainable Santa Cruz County plan as the medical district/flea market focus area. The project site is zoned PF and PA which is consistent with the General Plan Designations of P and C-O. The site is developed with an existing hospital and parking area which are allowed in the zone district. The project proposes a Planned Unit Development (PUD) which is allowed in the zone districts subject to approval by the Board of Supervisors. The project would not cause a significant environmental impact due to a conflict with any land use plan, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. No impacts are anticipated.

L. MINERAL RESOURCES

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?*	☐	☐	☐	☒

Discussion: The site does not contain any known mineral resources that would be of value to the region and the residents of the state. Therefore, no impact is anticipated from project implementation.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Result in the loss of availability of a locally-important mineral resource*	☐	☐	☐	☒

recovery site delineated on a local general plan, specific plan or other land use plan?

Discussion: The project site is zoned Public Facilities (PF), which is not considered to be an Extractive Use Zone (M-3) nor does it have a land use designation with a Quarry Designation Overlay (Q) (County of Santa Cruz 1994). Therefore, no potentially significant loss of availability of a known mineral resource of locally important mineral resource recovery (extraction) site delineated on a local general plan, specific plan or other land use plan would occur as a result of this project.

M. NOISE

Would the project result in:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐

Discussion:

County of Santa Cruz General Plan

The County of Santa Cruz has not adopted noise thresholds for construction noise. The following applicable noise related policy is found in the Public Safety and Noise Element of the Santa Cruz County General Plan (Santa Cruz County 1994).

- Policy 6.9.7 Construction Noise. Require mitigation of construction noise as a condition of future project approvals.

The General Plan also contains the following table, which specifies the maximum allowable noise exposure for stationary noise sources (operational or permanent noise sources) (Table 2).

Table 2: Maximum Allowable Noise Exposure for Stationary Noise Sources[1]		
	Daytime[5] (7:00 am to 10:00 pm)	Nighttime[2, 5] (10:00 pm to 7:00 am)
Hourly Leq average hourly noise level, dB[3]	50	45
Maximum Level, dB[3]	70	65
Maximum Level, dB – Impulsive Noise[4]	65	60

Notes:
1 As determined at the property line of the receiving land use. When determining the effectiveness of noise mitigation measures, the standards may be applied to the receptor side of noise barriers or other property line noise mitigation measures.
2 Applies only where the receiving land use operates or is occupied during nighttime hours
3 Sound level measurements shall be made with "slow" meter response.
4 Sound level measurements shall be made with "fast" meter response
5 Allowable levels shall be raised to the ambient noise levels where the ambient levels exceed the allowable levels. Allowable levels shall be reduced to 5 dB if the ambient hourly Leq is at least 10 dB lower than the allowable level.
Source: County of Santa Cruz 1994

County of Santa Cruz Code

There are no County of Santa Cruz ordinances that specifically regulate construction or operational noise levels. However, Section 8.30.010 (Curfew—Offensive noise) of the SCCC contains the following language regarding noise impacts:

(A) No person shall make, cause, suffer, or permit to be made any offensive noise.

(B) "Offensive noise" means any noise which is loud, boisterous, irritating, penetrating, or unusual, or that is unreasonably distracting in any other manner such that it is likely to disturb people of ordinary sensitivities in the vicinity of such noise, and includes, but is not limited to, noise made by an individual alone or by a group of people engaged in any business, activity, meeting, gathering, game, dance, or amusement, or by any appliance, contrivance, device, tool, structure, construction, vehicle, ride, machine, implement, or instrument.

(C) The following factors shall be considered when determining whether a violation of the provisions of this section exists:

(1) Loudness (Intensity) of the Sound.

(a) Day and Evening Hours. For purposes of this factor, a noise shall be automatically considered offensive if it occurs between the hours of 8:00 a.m. and 10:00 p.m. and it is:

(i) Clearly discernible at a distance of 150 feet from the property line of the property from which it is broadcast; or

(ii) In excess of 75 decibels at the edge of the property line of the property from which the sound is broadcast, as registered on a sound measuring instrument meeting the American National Standard Institute's Standard S1.4-1971 (or more recent revision thereof) for Type 1 or Type 2 sound level meters, or an instrument which provides equivalent data.

A noise not reaching this intensity of volume may still be found to be offensive depending on consideration of the other factors outlined below.

(b) Night Hours. For purposes of this factor, a noise shall be automatically considered offensive if it occurs between the hours of 10:00 p.m. and 8:00 a.m. and it is:

(i) Clearly discernible at a distance of 100 feet from the property line of the property from which it is broadcast; or

(ii) In excess of 60 decibels at the edge of the property line of the property from which the sound is broadcast, as registered on a sound measuring instrument meeting the American National Standard Institute's Standard S1.4-1971 (or more recent revision thereof) for Type 1 or Type 2 sound level meters, or an instrument which provides equivalent data.

A noise not reaching this intensity of volume may still be found to be offensive depending on consideration of the other factors outlined below.

(2) Pitch (frequency) of the sound, e.g., very low bass or high screech;

(3) Duration of the sound;

(4) Time of day or night;

(5) Necessity of the noise, e.g., garbage collecting, street repair, permitted construction activities;

(6) The level of customary background noise, e.g., residential neighborhood, commercial zoning district, etc.; and

(7) The proximity to any building regularly used for sleeping purposes. [Ord. 5205 § 1, 2015; Ord. 4001 § 1, 1989]

<u>Sensitive Receptors</u>

Some land uses are generally regarded as being more sensitive to noise than others due to the type of population groups or activities involved. Sensitive population groups generally include children and the elderly. Noise sensitive land uses typically include all residential uses (single- and multi-family, mobile homes, dormitories, and similar uses), hospitals, nursing homes, schools, and parks.

The nearest sensitive receptors are patients of Dominican Hospital and nearby medical offices along with residents living off Mission Drive located approximately 170 feet to the northeast of the project area.

Impacts

Potential Temporary Construction Noise Impacts

Table 3: Typical Noise Levels for Common Construction Equipment (at 50 feet)

Equipment	L_{max} (dBA)
Air Compressor	80
Backhoe	80
Chain Saw	85
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Saw	90
Crane	83
Dozer	85
Dump Truck	84
Excavator	85
Flat Bed Truck	84
Fork Lift	75
Generator	82
Grader	85
Hoe-ram	90
Jack Hammer	88
Loader	80
Paver	85
Pick-up Truck	55
Pneumatic Tool	85
Roller	85
Tree Chipper	87
Truck	84

Source: Federal Transit Authority, 2006, 2018.

The use of construction equipment to accomplish the project would result in noise in the project area, i.e., construction zone. Table 3 shows typical noise levels for common construction equipment. The sources of noise that are normally measured at 50 feet, are used to determine the noise levels at nearby sensitive receptors by attenuating 6 dB for each doubling of distance for point sources of noise such as operating construction equipment. Noise levels at the nearest sensitive receptors for each site were analyzed on a worst-case basis, using the equipment with the highest noise level expected to be used.

Although construction activities would likely occur during daytime hours, noise may be audible to nearby residents. However, periods of noise exposure would be temporary. Noise from construction activity may vary substantially on a day-to-day basis.

Construction activity would be expected to use equipment listed in Table 3. Based on the activities proposed for the project, the equipment with the loudest operating noise level that would be used often during activity would be an excavator or cement mixer, which would produce noise levels of 85 dBA at a distance of 50 feet. The nearest residence is located approximately 170 feet from the construction site. At that distance, the decibel level is reduced by approximately 44.61 decibels, a reduction of 40.39 decibels below 85 decibels. However, these impacts would also be temporary.

Noise generated during project construction would increase the ambient noise levels in adjacent areas. Construction would be temporary, and construction hours would be limited as a condition of approval. Given the limited duration of construction and the limited hours of construction activity, this impact is considered to be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

Discussion: The use of construction and grading equipment would potentially generate periodic vibration in the project area. This impact would be temporary and periodic and is not expected to cause damage; therefore, impacts are not expected to be significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion: The project is not in the vicinity of a private airstrip or within two miles of a public airport. Therefore, the project would not expose people residing or working in the project area. No impact is anticipated.

N. POPULATION AND HOUSING

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒

Discussion: The project would not induce substantial population growth in an area because the project does not propose any physical or regulatory change that would remove a restriction to or encourage population growth in an area. The project proposes only to construct an addition to an existing hospital, parking garage and associated site improvements and would not induce population growth. No impact would occur.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion: The project would not displace any existing housing. No impact would occur.

O. PUBLIC SERVICES

Would the project:

1. *Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services:*

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a. *Fire protection?*	☐	☐	☒	☐
b. *Police protection?*	☐	☐	☒	☐
c. *Schools?*	☐	☐	☐	☒
d. *Parks?*	☐	☐	☐	☒
e. *Other public facilities; including the maintenance of roads?*	☐	☐	☒	☐

Discussion (a through e): The project site is served by the Central Fire Protection District and County Sheriff. Nearby schools are Green Acres Elementary Schools, Delaveaga Elementary School, and Harbor High School. Parks in the vicinity include Santa Cruz Gardens County Park, Delaveaga County Park, and Winkle Avenue County Park.

While the project represents an incremental contribution to the need for services, the increase would be minimal. Moreover, the project meets all of the standards and requirements identified by the local fire agency or California Department of Forestry, as applicable, and school, park, and transportation fees to be paid by the applicant would be used to offset the incremental increase in demand for school and recreational facilities and public roads. Impacts would be considered less than significant.

P. RECREATION

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?*	☐	☐	☒	☐

Discussion: The project would not substantially increase the use of existing neighborhood and regional parks or other recreational facilities. Impacts would be considered less than significant.

2. *Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?*	☐	☐	☐	☒

Discussion: The project does not propose the expansion or require the construction of additional recreational facilities. No impact would occur.

Q. TRANSPORTATION

Would the project:

1. *Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?*	☐	☐	☒	☐

Discussion: Senate Bill (SB) 743, signed by Governor Jerry Brown in 2013, is changing the way transportation impacts are identified under CEQA. Specifically, the legislation directed the State of California's Office of Planning and Research (OPR) to look at different metrics for identifying transportation impacts. Following several years of draft proposals and related public comments, OPR issued its Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018) to assist practitioners in implementing the CEQA Guidelines revisions to use vehicle miles traveled (VMT) as the preferred metric for assessing passenger vehicle related impacts. Along with this OPR advisory guidance, the CEQA guidelines were updated in December 2018, such that vehicle Level of Service (LOS) will no longer be used as a determinant of significant environmental impacts, and an analysis of VMT is required as of July 2020. A discussion of consistency with the Santa Cruz County General Plan LOS policy is provide below for informational purposes only.

Santa Cruz County General Plan Policy 3.12.1 establishes a desired LOS of C and a minimum LOS of D. A traffic study for the project was prepared by Fehr & Peers, dated October 2020 (Attachment 3). As described in the traffic study, two methods for determining trip generation rates were used for the proposed project. The first method was based on building size and the second method was based on number of employees. Method one trip generation rates resulted in a higher number of trips therefore, method one was used to evaluate potential effects (adverse and beneficial) on Santa Cruz County transportation facilities and services near the Project site. Using the increased building size as the basis of trip generation, the proposed Project would generate 901 daily vehicle trips, 81 morning peak hour vehicle trips (52 inbound and 29 outbound) and 71 evening peak hour vehicle trips (30 inbound and 41 outbound).

This increase in traffic will result in an operational deficiency at Soquel Ave/Driveway and

Soquel Drive by worsening an unacceptable LOS of E: the delay will be increased from 74.2 seconds to 77.2 seconds in Cumulative plus Project conditions. The Department of Public Works has reviewed the traffic study and has established the following improvements to address operations and design of the project: install an additional northbound right turn lane on Soquel Avenue with at least 60 feet of storage.

The project design would comply with current road requirements, including the regulations under section 13.11.074 of the County Code, "Access, circulation and parking" to prevent potential hazards to motorists, bicyclists, and/or pedestrians, as well as the County of Santa Cruz Department of Public Works design criteria. In addition, the project will provide new accessible ADA-compliant pedestrian facilities from nearby transit facilities to the hospital with lighting as well as enhanced pedestrian paths between the hospital and the parking structure. The project will also provide 92 bicycle parking facilities and bicycle circulation throughout the site as well as connecting to nearby facilities. Vehicle parking design meets County code and design criteria for spacing, circulation and location. In addition, the project will not result in any inconsistency with regional plans. Therefore, impacts would be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1) (Vehicle Miles Traveled)?*	☐	☒	☐	☐

Discussion: OPR's "Technical Advisory on Evaluating Transportation Impacts in CEQA" (2018) provides recommended thresholds and methodologies for assessing impacts of new developments on VMT. There are also a number of screening criteria recommended by OPR that can be used to determine whether a project will have a less-than-significant impact. The screening criteria include projects that generate less than 110 net new trips, map-based screening, projects within a ½ mile of high-quality transit, affordable housing projects, and local serving retail. Since Santa Cruz County has a Regional Transportation Planning Authority and generally conducts transportation planning activities countywide, the county inclusive of the cities is considered a region.

In June of 2020, the County of Santa Cruz adopted a threshold of 15% below the existing countywide average per capita VMT levels for residential projects, 15% below the existing countywide average per employee VMT for office and other employee-based projects, no net increase in the countywide average VMT for retail projects, and no net increase in VMT for other projects. The medical land use falls under the threshold of no net increase in VMT. A VMT analysis was prepared by Fehr & Peers dated October 2020 (Attachment 4). The analysis estimates the existing VMT of the service population, which includes employees and patients by using the countywide travel demand model[3] and then compares the additional VMT. The existing daily VMT on the County's roadway system was estimated at 8,184,330. The analysis concludes that 1,680 vehicle miles would be added to the roadway network by the project which is a 0.02% increase.

Medical land uses tend to attract existing patients from other medical land uses rather than creating new demand for services, since people only seek medical treatment as needed unlike other services or land uses. Therefore, small increases or even decreases for medical land uses are common. The small increase in VMT will be mitigated by the implementation of Mitigation Measure TR-1—participation in the regional Cruz511 travel demand management program, hiring of a transportation coordinator to market the program, incentivizing and gamification of participation in the program, and provision of an emergency guaranteed ride home. Impacts would be less than significant with this mitigation measure incorporated.

Mitigation Measure:

TR-1 The following measures will be required to reduce VMT:

- Participation in the regional Cruz511 trip reduction program to develop an employer-based travel demand management program by shifting commuting to high-occupancy vehicles, transit, bicycling, and walking.
- Contracting with a transportation coordinator to keep the employer-based program active with ongoing marketing, education, gamification, a well-maintained website with employer specific resources, and participation in regional trip reduction events such as Bike to Work Day.
- Providing an emergency guaranteed ride home program for employees.
- The transportation coordinator shall establish success criteria and employee participation goals by year five of the programs. Success criteria shall be subject to review and approval by Planning staff.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒

Discussion: The project consists of expansion of an existing medical facility and addition of a

[3] The VMT memorandum refers to the "Santa Cruz County Regional Travel Demand Model" or the "SCCRTC travel mode," which the County refers to in other documentation as the "countywide travel demand model." This is the same travel demand model jointly shared by the two agencies and cooperatively maintained.

parking structure. No increase in hazards would occur from project design or from incompatible uses. No impact would occur from project implementation.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. Result in inadequate emergency access?	☐	☐	☐	☒

Discussion: The project's road access meets County standards and has been approved by the local fire agency. The site design provides adequate access for the ingress and egress of ambulances, as well as the circulation of these vehicles once on the site.

R. TRIBAL CULTURAL RESOURCES

1. *Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:*

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
A. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources Code section 5020.1(k), or	☐	☐	☐	☒
B. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

Discussion: The project proposes to amend a prior Master Plan Approval for an existing hospital and establish a Planned Unit Development (PUD) to allow for the construction of a three-story parking garage, 85,000 square foot addition to an existing hospital and install associated site improvements. Section 21080.3.1(b) of the California Public Resources Code (AB 52) requires a lead agency formally notify a California Native American tribe that is traditionally and culturally affiliated within the geographic area of the discretionary project when formally requested. As of this writing, no California Native American tribes traditionally and culturally affiliated with the Santa Cruz County region have formally requested a consultation with the County of Santa Cruz (as Lead Agency under CEQA) regarding Tribal Cultural Resources. However, no Tribal Cultural Resources are known to occur in or near the project area. Therefore, no impact to the significance of a Tribal Cultural Resource is anticipated from project implementation.

S. UTILITIES AND SERVICE SYSTEMS

Would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐

***Discussion*:**

Water

The project would connect to an existing municipal water supply. City of Santa Cruz Water Department has determined that adequate supplies are available to serve the project (Attachment 7), and no new facilities are required to serve the project. No impact would occur from project implementation.

Wastewater

Municipal wastewater treatment facilities are available and have capacity to serve the project. No new wastewater facilities are required to serve the project. No impact would occur from project implementation.

Stormwater

The drainage analysis for the project Dominican Hospital Expansion, prepared by Bowman and Williams, dated November 18, 2019 (Attachment 8). The County Department of Public Works Stormwater Management staff have reviewed the drainage information and have determined that Offsite drainage improvements are necessary to handle runoff from project Offsite improvements include but are not limited to the upsizing of an existing culvert located on the 76 gas station property which runs under Highway one located south of the project site, east of the Soquel Drive overpass. However, substantial environmental impacts associated with the improvements are not anticipated; therefore, impacts would be less than significant.

Electric Power

Pacific Gas and Electric Company (PG&E) provides power to existing and new developments in the Santa Cruz County area. As of 2018, residents and businesses in the

County were automatically enrolled in MBCP's community choice energy program, which provides locally controlled, carbon-free electricity delivered on PGE's existing lines.

The proposed site is already served by electric power, but additional improvements are necessary to serve the site. However, no substantial environmental impacts will result from the additional improvements; impacts will be less than significant.

Natural Gas

PG&E serves the urbanized portions of Santa Cruz County with natural gas. The proposed site is already served by natural gas, but additional improvements are necessary to serve the site. However, no environmental impacts will result from the additional improvements; impacts will be less than significant.

Telecommunications

Telecommunications, including telephone, wireless telephone, internet, and cable, are provided by a variety of organizations. AT&T is the major telephone provider, and its subsidiary, DirectTV provides television and internet services. Cable television services in Santa Cruz County are provided by Charter Communications in Watsonville and Comcast in other areas of the county. Wireless services are also provided by AT&T, as well as other service providers, such as Verizon.

No improvements related to telecommunications are required, and there will be no impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐

Discussion: The City of Santa Cruz Water Department has indicated that adequate water supplies are available to serve the project and has issued a will-serve letter for the project, subject to the payment of fees and charges in effect at the time of service (Attachment 7). The development would also be subject to the water conservation requirements in Chapter 7.69 (Water Conservation) and 13.13 (Water Conservation—Water Efficient Landscaping) of the County Code and the policies of section 7.18c (Water Conservation) of the General Plan. Therefore, existing water supplies would be sufficient to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years. Impacts would be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Result in determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's	☐	☐	☐	☒

existing commitments?

Discussion: The County of Santa Cruz Sanitation District has indicated that adequate capacity in the sewer collection system is available to serve the project, subject to the payment of fees and charges in effect at the time of service. Therefore, existing wastewater collection/treatment capacity would be sufficient to serve the project. No impact would occur from project implementation.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. *Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?*	☐	☐	☒	☐

Discussion: The project would not generate solid waste during the operational phase of the project. However, construction debris would be generated during demolition and construction, much of which would be recycled. The waste generated would not exceed local or state standards, or require additional landfills or recycling centers; therefore, impacts would be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
5. *Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?*	☐	☐	☐	☒

Discussion: The project would comply with all federal, state, and local statutes and regulations related to solid waste disposal. No impact would occur.

T. WILDFIRE

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Substantially impair an adopted emergency response plan or emergency evacuation plan?*	☐	☐	☐	☒

Discussion: The project is not located in a State Responsibility Area, a Very High Fire Hazard Severity Zone, or a County-mapped Critical Fire Hazard Area and will not conflict with emergency response or evacuation plans. Therefore, no impact would occur.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. *Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?*	☐	☐	☒	☐

Discussion: The project is not located in a State Responsibility Areas, a Very High Fire Hazard Severity Zone, or a County-mapped Critical Fire Hazard Area. However, the project design incorporates all applicable fire safety code requirements and includes fire protection devices as required by the local fire agency and is unlikely to exacerbate wildfire risks. Impacts would be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. *Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?*	☐	☐	☒	☐

Discussion: The project is not located in a State Responsibility Areas, a Very High Fire Hazard Severity Zone, or a County-mapped Critical Fire Hazard Area. Improvements associated with the project are unlikely to exacerbate wildfire risks. Impacts would be less than significant.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
4. *Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?*	☐	☐	☒	☐

Discussion: The project is not located within a State Responsibility Areas, a Very High Fire Hazard Severity Zone, or a County-mapped Critical Fire Hazard Area. Downslope and downstream impacts associated with wildfires are unlikely to result from the project. Regardless, the project design incorporates all applicable fire safety code requirements and includes fire protection devices as required by the local fire agency. Impacts would be less than significant.

U. MANDATORY FINDINGS OF SIGNIFICANCE

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
1. *Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal community or eliminate important examples of the major periods of California history or prehistory?*	☐	☐	☒	☐

Discussion: The potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory were considered in the response to each question in Section III (A through T) of this Initial Study. As a result of this evaluation, there is no substantial evidence that significant effects associated with this project would result. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
2. Does the project have impacts that are individually limited, but cumulatively considerable? (“cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐

Discussion: In addition to project specific impacts, this evaluation considered the project’s potential for incremental effects that are cumulatively considerable. As a result of this evaluation, there were determined to be no potentially significant cumulative effects associated with this project. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
3. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

Discussion: In the evaluation of environmental impacts in this Initial Study, the potential for adverse direct or indirect impacts to human beings were considered in the response to specific questions in Section III (A through T). As a result of this evaluation, there were determined to be potentially significant effects to human beings related to the following: Transportation impacts, particularly as it relates to Vehicle Miles Travelled (VMT). However, mitigation has been included that clearly reduces these effects to a level below significance. As a result of this evaluation, there is no substantial evidence that, after mitigation, there are adverse effects to human beings associated with this project. Therefore, this project has been determined not to meet this Mandatory Finding of Significance.

IV. REFERENCES USED IN THE COMPLETION OF THIS INITIAL STUDY

California Department of Conservation, 1980

Farmland Mapping and Monitoring Program Soil Candidate Listing for Prime Farmland and Farmland of Statewide Importance Santa Cruz County U.S. Department of Agriculture, Natural Resources Conservation Service, soil surveys for Santa Cruz County, California, August 1980.

California Department of Fish and Wildlife, 2019

California Natural Diversity Database SOQUEL USGS 7.5 minute quadrangle; queried 7/3/19.

CalFIRE, 2010

Santa Cruz County-San Mateo County Community Wildfire Protection Plan. May 2010.

Caltrans, 2018

California Public Road Data 2017: Statistical Information Derived from the Highway Performance Monitoring System. Released by the State of California Department of Transportation November 2018.

County of Santa Cruz, 1994

1994 General Plan and Local Coastal Program for the County of Santa Cruz, California. Adopted by the Board of Supervisors on May 24, 1994, and certified by the California Coastal Commission on December 15, 1994.

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County of Santa Cruz Climate Action Strategy. Approved by the Board of Supervisors on February 26, 2013.

County of Santa Cruz, 2015

County of Santa Cruz Local Hazard Mitigation Plan 2015-2020. Prepared by the County of Santa Cruz Office of Emergency Services.

DOF, 2018

E-5 Population and Housing Estimates for Cities, Counties and the State—January 1, 2011-2018. Released by the State of California Department of Finance May 2018.

Federal Transit Administration, 2006

Transit Noise and Vibration Impact Assessment Manual.

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Transit Noise and Vibration Impact Assessment Manual. September 2018.

FEMA, Flood Insurance Rate Map 0351 Federal Emergency Management Agency. Effective on May 16, 2012.

MBUAPCD, 2008

Monterey Bay Unified Air Pollution Control District (MBUAPCD), CEQA Air Quality Guidelines. Prepared by the MBUAPCD, Adopted October 1995, Revised: February 1997, August 1998, December 1999, September 2000, September 2002, June 2004 and February 2008.

MBUAPCD, 2013a

Monterey Bay Unified Air Pollution Control District, NCCAB (NCCAB) Area Designations and Attainment Status – January 2013. Available online at http://www.mbuapcd.org/mbuapcd/pdf/Planning/Attainment_Status_January_2013_2.pdf

MBUAPCD, 2013b

Triennial Plan Revision 2009-2011. Monterey Bay Unified Air Pollution Control District. Adopted April 17, 2013.

OPR, 2018

"Technical Advisory on Evaluating Transportation Impacts in CEQA." Available online at http://www.opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf.

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Attachment 1

Mitigation Monitoring and Reporting Program

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County of Santa Cruz

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
KATHLEEN MOLLOY, PLANNING DIRECTOR

MITIGATION MONITORING AND REPORTING PROGRAM for the DOMINICAN HOSPITAL PROJECT

Application No. 191157, February 2021

No.	Environmental Impact	Mitigation Measures	Responsibility for Compliance	Method of Compliance	Timing of Compliance
Transportation					
TRA-1	*Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)(1) (Vehicle Miles Traveled)?*	The following measures will be required to reduce VMT: • Participation in the regional Cruz511 trip reduction program to develop an employer-based travel demand management program by shifting commuting to high-occupancy vehicles, transit, bicycling, and walking. • Contracting with a transportation coordinator to keep the employer-based program active with ongoing marketing, education, gamification, a well-maintained website with employer specific resources, and participation in regional trip reduction events such as Bike to Work Day. • Providing an emergency guaranteed ride home program for employees. • The transportation coordinator shall establish success criteria and employee participation goals by year five of the program. Success criteria shall be subject to review and approval by Planning staff.	Project applicant.	Compliance monitored by the County Planning Department.	Annual reporting is required to ensure successful implementation of the program. Should the program meet success criteria after the 5th year, the annual reports may be discontinued. If success criteria are not met, the program shall be modified and annual reporting continued until success criteria are met.

Temporary Parking Plan

Application Number 191157

Attachment 2

Dignity Health

October 23, 2019

County of Santa Cruz
Planning Department
701 Ocean Street
Santa Cruz, CA 95060

RE: DIGNITY HEALTH DOMINICAN HOSPITAL PROPOSED PARKING STRUCTURE AND EXPANSION PROJECT (PERMIT APPLICATION 191157)

County of Santa Cruz,

As part of the planning for the proposed Dominican Hospital Parking Structure and Expansion Project our team's Parking and Traffic Engineer has identified a potential need for 140 temporary parking spaces during the construction of the new Parking Structure.

Oakwood Memorial Park has granted conditional approval for Dignity Health to utilize 37 existing parking spaces and develop up to 75 temporary parking spaces for a total of 112 parking spaces.

Dignity Health has had preliminary conversations with JR Parrish Commercial Real Estate regarding a nearby property owned by Louis Rittenhouse. The preliminary conversations have indicated an agreement could be made to develop the remaining temporary parking on the property.

Dignity Health is also in negotiations with the Palo Alto Medical Foundation to provide services at Dominican Hospital. After the negotiations are complete Dignity Health plans to request temporary use of Palo Alto Medical Foundations nearby property for temporary parking.

Dignity Health will continue to pursue temporary parking agreements during the entitlements process and submit the agreements once in place.

Sincerely,

Osa Aimufua
Manager – Planning, Design and Construction
Dignity Health Corporate Real Estate

SANTA CRUZ MEMORIAL
MORTUARIES • CREMATORY • CEMETERIES

County of Santa Cruz
Planning Department
701 Ocean Street
Santa Cruz, CA 95060

October 14, 2019

RE: DIGNITY HEALTH DOMINICAN HOSPITAL PROPOSED PARKING AND STRUCTURE AND EXPANSION PROJECT (PERMIT APPLICATION 191157)

Dear Sirs/Madam:

This letter is to confirm that Oakwood Memorial Park management has been discussing with Dominican Hospital management their request to use some of our existing parking spaces and to develop temporary parking spaces at Oakwood Memorial Park, 3301 Paul Sweet Rd, Santa Cruz, CA 95065 as part of Dominican Hospital's temporary parking plan to construct their proposed new parking structure included in their Permit Application 191157.

Please consider this letter Oakwood Memorial Park's conditional approval for Dominican Hospital to use 37 existing parking spaces and to develop up to 75 temporary parking spaces for a total of 112 parking spaces at Oakwood Memorial Park.

If you need to discuss this with us directly, please feel free to call me at 831-426-1601.

Kindest Regards,

Randy Krassow

Randy Krassow
President, Board of Trustees
Oakwood Memorial Park
1927 Ocean Street
Santa Cruz, CA95060

Transportation Impact Analysis

Application Number 191157

Attachment 3

Prepared by

FEHR PEERS

160 W. Santa Clara Street
Suite 675
San José, CA 95113

October 2020

Transportation Analysis

Dominican Hospital Modernization

Prepared for:
Devenney Group Ltd., Architects
Santa Cruz County

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Executive Summary

This report presents the results of a transportation analysis for the proposed Dominican Hospital modernization, which will include a 84,054-square foot (s.f.) hospital expansion, renovation of the existing surgical department of 12,448 s.f. for patient's rooms, and the construction of a 409-space multi-level parking structure (defined as the Project).

The purpose of this Transportation Analysis (TA) is to evaluate potential effects (adverse and beneficial) on Santa Cruz County transportation facilities and services near the Project site. The deficiency analysis was conducted using vehicle trip generation estimates based on an increased building size. This analysis approach identifies possible deficiencies and physical improvements. Because the purpose of this project is to right-size Dominican Hospital to meet state requirements and market expectations, a sensitivity analysis at the deficient intersections was conducted to determine the effects of reducing project vehicle trip generation and identifying potential Transportation Demand Management reductions (see the *Dominican Hospital TDM Plan*, a forthcoming separate report for more details).

Trip Generation

Two trip generation rates were used, the first trip rate is based on building size (method 1), and the second is based off the number of employees (method 2). The method 1 trip generation rates were used to identify deficiencies as it assumes the hospital expansion is not a modernization project. Using the increased building size as the basis of trip generation, the proposed Project would generate 901 daily vehicle trips, 81 morning peak hour vehicle trips (52 inbound and 29 outbound) and 71 evening peak hour vehicle trips (30 inbound and 41 outbound).

Dominican Hospital is planning for the future and has identified a need to modernize to continue providing healthcare in Santa Cruz County at the highest level and to provide enhanced care capabilities. The main purpose for the hospital modernization is to enhance patient and operating room quality by converting existing semi-private rooms to private rooms and upgrading their surgical department by constructing a new surgical department with modern operating rooms and support spaces. The combination of converting the existing semi-private rooms to private rooms and adding 60 new private patient's rooms will not increase the total number of licensed patient beds. Dominican Hospital currently has 222 licensed patient beds, and the modernization will result in a total of 222 licensed patient beds when the Project is completed. In other words, the Dominican Hospital modernization is a project to right-size Dominican Hospital to meet state requirements and market expectations. Therefore, most of the building size increase is dedicated to existing employees and visitor activities. The hospital estimates the trip generation growth will be attributable to 39 employees to account for the increase in the number of operating rooms from eight to ten and additional facility staff needed to maintain the new building.

Using the increased employment as the basis of the trip generation, the proposed Project would generate 148 daily vehicle trips, six morning peak hour vehicle trips (four inbound and two outbound) and five evening peak hour vehicle trips (two inbound and six outbound).

Intersection Deficiency Findings

A total of 13 intersections were evaluated for Existing with Project, Background with Project, and Cumulative with Project Conditions. Two intersections were found to have deficiencies based on the Santa Cruz County and California Department of Transportation deficiency criteria. The intersection of Soquel Avenue and Soquel Drive was identified as a cumulative deficiency during the AM peak hour by degrading the intersection to unacceptable operations. The deficient intersection was also tested using the hospitals anticipated visitor and employee growth trip generation estimate. Soquel Avenue/Driveway and Soquel Drive continues to operate at unacceptable levels under the cumulative with project condition with the anticipated trip generation.

Intersection Recommended Improvements

The following draft intersection improvements would improve the LOS to an acceptable condition at the deficient intersection location.

- Intersection 10, Soquel Avenue/Driveway and Soquel Drive: Install an additional northbound right turn lane on Soquel Avenue with at least 60 feet of storage.

1. Introduction

This report presents the results of a transportation analysis conducted for the proposed modernization of Dominican Hospital (the Project) located at 1555 Soquel Drive in Santa Cruz, California. The Project includes a 84,054-square foot (s.f.) hospital expansion, renovation of the existing surgical department of 12,448 s.f. for patient's rooms, and the construction of a 409-space multi-level parking structure. This chapter discusses the transportation analysis purpose, project description, study area, analysis scenarios and methods, and report organization.

Study Purpose and Project Description

The purpose of this Transportation Analysis (TA) is to provide a local transportation assessment of potential effects (adverse and beneficial) on Santa Cruz County transportation facilities and services near the Project site. Specifically, this analysis accomplishes the following:

1. Provides an off-site intersection analysis under Existing and Existing with Project Conditions including an evaluation of potential transportation deficiencies and improvements on the surrounding transportation system (see **Chapters 3** and **5**);
2. Summarizes the site's trip generation and its distribution to the street system (see **Chapter 4**);
3. Provides an off-site intersection analysis under Background and Background with Project Conditions including an evaluation of potential transportation deficiencies and improvements on the surrounding transportation system (see **Chapter 6**);
4. Provides an off-site intersection analysis under Cumulative and Cumulative with Project Conditions including an evaluation of potential transportation deficiencies and improvements on the surrounding transportation system (see **Chapter 7**); and
5. Reviews the site access and on-site circulation for vehicles, bicyclists and pedestrians, and conducts a parking occupancy analysis under Existing Conditions, during parking structure construction, and with completion for building renovation, building addition and parking structure construction, (see **Chapter 8** and **Appendix A**).

Dominican Hospital is planning for the future and has identified a need to modernize to continue providing healthcare in Santa Cruz County at the highest level and to provide enhanced care capabilities. The main purpose for the hospital modernization project is to enhance patient and operating room quality by converting existing semi-private rooms to private rooms and replace existing operating rooms. The combination of converting the existing semi-private rooms to private rooms and adding 60 new private patient's rooms will not increase the total number of licensed patient beds. Dominican Hospital currently has 222 licensed patient beds. The modernization will result in a total of 222 licensed patient beds when the Project is completed.

The Project includes the following components:

- Renovation of 12,448 s.f. in the existing surgical department for patient's rooms
- Addition of 84,054 s.f. in a new hospital tower
- Construction of a 409-space parking structure

The proposed hospital expansion will be located on the northeast side of the existing hospital building. It will consist of three levels plus a basement floor containing storage and mechanical equipment. This hospital modernization will replace eight existing operating rooms with 10 new operating rooms on the ground level and provide 60 new patient rooms on two levels (30 private patient rooms per floor) by converting of the existing facility's semi-private patient rooms into private patient rooms, thus not increasing the total number of licensed patient beds for the hospital. The proposed 409-space parking structure will be located on an employee parking lot north of the 1661 Soquel Drive medical office building. The site plan for the proposed hospital modernization is presented on **Figure 1**.

The 1545, 1575 and 1595 Soquel Drive Medical Office Buildings (MOBs) and MRI buildings are located inside the Dominican Hospital Campus area, which means the trip generation analysis includes activity from the hospital and these MOBs. They have a shared parking agreement with the hospital that allows use of Dominican Hospital's on-site parking spaces. The MOBs along the eastern side of Dominican Way are also located in the Dominican Hospital Campus area and the activity for these buildings were also included in the trip generation analysis. The MOB at 1661 Soquel Drive does not have a shared parking agreement with Dominican Hospital. Therefore, this study does not include the traffic or parking from 1661 Soquel Drive. The Project summary is presented **Table 1.**

Table 1: Dominican Hospital Existing and Project Conditions Building Areas[1]

Use	Existing Conditions[2]	Hospital Modernization	Project Conditions
Main Hospital	236,371	84,054	320,425
Employee Education Conference Center & Offices	19,825		19,825
Education Center	19,558		19,558
1545 Soquel MRI	4,600		4,600
1575 Soquel MOB	7,652		7,652
1595 Soquel MOB	33,876		33,876
Dominican Way MOBs	55,000		55,000
Total	**376,882**	**84,054**	**460,936**

Notes:
1. All values are represented in square footage.
2. Breakdown of existing occupied hospital and medical office uses provided by the hospital.

Source: Fehr & Peers, 2020.

Analysis Scenarios

The intersection operations were analyzed under the following scenarios:

Scenario 1: *Existing Conditions*: Existing volumes obtained from counts conducted in June 2019, and StreetLight data for the additional intersection was collected over several months in 2019.

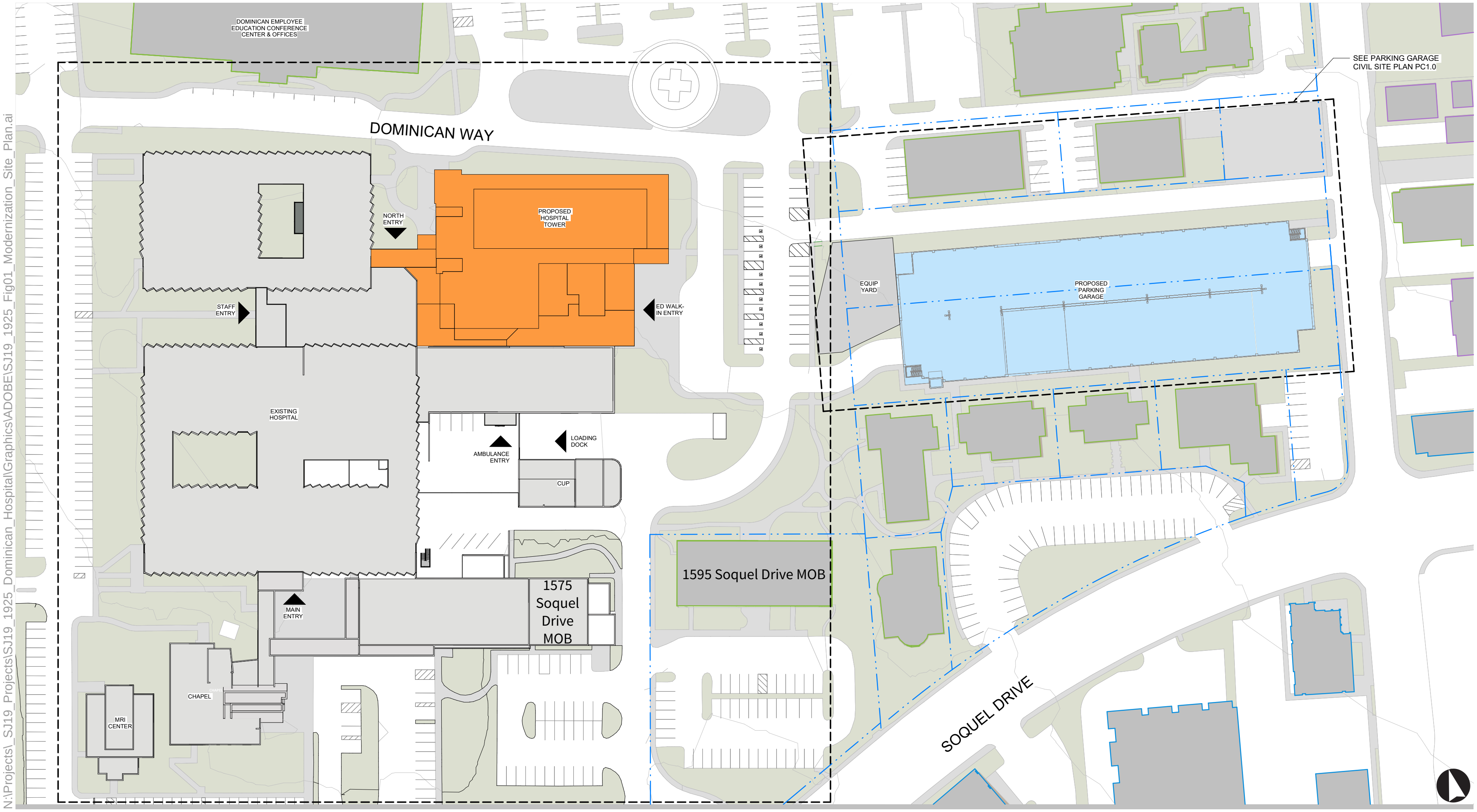
Scenario 2: *Existing with Project Conditions*: Scenario 1 volumes plus traffic generated by the proposed project.

Scenario 3: *Background Conditions*: Existing volumes plus traffic from projects currently under construction and approved, but not yet constructed, developments in the area and a background traffic growth to the opening year of the Project in 2028.

Scenario 4: *Background with Project Conditions* – Scenario 3 volumes plus traffic generated by the proposed project.

Scenario 5: *Cumulative Conditions* – Background volumes from Scenario 3 plus traffic generated from pending developments and a cumulative traffic growth to represent possible conditions in 2040.

Scenario 6: *Cumulative with Project Conditions* – Scenario 5 volumes plus traffic generated by net increase in traffic due to implementation of the proposed project.



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Proposed Hospital Tower

Proposed 411 space Parking Garage

Figure 1

Dominican Hospital Modernization Site Plan

Study Locations

The effects of the Project on local streets were determined by measuring the change in peak hour vehicle delay that Project-generated traffic would create at intersections near the Project site during the weekday morning (7:00 to 9:00 AM) and afternoon (4:00 to 6:00 PM) peak periods. The following intersections were selected based on county staff comments, estimates of the added traffic from the Project, and locations of existing and planned roadways in the area:

The following 13 intersections (shown in **Figure 2**) were evaluated.

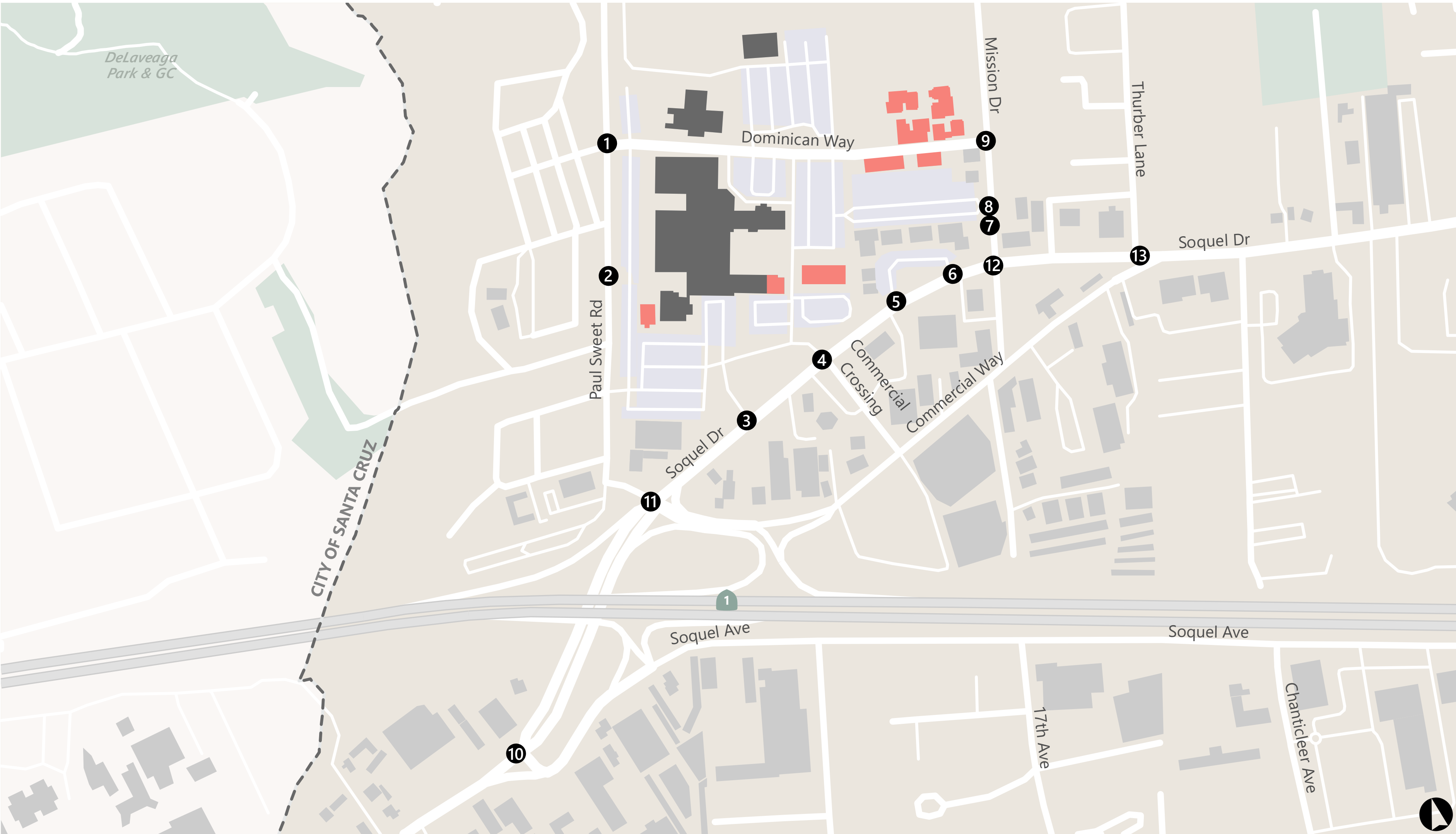
	Intersection	Jurisdiction
1.	Paul Sweet Road and Dominican Way	Santa Cruz County
2.	Paul Sweet Road and Employee Parking Lot C Driveway	Santa Cruz County
3.	Hospital Driveway and Soquel Drive	Santa Cruz County
4.	Hospital Drive-Commercial Crossings and Soquel Drive	Santa Cruz County
5.	1661 Soquel Medical Office Driveway 1 and Soquel Drive	Santa Cruz County
6.	1661 Soquel Medical Office Driveway 2 and Soquel Drive	Santa Cruz County
7.	Mission Drive and Medical Office Driveway	Santa Cruz County
8.	Mission Drive and Project Driveway	Santa Cruz County
9.	Mission Drive and Dominican Way	Santa Cruz County
10.	Soquel Drive and Soquel Avenue	Santa Cruz County
11.	Paul Sweet Road-Commercial Way and Soquel Drive	Caltrans
12.	Mission Drive and Soquel Drive	Santa Cruz County
13.	Commercial Way/Thurber Lane and Soquel Drive	Santa Cruz County

Report Organization

This report is divided into eight chapters as described below:

- **Chapter 1 – Introduction** discusses the purpose and organization of the report.
- **Chapter 2 – Technical Approach and Analysis Methods** presents the transportation analysis methods used to evaluate study intersection operations including data collection methods. The level of service thresholds for acceptable intersection operations are presented for each jurisdiction.
- **Chapter 3 – Existing Conditions** describes the transportation system near the Project site, including the surrounding roadway network AM and PM peak period intersection turning movement volumes; existing bicycle, pedestrian, and transit facilities; and intersection operations.
- **Chapter 4 – Project Characteristics** presents relevant project information such as the Project components and project trip generation, distribution, and assignment.

- **Chapter 5 – Existing with Project Traffic Conditions** addresses the existing conditions with the Project and discusses project deficiencies and improvements.
- **Chapter 6 – Background Traffic Conditions** addresses the near-term future conditions, both without and with the Project, and discusses project deficiencies and improvements.
- **Chapter 7 – Cumulative Traffic Conditions** addresses the long-term future conditions, both without and with the Project, and discusses project deficiencies and improvements.
- **Chapter 8 – Site Access, On-Site Circulation and Parking** describes Project access and circulation for all travel modes.



Study Intersections
Hospital Buildings
Hospital Campus

Figure 2
Study Intersections

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2. Technical Approach and Analysis Methods

This chapter describes the transportation analysis methods used to evaluate study intersection operations and parking demand.

Technical Approach

Site specific vehicle trip generation data was used in this transportation analysis. Hospital driveway and intersection count volumes were used to determine the existing trip generation of the hospital and in the intersection operations analysis. Intersection deficiencies and recommended improvements were based off of the observed hospital trip generation rates. The trip generation estimates use trip generation rates based on building size (method 1) and employment (method 2):

- <u>Method 1 – Vehicle Trip Generation using Increased Building Size</u>: The daily and peak our trip generation is based on the vehicle trip rates per 1,000 square feet and the vehicle trip generation is calculated using the observed vehicle trip generation rates per 1,000 square feet. This method will be used by County Public Works staff to estimate the traffic fee.
- <u>Method 2 – Vehicle Trip Generation using Increased Employment Population</u>: The purpose of this project is to right-size Dominican Hospital to meet state requirements and market expectations. Therefore, most of the building size increase is dedicated to existing employees and visitor activities. The hospital has projected an increase of 39 employees to account for the increase of two operating rooms, above their current number of operating rooms and additional facility staff needed to maintain the new building (see **Appendix D** for additional details prepared by Dominican Hospital). The trip generation estimates are based on the vehicle trips per employee for the hospital. This trip generation estimate is reflective of the vehicle trip increase the hospital expects.

The Method 1 trip generation estimates are used to identify deficiencies and the Method 2 trip generation are used for sensitivity analysis of deficient locations and assist in identifying the potential Transportation Demand Management reductions (see the *Dominican Hospital TDM Plan* a forthcoming separate report for more details).

Existing Traffic Counts

The trip generation surveys were conducted via hospital driveway counts during the morning peak period (7:00 AM to 9:00 AM) and evening peak period (4:00 PM to 6:00 PM). The counts captured the traffic volumes entering or exiting the hospital. On the same day (June 6, 2019), the study intersections were counted using manual intersection counts (with the exception of the Commercial Way/Thurber Lane and Soquel Drive intersection). The Commercial Way/Thurber Lane and Soquel Drive intersection count was collected using 2019 StreetLight© intersection count data. The driveway and intersection counts were collected while local schools were in-session and no unusual traffic events were observed. All the counts include vehicles, bicycles, and pedestrians (see **Appendix B**).

The Commercial Way/Thurber Lane and Soquel Drive intersection was added to this analysis after the March 2020 shelter-in-place order issued by Santa Cruz County Public Health Department on March 31, 2020 to slow the spread of COVID-19. Because recent historical counts were not available at this intersection, 2019 StreetLight© data was used for this intersection. The StreetLight data is based on a 60-minute period, when schools are in session, with the highest traffic volumes during the two-hour AM and PM count periods as the AM and PM peak hours of traffic. The volumes were then adjusted to balance with the June 2019 traffic volumes on Soquel Drive.

Intersection Operations Analysis Methods

The operations of roadway facilities are described with the term level of service (LOS). LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay and freedom to maneuver Six levels are defined from LOS A, which reflects free-flow conditions where there is very little interaction between vehicles, to LOS F, where the vehicle demand exceeds the capacity and high levels of vehicle delay result. LOS E represents “at-capacity” operations. When traffic volumes exceed the capacity at a signalized intersection, vehicles may wait through multiple signal cycles before traveling through the intersection; these operations are designated as LOS F.

Signalized Intersections

The method described in Chapter 18 of the *2010 Highway Capacity Manual* (HCM 2010) and *Highway Capacity Manual 2000* (HCM 2000), Transportation Research Board, was used to prepare the level of service calculations for the study intersections. HCM 2000 was used for Intersection 13 because the synchro software package has limitations for intersections with non-standard National Electrical Manufacturing Association (NEMA) phasing can only be reported in HCM 2000. This level of service method analyzes a signalized intersection’s operation based on average control delay per vehicle. Control delay includes the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay is calculated using Synchro 10.0 analysis software and is correlated to a level of service designation as shown in **Table 2**.

Table 2: Signalized Intersection Level of Service Definitions

Level of Service	Description	Average Control Delay per Vehicle (seconds)
A	Operations with very low delay occurring with favorable progression and / or short cycle lengths.	≤ 10.0
B	Operations with low delay occurring with good progression and / or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and / or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high volume-to-capacity (V / C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V / C ratios. Individual cycle failures are frequent occurrences.	55.1 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2010.

Unsignalized Intersections

Operations of the unsignalized study intersections were evaluated using the method contained in Chapters 19, 20, and 21 of the *2010 HCM* and calculated using Synchro analysis software. Level of service ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At two-way or side-street-stop controlled intersections, control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, control delay is computed as the average of all movements in that lane. For all-way stop-controlled and roundabout locations, a weighted average delay for the entire intersection is presented. **Table 3** summarizes the relationship between delay and level of service for unsignalized intersections.

Table 3: Unsignalized Intersection Level of Service Definitions

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delay.	≤ 10.0
B	Short traffic delay.	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 with intersection capacity exceeded.	> 50.0

Sources: *Highway Capacity Manual*, Transportation Research Board, 2010.

Additionally, when deficient, the *California Manual on Uniform Traffic Control Devices* (CA MUTCD) peak hour volume signal warrant was applied to unsignalized intersections operating unacceptably to assess whether signalization could be warranted.[1]

Deficiency Criteria

Santa Cruz County

Based on its General Plan, Santa Cruz County has a minimum acceptable peak hour operating level of LOS C for signalized intersections. LOS D operations are considered acceptable at County intersections where further improvements are considered infeasible. Deficiencies at signalized intersections in the County are found to occur when the addition of project traffic causes one of the following:

- The addition of project traffic causes intersection operations to degrade from LOS D or better to LOS E or F, or
- Project traffic is added to an intersection operating at LOS E or LOS F, resulting in a one-percent increase in the volume-to-capacity ratio of all critical movements.

Deficiencies at unsignalized intersections in the County are defined to occur when:

- The addition of project traffic causes intersection operations to degrade from LOS D or better to LOS E or F, and the peak hour signal warrant from the CA MUTCD is satisfied, or
- Project traffic is added to an intersection operating at LOS E or F, and the peak hour signal warrant from the CA MUTC is satisfied.

California Department of Transportation (Caltrans)

The minimum acceptable LOS for intersections controlled by Caltrans is the LOS C/D cusp, meaning that LOS C is the minimum acceptable operating level. Deficiencies at signalized Caltrans intersections are found to occur when the addition of project traffic causes one of the following:

- The addition of project traffic causes intersection operations to degrade from LOS C or better to LOS D, E or F, or Project traffic is added to a signalized intersection operating at LOS D, E or LOS F.

[1] Warrant 3 – **Peak hour vehicle volume** This warrant determines if the minor street traffic suffers undue delay when entering or crossing the major street for a minimum of one hour of an average day. This is based on the major street left-turn volume, the higher-volume minor-street approach volume, and calculated delay for vehicles on the higher-volume minor-street approach.

3. Existing Conditions

This chapter discusses the Existing Conditions of the roadway network, transit, pedestrian, and bicycle facilities, existing intersection operations, and field observations.

COVID-19 Note: The following Existing Conditions discussion describes conditions prior to the March 2020 shelter-in-place policy. The intersection counts used for this analysis were collected prior to the voluntary work from home polices implemented by several large technology firms beginning the first week in March 2020, and the formal shelter-in-place order issued by Santa Cruz County Public Health Department on March 31, 2020, to slow the spread of COVID-19.

Existing Street System

The existing street network is illustrated in **Figure 2.** Dominican Hospital is located on Soquel Drive between Mission Drive and Paul Sweet Road and has multiple access driveways on these roadways. State Route 1 provides regional access to Dominican Hospital.

State Route (SR) 1 is a state highway in Santa Cruz County. SR 1 provides access to Watsonville and Monterey to the south, and San Francisco to the north. Near the Project site, the freeway has an east-west alignment with two freeway lanes in each direction and a posted speed limit of 65 miles per hour (mph). Dominican Hospital is located just north of the Soquel Drive interchange with SR 1.

Soquel Drive is a four-lane, east-west arterial street that extends from Soquel Avenue west of SR 1 east to Rio Del Mar Boulevard. Dominican Hospital has one signalized entrance on Soquel Drive at Commercial Crossing and another unsignalized entrance just west of Commercial Crossing. Soquel Drive also has designated bike lanes striped in both directions. The posted speed limit on Soquel Drive near the Project is 35 mph.

Soquel Avenue is a two- to four-lane, east-west arterial street connecting Santa Cruz, Live Oak, and Capitola. This street is south of SR 1. Southbound SR 1 on- and off-ramps connect to Soquel Avenue between the Soquel Drive and 17th Avenue Intersections. The posted speed limit on Soquel Avenue is 35 mph.

Mission Drive is a two-lane, collector street that connects the neighborhood north and east of Dominican Hospital with Soquel Drive. Two Dominican Hospital driveways provide access to/from Mission Drive at (1) Dominican Way and (2) between Dominican Way and Soquel Drive (the northernmost driveway will provide access to the proposed parking structure). The posted speed limit on Mission Drive is 25 mph.

Thurber Lane is a two-lane street connecting residents north of Dominican Hospital to Soquel Drive. Thurber Lane does not connect directly to Dominican Hospital. The posted speed limit on Thurber Lane is 30 mph.

Paul Sweet Road is a two-lane street connecting residents north of Santa Cruz and Dominican Hospital to Soquel Drive. The hospital has two driveways on Paul Sweet Road. The driveway at Paul Sweet Road and Salisbury Drive has been closed. The posted speed limit on Paul Sweet Road is 25 mph.

Existing Transit Service

The Santa Cruz Metropolitan Transit District (Santa Cruz METRO) provides transit service in Santa Cruz County, serving Santa Cruz, Scotts Valley, Capitola, and Watsonville, as well as to unincorporated parts of the county. Two routes operate near the Project site: Routes 71 and 91X stop at the Soquel Drive and Hospital Drive bus stop, adjacent to the Project site, as shown in **Table 4**.

Santa Cruz METRO also provides METRO ParaCruz, which offers accessible door-to-door shared rides for people with any disability that prevents them from using the bus.

Table 4: Existing Transit Services[1]

Route	From	To	Weekdays		Saturdays		Sundays	
			Operating Hours[2]	Peak Headway[3] (minutes)	Operating Hours[2]	Headway[3] (minutes)	Operating Hours[2]	Headway[3] (minutes)
Santa Cruz METRO								
71	Santa Cruz METRO Center	Watsonville Transit Center	5:35 AM – 12:45 AM	30	6:10 AM – 12:45 AM	30	6:10 AM – 12:45 AM	30
91X	Santa Cruz METRO Center	Watsonville Transit Center	6:00 AM – 5:50 PM	30	No service			

Notes:
1. Transit schedule prior to COVID-19 shelter-in-place order.
2. Operating hours rounded to the nearest five-minute interval.
3. Headways are defined as the time interval between two transit vehicles traveling in the same direction over the same route.

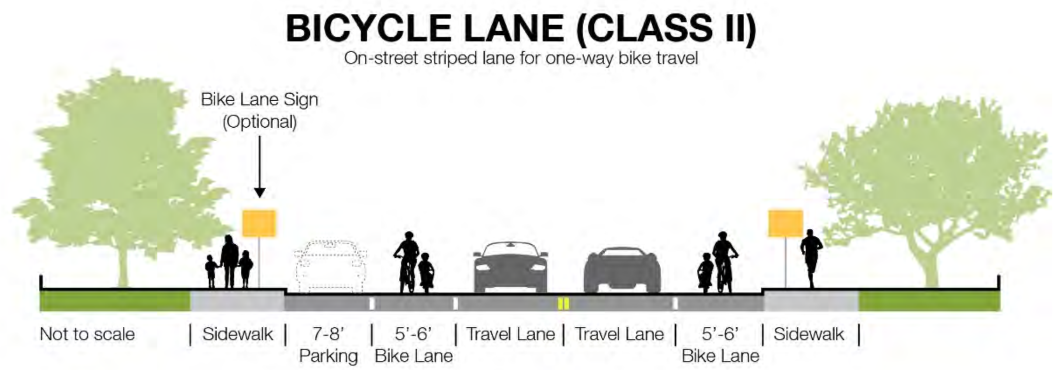
Source: Santa Cruz METRO, February 2020.

Existing Pedestrian and Bicycle Facilities

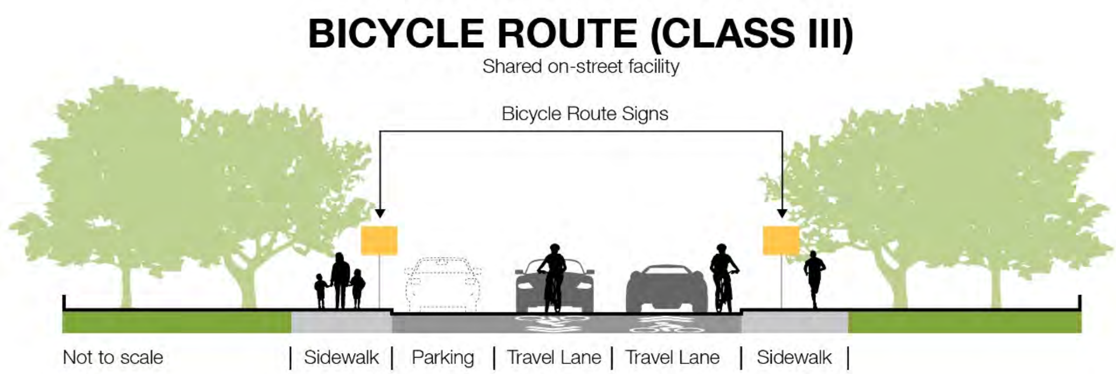
Pedestrian facilities in the study area include sidewalks, crosswalks, and pedestrian signals. At the signalized intersections in the study area, crosswalks and pedestrian push-button actuated signals are provided. Five-foot sidewalks are provided around the Project site and crosswalks are provided at some unsignalized intersections.

Bicycle facilities near Dominican Hospital include the following:

- **Class II Bike Lanes** – Conventional bike lanes that use a stripe of paint and other markings to designate exclusive use by bicycles.



- **Class III Bike Routes** – On bike routes, bicyclists share the right-of-way with vehicles. Signing and sometimes shared lane markings, such as "sharrows," indicate the road is a shared use facility.



Near the Project, Soquel Drive provides Class II Bike lanes in both directions. Thurber Lane also provides Class II Bike lanes in both directions. Brookwood Drive, which connects to Paul Sweet Road, to the west of the hospital, is designated as a Class III Bike Route. **Figure 3** presents the pedestrian and bicycle facilities on and near the Project site.

Intersection Levels of Service

Existing intersection lane configurations, signal timings, and peak hour turning movement traffic volumes were used to determine the existing levels of service for the study intersections during the AM and PM peak hours. **Figure 4** presents the existing AM and PM peak hour turning movement volumes and the corresponding lane configurations and traffic control devices. The existing traffic counts are contained in **Appendix B**.

The results of the Existing Conditions LOS analysis are presented in **Table 5**, and the corresponding LOS calculation sheets are included in **Appendix C**. All the study intersections except the Mission Drive and Soquel Drive intersection operate at LOS C or better under Existing Conditions. Mission Drive and Soquel Drive intersection operates at LOS B and LOS D during the AM and PM peak hour, respectively. These are acceptable operating levels.

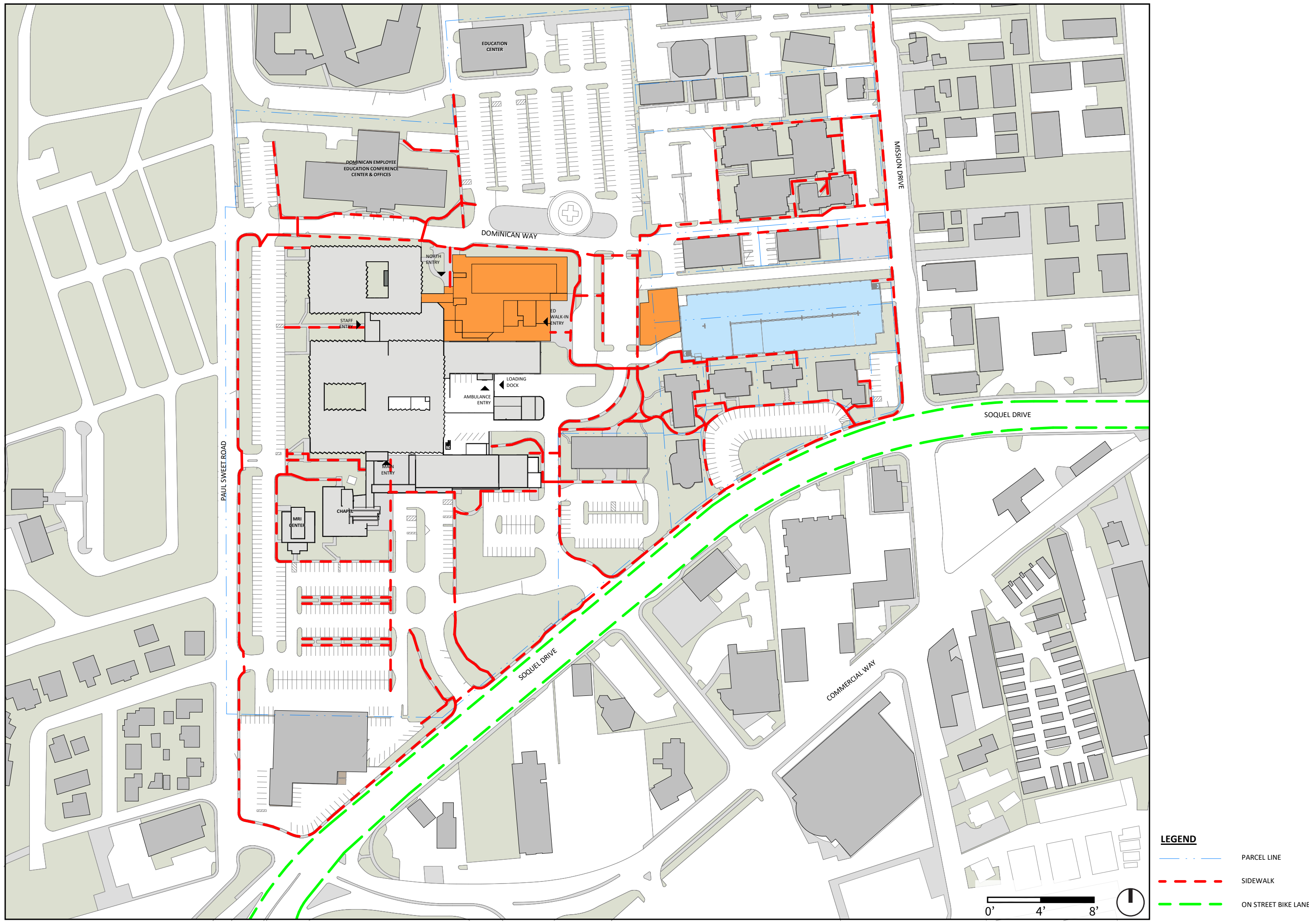
Table 5: Existing Intersection Level of Service

ID	Intersection	Control Type[1]	Jurisdiction (LOS Standard)[2]	Peak Hour[3]	Existing	
					Delay[4]	LOS[5]
1	Paul Sweet Road and Dominican Way	SSSC	SCC (D)	AM PM	1.2 (9.5) 2.2 (9.5)	A (A) A (A)
2	Paul Sweet Road and Hospital Driveway	SSSC	SCC (D)	AM PM	0.5 (9.9) 0.4 (9.8)	A (A) A (A)
3	Soquel Drive and Hospital Driveway	SSSC	SCC (D)	AM PM	0.5 (14.6) 0.3 (13.7)	A (B) A (B)
4	Commercial Crossings / Hospital Drive and Soquel Drive	Signal	SCC (D)	AM PM	11.0 9.6	B A
5	Soquel Drive and Western Medical Office Driveway	SSSC	SCC (D)	AM PM	0.4 (18.5) 0.3 (15.0)	A (C) A (C)
6	Soquel Drive and Eastern Medical Office Driveway	SSSC	SCC (D)	AM PM	0.1 (16.9) 0.1 (16.5)	A (C) A (C)
7	Mission Drive and Medical Office Driveway	SSSC	SCC (D)	AM PM	0.3 (9.3) 0.1 (10.3)	A (A) A (B)
8	Mission Drive and Hospital Driveway	SSSC	SCC (D)	AM PM	1.5 (8.9) 1.0 (10.0)	A (A) A (B)
9	Mission Drive and Dominican Way	SSSC	SCC (D)	AM PM	3.4 (9.2) 4.3 (9.7)	A (A) A (A)
10	Soquel Avenue/Driveway and Soquel Drive	Signal	SCC (D)	AM PM	25.9 29.5	C C
11	Commercial Way/Paul Sweet Road and Soquel Drive/US-101 NB Ramps	Signal	Caltrans (D)	AM PM	27.4 30.5	C C
12	Mission Drive and Soquel Drive	Signal	SCC (D)	AM PM	19.9 54.7	B D
13	Commercial Way/Thurber Lane & Soquel Drive[6]	Signal	SCC (D)	AM PM	9.2 7.9	A A

Notes: **Bold text** indicates intersection operates at unacceptable level of service.

1. Signal = signalized intersection; SSSC = side-street stop-controlled intersection.
2. AM = morning peak hour, PM = evening peak hour.
3. SCC = Santa Cruz County.
4. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the 2010 *Highway Capacity Manual* for signalized intersections and all-way stop-controlled intersections. For side-street stop-controlled intersections, average control delay and total delay for the worst movement is reported as "average control delay (worst movement total delay)."
5. LOS = Level of Service. LOS calculations conducted using the Synchro 10 analysis software packages, which apply the methods described in the 2010 *Highway Capacity Manual*. For side-street stop-controlled intersections, average control LOS and total LOS for the worst movement is reported as "average control LOS (worst movement total LOS)."
6. Intersection delay calculated using HCM 2000 methods for non-standard NEMA phasing.

Source: Fehr & Peers, 2020.



Source: DEVENNEY GROUP LTD., ARCHITECTS

Figure 3

Dominican Hospital Modernization Pedestrian and Bike Circulation

Field Observations

Field observations were conducted on June 6, 2019 during the peak AM and PM weekday travel periods to observe general traffic conditions, queuing, and verify signal timing at the study intersections. Light pedestrian and bike activities were observed at all study intersections. These observations indicated that the study intersections generally operate at the levels of service shown in **Table 5**. Observations for key study locations follow. Field observation at the new intersection of Soquel Drive and Thurber Lane were not conducted due to COVID-19 conditions.

Intersection 3: Soquel Drive/Unsignalized Hospital Entrance

This intersection is controlled by stop signs on the hospital driveway approaches, with no traffic controls on the Soquel Drive approaches. The pavement on Soquel Drive at the intersection is striped “Keep Clear” in the westbound direction. During the AM peak hour, drivers on Soquel Drive generally left adequate room for vehicles turning into the hospital, which resulted in minimal delay to left-turning vehicles. During the PM peak hour, when vehicles predominantly exit the hospital, drivers on westbound Soquel Drive again complied with the pavement markings. However, vehicles turning left out of the hospital driveway have to perform a staged turn due to high eastbound volumes.

Intersection 4: Soquel Drive/Hospital Entrance/Commercial Crossing

This intersection operated well with minimal delay to drivers, except for the eastbound left-turn movement. (This movement serves vehicles turning into the hospital.) Often, vehicles required more than one signal cycle to clear this intersection.

Intersection 10: Soquel Avenue/Soquel Drive

Queuing was observed on the three major approaches to this intersection during the AM and PM peak hours. The queue in the westbound left-turn lane on Soquel Drive extended onto the SR 1 overcrossing during the PM peak hour, but generally cleared in one signal cycle and was not observed to spill out of the left-turn pocket. Eastbound queues on Soquel Avenue were observed to extend to the 7th Avenue intersection during the PM peak hour. The queue on the northbound Soquel Avenue approach often spills back to the SR 1 ramps during the AM peak hour. These queues generally cleared in one signal cycle due to the signal coordination and an overlap phase serving the northbound right-turn movement.

Intersection 11: Soquel Drive/Paul Sweet Road/Commercial Way

During the AM peak hour, vehicles on the westbound approach to this intersection favored the right lane. Queuing on westbound Soquel Drive was observed during the AM and PM peak hours, often extending to the signalized hospital entrance/Commercial Crossing and occasionally extending to Mission Drive. This extended queue generally cleared in one signal cycle due to signal coordination.

4. Project Characteristics

This chapter provides an overview of the proposed Project components and addresses the proposed project trip generation, distribution, and assignment characteristics, allowing for an evaluation of project impacts on the surrounding roadway network. The amount of traffic associated with the Project was estimated using a three-step process:

1. **Trip Generation** – The *amount* of vehicle traffic entering/exiting the Project site was estimated.
2. **Trip Distribution** – The *direction* trips would use to approach and depart the site was projected.
3. **Trip Assignment** – Trips were then *assigned* to specific roadway segments and intersection turning movements.

Trip Generation Analysis

Trip generation refers to the process of estimating the amount of vehicular traffic a project would add to the surrounding street system. The purpose of the vehicular trip generation survey is to determine the number of vehicle trips entering and exiting the Dominican Hospital site during the AM and PM peak hours of a typical mid-week workday. The state-of-the-practice is that trip generation be derived from local empirical data, as this will provide the most accurate estimate of local vehicle trip making. This requires surveying the existing land use to capture local factors such as demographics, cost of automobile ownership, land use patterns (e.g., density diversity, distance to transit, etc.), roadway congestion, transportation demand management measures, and transportation mobility choices. In the absence of empirical studies, agencies typically use data in the most recently published *Trip Generation Manual* by the Institute of Transportation Engineers (ITE). The results of the Dominican Hospital trip generation survey are described below.

Driveway counts were used to calculate the existing trip generation of Dominican Hospital. This included AM and PM peak period counts collected at the six (6) hospital driveway intersections below:

- Paul Sweet Road and Dominican Way
- Paul Sweet Road and Employee Parking Lot C Driveway
- Hospital Driveway and Soquel Drive
- Hospital Drive-Commercial Crossings and Soquel Drive
- Mission Drive and Project Driveway
- Mission Drive and Dominican Way

Table 6 presents the existing vehicle trip generation for the Dominican Hospital campus and the corresponding trip generation rates based on occupied square footage. The hospital campus generates 548 trips (390 inbound and 158 outbound) during the AM peak hour and 522 trips (143 inbound and 379 outbound) during the PM peak hour.

Table 6: Existing Observed Dominican Hospital Campus Vehicle Trip Generation

Time Period	Occupied s.f.[1]	In	Out	Total
Trip Generation[2]				
AM Peak Hour (7:30-8:30)	376.9 KSF[4]	390	158	548
PM Peak Hour (4:30-5:30)		196	389	585
Trip Generation Rate[3]				
AM Peak Hour (7:30-8:30)	376.9 KSF[4]	1.03	0.42	1.45
PM Peak Hour (4:30-5:30)		0.52	1.03	1.55

Notes:

1. Occupied s.f. is the existing occupied square footage for Dominican Hospital.
2. Based on driveway counts collected in June 2019.
3. Trip Generation Rate = (observed traffic count) / (total occupied square footage).
4. KSF – thousand s.f.

Source: Fehr & Peers, 2020.

Comparison to ITE Trip Generation Estimates

The Dominican Hospital trip generation was compared to the trip generation estimates using average ITE rates for hospitals (ITE land use code 610) and medical office buildings (ITE land use code 720) from the *Trip Generation Manual*, 10th Edition (Institute of Transportation Engineers), 2017. In the absence of local trip generation surveys, these rates would be used to estimate the vehicle trip generation. As described in the ITE *Trip Generation Manual* 10th Edition (2017), the rates are based on surveys collected at general urban/suburban locations. **Table 7** provides a summary of the trip generation estimates for Dominican Hospital applying the ITE hospital rates to the main hospital, employee education conference center and office, and education center and medical office building rates to the two MOBs, along with a comparison of the observed Dominican Hospital trip generation.

Table 7: Existing Trip Generation Comparison

Land Use[1]	ITE Trip Rates (Per KSF)[2]				ITE Estimated Trips[3]			
	AM Peak Hour		PM Peak Hour		AM Peak Hour		PM Peak Hour	
	In / Out	Total	In / Out	Total	In / Out	Total	In / Out	Total
Hospital[4] (275.8 KSF)	68%/32%	0.89	32%/68%	0.97	167/79	246	86/182	268
Soquel Medical Offices[5] (41.5 KSF)	78%/22%	2.78	28%/72%	3.46	73/20	93	32/84	116
1545 Soquel MRI (4.6 KSF)[5]	78%/22%	2.78	28%/72%	3.46	10/3	13	4/12	16
Dominican Way Medical Offices[5] (55.0 KSF)	78%/22%	2.78	28%/72%	3.46	119/34	153	53/138	191
ITE Sub-Total [A]					386/142	528	183/436	619
Observed Trip Generation[6] [B]					390/158	548	196/389	585
Difference of Observed versus ITE Trip Rates [B – A = C]					4/16	20	13/(47)	(34)

Notes:

1. Land Use is the existing occupied square footage on the Dominican Hospital campus area.
2. Trips rates obtained from *Trip Generation Manual*, 10th Ed. (Institute of Transportation Engineers, 2017).
3. Number of trips calculated using trip rates from *Trip Generation Manual*, 10th Ed. (Institute of Transportation Engineers, 2017).
4. Based on trip rates for the Hospital Land Use Category (610).
5. Based on trip rates for the Medical Office Land Use Category (720).
6. Observed trip generation at Dominican Hospital based on traffic counts collected in June 2019. Trip Generation during peak hour of adjacent street traffic (7:30 AM to 8:30 AM and 4:30 PM to 5:30 PM) is reported.

Source: Fehr & Peers, 2020.

Table 7 shows that the application of ITE trip rates would underestimate Dominican Hospital's trip generation by a total of 20 trips in the AM peak hour and overestimate by 34 trips in the PM peak hour. This means that Dominican Hospital has more intensive trip making characteristics than the sites used to develop the ITE trip rates in the AM peak hour, and less intensive trip making characteristics in the PM peak hour. Because of the trip making characteristic of Dominican Hospital, the site-specific rates were used to estimate the trip generation for the with-project scenarios.

The amount of traffic generated by the existing hospital uses on the site was measured with driveway counts collected in June 2019. The existing uses generate 548 morning peak hour vehicle trips (390 inbound and 158 outbound) and 585 evening peak hour vehicle trips (196 inbound and 389 outbound). The daily trip generation was not directly observed; rather, it is a calculated value that is the sum of the daily ITE trip generation for the hospital and medical office buildings on the existing hospital campus. Using ITE trip generation rates, the Soquel, and Dominican Way medical offices generate an estimated 3,518 daily vehicle trips, 282 morning peak hour vehicle trips (219 inbound and 63 outbound) and 351 evening peak hour net new vehicle trips (97 inbound and 254 outbound). The daily hospital trip generation is estimated using average ITE rates and the hospital peak hour trip generation estimates are calculated by subtracting the medical office trip generation from the observed driveway counts. The hospital generates an estimated 2,957 daily vehicle trips, 266 morning peak hour vehicle trips (171 inbound and 95 outbound) and 234 evening peak hour net new vehicle trips (99 inbound and 135 outbound).

The Dominican Hospital modernization will not increase the number of licensed patient beds, but rather improve the quality of services. This is a project to right-size Dominican Hospital to meet state requirements and market expectations. Therefore, most of the building size increase is dedicated to existing employees and visitor activities. The hospital has projected an increase of 39 employees to account for the increase of two operating rooms, above their current number of operating rooms and additional facility staff needed to maintain the new building(see **Appendix D** for additional details prepared by Dominican Hospital). As noted in the Technical Approach section of **Chapter 2**, the trip generation analysis uses trip generation rates based on building size (method 1) and rates based on employment size (method 2). The resulting peak hour hospital trip rates based on building size are shown in **Table 8** and **Table 9** respectively.

Based on the building size rates, the Dominican Hospital generates roughly 0.96 vehicle trips per 1,000 square feet in the AM peak hour and 0.85 vehicle trips per 1,000 square feet during the PM peak hour. Base on the employee rates, Dominican Hospital generate roughly 0.15 vehicle trips during the AM peak hour and 0.13 vehicle trips during the PM peak hour.

Table 8: Hospital Trip Generation Building Size Rates

Use	Size (KSF)	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Trip Generation								
Existing Hospital Campus[1]	376.9 KSF	6,475	390	158	548	196	389	585
Soquel Medical Offices[2]	41.5 KSF	1,444	90	26	116	40	104	144
Dominican Way Medical Offices[2]	55.0 KSF	1,914	119	34	153	53	138	191
1545 Soquel MRI[2]	4.6 KSF	160	10	3	13	4	12	16
Hospital[3]	275.8 KSF	2,957	171	95	266	99	135	234
Hospital Trip Generation Rates[4]								
Hospital	275.8 KSF	10.72	0.62	0.34	0.96	0.36	0.49	0.85

Notes:

1. Daily trip estimate is the sum of the hospital and medical office daily trip generation using ITE trip generation rates on a per 1,000 square foot basis. Morning and evening peak hour trip generation from driveway counts summarized in **Table 6**.
2. Number of daily and peak hour trips calculated using trip rates from *Trip Generation Manual*, 10th Ed. (Institute of Transportation Engineers, 2017) using ITE land use category 720 on a per 1,000 square foot basis.
3. Daily trip generation is based on the daily rates obtained from *Trip Generation Manual*, 10th Ed. (Institute of Transportation Engineers, 2017) using ITE land use category 610 on a per 1,000 square foot basis. Peak hour trip generation is the Existing Hospital Campus peak hour trip generation minus the medical office trip generation.
4. Trip Generation Rate = (hospital traffic) / (275.8 KSF).

Source: Fehr & Peers, 2020.

Table 9: Hospital Trip Generation Employee Rates

Use	Size (Employees)	Daily	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Trip Generation								
Existing Hospital Campus[1]	-	10,385	390	158	548	196	389	585
Soquel Medical Offices[2]	-	1,444	90	26	116	40	104	144
Dominican Way Medical Offices[2]	-	1,914	119	34	153	53	138	191
1545 Soquel MRI[2]	-	160	10	3	13	4	12	16
Hospital[3]	1,812	6,867	171	95	266	99	135	234
Hospital Trip Generation Rates[4]								
Hospital[4]	1,812	3.79	0.10	0.05	0.15	0.06	0.07	0.13

Notes:
1. Daily trip estimate is the sum of the hospital and medical office daily trip generation using ITE trip generation rates on an employee number basis. Morning and evening peak hour trip generation from driveway counts summarized in **Table 6**.
2. Number of daily and peak hour trips calculated using trip rates from *Trip Generation Manual*, 10th Ed. (Institute of Transportation Engineers, 2017) using ITE land use category 720 on a per 1,000 square foot basis as current employee count is not available.
3. Daily trip generation is based on the daily rates obtained from *Trip Generation Manual*, 10th Ed. (Institute of Transportation Engineers, 2017) using ITE land use category 610 on an employee number basis. Peak hour trip generation is the Existing Hospital Campus peak hour trip generation minus the medical office trip generation.
4. Trip Generation Rate = (hospital traffic) / (1,812).

Source: Fehr & Peers, 2020.

Trip Generation Estimates

Table 10 summarizes the new hospital trip generation based on the increase in building size and the trip generation rates summarized in **Table 8**. Using the increase in square footage, the Project is estimated to generate 81 AM peak hour trips (52 inbound and 29 outbound) and 71 PM peak hour trips (30 inbound and 41 outbound). Santa Cruz County's procedure for collecting impact fees is based on the increase in building square footage and the average daily ITE rates for hospitals (ITE land use code 610) which equates to 901 daily trips as shown in Table 10.

Table 10: Project Vehicular Trip Generation Summary

Use	Size	Daily[1]	AM Peak Hour[1]			PM Peak Hour[1]		
			In	Out	Total	In	Out	Total
New Hospital Tower	84.054 KSF	901	52	29	81	30	41	71

Notes:
1. Daily trips rates obtained from *Trip Generation Manual*, 10th Ed. (Institute of Transportation Engineers, 2017) using ITE land use category 610 on a per 1,000 square foot basis. While the peak hour trip generation rates are from **Table 8**.

Source: Fehr & Peers, 2020

Table 11 summarizes the new hospital trip generation based on the increase in employees and the trip generation rates summarized in **Table 9**. Using the estimated employee increase provided by Dominican Hospital, the Project is estimated to generate 6 AM peak hour trips (four inbound and two outbound) and 5 PM peak hour trips (two inbound and three outbound).

Table 11: Dominican Hospital Anticipate Project Trip Generation

Use	Size	Daily[1]	AM Peak Hour[1]			PM Peak Hour[1]		
			In	Out	Total	In	Out	Total
New Hospital Tower	39 Employees	148	4	2	6	2	3	5

Notes:
1. Daily trips rates obtained from *Trip Generation Manual*, 10th Ed. (Institute of Transportation Engineers, 2017) using ITE land use category 610 on a per employee basis. While the peak hour trip generation rates are from **Table 9**.

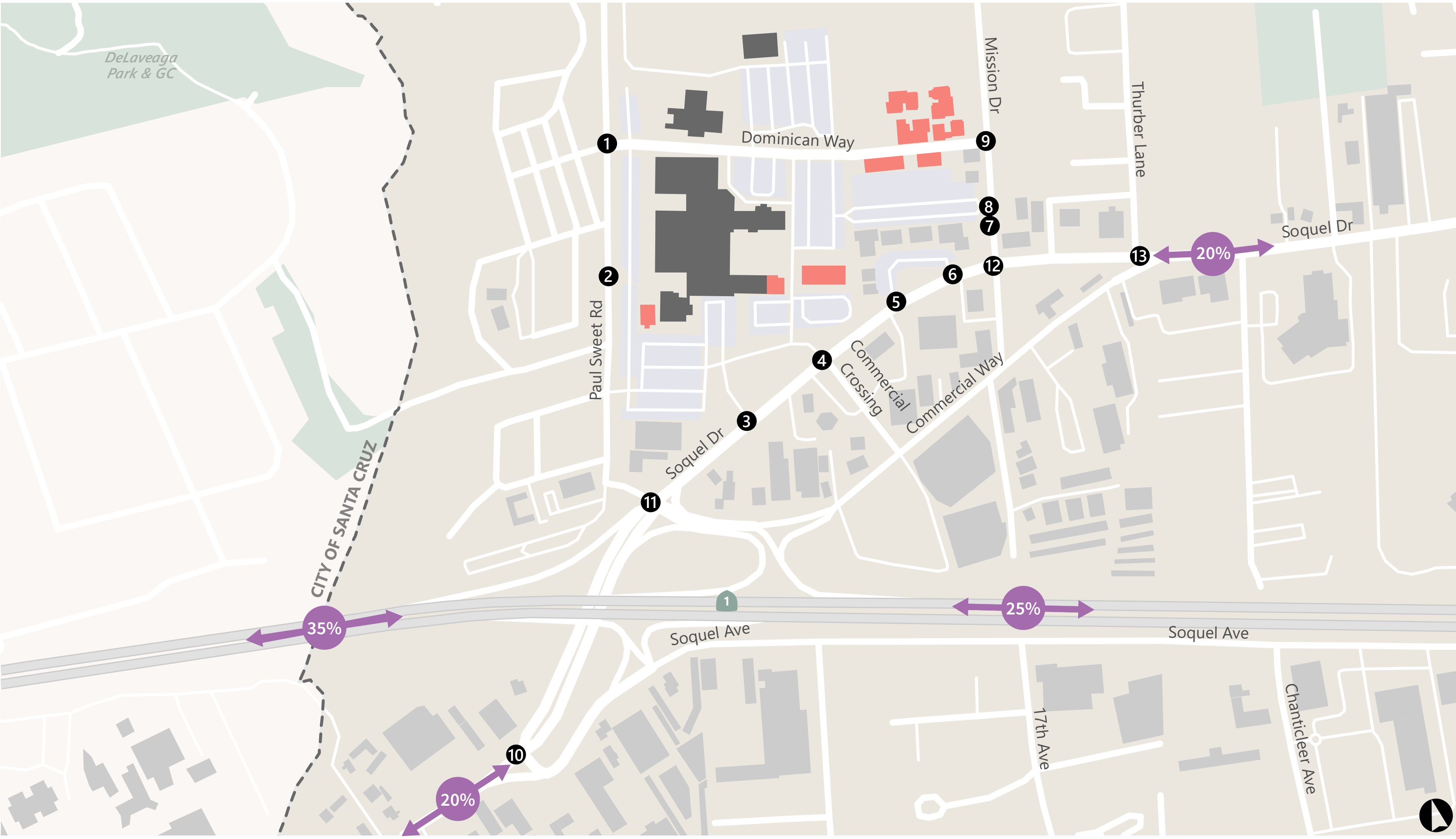
Source: Fehr & Peers, 2020

Project Trip Distribution and Assignment

Project trip distribution refers to the directions of approach and departure that vehicles would take to access and leave the site. The estimated trip distribution pattern is based on the existing travel patterns in the area, the location of complementary land uses, the SCCRTC Model and access routes to and from the Dominican Hospital Site. The resulting trip distribution percentages are shown on **Figure 5**. The Project trip generation estimates, in combination with the expected trip distribution patterns, were used to assign vehicle trips to the local roadway network, as shown on **Figure 6**.

Volume Redistribution

Appendix A presents a detailed study on the Dominican Hospital volume redistribution due to the proposed parking configurations. Under the competition of the project, parking lot 8 will be removed due to the construction of the new hospital tower, parking lot 9 will be resized to accommodate the equipment yard, and parking lot 6 will be replaced with the proposed 409-space parking structure. Based on the new parking configurations existing vehicle turning movements were redistributed throughout the study intersections based on the trip distribution on **Figure 5**.



Study Intersections
Trip Distribution
Hospital Buildings
Hospital Campus

Figure 5
Dominican Hospital
Trip Distribution

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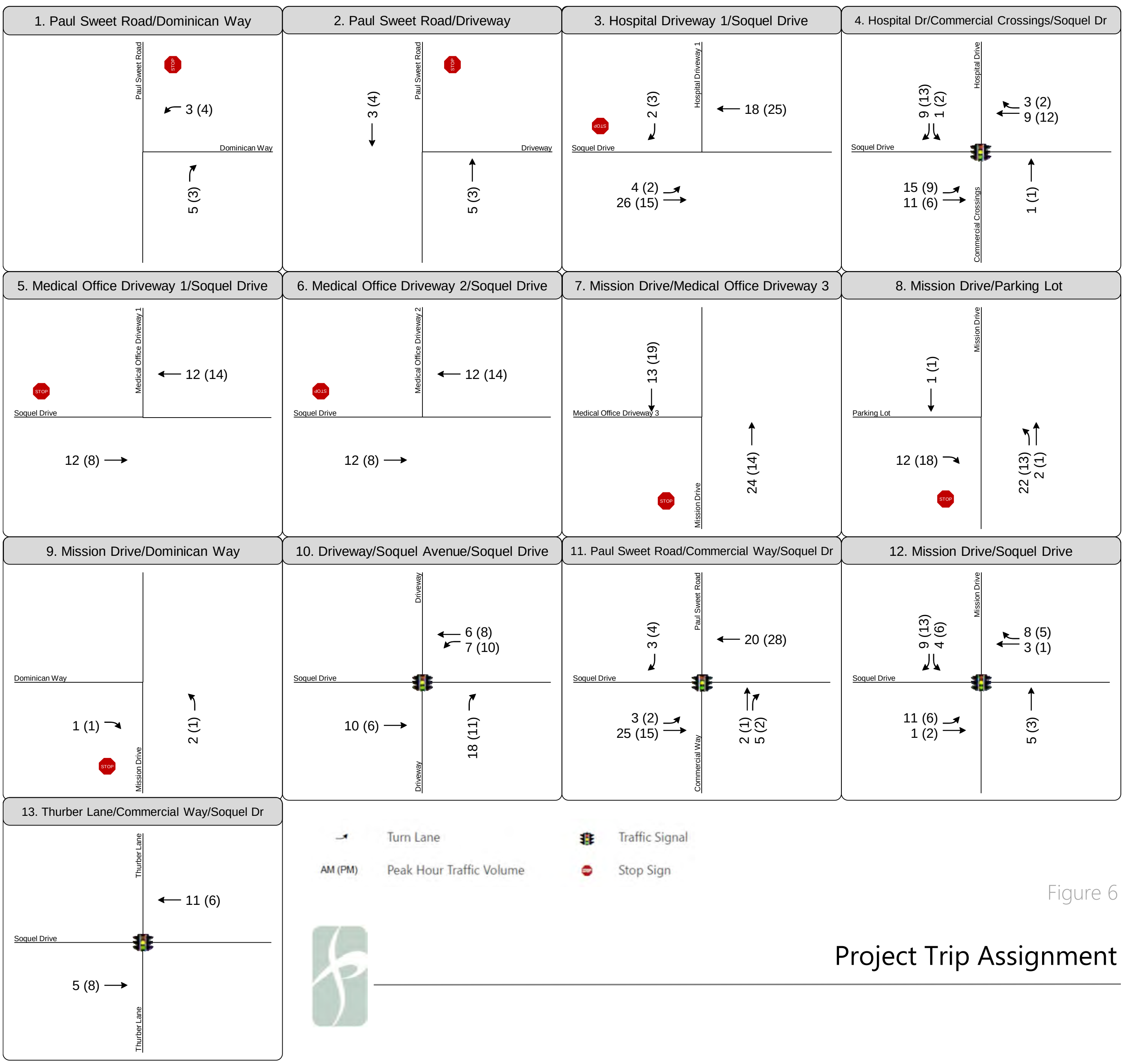


Figure 6

Project Trip Assignment

5. Existing with Project Conditions

This chapter presents the effects of the proposed Project on the surrounding street system under Existing with Project Conditions. Existing with Project Conditions are defined as Existing Conditions plus traffic generated by the proposed Project. Project effects on intersections under this scenario are then identified by comparing the level of service results under Existing with Project Conditions to those under Existing Conditions.

Existing with Project Traffic Volumes

The Project traffic volumes on **Figure 6** were added to the existing traffic volumes from **Figure 4** to estimate the Existing with Project traffic volumes, as shown on **Figure 7**.

Analysis of Existing with Project Conditions

Existing with Project Conditions intersections were evaluated using the Method 1 vehicle trip generation approach described in **Chapter 2**. The Existing with Project Conditions analysis results are presented in **Table 12**, based on the traffic volumes and intersection configurations presented on **Figure 7**. **Table 12** also includes the operations results for Existing Conditions. The addition of project traffic would increase peak hour vehicle delay at most of the study intersections. With the addition of project traffic, all intersection would continue to operate at acceptable levels.

Table 12: Existing with Project Intersection Levels of Service

ID	Intersection	Control Type[1]	Jurisdiction (LOS Standard)[2]	Peak Hour[3]	Existing		Existing with Project	
					Delay[4]	LOS[5]	Delay[4]	LOS[5]
1	Paul Sweet Road and Dominican Way	SSSC	SCC (D)	AM PM	1.2 (9.5) 2.2 (9.5)	A (A) A (A)	1.3 (9.6) 2.3 (9.5)	A (A) A (A)
2	Paul Sweet Road and Hospital Driveway	SSSC	SCC (D)	AM PM	0.5 (9.9) 0.4 (9.8)	A (A) A (A)	0.5 (10.0) 0.4 (9.9)	A (B) A (A)
3	Soquel Drive and Hospital Driveway	SSSC	SCC (D)	AM PM	0.5 (14.6) 0.3 (13.7)	A (B) A (B)	0.5 (14.8) 0.3 (14.0)	A (B) A (B)
4	Commercial Crossings / Hospital Drive and Soquel Drive	Signal	SCC (D)	AM PM	11.0 9.6	B A	12.0 13.9	B B
5	Soquel Drive and Western Medical Office Driveway	SSSC	SCC (D)	AM PM	0.4 (18.5) 0.3 (15.0)	A (C) A (C)	0.4 (19.1) 0.3 (15.2)	A (C) A (C)
6	Soquel Drive and Eastern Medical Office Driveway	SSSC	SCC (D)	AM PM	0.1 (16.9) 0.1 (16.5)	A (C) A (C)	0.1 (17.4) 0.1 (16.8)	A (C) A (C)
7	Mission Drive and Medical Office Driveway	SSSC	SCC (D)	AM PM	0.3 (9.3) 0.1 (10.3)	A (A) A (B)	0.3 (9.4) 0.1 (10.5)	A (A) A (B)
8	Mission Drive and Hospital Driveway	SSSC	SCC (D)	AM PM	1.5 (8.9) 1.0 (10.0)	A (A) A (B)	2.2 (9.2) 2.2 (10.0)	A (A) A (B)
9	Mission Drive and Dominican Way	SSSC	SCC (D)	AM PM	3.4 (9.2) 4.3 (9.7)	A (A) A (A)	2.5 (9.1) 3.8 (9.6)	A (A) A (A)
10	Soquel Avenue/Driveway and Soquel Drive	Signal	Caltrans (D)	AM PM	25.9 29.5	C C	28.1 29.8	C C
11	Commercial Way/Paul Sweet Road and Soquel Drive/US-101 NB Ramps[7]	Signal	SCC (D)	AM PM	27.4 30.5	C C	27.8 30.4	C C
12	Mission Drive and Soquel Drive[8]	Signal	SCC (D)	AM PM	19.9 54.7	B D	20.7 52.3	C D
13	Commercial Way/Thurber Lane & Soquel Drive[6/7]	Signal	SCC (D)	AM PM	9.2 7.9	A A	9.5 7.8	A A

Notes: **Bold text** indicates intersection operates at an unacceptable level of service.

1. Signal = signalized intersection; SSSC = side-street stop-controlled intersection.
2. AM = morning peak hour, PM = evening peak hour.
3. SCC = Santa Cruz County.
4. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the 2010 *Highway Capacity Manual* for signalized intersections and all-way stop-controlled intersections. For side-street stop-controlled intersections, average control delay and total delay for the worst movement is reported as "average control delay (worst movement total delay)."
5. LOS = Level of Service. LOS calculations conducted using the Synchro 10 analysis software packages, which apply the methods described in the 2010 *Highway Capacity Manual*. For side-street stop-controlled intersections, average control LOS and total LOS for the worst movement is reported as "average control LOS (worst movement total LOS)."
6. Intersection delay calculated using HCM 2000 methods for non-standard NEMA phasing.
7. Delay decreases in the plus project scenarios as additional volume is added to the movements with a delay below the intersection average delay.

8. Delay decreases in the plus project scenarios as additional volume is added to the movements with a delay below the intersection average delay as well as the shift in traffic from the parking structure.

Source: Fehr & Peers, 2020.

Deficiencies and Improvements

This section evaluates the intersection LOS results presented in **Table 12** and compares the results with established criteria previously summarized. The Project was found to result in no operational deficiencies under the Existing with Project conditions.

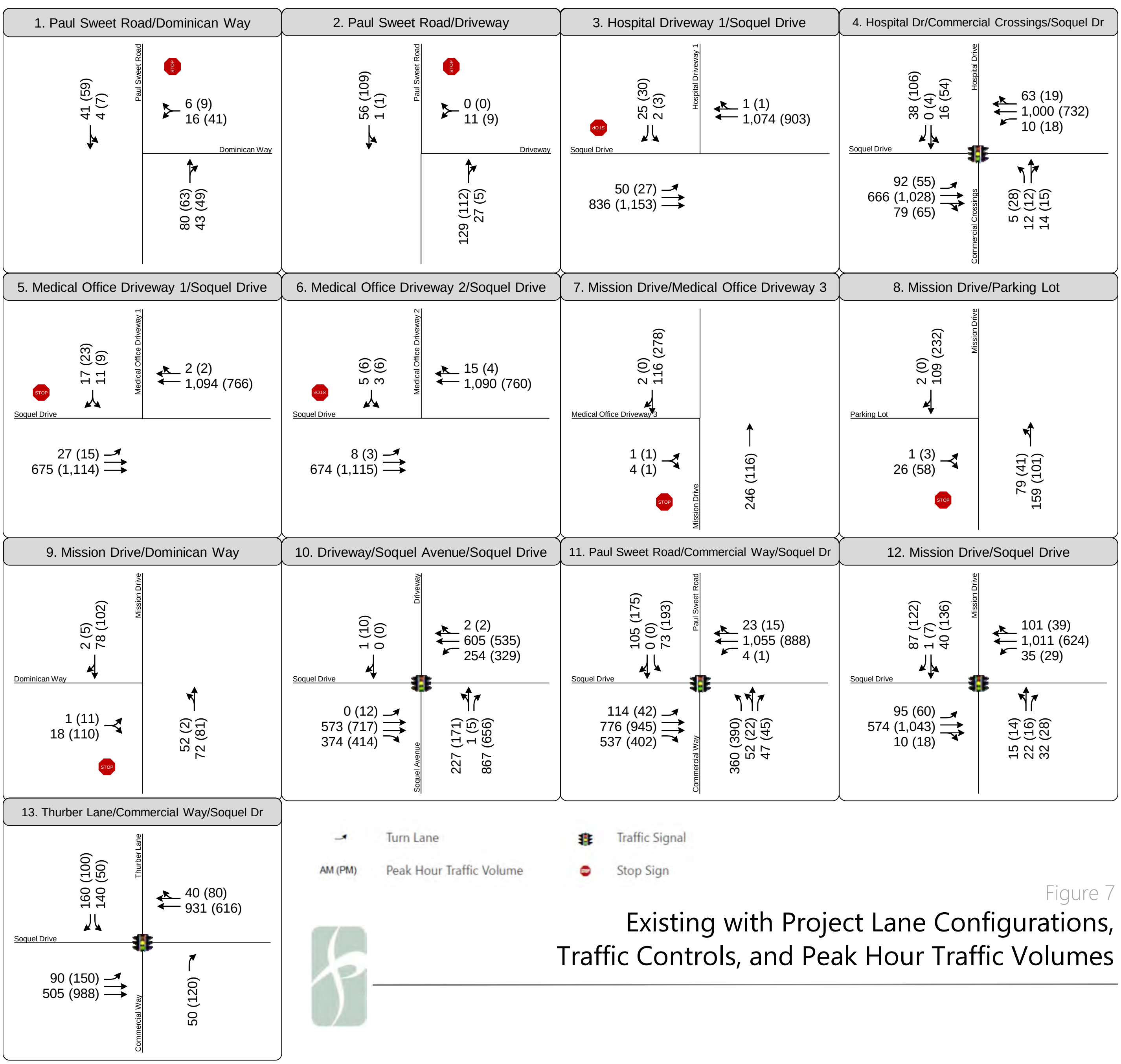


Figure 7

Existing with Project Lane Configurations, Traffic Controls, and Peak Hour Traffic Volumes

6. Background Traffic Conditions

This chapter presents the transportation analysis under Background Conditions and Background with Project Conditions. Background Conditions are defined as conditions prior to completion and occupancy of the Project. Traffic Volumes for Background Conditions are based on applying a growth rate to existing volumes. Background with Project Conditions are defined as Background Conditions plus the added Project Traffic.

Background Conditions Street Infrastructure Improvements

This study assumed that the newly proposed CVS Pharmacy on the southwest corner of the intersection of Soquel Drive and Hospital Driveway has been built under this scenario. The southbound left-turn movement at this intersection will be prohibited during the AM and PM peak hours and all related vehicle trips were rerouted to the Hospital Drive-Commercial Crossing and Soquel Drive intersection. The related transportation impact analysis report is included in **Appendix E.**

Background Conditions Volumes

The Background Conditions volumes were estimated using a growth rate for the Project opening year of 2028. Given the long time horizon for the project to open, the annualized growth rate on Soquel Drive was derived based on counts and population growth in Santa Cruz County over the past 15 years. The most recent bi-directional average daily traffic (ADT) was compared with historical data. Calculations determined the volumes along Soquel Drive and Soquel Avenue near the Project would increase by 1.13 percent per year, as shown in **Table 13**. This growth rate is similar to the growth rate of the land use projections presented in AMBAG's land use forecast document. Also, this growth rate is higher than the travel demand forecasts in the Santa Cruz Regional Transportation Commission models, along this portion of Soquel which is showing a 0.004[1] percent growth rate per year. For the analysis, to be conservative, a growth rate of 1.15 percent was assumed. The 2028 turning movement volumes were calculated by applying the growth rate to the through movements along Soquel Drive and Soquel Avenue and rounding up the side street movements to the nearest ten, as presented on **Figure 8**. Project traffic was added to the Background Conditions volumes to estimate Background with Project Conditions volumes, as presented on **Figure 9**.

Table 13: Growth Rate Calculations

Roadway Segment	Most Recent ADT		Historical ADT		Annual Growth Rate
	Year	ADT	Year	ADT	
Soquel Drive West of Mission Drive	2016	22,642	2007	20,551	1.13%

Source: Santa Cruz County Regional Transportation Commission, Average Daily Traffic Bi-directional Volumes, 2020.

[1] Growth rate determined by comparing the SCC TC model 2019 ADT volumes (26,427 vehicles) to the 2040 volumes (27,624 vehicles) on Soquel Drive west of Thurber Lane.

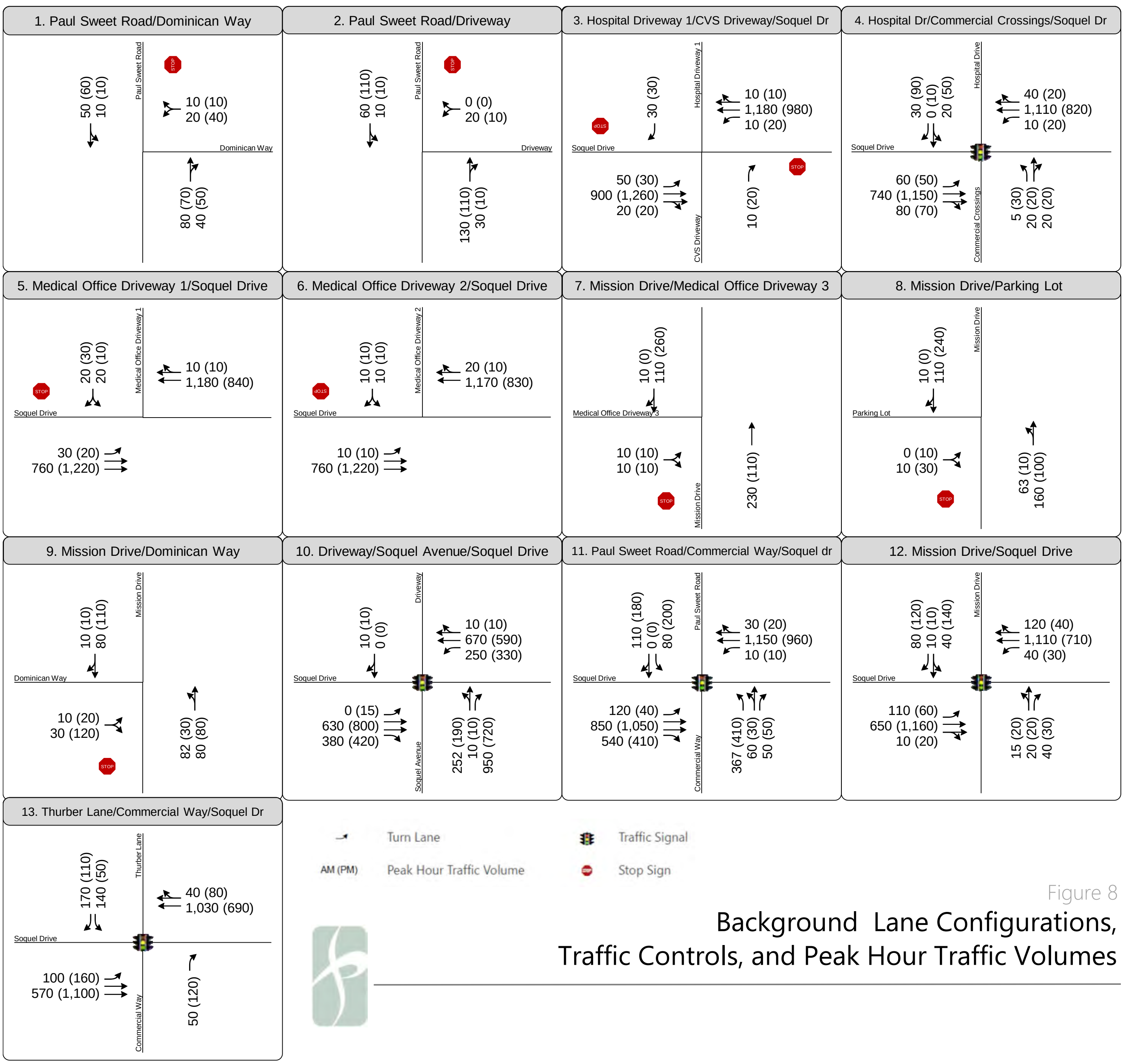


Figure 8

Background Lane Configurations, Traffic Controls, and Peak Hour Traffic Volumes

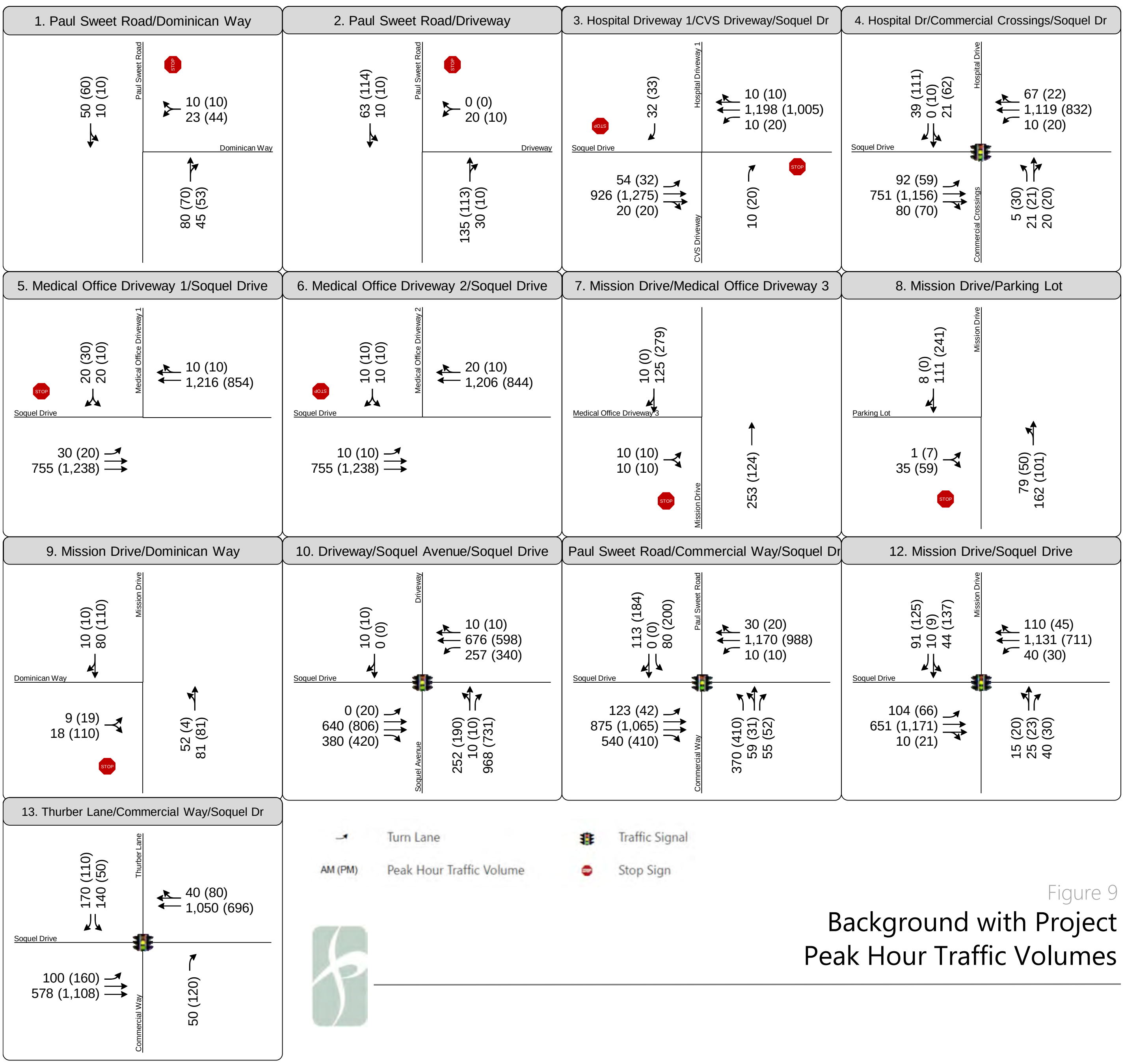


Figure 9

Background with Project
Peak Hour Traffic Volumes

Analysis of Background Conditions

Background Conditions and Background with Project Conditions were evaluated using the same methods described in **Chapter 2**. The analysis results are presented in **Table 14**, based on the traffic volumes and lane configurations presented on **Figure 8** and **Figure 9**. In the Background Condition, all intersections would operate at acceptable levels.

Table 14: Background with Project Intersection Levels of Service

ID	Intersection	Control Type[1]	Jurisdiction (LOS Standard)[2]	Peak Hour[3]	Background		Background with Project	
					Delay[4]	LOS[5]	Delay[4]	LOS[5]
1	Paul Sweet Road and Dominican Way	SSSC	SCC (D)	AM PM	1.8 (9.7) 2.3 (9.7)	A (A) A (A)	1.8 (9.8) 2.4 (9.7)	A (A) A (A)
2	Paul Sweet Road and Hospital Driveway	SSSC	SCC (D)	AM PM	1.1 (10.3) 0.7 (10.1)	A (B) A (B)	1.1 (10.4) 0.7 (10.1)	A (B) A (B)
3	Soquel Drive and Hospital Driveway	SSSC	SCC (D)	AM PM	0.6 (14.9) 0.6 (15.6)	A (B) A (C)	0.6 (15.1) 0.6 (15.8)	A (C) A (C)
4	Commercial Crossings / Hospital Drive and Soquel Drive	Signal	SCC (D)	AM PM	10.4 11.3	B B	11.3 14.3	B B
5	Soquel Drive and Western Medical Office Driveway	SSSC	SCC (D)	AM PM	0.7 (24) 0.4 (16.4)	A (C) A (C)	0.7 (25.0) 0.4 (16.6)	A (C) A (C)
6	Soquel Drive and Eastern Medical Office Driveway	SSSC	SCC (D)	AM PM	0.3 (21.2) 0.2 (18.8)	A (C) A (C)	0.3 (21.8) 0.2 (19.0)	A (C) A (C)
7	Mission Drive and Medical Office Driveway	SSSC	SCC (D)	AM PM	0.7 (10.2) 0.5 (10.5)	A (B) A (B)	0.6 (10.4) 0.5 (10.7)	A (B) A (B)
8	Mission Drive and Hospital Driveway	SSSC	SCC (D)	AM PM	1.6 (9.0) 1.2 (10.2)	A (A) A (B)	2.4 (9.2) 2.3 (10.3)	A (A) A (B)
9	Mission Drive and Dominican Way	SSSC	SCC (D)	AM PM	3.5 (9.8) 4.4 (10.0)	A (A) A (B)	2.6 (9.7) 3.9 (9.8)	A (A) A (A)
10	Soquel Avenue/Driveway and Soquel Drive	Signal	Caltrans (D)	AM PM	42.2 31.6	D C	45.6 32.0	D C
11	Commercial Way/Paul Sweet Road and Soquel Drive/US-101 NB Ramps	Signal	SCC (D)	AM PM	28.6 31.3	C C	29.2 31.6	C C
12	Mission Drive and Soquel Drive[8/9]	Signal	SCC (D)	AM PM	20.5 54.1	C D	22.4 51.9	C D
13	Commercial Way/Thurber Lane & Soquel Drive[6]	Signal	SCC (D)	AM PM	9.8 7.9	A A	10.1 8.1	B A

Notes: **Bold text** indicates intersection operates at an unacceptable level of service.

1. Signal = signalized intersection; SSSC = side-street stop-controlled intersection.
2. AM = morning peak hour, PM = evening peak hour.

3. SCC = Santa Cruz County.
4. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the 2010 *Highway Capacity Manual* for signalized intersections and all-way stop-controlled intersections. For side-street stop-controlled intersections, average control delay and total delay for the worst movement is reported as "average control delay (worst movement total delay)."
5. LOS = Level of Service. LOS calculations conducted using the Synchro 10 analysis software packages, which apply the methods described in the 2010 *Highway Capacity Manual*. For side-street stop-controlled intersections, average control LOS and total LOS for the worst movement is reported as "average control LOS (worst movement total LOS)."
6. Intersection delay calculated using HCM 2000 methods for non-standard NEMA phasing.
7. Delay decreases in the plus project scenarios as additional volume is added to the movements with a delay below the intersection average delay.
8. Delay decreases in the background no project scenario when compared to existing conditions as additional volume is added to the movements with a delay below the intersection average delay.
9. Delay decreases in the plus project scenarios as additional volume is added to the movements with a delay below the intersection average delay as well as the shift in traffic from the parking structure.

Source: Fehr & Peers, 2020.

With the addition of project traffic, all intersection would continue to operate at acceptable levels.

Background Conditions Deficiencies and Improvements

This section evaluates the intersection LOS results presented in **Table 14** and compares the results with established deficiency criteria. The Project was found to result in no operational deficiencies under the Background with Project conditions.

7. Cumulative Traffic Conditions

This chapter presents the transportation analysis under Cumulative Conditions and Cumulative with Project Conditions. Cumulative Conditions are defined as conditions prior to completion and occupancy of the Project. Traffic volumes for Cumulative Conditions are based on applying a growth rate to the existing volumes. Cumulative with Project Conditions are defined as Cumulative Conditions plus the net-added Project traffic.

Cumulative Street Infrastructure Improvements

As with Background Conditions, this scenario assumed that the newly proposed CVS Pharmacy on the southwest corner of the intersection of Soquel Drive and Hospital Driveway has been built. The southbound left-turn movement at this intersection will be prohibited during the AM and PM peak hours and all related vehicle trips were rerouted to the Hospital Drive-Commercial Crossing and Soquel Drive intersection.

Cumulative Traffic Forecasts

Year 2040 turning movement volumes were calculated in similar method to the background 2028 volumes. For the analysis, to be conservative, a growth rate of 1.15 percent was assumed. The 2028 turning movement volumes were calculated by applying the growth rate to the through movements along Soquel Drive and Soquel Avenue and rounding up the side street movements to the nearest ten, as presented on **Figure 10**. Project traffic was added to the Cumulative Conditions volumes to estimate Cumulative with Project Condition volumes, as presented on **Figure 11**.

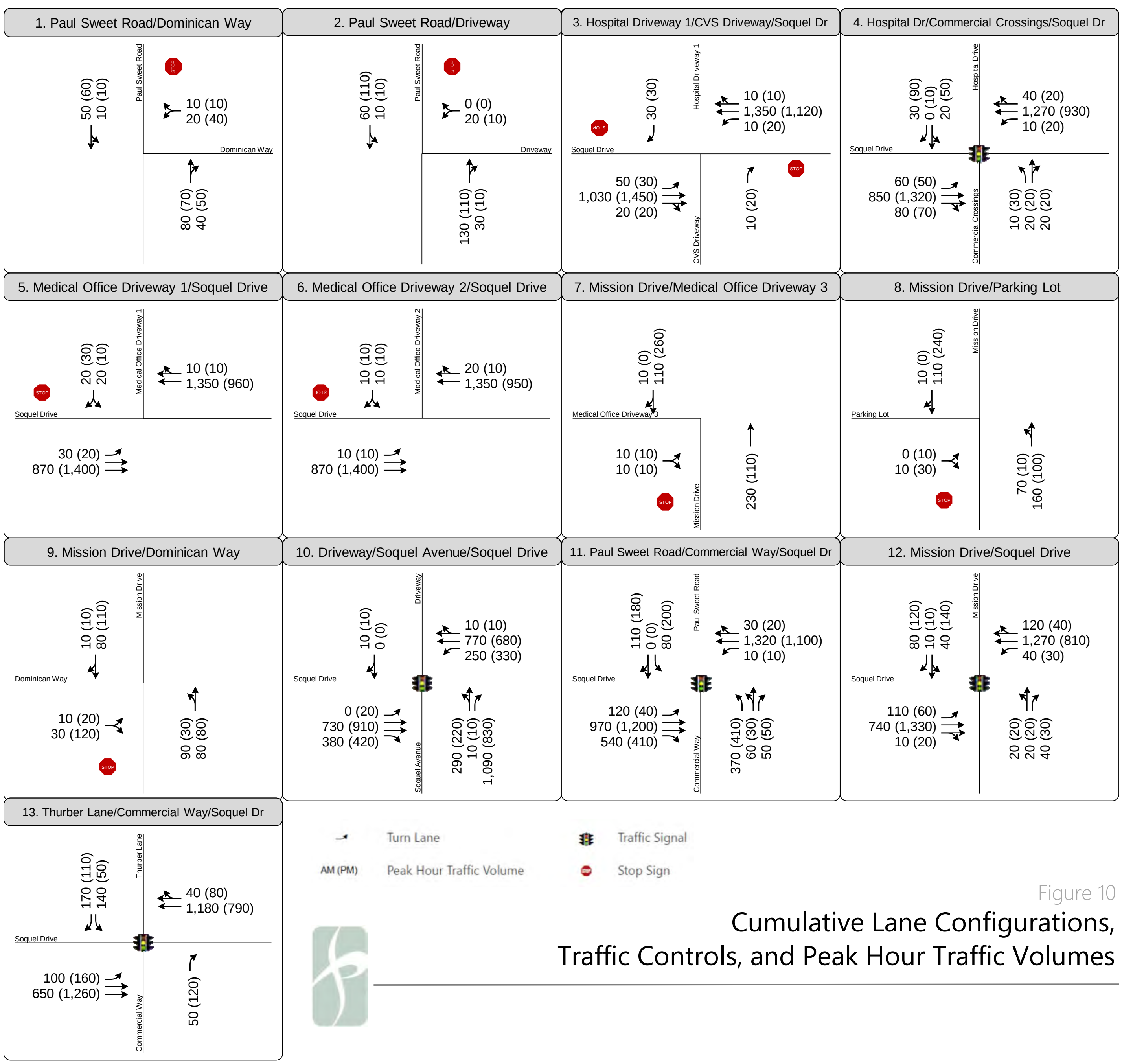


Figure 10

Cumulative Lane Configurations, Traffic Controls, and Peak Hour Traffic Volumes

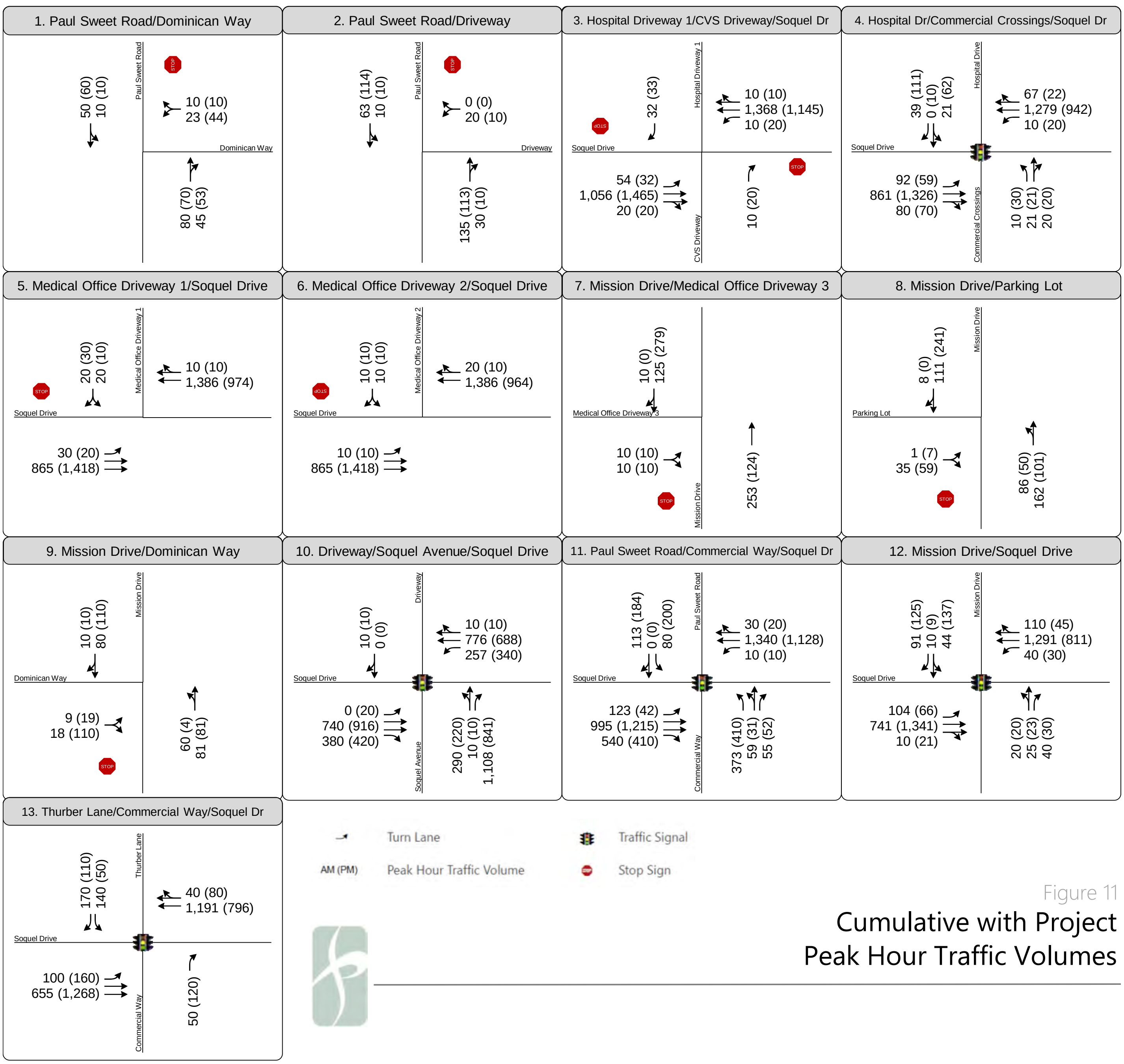


Figure 11

Cumulative with Project Peak Hour Traffic Volumes

Analysis of Cumulative Conditions

Cumulative Conditions and Cumulative with Project Conditions were evaluated using the same methods described in **Chapter 2**. The analysis results are presented in **Table 15**, based on the traffic volumes and lane configurations presented on **Figure 10** and **Figure 11**. In the Cumulative Condition, Soquel Avenue and Soquel Drive would degrade to an LOS E in the AM Peak hour. All other intersections would continue to operate at acceptable levels.

Table 15: Cumulative with Project Intersection Levels of Service

ID	Intersection	Control Type[1]	Jurisdiction (LOS Standard)[2]	Peak Hour[3]	Cumulative		Cumulative with Project	
					Delay[4]	LOS[5]	Delay[4]	LOS[5]
1	Paul Sweet Road and Dominican Way	SSSC	SCC (D)	AM PM	1.8 (9.7) 2.3 (9.7)	A (A) A (A)	1.8 (9.8) 2.4 (9.7)	A (A) A (A)
2	Paul Sweet Road and Hospital Driveway	SSSC	SCC (D)	AM PM	1.1 (10.3) 0.7 (10.1)	A (B) A (B)	1.1 (10.4) 0.7 (10.1)	A (B) A (B)
3	Soquel Drive and Hospital Driveway	SSSC	SCC (D)	AM PM	0.6 (14.9) 0.5 (17.7)	A (B) A (C)	0.6 (16.8) 0.6 (17.9)	A (C) A (C)
4	Commercial Crossings / Hospital Drive and Soquel Drive	Signal	SCC (D)	AM PM	9.7 11.1	A B	10.6 14.3	B B
5	Soquel Drive and Western Medical Office Driveway	SSSC	SCC (D)	AM PM	0.7 (29.6) 0.4 (18.4)	A (D) A (C)	0.7 (31.0) 0.4 (18.7)	A (D) A (C)
6	Soquel Drive and Eastern Medical Office Driveway	SSSC	SCC (D)	AM PM	0.3 (25.2) 0.2 (21.5)	A (D) A (C)	0.3 (26.2) 0.2 (21.9)	A (D) A (C)
7	Mission Drive and Medical Office Driveway	SSSC	SCC (D)	AM PM	0.7 (10.2) 0.5 (10.5)	A (B) A (B)	0.7 (10.4) 0.5 (10.7)	A (B) A (B)
8	Mission Drive and Hospital Driveway	SSSC	SCC (D)	AM PM	1.7 (9.0) 1.2 (10.2)	A (A) A (B)	2.5 (9.2) 2.3 (10.3)	A (A) A (B)
9	Mission Drive and Dominican Way	SSSC	SCC (D)	AM PM	3.6 (9.8) 4.4 (10.0)	A (A) A (B)	2.7 (9.7) 3.9 (9.8)	A (A) A (A)
10	Soquel Avenue/Driveway and Soquel Drive	Signal	Caltrans (D)	AM PM	**74.2** 36.7	**E** D	**77.7** 37.8	**E** D
11	Commercial Way/Paul Sweet Road and Soquel Drive/US-101 NB Ramps	Signal	SCC (D)	AM PM	30.4 31.3	C C	31.4 31.5	C C
12	Mission Drive and Soquel Drive[8]	Signal	SCC (D)	AM PM	26.7 50.1	C D	33.1 48.3	D D
13	Commercial Way/Thurber Lane & Soquel Drive[6]	Signal	SCC (D)	AM PM	10.5 8.1	B A	10.7 8.2	B A

Notes: **Bold text** indicates intersection operates at an unacceptable level of service.

1. Signal = signalized intersection; SSSC = side-street stop-controlled intersection.

2. AM = morning peak hour, PM = evening peak hour.
3. SCC = Santa Cruz County.
4. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the 2010 *Highway Capacity Manual* for signalized intersections and all-way stop-controlled intersections. For side-street stop-controlled intersections, average control delay and total delay for the worst movement is reported as "average control delay (worst movement total delay)."
5. LOS = Level of Service. LOS calculations conducted using the Synchro 10 analysis software packages, which apply the methods described in the 2010 *Highway Capacity Manual*. For side-street stop-controlled intersections, average control LOS and total LOS for the worst movement is reported as "average control LOS (worst movement total LOS)."
6. Intersection delay calculated using HCM 2000 methods for non-standard NEMA phasing.
7. Delay decreases in the plus project scenarios as additional volume is added to the movements with a delay below the intersection average delay.
8. Delay decreases in the cumulative no project scenario when compared to existing and background conditions as additional volume is added to the movements with a delay below the intersection average delay.

Source: Fehr & Peers, 2020.

The addition of project traffic would increase delay at the study intersections. With the addition of project traffic, the following intersection would degrade to an unacceptable operation:

- Soquel Avenue and Soquel Drive would degrade in the AM Peak hour for an intersection already operating at unacceptable levels.

Cumulative Conditions Deficiencies and Improvements

This section evaluates the intersection LOS results presented in **Table 15** and compares the results with established criteria previously summarized. The effectiveness of the improvements is shown in **Table 16**. The Project was found to result in one operational deficiency at the Soquel Avenue and Soquel Drive (Intersection 10) during the AM peak hour. The potential improvement at Soquel Avenue/Driveway and Soquel Drive would be to install an additional northbound right turn lane on Soquel Avenue with at least 60 feet of storage. The installation of an additional northbound right turn lane would result in acceptable intersection operations during both peak hours. The feasibility of this intersection improvement would require further investigation to confirm that the dual right turn lane could accommodate trucks.

A sensitivity test was conducted to show the effects of the reduced trip generation projected by Dominican Hospital using their estimate of new employees. The reduced hospital trip generation would result in 38 fewer vehicle trips in the AM peak hour and 32 fewer trips in the PM peak hour. Only three vehicle trips during the AM and PM peak hour would travel through Soquel Avenue/Driveway and Soquel Drive. With the reduced trip generation, Soquel Avenue/Driveway and Soquel Drive would continue operate at LOS E the AM peak hour.

Table 16: Cumulative with Project Recommendations Intersection Levels of Service

ID	Intersection	Control Type[1]	Peak Hour[2]	Cumulative		Cumulative with Project		Cumulative with Project Improvements		Cumulative with Project (Reduced Trips)	
				Delay[3]	LOS[4]	Delay[3]	LOS[4]	Delay[3]	LOS[4]	Delay[3]	LOS[4]
10	Soquel Avenue/Driveway and Soquel Drive	Signal	AM PM	**74.2** 36.7	**E** D	**77.7** 37.8	**E** D	18.0 23.1	B C	**74.3** 36.8	**E** D

Notes: **Bold text** indicates intersection operates at an unacceptable level of service.

1. Signal = signalized intersection.
2. AM = morning peak hour, PM = evening peak hour.
3. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the 2010 *Highway Capacity Manual* for signalized intersections.
4. LOS = Level of Service. LOS calculations conducted using the Synchro 10 analysis software packages, which apply the methods described in the 2010 *Highway Capacity Manual*.

Source: Fehr & Peers, 2020.

8. Site Access, Circulation and Parking

This chapter evaluates the site access and internal circulation for vehicles, bicycles, and pedestrians, and connections to key off-site pedestrian, bicycle, and transit facilities.

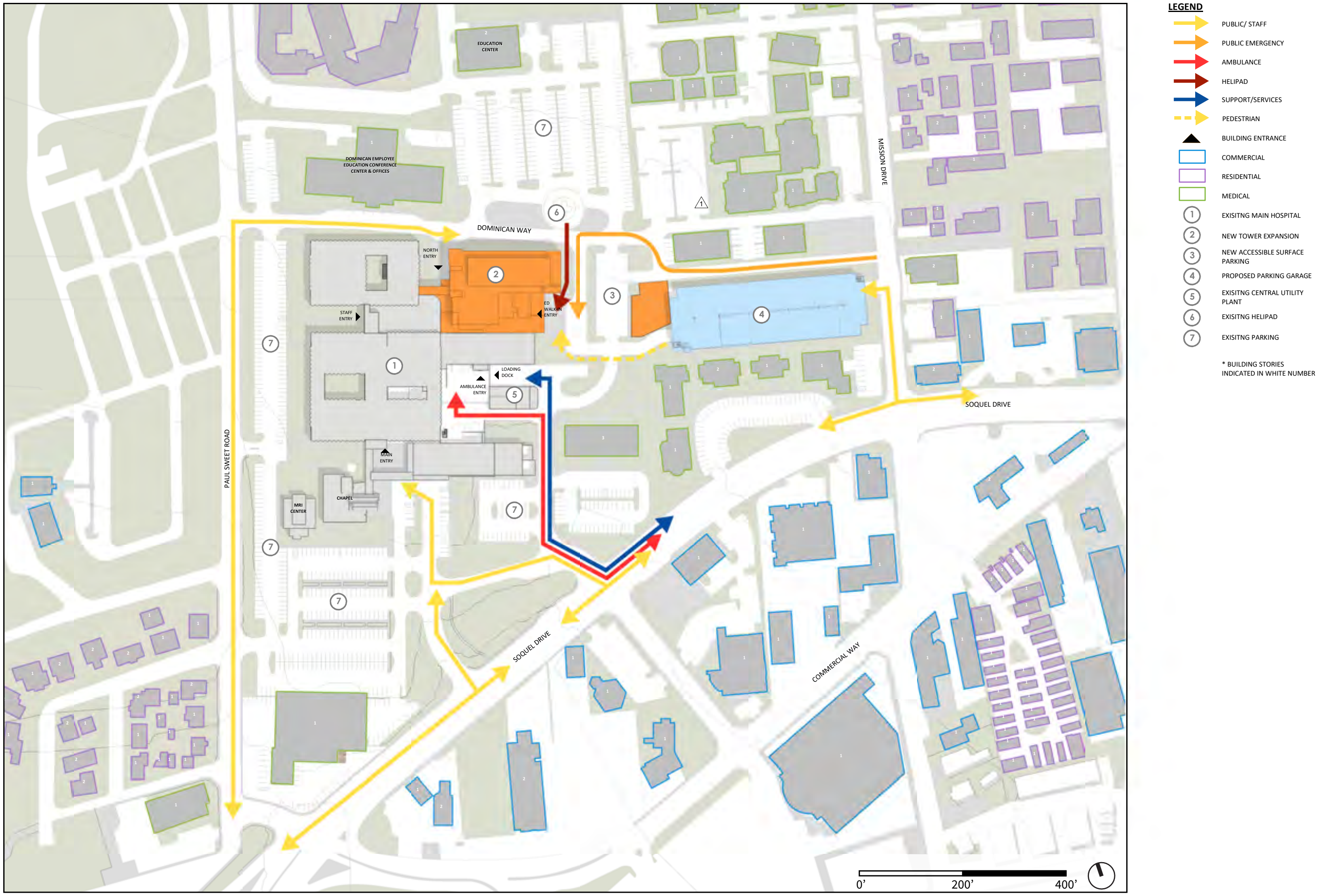
Vehicle Access

The Project site plan is shown in **Figure 12**. The key transportation network features are described below.

Vehicular access to the modernized Hospital would continue to be provided by Paul Sweet Road to the west, Soquel Drive to the south, and Mission Drive to the east. These streets would serve passenger vehicles, trucks, emergency vehicles, bicyclists, and pedestrians. These streets lead to bi-directional driveways that allow access to the various at-grade parking lots on campus. The new parking structure would be accessed via Mission Drive near the new hospital tower as well as an on-site entrance. A passenger pick-up/drop-off area is provided near the entrance to the hospital. Loading dock access is unchanged from its existing location south of the modernized hospital tower.

Emergency Vehicle Access

Emergency vehicle access to the site would be provided along Dominican Way and Hospital Driveway to access the emergency room entrance and the helicopter pad on Dominican Way. Additionally, emergency vehicles would have access to the site via most of the parking lot drive aisles. **Figure 12** illustrates the planned emergency vehicle access.



Source: DEVENNEY GROUP LTD., ARCHITECTS

Figure 12

Dominican Hospital Modernization Vehicle Access and Circulation

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Bicycle Circulation and Connections

Bicycles are allowed to circulate on the driveway aisle to access bicycle parking as shown in **Figure 3**. Bicyclist would connect with the bicycle lanes on Soquel Drive to travel east-west along Soquel. Bicyclists can also cross Soquel Drive at the existing signals located at Paul Sweet Road and Hospital Driveway to access land uses south of Soquel Drive. This would also provide access to the planned crossing of Highway 1 and other future transportation options such as enhanced bus service along Highway 1 (per concepts presented in the Sustainable Santa Cruz County (SSCC) Plan). Adjacent to the Project site along Paul Sweet Drive between Soquel Drive and Brookwood Drive, the SSCC Plan envisions an "active connector" street (see Figure 5-2 of the SSCC Plan). Although the cross-section for an active connector street is not defined in the SSCC Plan, this street would include a bicycle route with wayfinding or a bicycle lane (parking would need to be removed on one or both sides of the street).

Pedestrian Circulation

The existing Dominican Hospital campus includes sidewalks connecting each building to each other and to/from Paul Sweet Road, Soquel Drive, and Mission Drive. **Figure 3** shows the existing sidewalk system on campus. While **Figure 13** and **Figure 14** show the enhanced ADA paths that will be constructed with the Project. There are two ADA paths:

- <u>Enhanced Connection between Modernized Hospital and Soquel Drive Transit Stops</u>. This enhanced connection between the modernized hospital tower to the northern corner of the intersection of Hospital Driveway and Soquel Drive will feature an ADA compliant path. The path will be a direct connection to the sheltered transit stop located at the intersection of Hospital Drive and Soquel Drive. Crosswalks will be provided at the internal intersections along with curb ramps. This pathway will be illuminated at night. Directional signage will be provided to guide pedestrians to their destination on-campus. This enhanced connection implements one of the values in the Sustainable Santa Cruz County (SSCC) Plan (October 2014) – "access for all." Access for all is defined in the SSCC Plan as (SSCC page 5-2):

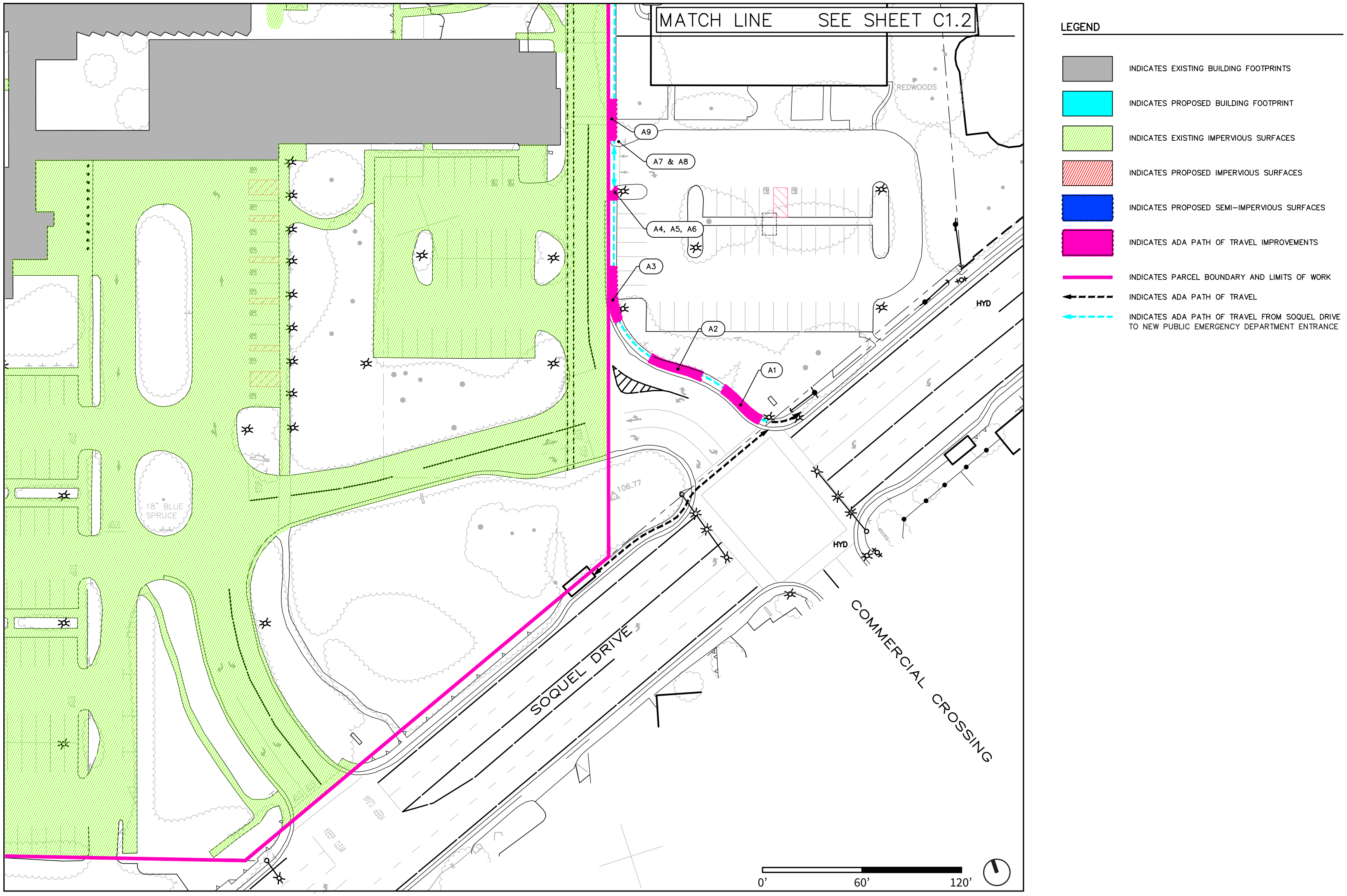
  > *Providing access to all destinations for all residents and visitors translates directly to the identification of improvements that would strengthen connectivity and proximity to employment and activity centers in the Plan area. Destinations include employment centers, community centers, schools, community buildings, and gathering places. Access is a person's ability to reach desired goods, services, and destinations typically needed on a daily or frequent basis, regardless of which travel mode one chooses.*

- <u>Enhanced Connection between Modernized Hospital and the Parking Structure</u>. This enhanced connection will feature an ADA path between the modernized hospital and the parking structure. This path will connect the accessible parking spaces within the parking structure. Crosswalks will be provided at the internal intersections along with curb ramps. This pathway will also be illuminated.

Wayfinding signage throughout the site is recommended to direct pedestrians to the ADA paths and to other destinations throughout the campus.

Parking

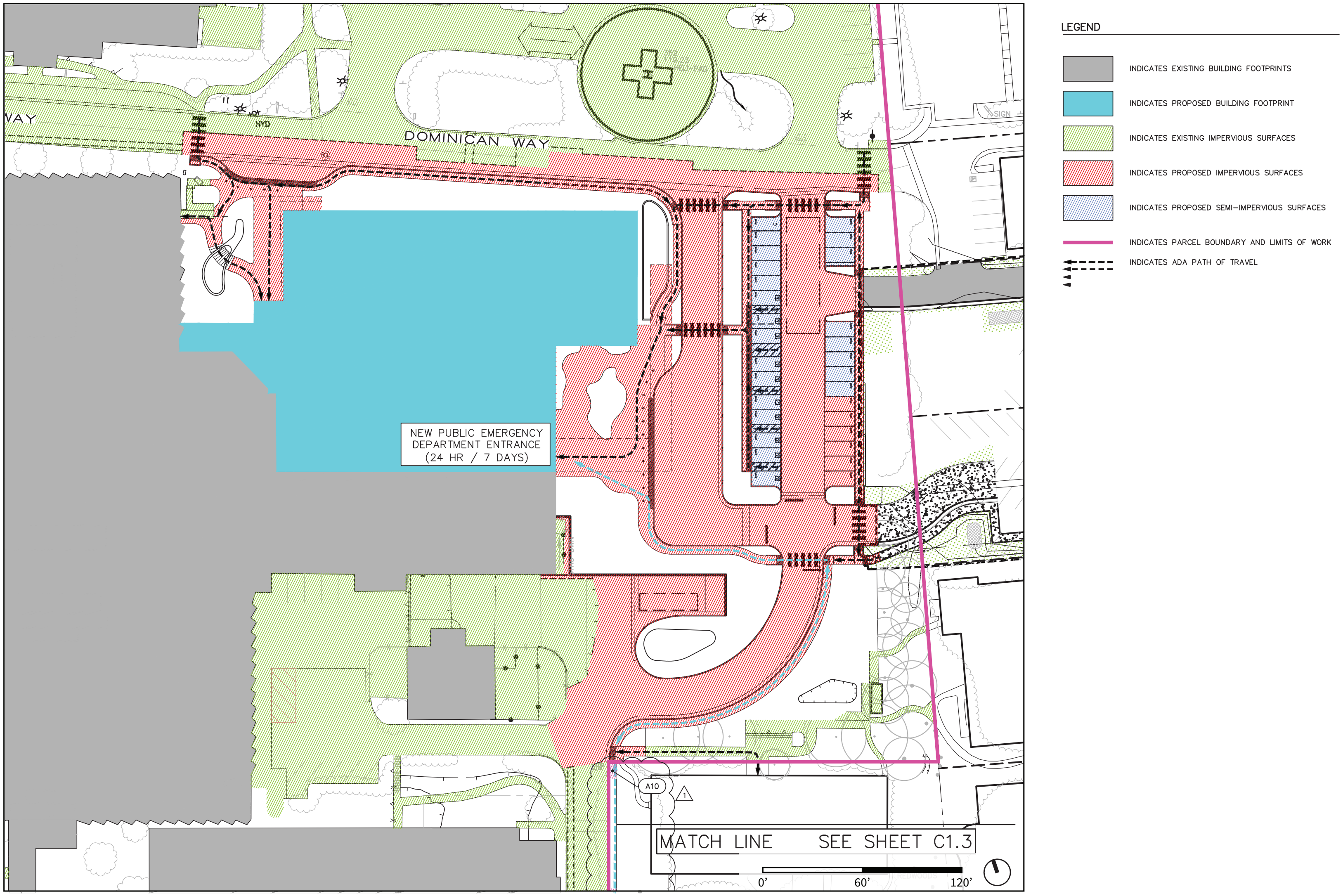
Based on the Project plan information from May 2020, the parking structure on the Project site will contain a total of 409 spaces. Furthermore, the new hospital tower will remove 147 surface parking lot spaces. **Appendix A** presents a Dominican Hospital on-site parking inventory and parking analysis. The net gain in parking spaces under project completion is 54 spaces when compared to existing conditions. The overall Dominican Hospital parking occupancy at 11:00 AM is projected to be 81 percent under this scenario.



Source: DEVENNEY GROUP LTD., ARCHITECTS

Figure 13

Transit Enhanced ADA Connection



Source: DEVENNEY GROUP LTD., ARCHITECTS

Figure 14

New Parking Structure ADA Connection

Appendix A:
Dominican Hospital May 2020 Study

The Dominican Hospital May 2020 study presents a summary of parking occupancy and driveway operations under: (1) Existing Conditions, (2) during parking structure construction, and (3) when construction is complete.

Dominican Hospital Modernization Transportation Study

Prepared for:
Devenney Group Ltd., Architects
Santa Cruz County

May 2020

SJ19-1925

FEHR & PEERS

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EXECUTIVE SUMMARY

This report presents the results of a focused transportation analysis for the proposed Dominican Hospital modernization, which will include an 84,054-square foot (s.f.) hospital expansion, renovation of 12,448 s.f. of medical office space, and the construction of a 411-space multi-level parking structure (defined as the Project). This analysis provides the following:

- A summary of parking occupancy and driveway operations under: (1) Existing Conditions, (2) during parking structure construction, and (3) with completion of the building renovation, building addition, and parking structure construction (Project Conditions); and

Project Description

Dominican Hospital is planning for the future and has identified the need to modernize to continue providing healthcare in Santa Cruz County at the highest level and to provide enhanced care capabilities. The main purpose for the hospital modernization is to enhance the patient room and operating room quality by converting existing semi-private rooms to private rooms and enlarging the current operating rooms. The combination of converting the existing semi-private rooms to private rooms and adding 60 new private patient's rooms will not increase the total number of patient beds. Dominican Hospital currently has 222 beds, and the modernization will result in total of 222 beds when the Project is completed. The proposed hospital modernization is presented on **Figure 1**.

Study Scenarios

The modernization of the Dominican Hospital will not increase the number of patient beds, but rather improve the quality of services. Therefore, this study assumes that the hospital will not attract additional patient and visitor vehicle trips with the modernization project and there will be no increase in trips during the morning and evening peak hours under Project Conditions. However, there will be changes in site travel patterns due to the proposed changes to parking lots, site access, and the internal circulation system. This study evaluates how site access and circulation will change with the proposed Project.

The operations of several study intersections were analyzed during the mid-week morning (AM) and evening (PM) peak hours under the following scenarios:

Scenario 1: *Existing Conditions*: Existing parking inventory and parking demand, existing trip generation, and existing traffic volumes obtained from counts conducted in June 2019.

Scenario 2: *Existing with Parking Structure Construction Conditions*: Scenario 1 parking demand and volumes with the effects of constructing a 411-space parking structure on Lot 6.

Scenario 3: *Existing with Project Conditions***:** Scenario 1 parking demand and volumes with the effects of the hospital modernization and new parking structure.

Trip Generation

The existing vehicle trip generation of the hospital for the mid-week AM and PM peak hours was estimated based on counting all vehicles entering and exiting Dominican Hospital driveways. The results of the counts were 548 total trips during the AM peak hour (390 inbound and 158 outbound) and 585 total trips during the PM peak hour (196 inbound and 389 outbound). Trip generation rates for the existing uses were calculated using these volumes and the existing occupied square footage for the site. These trip generation rates were compared to rates in the Institute of Transportation Engineers' (ITE) *Trip Generation* manual.

Parking Supply and Occupancy Findings

Existing Conditions

A parking inventory was conducted for the site. Based on the parking inventory, there are total of 1,045 parking spaces available on-site. Parking occupancy surveys were conducted to estimate the hospital parking demand throughout a typical weekday.

- The overall parking demand for all users' peaks at 11:00 AM when the total parking occupancy reaches 85 percent; it remains relatively high until 4:00 PM.
- The patient parking demand peaks at 9:00 AM with 75 percent occupancy of patient spaces. It decreases to 40 percent by noon and then increases to around 60 percent until 3:00 PM.

Existing with Parking Structure Construction Conditions

During the construction of the parking structure, there will be a loss of 210 staff parking spaces with the closure of parking lot 6. Therefore, a total of 835 spaces (1,045-210=835) will be available on-site. Under this scenario, parking lots 1 and 9 will convert 70 spaces (in total) to staff spaces. The hospital will use a temporary offsite parking lot to accommodate the remaining spaces from lot 6 (140 spaces). As a result, the overall Dominican Hospital parking occupancy at 11:00 AM is projected to be 90 percent during construction.

Existing with Project Conditions

The new parking structure will have 411 parking spaces and the resized parking lot 9 will have 28 parking spaces, a reduction of 97 (125-28=97) spaces. Parking lot 8 has 50 parking spaces under Existing Conditions and it will be removed under this scenario due to the Dominican Hospital building expansion. When construction is complete, there will be total of 1,099 (835+411-50-97=1,099) on-site parking spaces. The net gain in parking spaces is 54 compared to Existing Conditions. The overall Dominican Hospital parking occupancy at 11:00 AM is projected to be 81 percent under this scenario.

Intersection Operations Findings

A total of 12 intersections were evaluated for near-term operational deficiencies. With the exception of the Mission Drive and Soquel Drive intersection, all study intersections operate at LOS C or better under Existing, Existing with Parking Structure Construction, and Existing with Project Conditions during both AM and PM peak hours. Mission and Soquel Drive intersection operates at LOS B and LOS D during AM and PM peak hour, respectively, under all three study scenarios.

As a result, all study intersection operations under Existing, Existing with Parking Structure Construction, and Existing with Project Conditions are considered acceptable.

1. INTRODUCTION

This report presents the results of a transportation analysis conducted for the proposed modernization of Dominican Hospital (the Project) located at 1555 Soquel Drive in Santa Cruz, California. The Project entails renovating12,448 square feet (s.f.) of the existing hospital, adding 84,054 s.f., and constructing a 411-space parking structure. The analysis provides the following:

- Existing site vehicle trip generation,
- A summary of parking occupancy and driveway operations under: (1) Existing Conditions, (2) during parking structure construction, and (3) with completion of building renovation, building addition, and parking structure construction (Project Conditions); and
- An evaluation of vehicle miles traveled (VMT) for the Project.

The study also evaluates the Project's effects on the traffic operations of the hospital driveways and the nearby roadway system, and on the on-site parking supply. It was conducted following the transportation analysis guidelines for Santa Cruz County.

Project Description

Dominican Hospital is planning for the future and has identified a need to modernize to continue providing healthcare in Santa Cruz County at the highest level and to provide enhanced care capabilities. The main purpose for the hospital modernization project is to enhance patient and operating room quality by converting existing semi-private rooms to private rooms and replace existing operating rooms. The combination of converting the existing semi-private rooms to private rooms and adding 60 new private patient's rooms will not increase the total number of licensed patient beds. Dominican Hospital currently has 222 licensed patient beds. The modernization will result in a total of 222 licensed patient beds when the Project is completed.

The Project includes the following components:

- Renovation of 12,448 s.f. in the existing surgical department for patient's rooms
- Addition of 84,054 s.f. in a new hospital tower
- Construction of a 411-space parking structure

The The proposed hospital expansion will be located on the northeast side of the existing hospital building. It will consist of three levels plus a basement floor containing storage and mechanical equipment. This hospital modernization will replace eight existing operating rooms with 10 new operating rooms on the ground level and provide 60 new patient rooms on two levels (30 private patient rooms per floor) by converting of the existing facility's semi-private patient rooms into private patient rooms, thus not increasing the total number of licensed patient beds for the hospital. The proposed 411-space parking structure will be located on an employee parking lot north of the 1661 Soquel Drive medical office building. The site plan for the proposed hospital modernization is presented on **Figure 1**.

The 1575 and 1595 Soquel Drive Medical Office Buildings (MOBs) are located inside the Dominican Hospital area, which means the trip generation and parking analysis includes activity from the hospital and these MOBs. They have a shared parking agreement with the hospital that allows use of Dominican Hospital's on-site parking spaces. The MOB at 1661 Soquel Drive does not have a shared parking agreement with Dominican Hospital. Therefore, this study does not include the traffic or parking from 1661 Soquel Drive. The Project summary is presented **Table 1.**

Table 1: Dominican Hospital Existing and Project Conditions Building Areas[1]

Use	Existing Conditions[2]	Hospital Modernization	Project Conditions
Main Hospital	236,371	84,054	320,425
Employee Education Conference Center & Offices	19,825		19,825
Education Center	19,558		19,558
1575 Soquel MOB	7,652		7,652
1595 Soquel MOB	33,876		33,876
Total	**317,282**	**84,054**	**401,336**

Notes:
1. All values are represented in square footage.
2. Breakdown of existing occupied hospital and medical office uses provided by the hospital.

Source: Fehr & Peers, 2020.

Analysis Scenarios

The parking occupancy and driveway operations were analyzed under the following scenarios:

Scenario 1: *Existing Conditions* – Existing parking inventory and parking demand, existing trip generation, and existing traffic volumes obtained from counts conducted in June 2019.

Scenario 2: *Existing with Parking Structure Construction Conditions* – Scenario 1 parking demand and volumes with the effects of constructing a 411-space parking structure on lot 6.

Scenario 3: *Existing with Project Conditions* – Scenario 1 parking demand and volumes with the effects of the hospital modernization and parking structure.

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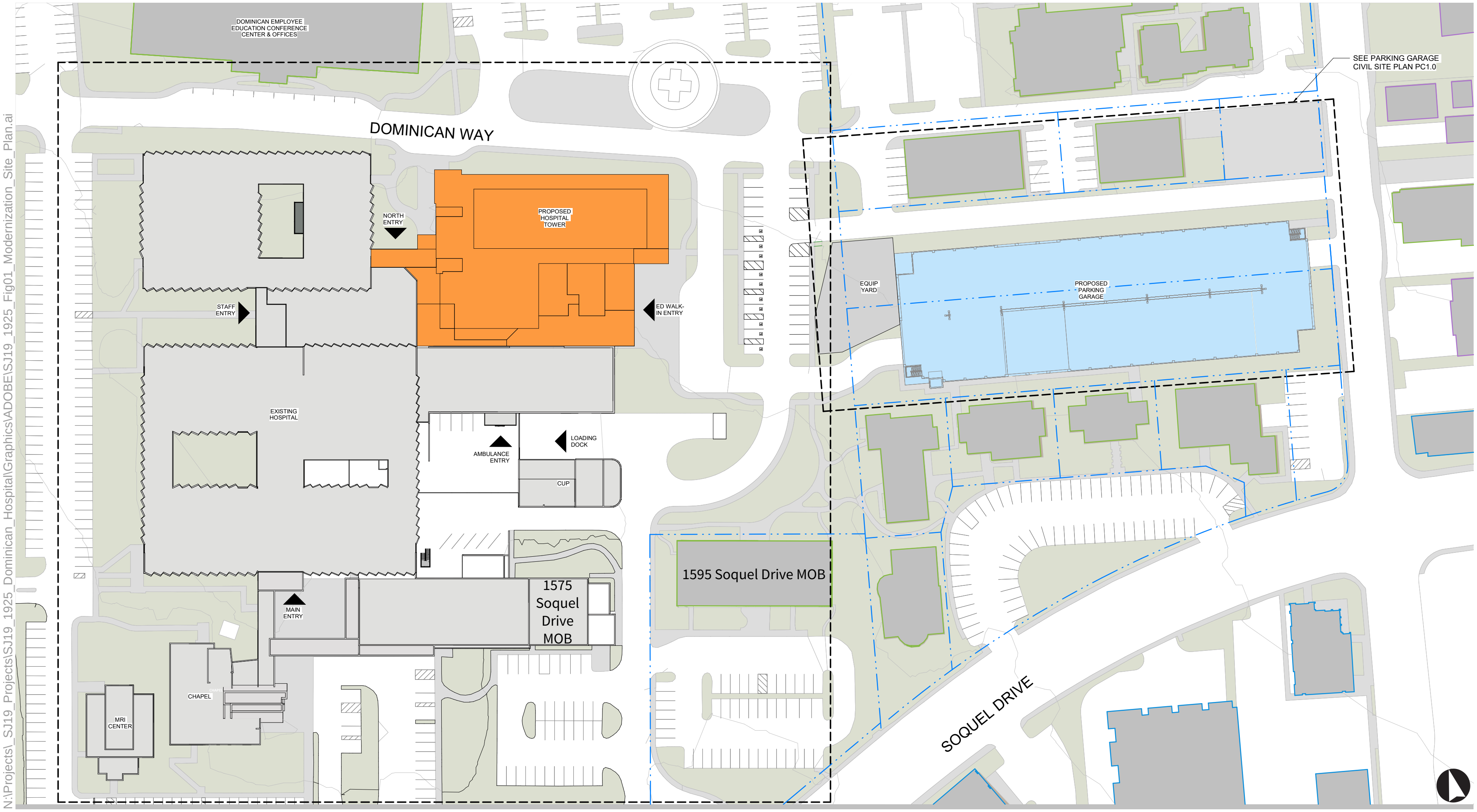


Proposed Hospital Tower

Proposed 411 space Parking Garage

Figure 1

Dominican Hospital Modernization Site Plan

Study Area

On-Site Parking

Parking is a key issue for the existing and future use of Dominican Hospital. An inventory of the existing parking spaces and a parking occupancy survey was conducted for the twelve on-site surface parking lots and survey results are included in **Appendix C**.

Intersections

The Project's effect on the study area intersection operations was evaluated for the morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods. The modernization of the Dominican Hospital is not anticipated to increase the overall traffic to and from the site; however, there will be localized changes to hospital traffic during construction of the parking structure when the on-site parking supply will be reduced. Plus there will be a redistribution of traffic when the Project is completed, which may change circulation and access patterns.

The following 12 intersections (shown in **Figure 2**) were evaluated.

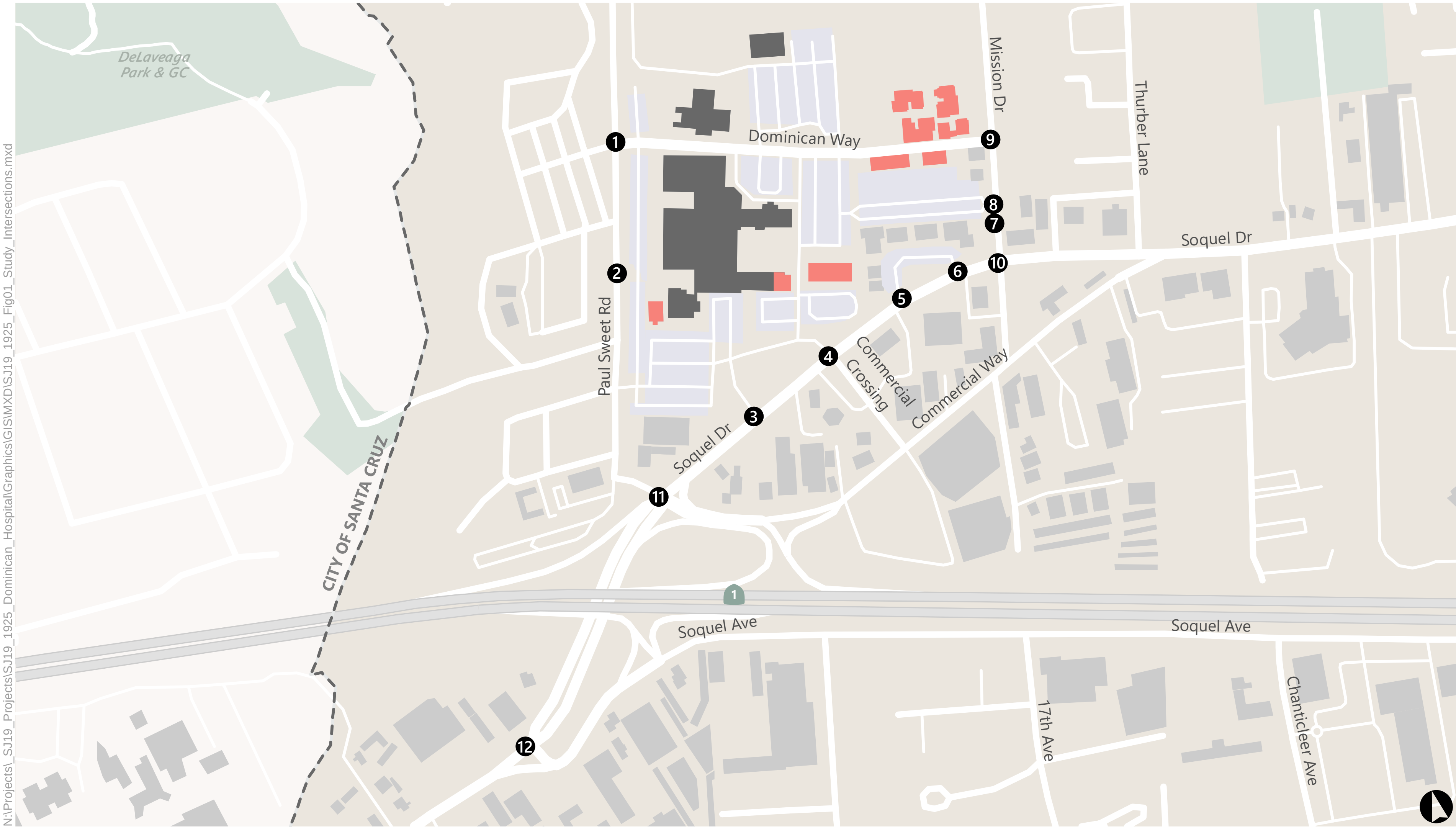
	Intersection	Jurisdiction
1.	Paul Sweet Road and Dominican Way	Santa Cruz County
2.	Paul Sweet Road and Employee Parking Lot C Driveway	Santa Cruz County
3.	Paul Sweet Road-Commercial Way and Soquel Drive	Caltrans
4.	Hospital Driveway and Soquel Drive	Santa Cruz County
5.	Hospital Drive-Commercial Crossings and Soquel Drive	Santa Cruz County
6.	1661 Soquel Medical Office Driveway 1 and Soquel Drive	Santa Cruz County
7.	1661 Soquel Medical Office Driveway 2 and Soquel Drive	Santa Cruz County
8.	Mission Drive and Soquel Drive	Santa Cruz County
9.	Mission Drive and Medical Office Driveway	Santa Cruz County
10.	Mission Drive and Project Driveway	Santa Cruz County
11.	Mission Drive and Dominican Way	Santa Cruz County
12.	Soquel Drive and Soquel Avenue	Santa Cruz County

Report Organization

This report is divided into five additional chapters as described below:

- **Chapter 2 – Technical Approach and Analysis Methods** presents the transportation analysis methods used to evaluate study intersection operations and parking demand and occupancy including data collection methods. In addition, the level of service thresholds for acceptable intersection operations are presented for each jurisdiction.

- **Chapter 3 – Existing Conditions** discusses the Existing Conditions of the roadway facilities, traffic volumes, intersection operations, field observations, parking supply, parking occupancy, and hospital vehicle trip generation.
- **Chapter 4 – Existing with Parking Structure Construction Conditions** describes the traffic forecasts while the parking structure is under construction and presents the transportation analysis for Existing with Parking Structure Construction Conditions.
- **Chapter 5 – Existing with Project Conditions** presents the transportation analysis for Existing with Project Conditions.



Study Intersections
Hospital Buildings
Hospital Campus

Figure 2

Study Intersections

2. TECHNICAL APPROACH AND ANALYSIS METHODS

This chapter describes the transportation analysis methods used to evaluate study intersection operations and parking demand.

Technical Approach

Site specific parking and vehicle trip generation data was used in this transportation analysis. Parking survey data was used to inventory the parking supply and to determine parking demand and occupancy. Hospital driveway and intersection count volumes were used to determine the existing trip generation of the hospital and in the intersection operations analysis. The existing trip generation was adjusted to represent the traffic volumes during construction when the on-site parking is reduced.

Data Collection

Specifics of the data collection are described below.

Parking Inventory and Occupancy Survey

Parking is a key issue for this project. Fehr & Peers conducted parking inventory and occupancy surveys at 12 parking lots. The parking inventory classified the spaces into the following categories:

- patient,
- staff,
- general,
- valet,
- stroke,
- visitor,
- pick-up/drop-off,
- expectant mothers,
- emergency,
- Accessible Parking Spaces (ADA),
- Magnetic Resonance Imaging (MRI),
- Hybrid Electric Vehicle (HEV),
- ST-Elevation Myocardial Infarction (STEMI)
- 1575 medical office building,
- 1595 medical office building, and
- shuttle.

To assess the existing level of parking demand on-site, a parking occupancy survey was completed over a two-day period - June 5, 2019 (Wednesday) and June 6, 2019 (Thursday). The numbers of parked vehicles were recorded on an hourly basis from 7:00 AM to 7:00 PM. The results of the parking inventory and occupancy survey are provided in the Existing Conditions chapter.

Intersection and Driveway Counts

The trip generation surveys were conducted via hospital driveway counts during the morning peak period (7:00 AM to 9:00 AM) and evening peak period (4:00 PM to 6:00 PM). The counts captured the traffic volumes entering or exiting the hospital. On the same day (June 6, 2019), the study intersections were counted. The driveway and intersection counts were collected while local schools were in-session and no unusual traffic events were observed. All the counts include vehicles, bicycles, and pedestrians (see **Appendix A**).

Intersection Operations Analysis Methods

The operations of roadway facilities are described with the term level of service (LOS). LOS is a qualitative description of traffic flow based on factors such as speed, travel time, delay and freedom to maneuver. Six levels are defined from LOS A, which reflects free-flow conditions where there is very little interaction between vehicles, to LOS F, where the vehicle demand exceeds the capacity and high levels of vehicle delay result. LOS E represents “at-capacity” operations. When traffic volumes exceed the capacity at an intersection, vehicles may wait through multiple signal cycles before traveling through the intersection; these operations are designated as LOS F.

Santa Cruz County desires a LOS C standard for its intersections but accepts LOS D operations as the minimum acceptable standard at physically constrained intersections or roadways.[1] Caltrans District 5 standard for its intersections is on the cusp of LOS C/D (in effect a LOS C standard).

Signalized Intersections

The method described in Chapter 18 of the *2010 Highway Capacity Manual* (HCM) (Transportation Research Board) was used to prepare the level of service calculations for the study intersections. This level of service method analyzes a signalized intersection’s operation based on average control delay per vehicle. Control delay includes the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay is calculated using Synchro 9.0 analysis software and is correlated to a level of service designation as shown in **Table 2**.

[1] Santa Cruz County General Plan, 3.12.1 Level of Service (LOS) Policy.

Table 2: Signalized Intersection Level of Service Definitions

Level of Service	Description	Average Control Delay per Vehicle (seconds)
A	Operations with very low delay occurring with favorable progression and / or short cycle lengths.	≤ 10.0
B	Operations with low delay occurring with good progression and / or short cycle lengths.	10.1 to 20.0
C	Operations with average delays resulting from fair progression and / or longer cycle lengths. Individual cycle failures begin to appear.	20.1 to 35.0
D	Operations with longer delays due to a combination of unfavorable progression, long cycle lengths, and high volume-to-capacity (V / C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	Operations with high delay values indicating poor progression, long cycle lengths, and high V / C ratios. Individual cycle failures are frequent occurrences.	55.1 to 80.0
F	Operations with delays unacceptable to most drivers occurring due to over-saturation, poor progression, or very long cycle lengths.	> 80.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2010.

Unsignalized Intersections

Operations of the unsignalized study intersections and roundabouts were evaluated using the method contained in Chapters 19, 20, and 21 of the *2010 HCM* and calculated using Synchro analysis software. Level of service ratings for stop-sign controlled intersections are based on the average control delay expressed in seconds per vehicle. At two-way or side-street-stop controlled intersections, control delay is calculated for each movement, not for the intersection as a whole. For approaches composed of a single lane, control delay is computed as the average of all movements in that lane. For all-way stop-controlled and roundabout locations, a weighted average delay for the entire intersection is presented. **Table 3** summarizes the relationship between delay and level of service for unsignalized intersections.

Table 3: Unsignalized Intersection Level of Service Definitions

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delay.	≤ 10.0
B	Short traffic delay.	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 with intersection capacity exceeded.	> 50.0

Sources: *Highway Capacity Manual*, Transportation Research Board, 2010.

Additionally, the *California Manual on Uniform Traffic Control Devices* (CA MUTCD) peak-hour volume signal warrant was applied to unsignalized intersections operating unacceptably to assess whether signalization could be warranted.[2]

[2] Warrant 3 – **Peak hour vehicle volume** This warrant determines if the minor street traffic suffers undue delay when entering or crossing the major street for a minimum of one hour of an average day. This is based on the major street left-turn volume, the higher-volume minor-street approach volume, and calculated delay for vehicles on the higher-volume minor-street approach.

3. EXISTING CONDITIONS

This chapter discusses the Existing Conditions of the roadway facilities, the results of the parking inventory and occupancy surveys, the Dominican Hospital vehicle trip generation, existing intersection operations, and field observations.

Street Network

The existing street network is illustrated in **Figure 2**. Dominican Hospital is located on Soquel Drive between Mission Drive and Paul Sweet Road and has multiple access driveways on these roadways. State Route 1 provides regional access to Dominican Hospital.

State Route (SR) 1 is state highway in Santa Cruz County, providing access to Watsonville and Monterey to the south, and to San Francisco to the north. Near the Project site, the freeway has an east-west alignment with two freeway lanes in each direction and a posted speed limit of 65 miles per hour (mph). Dominican Hospital is located just north of the Soquel Drive interchange with SR 1.

Soquel Drive is a four-lane, east-west arterial roadway that extends from Soquel Avenue west of SR 1 east to Rio Del Mar Boulevard. Dominican Hospital has one signalized entrance on Soquel Drive at Commercial Crossing and another unsignalized entrance just west of Commercial Crossing. Soquel Drive also has designated bike lanes striped in both directions. The posted speed limit on Soquel Drive near the Project is 35 mph.

Soquel Avenue is a two to four-lane, east-west arterial roadway connecting Santa Cruz, Live Oak and Capitola. This street is south of SR 1. Southbound SR 1 on and off-ramps connect to Soquel Avenue between the Soquel Drive and 17th Avenue Intersections. The posted speed limit on Soquel Avenue is 35 mph.

Mission Drive is a two-lane, collector street that connects the neighborhood north and east of Dominican Hospital with Soquel Drive. Two Dominican Hospital driveways provide access to/from Mission Drive at: (1) at Dominican Way and (2) between Dominican Way and Soquel Drive (the northern-most driveway will provide access to the proposed parking structure). The posted speed limit on Mission Drive is 25 mph.

Paul Sweet Road is a two-lane street connecting residents north of Santa Cruz and Dominican Hospital to Soquel Drive. The hospital has two driveways on Paul Sweet Road. The driveway at Paul Sweet Road and Salisbury Drive has been closed. The posted speed limit on Paul Sweet Road project is 25 mph.

Parking Inventory and Occupancy

This section describes the existing parking inventory (or supply) and occupancy for Dominican Hospital.

Parking Inventory

Table 4 and **Figure 3** display the existing parking inventory by lot and category for Dominican Hospital. Spaces are categorized as Patient, Staff, Americans with Disabilities Act (ADA) or accessible, General, 1575 medical office building (MOB), 1595 medical office building (MOB), or Reserved (i.e., a category that includes parking spaces reserved for Magnetic Resonance Imaging (MRI), valet, Hybrid Electric Vehicle (HEV), emergency, ST-Elevation Myocardial Infarction (STEMI), stroke, visitor, pick-up/drop-off, expectant mothers, and shuttle.).

Table 4: Existing Parking Inventory by Parking Category

Parking Location[2]	Parking Category (Number of Spaces)[1]							Total Parking Supply
	Patient	Staff	ADA[3]	General	Reserved[4]	1575 MOB	1595 MOB	
Lot 1	0	0	3	149	23	0	0	175
Lot 2	0	46	0	0	0	0	0	46
Lot 3	0	83	0	0	0	0	0	83
Lot 4	0	0	0	28	0	0	0	28
Lot 5	0	188	8	28	7	0	0	231
Lot 6	0	210	0	0	0	0	0	210
Lot 8	5	0	1	0	44	0	0	50
Lot 9	23	0	0	0	0	102	0	125
Lot 10	0	0	4	0	0	39	0	43
Lot 11	0	0	8	0	14	0	0	22
Lot 12	0	0	4	0	0	0	28	32
Total	28	527	28	205	88	141	28	1,045

Notes:
1. Parking inventory collected on Wednesday, June 6, 2019.
2. 1661 Soquel Drive MOB is served by Lot 7 and was not included in this table
3. ADA = Americans with Disabilities Act or Accessible Parking Spaces
4. Reserved parking includes parking reserved for MRI, valet, HEV, emergency, STEMI, stroke, visitor, pick-up/drop-off, expectant mothers, and shuttle.

Source: Fehr & Peers, 2020.

As displayed in **Table 4** and **Figure 3**, Dominican Hospital has a total parking supply of 1,045 spaces. Of these, 141 spaces are designated for 1575 Soquel and 28 spaces are designated for 1595 Soquel.

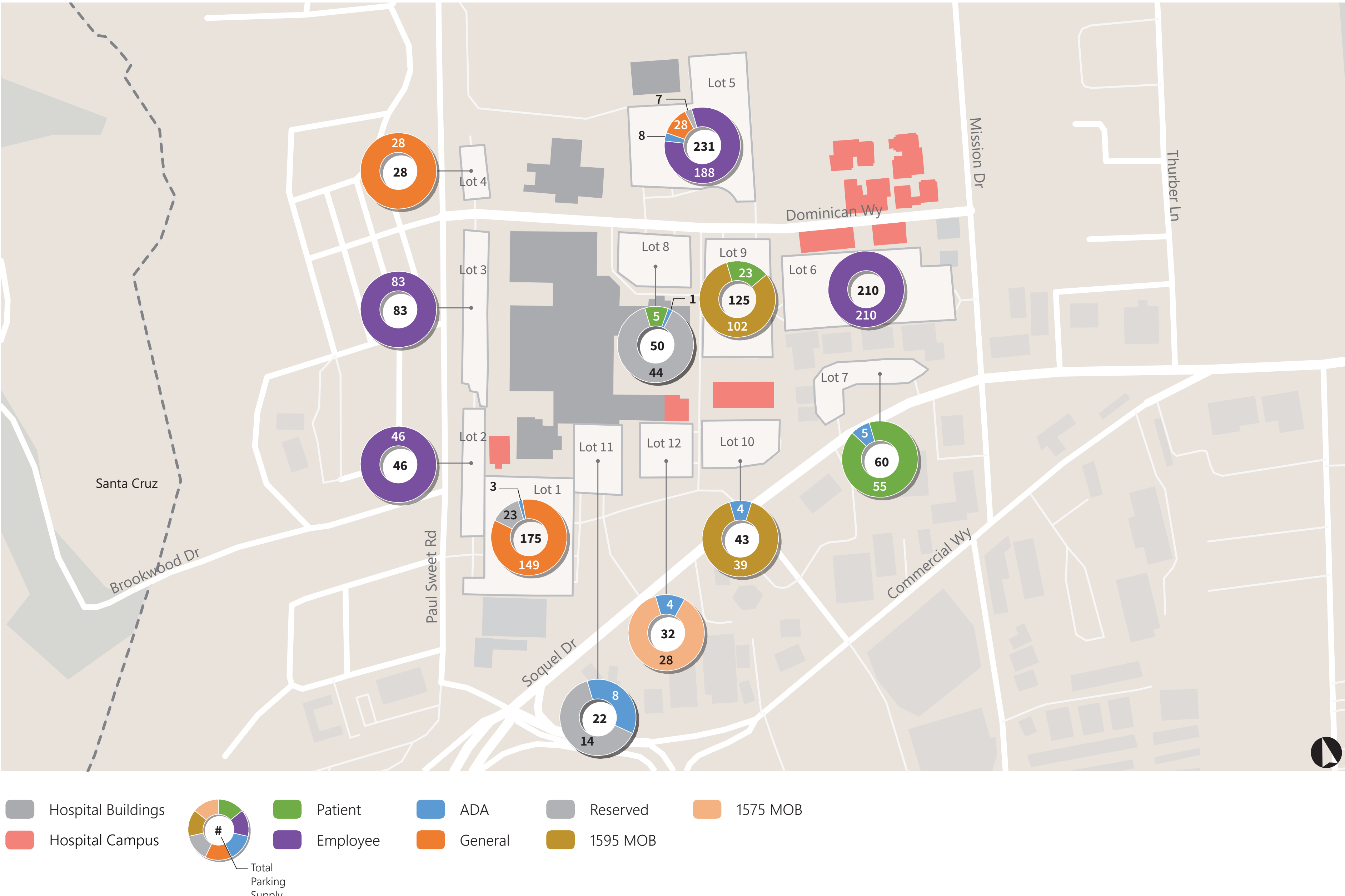
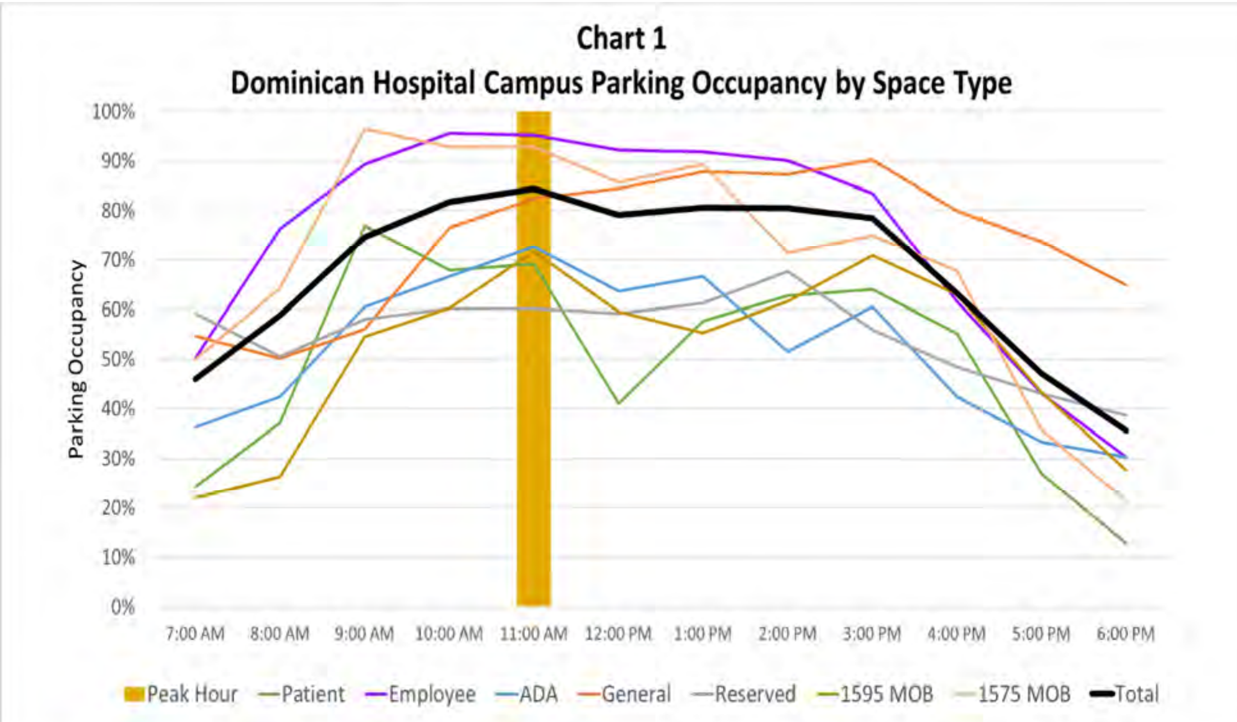


Figure 3

Existing Parking Supply

Parking Occupancy by Category and Time of Day

The numbers of parked vehicles observed during the surveys represent the parking demands. The parking demands for each space type were divided by the corresponding parking supplies to calculate the parking occupancy by space type and time of day. **Chart 1** displays the results for each of the space categories described above and for the hospital as a whole.



As displayed in **Chart 1**, employee and general spaces reach peaks of almost 100 percent occupancy during select times. Patient, ADA, MOB, and reserved spaces are around 50-75 percent occupied for most of the day. The chart shows that the peak parking period for general spaces starts around 10:00 AM and ends at 4:00 PM and peaks at 3:00 PM with around 90 percent occupancy. This chart indicates that employee parking peaks at 10:00 AM with around 95 percent occupancy and it decreases sharply after 3:00 PM. Overall the patient peak parking period starts at 9:00 AM and ends at 3:00 PM; however, the patient parking has a lower occupancy rate at noon with around 40 percent occupancy.

Peak Parking Occupancy by Lot

The parking occupancy survey results indicate that the overall Dominican Hospital parking demand peaks at 11:00 AM. **Table 5** and **Figure 4** display the weekday peak parking occupancy by lot. **Table 5** also presents the information by parking space category.

Table 5: Existing Peak Parking Demand and Occupancy by Lot

Parking Locations	Peak Demand by Parking Category (No. of Parked Vehicles at 11:00 AM)									Occupancy
	Patient	Staff	ADA	General	Reserved[1]	1575 MOB	1595 MOB	Total Demand	Total Parking Supply	
Lot 1	0	0	3	113	8	0	0	124	175	71%
Lot 2	0	43	0	0	0	0	0	43	46	**93%**
Lot 3	0	70	0	0	0	0	0	70	83	84%
Lot 4	0	0	0	28	0	0	0	28	28	**100%**
Lot 5	0	180	5	28	7	0	0	220	231	**95%**
Lot 6	0	209	0	0	0	0	0	209	210	**100%**
Lot 8	0	0	1	0	35	0	0	36	50	72%
Lot 9	15	0	0	0	0	64	0	79	125	63%
Lot 10	0	0	4	0	0	37	0	41	43	**95%**
Lot 11	0	0	6	0	6	0	0	12	22	55%
Lot 12	0	0	2	0	0	0	26	28	32	88%
Total	15	502	21	169	56	101	26	890	1,045	85%

Notes:

1. Reserved parking includes parking reserved for MRI, valet, HEV, emergency, STEMI, stroke, visitor, pick-up/drop-off, expectant mothers, and shuttle.

Bold percentage indicates parking lot is more than 90% full, which is considered a peak design parking activity level above which it is difficult to find a parking space quickly causing additional vehicle circulation and waiting time.
Source: Fehr & Peers, 2020.

As displayed in **Table 5** and **Figure 4**, Dominican Hospital overall parking space occupancy is 85 percent during the peak hour under Existing Conditions. Parking lots 2, 4, 5, 6, and 10 are at or close to 100 percent occupancy. Lots 1, 8, 9, and 11 have lower occupancies during the peak parking period. Parking lots with employee parking such as lots 2, 5, and 6 all experience an occupancy above 90%. Lot 4 has the highest average parking occupancy rate of 100% during weekday peak hour which consists of all general parking. Lot 9 has the lowest average parking occupancy at 63% which consists of patient and 1595 Soquel Drive medical office parking. The parking occupancy table for each lot by time of day is attached in **Appendix D**.

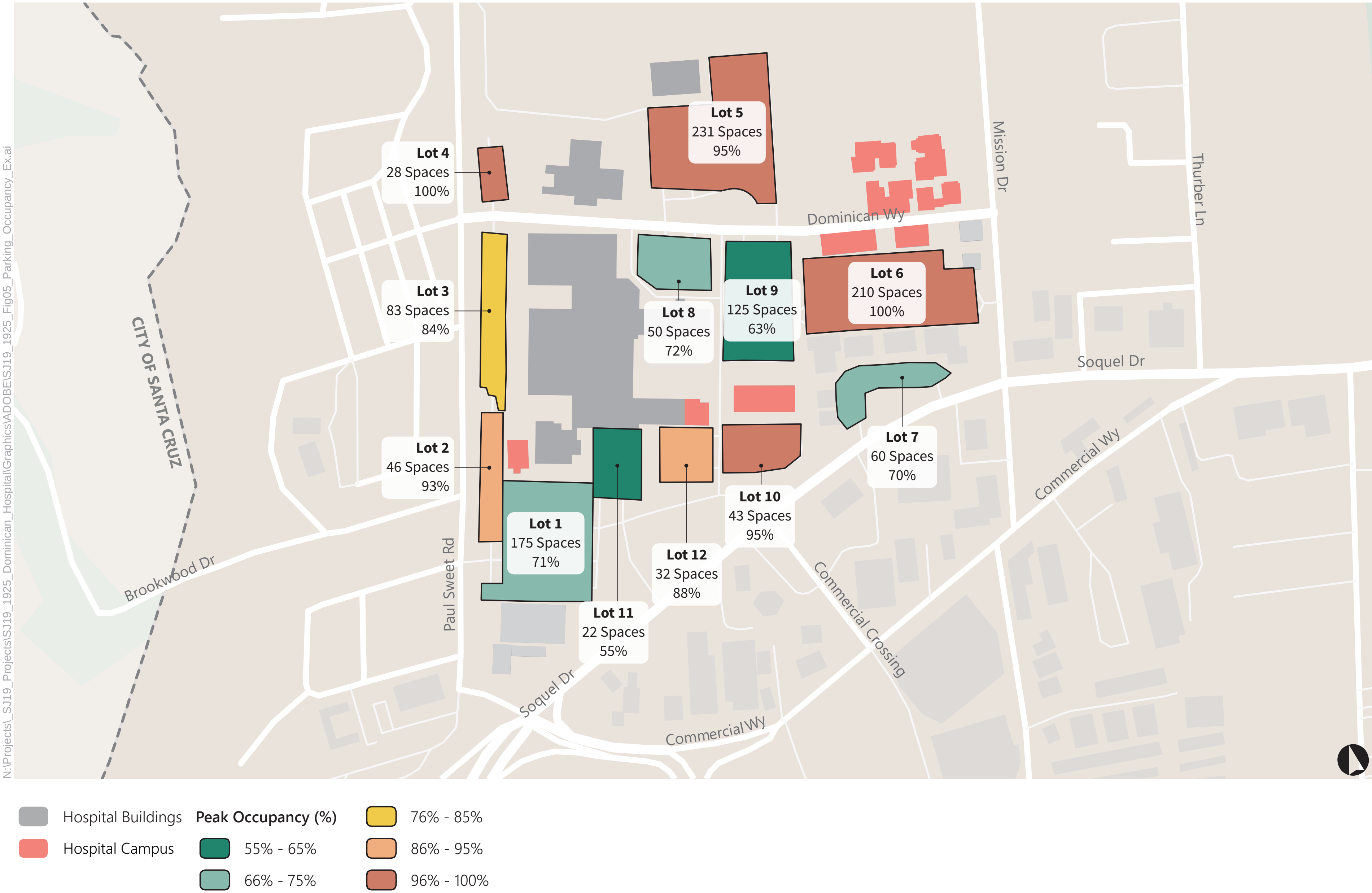


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Figure 4

Existing Conditions Weekday Peak Occupancy

Intersection Levels of Service

Existing intersection lane configurations, signal timings, and peak hour turning movement traffic volumes were used to determine the existing levels of service for the study intersections. Peak hour operations of the twelve (12) study intersections were evaluated during the morning (7:00 AM to 9:00 AM) and evening (4:00PM to 6:00 PM) peak periods. **Figure 5** presents the existing AM and PM peak-hour turning movement volumes and the corresponding lane configurations and traffic control devices. The existing traffic counts are contained in **Appendix A**.

The results of the Existing Conditions LOS analysis are presented in **Table 6**, and the corresponding LOS calculation sheets are included in **Appendix B**. All the study intersections except the Mission Drive and Soquel Drive intersection operate at LOS C or better under Existing Conditions. Mission Drive and Soquel Drive intersection operates at LOS B and LOS D during the AM and PM peak hour, respectively. These are acceptable operating levels.

Table 6: Existing Intersection Level of Service

ID	Intersection	Control Type[1]	Jurisdiction (LOS Standard)[2]	Peak Hour[3]	Existing	
					Delay[4]	LOS[5]
1	Paul Sweet Road and Dominican Way	SSSC	SCC (D)	AM PM	1.2 (9.5) 2.2 (9.5)	A (A) A (A)
2	Paul Sweet Road and Driveway	SSSC	SCC (D)	AM PM	0.5 (9.9) 0.4 (9.8)	A (A) A (A)
3	Soquel Drive and Hospital Driveway 1	SSSC	SCC (D)	AM PM	0.5 (14.6) 0.3 (13.8)	A (B) A (B)
4	Commercial Crossings/Hospital Drive and Soquel Drive	Signal	SCC (D)	AM PM	11.0 9.6	B A
5	Soquel Drive and Medical Office Driveway 1	SSSC	SCC (D)	AM PM	0.4 (18.6) 0.3 (15.1)	A (C) A (B)
6	Soquel Drive and Medical Office Driveway 2	SSSC	SCC (D)	AM PM	0.1 (16.9) 0.1 (16.6)	A (C) A (C)
7	Mission Drive and Medical Office Driveway 3	SSSC	SCC (D)	AM PM	0.3 (9.3) 0.1 (10.3)	A (A) A (B)
8	Mission Drive and Parking Lot Driveway	SSSC	SCC (D)	AM PM	1.5 (8.9) 1.0 (10.0)	A (A) A (B)
9	Mission Drive and Dominican Way	SSSC	SCC (D)	AM PM	3.4 (9.2) 4.3 (9.7)	A (A) A (A)
10	Mission Drive and Soquel Drive	Signal	SCC (D)	AM PM	17.8 51.7	B D
11	Commercial Way/Paul Sweet Road and Soquel Drive/US-101 NB Ramps	Signal	Caltrans (D)	AM PM	27.4 30.5	C C

12	Soquel Avenue/Driveway and Soquel Drive	Signal	SCC (D)	AM PM	25.9 29.5	C C

Notes: **Bold text** indicates intersection operates at unacceptable level of service.

1. Signal = signalized intersection; SSSC = side-street stop-controlled intersection.
2. AM = morning peak hour, PM = evening peak hour.
3. SCC = Santa Cruz County.
4. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the 2010 Highway Capacity Manual for signalized intersections and all-way stop-controlled intersections. For side-street stop-controlled intersections, average control delay and total delay for the worst movement is reported as "average control delay (worst movement total delay)."
5. LOS = Level of Service. LOS calculations conducted using the Synchro 10 analysis software packages, which apply the methods described in the 2010 Highway Capacity Manual. For side-street stop-controlled intersections, average control LOS and total LOS for the worst movement is reported as "average control LOS (worst movement total LOS)."

Source: Fehr & Peers, 2020.

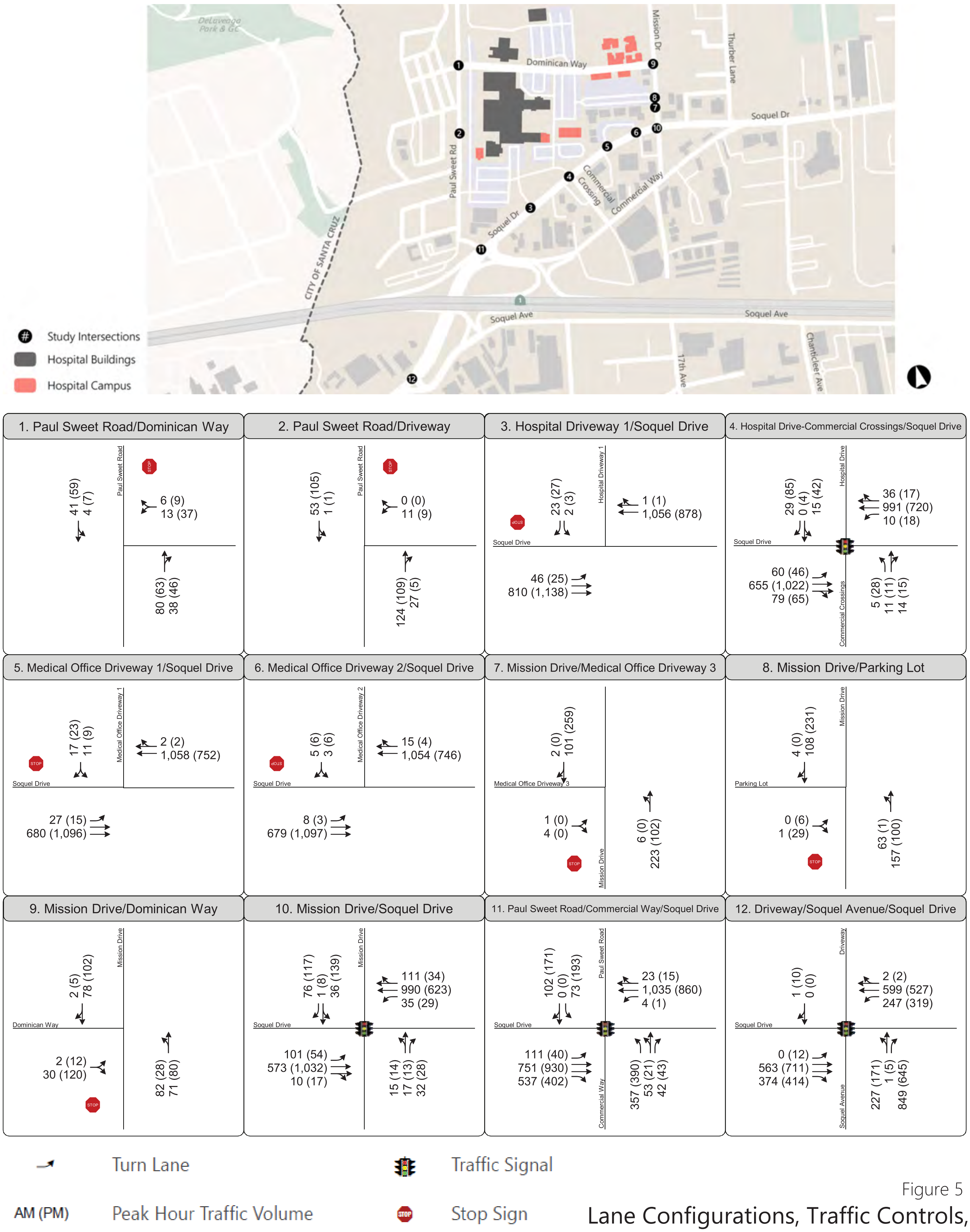


Figure 5
Lane Configurations, Traffic Controls, and Peak Hour Taffic Volumes Existing Conditions

Field Observations

Field observations were conducted on June 6, 2019 during the peak morning and evening weekday travel periods to observe general traffic conditions, queuing, and verifying signal timing at the study intersections. Light pedestrian and bike activities were observed at all study intersections. These observations indicated that the study intersections generally operate at the levels of service shown in **Table 6**. Observations for key study locations follow.

Intersection 3: Soquel Drive/Unsignalized Hospital Entrance

This intersection is controlled by stop signs on the hospital driveway approaches, with no traffic controls on the Soquel Drive approaches. The pavement on Soquel Drive at the intersection is striped 'Keep Clear' in the westbound direction. During the AM peak hour, drivers on Soquel Drive generally left adequate room for vehicles turning into the hospital, which resulted in minimal delay to left-turning vehicles. During the PM peak hour, when vehicles predominantly exit the hospital, drivers on westbound Soquel Drive again complied with the pavement markings. However, vehicles turning left out of the hospital driveway have to perform a staged turn due to high eastbound volumes.

Intersection 4: Soquel Drive/Hospital Entrance/Commercial Crossing

This intersection operated well with minimal delay to drivers, except for the eastbound left-turn movement. (This movement serves vehicles turning into the hospital.) Often, vehicles required more than one signal cycle to clear this intersection.

Intersection 11: Soquel Drive/Paul Sweet Road/Commercial Way

During the AM peak hour, vehicles on the westbound approach to this intersection favored the right lane. Queuing on westbound Soquel Drive was observed during the AM and PM peak hours, often extending to the signalized hospital entrance/Commercial Crossing and occasionally extending to Mission Drive. This extended queue generally cleared in one signal cycle due to signal coordination.

Intersection 12: Soquel Avenue/Soquel Drive

Queuing was observed on the three major approaches to this intersection during the AM and PM peak hours. The queue in the westbound left-turn lane on Soquel Drive extended onto the SR 1 overcrossing during the PM peak hour, but generally cleared in one signal cycle and was not observed to spill out of the left-turn pocket. Eastbound queues on Soquel Avenue were observed to extend to the 7th Avenue intersection during the PM peak hour. The queue on the northbound Soquel Avenue approach often spills back to the SR 1 ramps during the AM peak hour. These queues generally cleared in one signal cycle due to the signal coordination and an overlap phase serving the northbound right-turn movement.

4. EXISTING WITH PARKING STRUCTURE CONSTRUCTION CONDITIONS

This chapter discusses the parking demand and intersection operations under Existing with Parking Structure Construction Conditions. Under this scenario, parking lot 6 with 210 staff parking spaces would become unavailable as the new 411-space parking structure is built. Some parking lot 6 users would be rerouted to parking lots 1 and 9, which have available parking spaces during the day that are able to be converted to staff spaces. The remainder of parking lot 6 users would be accommodated off-site.

Under this scenario, this study assumed that the newly proposed CVS Pharmacy on the southwest corner of the intersection of Soquel Drive and Hospital Driveway 1 has been built. The related transportation impact analysis report is included in **Appendix E**. The southbound left-turn movement at this intersection will be prohibited during the AM and PM peak hours and all related vehicle trips were rerouted to the Hospital Drive-Commercial Crossing and Soquel Drive intersection.

Parking Analysis

Parking Demand

While parking lot 6 is closed, its parking demand will shift to available parking spaces on the Dominican Hospital site and to off-site spaces. Based on the parking occupancy data shown in the Existing Conditions chapter, parking lot 1 can convert its 35 parking spaces and parking lot 9 can convert 35 of its parking spaces into staff spaces. If this occurs, approximately 33 percent of the lot 6 parking demand would be accommodated on-site. The remaining parking demand of 140 parking spaces (approximately 67 percent of the lot 6 parking supply) would need to be shifted to an off-site location. The temporary off-site parking will be located west of Paul Sweet Road at Oakwood Memorial Park & Cemetery.

The new staff spaces in lots 1 and 9 would have similar parking occupancies during the day as parking lot 6. Since parking lot 6 has 100 percent occupancy during the weekday peak hour, this study assumed that all staff parking spaces in lots 1 and 9 would be occupied during the weekday peak hour.

Parking Inventory and Parking Occupancy

Table 7 and **Figure 6** display the Existing with Parking Structure Construction Conditions parking inventory by lot and category at Dominican Hospital.

Table 7: Existing with Parking Structure Construction Parking Inventory by Category

Parking Locations	Parking Category (Number of Spaces)							Total Parking Supply
	Patient	Staff	ADA	General	Reserved[1]	1575 MOB	1595 MOB	
Lot 1	0	35	3	114	23	0	0	175
Lot 2	0	46	0	0	0	0	0	46
Lot 3	0	83	0	0	0	0	0	83
Lot 4	0	0	0	28	0	0	0	28
Lot 5	0	188	8	28	7	0	0	231
Lot 6[2]	-	-	-	-	-	-	-	-
Lot 8	5	0	1	0	44	0	0	50
Lot 9	18	35	0	0	0	72	0	125
Lot 10	0	0	4	0	0	39	0	43
Lot 11	0	0	8	0	14	0	0	22
Lot 12	0	0	4	0	0	0	28	32
Total	23	387	28	170	88	111	28	835

Notes:

1. Reserved parking includes parking reserved for MRI, valet, HEV, emergency, STEMI, stroke, visitor, pick-up/drop-off, expectant mothers, and shuttle.
2. Under Existing with Parking Structure Construction Conditions Lot 6 is not open for parking.

Source: Fehr & Peers, 2020.

Table 8 and **Figure 7** display the weekday peak parking occupancy (11:00 AM) on the Dominican Hospital by lot and category.

Table 8: Existing with Parking Structure Construction Peak Parking Occupancy by Lot

Parking Locations	Peak Demand by Parking Category (No. of Parked Vehicles at 11:00 AM)									Occupancy
	Patient	Staff	ADA	General	Reserved[1]	1575 MOB	1595 MOB	Total Demand	Total Parking Supply	
Lot 1	0	35	3	113	8	0	0	159	175	**91%**
Lot 2	0	43	0	0	0	0	0	43	46	**93%**
Lot 3	0	70	0	0	0	0	0	70	83	84%
Lot 4	0	0	0	28	0	0	0	28	28	**100%**
Lot 5	0	180	5	28	7	0	0	220	231	**95%**
Lot 6[2]	-	-	-	-	-	-	-	-	-	-
Lot 8	0	0	1	0	35	0	0	36	50	72%
Lot 9	18	35	0	0	0	61	0	114	125	**91%**
Lot 10	0	0	4	0	0	37	0	41	43	**95%**
Lot 11	0	0	6	0	6	0	0	12	22	55%
Lot 12	0	0	2	0	0	0	26	28	32	88%
Subtotal	18	363	21	169	56	98	26	751	835	**90%**
Off Site Parking	0	139	0	0	0	0	0	139	140	**100%**
Total[3]	18	502	21	169	56	101	26	890	1,045	85%

Notes: **Bold** percentage indicates parking lot is more than 90% full which is considered a peak design parking activity level above which it is difficult to find a parking space quickly causing additional vehicle circulation and waiting time.

1. Reserved parking includes parking reserved for MRI, valet, HEV, emergency, STEMI, stroke, visitor, pick-up/drop-off, expectant mothers, and shuttle.
2. Under Existing with Parking Structure Construction Conditions Lot 6 is not open for parking.
3. Total parking demand and occupancy including off-site parking lot.

Source: Fehr & Peers, 2020.

As displayed in **Table 8** and **Figure 7**, the overall Dominican Hospital parking occupancy is projected to be 90 percent during the peak hour. The parking occupancy rates at parking lot 1 and 9 would increase from 71 percent and 63 percent under Existing Conditions to 91 percent (both lots) while the parking structure is being constructed.

Parking Recommendations

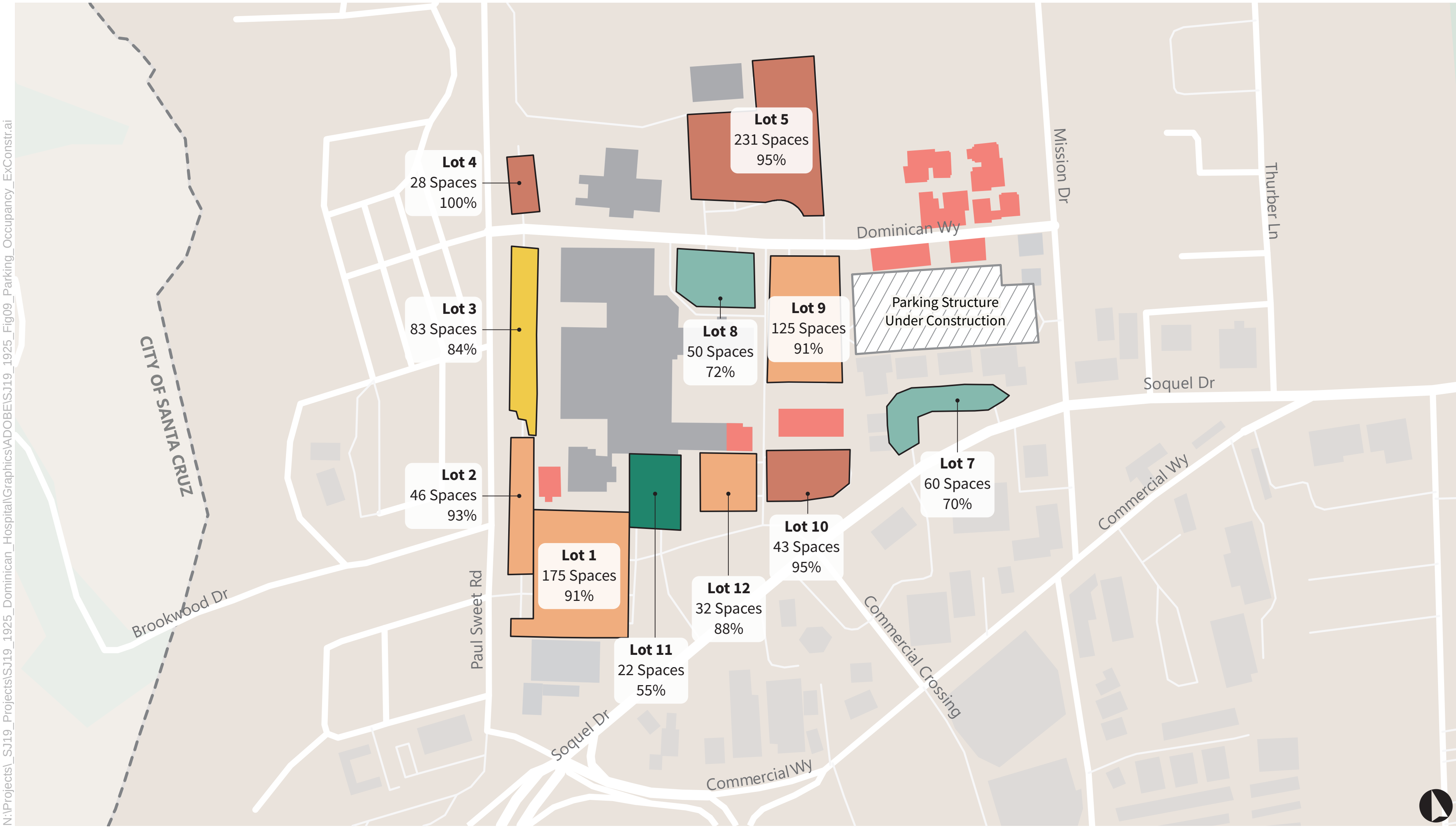
The following recommendations are provided to accommodate the displaced staff parking spaces during construction of the parking structure:

- Convert 35 spaces from General parking in parking lot 1 to Staff spaces
- In parking lot 9 convert 5 spaces from Patient parking and 30 spaces from 1575 medical office parking to Staff spaces.
- Police other lots to minimize overflow staff parking

Hospital Buildings
Hospital Campus
Total Parking Supply
Patient
Employee
ADA
General
Reserved
1595 MOB
1575 MOB

Figure 6

Existing with Parking Structure Construction Condition Parking Supply



Hospital Buildings
Hospital Campus

Peak Occupancy (%)
Under Construction
55% - 65%
66% - 75%
76% - 85%
86% - 95%
96% - 100%

Figure 7

Existing with Parking Structure Construction Conditions Weekday Peak Occupancy

County Code Parking Requirements

This section compares the parking supply to parking requirements under the Santa Cruz County Code. Santa Cruz County Code 13.10.525B identifies vehicle and bicycle parking requirements by land use. The County Code designates the Dominican Hospital as a nonresidential use with hospital and office uses. The MOBs located at 1575 and 1595 Soquel Drive are included in this parking evaluation for informational purposes only. The bulleted list below summarizes the relevant parking requirements:

- Hospitals (auto parking):
  - 1.5 spaces per bed and 1.0 spaces per 200 s.f. of office
- Hospitals (bicycle parking):
  - 0.2 spaces per bed
- Medical Offices (auto parking):
  - 1.0 spaces per 225 s.f. of gross floor area; 2 minimum
- Medical Offices (bicycle parking):
  - 1.0 spaces per 1,000 s.f. of gross floor area; 2 minimum

Under County code, auto parking requirements for hospital uses are calculated based on the number of patient beds and floor area of office space; the requirement for medical office uses is based on its gross floor area. The employee education conference center and education center were assumed as office uses. The Project team indicated that the main hospital building has total of 8,418 square feet of office uses, which include human resources and administrative staff areas. Therefore, Dominican Hospital is assumed to have a total of 47,801 (19,825+19,558+8,418=47,801) square feet of office areas. The results for Dominican Hospital site are shown in **Table 9**. Based on the results shown in **Table 9**, the parking supply at Dominican Hospital during parking structure construction exceeds County Code requirements by approximately 77 spaces.

Table 9: Existing with Parking Structure Construction Auto Parking Requirements

Use	Code Requirement [1]	Quantity	Required Parking
Hospital	1.5 spaces per patient bed	222	333
	1.0 spaces per 200 s.f. of office	47,801 s.f.	240
Medical Office[2]	1.0 spaces per 225 s.f. of gross floor area	41,528 s.f.	185
Total Required Parking Spaces			758
Existing with Parking Construction Parking Supply			835
Parking Surplus over County Code Requirement			77

Notes:

1. Code requirement is for nonresidential use with hospital and medical office uses as defined in Santa Cruz County Code 13.10.525.
2. Medical Office square footage for 1575 MOB and 1595 MOB. Required bicycle parking for the medical office is provided for informational purposes only.

Source: Fehr & Peers, 2020.

Under County code, bike parking requirements for hospital uses are calculated based on the number of patient beds. Bike parking requirements for medical office uses are calculated based on the gross floor area. The existing bicycle parking supply will not change during parking structure construction. As displayed in **Table 10**, the existing bike parking supply on Dominican Hospital does not meet current County requirements. While bike parking requirements may have differed when these buildings were constructed, the amount of bike parking would be 35 (87-52=35) spaces short based on current code requirements.

Table 10: Existing with Parking Structure Construction Bike Parking Requirements

Use	Code Requirement[1]	Quantity	Required Parking
Hospital	0.2 space per patient bed	222	45
Medical Office[2]	1 space per 1,000 s.f.	41,528	42
Total Required Parking Spaces			87
Existing with Parking Construction Parking Supply			52
Parking Surplus over County Code Requirement			-35

Notes:

1. Code requirement is for nonresidential use with hospital and medical office uses as defined in Santa Cruz County Code 13.10.525.
2. Medical Office square footage for 1575 MOB and 1595 MOB. Required bicycle parking for the medical office is provided for informational purposes only.

Source: Fehr & Peers, 2020.

Accessible Parking Space Requirements

This section compares the accessible parking supply to parking requirements under the Santa Cruz County Code. Santa Cruz County Code 13.10.525E identifies the minimum number of required accessible parking spaces based on total number of parking spaces provided in parking facility as shown in **Table 11**.

Table 11: Existing with Parking Structure Construction Accessible Parking Requirements

Total Number of Parking Spaces Provided in Parking Facility	Minimum Number of Required Accessible Parking Spaces
1 to 25	1
26 to 50	2
51 to 75	3
76 to 100	4
101 to 150	5
151 to 200	6
201 to 300	7
301 to 400	8
401 to 500	9
501 to 1000	2 percent of total
1001 and over	20, plus 1 for each 100, or fraction thereof, over 1000

Source: *Santa Cruz County Code.*

As shown in **Table 7**, during parking structure construction, Dominican Hospital would have 835 total parking spaces and 21 accessible parking spaces. The Santa Cruz County Code requires the number of accessible parking spaces to be at least 2 percent of the total parking supply. Therefore, the minimum number of accessible parking spaces under this scenario would be 17 (835 x 0.02=16.7). Under this scenario, the accessible parking supply during construction would meet The Santa Cruz County Code requirements.

Driveway Analysis

The vehicles currently parking in lot 6 will move to lots 1 and 9 and designated off-site parking during construction. This will change the traffic volumes at the hospital driveways and study intersections. The volume redistribution and resulting intersection operations are discussed in the following sections.

Volume Redistribution

The AM and PM peak hour vehicle trips generated from the 210 staff parking spaces in lot 6 were removed from the existing intersection volumes based on the trip distribution pattern shown on **Figure 8**.

The estimated trip distribution pattern is based on the existing travel patterns in the area and access routes to and from the Dominican Hospital site.

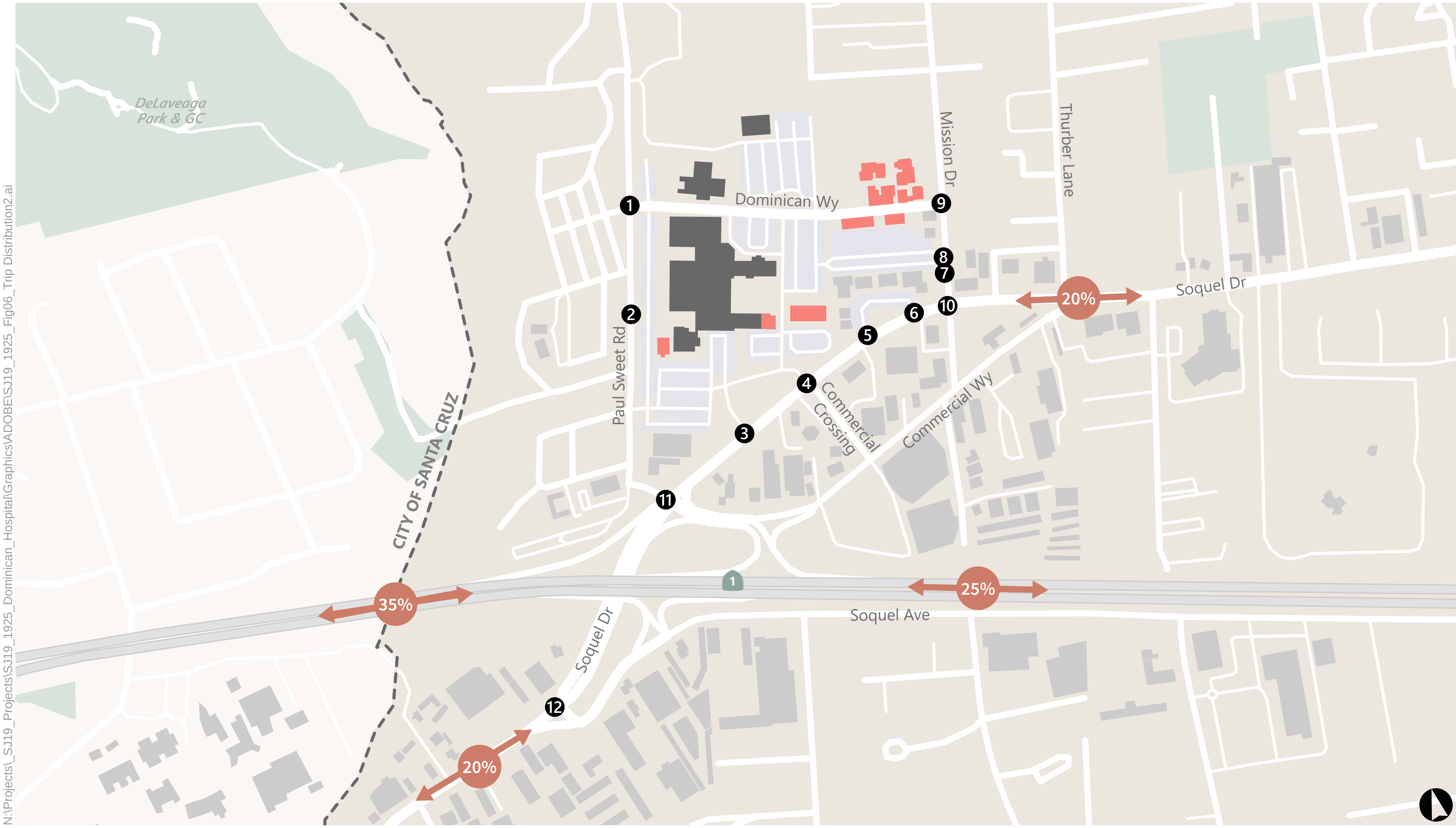
Lots 1 and 9 will each have 35 new spaces allocated to staff and will therefore each carry about 16 percent of parking lot 6 trips. Off-site parking will have 140 spaces allocated to staff and therefore carry about 67 percent of lot 6 trips. **Table 12** shows the trips assigned to parking lots 1 and 9, and the off-site parking lot.

Table 12: Added Trips to Lots 1 & 9 and Off-Site Parking Lot

Lot	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Existing Trips						
Existing Lot 6 Trips	67	1	68	1	35	36
Added Trips to Lots 1 & 9 and Off-Site Parking Lot						
Lot 1	11	0	11	0	6	6
Lot 9	11	0	11	0	6	6
Off-Site Parking Lot	45	1	46	1	23	24
Total Reassigned Trips	**67**	**1**	**68**	**1**	**35**	**36**

Source: Fehr & Peers, 2020.

Based on the assumption above, lots 1 and 9 will each have 11 added inbound and 0 added outbound trips during the AM peak and 0 added inbound and 6 added outbound trips during the PM peak hour. The off-site parking lot will have 45 added inbound and 1 outbound trip during the AM peak hour and 1 added inbound trip and 23 added outbound trips during the PM peak hour. These newly assigned inbound and outbound trips were distributed to adjacent intersections based on the distribution pattern on **Figure 8**.



Study Intersections

Trip Distribution

Hospital Buildings

Hospital Campus

Figure 8

Dominican Hospital Trip Distribution

Intersection Levels of Service

Figure 9 presents the AM and PM peak-hour turning movement volumes and the corresponding lane configurations and traffic control devices for Existing with Parking Structure Construction Conditions.

The results of the Existing with Parking Structure Construction Conditions intersection LOS analysis are presented in **Table 13**, and the corresponding LOS calculation sheets are included in **Appendix B**. All the study intersections except Mission Drive and Soquel Drive intersection operate at LOS C or better. Mission Drive and Soquel Drive intersection operate at LOS B and LOS D during the AM and PM peak hour, respectively. These are acceptable operating levels.

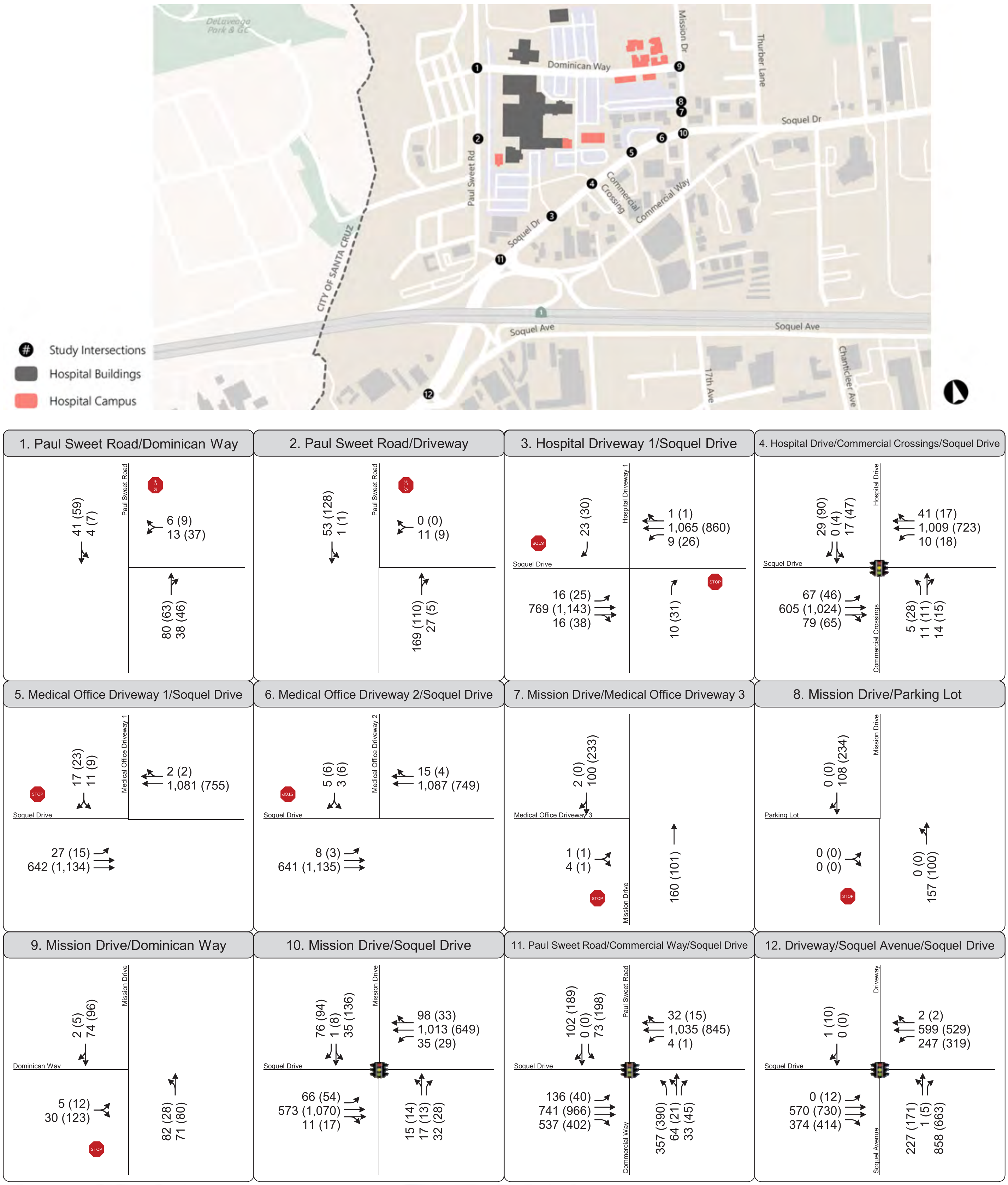
Table 13: Existing with Parking Structure Construction Intersection Levels of Service

ID	Intersection	Control Type[1]	Jurisdiction (LOS Standard)[2]	Peak Hour[3]	Existing with Parking Structure Construction	
					Delay[4]	LOS[5]
1	Paul Sweet Road and Dominican Way	SSSC	SCC (D)	AM PM	1.2 (9.5) 2.2 (9.5)	A (A) A (A)
2	Paul Sweet Road and Driveway	SSSC	SCC (D)	AM PM	0.5 (10.3) 0.4 (10.0)	A (B) A (B)
3	Soquel Drive and Hospital Driveway 1[6]	SSSC	SCC (D)	AM PM	0.4 (13.7) 0.6 (15.0)	A (B) A (C)
4	Commercial Crossings/Hospital Drive and Soquel Drive	Signal	SCC (D)	AM PM	11.1 9.7	B B
5	Soquel Drive and Medical Office Driveway 1	SSSC	SCC (D)	AM PM	0.5 (18.8) 0.3 (15.2)	A (C) A (B)
6	Soquel Drive and Medical Office Driveway 2	SSSC	SCC (D)	AM PM	0.1 (17.3) 0.1 (16.7)	A (C) A (C)
7	Mission Drive and Medical Office Driveway 3	SSSC	SCC (D)	AM PM	0.4 (9.2) 0.1 (10.1)	A (A) A (B)
8	Mission Drive and Parking Lot Driveway7	SSSC	SCC (D)	AM PM	0.0 (0.0) 0.0 (0.0)	A (A) A (A)
9	Mission Drive and Dominican Way	SSSC	SCC (D)	AM PM	3.6 (9.4) 4.4 (9.7)	A (A) A (A)
10	Mission Drive and Soquel Drive	Signal	SCC (D)	AM PM	16.1 49.6	B D
11	Commercial Way/Paul Sweet Road and Soquel Drive/US-101 NB Ramps	Signal	Caltrans (D)	AM PM	28.2 31.5	C C
12	Soquel Avenue/Driveway and Soquel Drive	Signal	SCC (D)	AM PM	27.3 30.0	C C

Notes: **Bold text** indicates intersection operates at unacceptable level of service.

1. Signal = signalized intersection; SSSC = side-street stop-controlled intersection.
2. SCC = Santa Cruz County.
3. AM = morning peak hour, PM = evening peak hour.
4. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the 2010 Highway Capacity Manual for signalized intersections and all-way stop-controlled intersections. For side-street stop-controlled intersections, average control delay and total delay for the worst movement is reported as "average control delay (worst movement total delay)."
5. LOS = Level of Service. LOS calculations conducted using the Synchro 10 analysis software packages, which apply the methods described in the 2010 Highway Capacity Manual. For side-street stop-controlled intersections, average control LOS and total LOS for the worst movement is reported as "average control LOS (worst movement total LOS)."
6. Soquel Drive and Hospital Drive 1 intersection layout has been changed due to the new CVS and Southbound left turn is prohibited during the peak hours
7. Mission Drive and Parking Driveway has no delay due to no inbound/outbound traffic from parking lot during construction.

Source: Fehr & Peers, 2020.



Turn Lane

Traffic Signal

AM (PM) Peak Hour Traffic Volume

Stop Sign

Figure 9

Lane Configurations, Traffic Controls, and Peak Hour Taffic Volumes

Existing with Parking Structure Construction Conditions

5. EXISTING WITH PROJECT CONDITIONS

This chapter discusses the parking demand and intersection operations under Existing with Project Conditions. Under this scenario, parking lot 8 will be removed due to the construction of the new hospital tower, parking lot 9 will be resized to accommodate the equipment yard, and parking lot 6 will be replaced with the proposed 411-space parking structure, which would be completed and available for parking.

Parking Analysis

Parking Demand

All of the parking demand from both parking lot 6 and 8 will shift to the new parking garage. The number of spaces in parking lot 9 will decrease from 125 spaces to 28 spaces with the Project, a decrease of 97 spaces (78 percent). This study assumed that 78 percent of lot 9 parking demand will shift to the new parking structure.

Parking Inventory and Occupancy

Table 14 and **Figure 10** display the Existing with Project parking inventory by lot and space category. As shown in **Table 14,** Dominican Hospital will have a total of 1,099 parking spaces when the Project is built. This is a net increase of 54 spaces compared to Existing Conditions.

Table 14: Existing with Project Parking Inventory by Category

Parking Location	Parking Category (Number of Spaces)							Total Parking Supply
	Patient	Staff	ADA	General	Reserved[1]	1575 MOB	1595 MOB	
Lot 1	0	0	3	149	23	0	0	175
Lot 2	0	46	0	0	0	0	0	46
Lot 3	0	83	0	0	0	0	0	83
Lot 4	0	0	0	28	0	0	0	28
Lot 5	0	188	8	28	7	0	0	231
Lot 6[2]	0	210	7	167	27	0	0	411
Lot 8	0	0	0	0	0	0	0	0
Lot 9	5	0	0	0	0	23	0	28
Lot 10	0	0	4	0	0	39	0	43
Lot 11	0	0	8	0	14	0	0	22
Lot 12	0	0	4	0	0	0	28	32
Total	5	527	34	372	71	62	28	1,099

Notes:
1. Reserved parking includes parking reserved for MRI, valet, HEV, emergency, STEMI, stroke, visitor, pick-up/drop-off, expectant mothers, and shuttle.
2. Parking lot 6 is replaced with new 411 space parking structure

Source: Fehr & Peers, 2020.

Table 15 and **Figure 11** display the weekday peak parking occupancy (11:00 AM) at Dominican Hospital by lot and space category with completion of the Project. As shown, the overall Dominican Hospital parking occupancy would be 81 percent during the weekday peak hour once the Project is completed. The new parking structure would likely have an occupancy rate of about 75 percent during the weekday peak hour.

Table 15: Existing with Project Weekday Projected Peak Parking Occupancy by Lot

Parking Location	Peak Demand by Parking Category (No. of Parked Vehicles at 11:00 AM)									Occupancy
	Patient	Staff	ADA	General	Reserved[1]	1575 MOB	1595 MOB	Total Demand	Total Parking Supply	
Lot 1	0	0	3	113	8	0	0	124	175	71%
Lot 2	0	43	0	0	0	0	0	43	46	**93%**
Lot 3	0	70	0	0	0	0	0	70	83	84%
Lot 4	0	0	0	28	0	0	0	28	28	**100%**
Lot 5	0	180	5	28	7	0	0	220	231	**95%**
Lot 6[2]	12	209	1	85	0	0	0	307	411	75%
Lot 8[3]	0	0	0	0	0	0	0	0	0	0
Lot 9	3	0	0	0	0	14	0	17	28	61%
Lot 10	0	0	4	0	0	37	0	41	43	**95%**
Lot 11	0	0	6	0	6	0	0	12	22	55%
Lot 12	0	0	2	0	0	0	26	28	32	88%
Total	15	502	21	254	21	51	26	890	1,099	81%

Notes:

1. Reserved parking includes parking reserved for MRI, valet, HEV, emergency, STEMI, stroke, visitor, pick-up/drop-off, expectant mothers, and shuttle.
2. Parking lot 6 is new 411 space parking structure
3. Lot 8 becomes unavailable after hospital modernization.

Bold percentage indicates parking lot is more than 90% full
Source: Fehr & Peers, 2020.

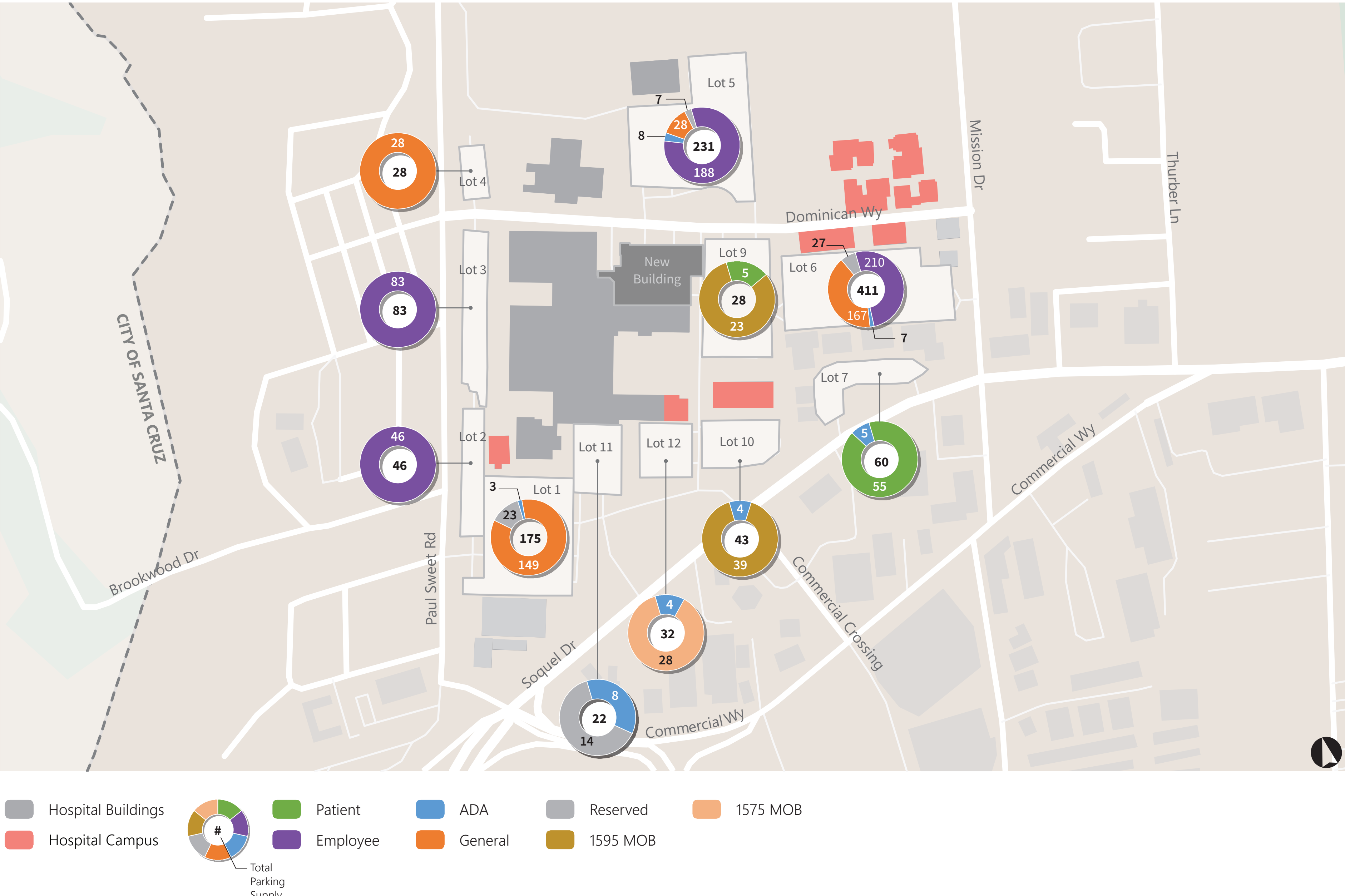
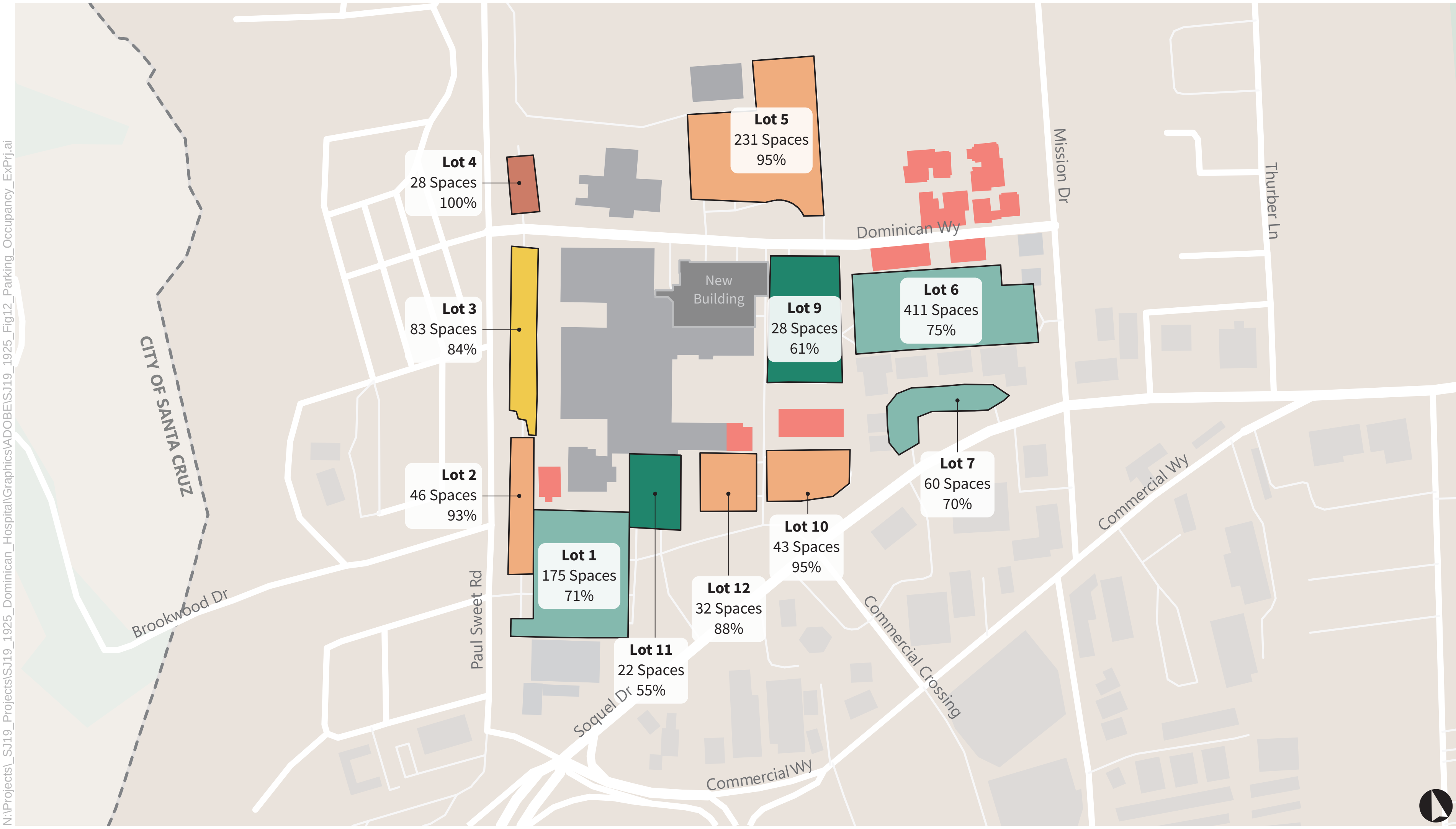


Figure 10

Existing with Project Conditions Parking Supply



Hospital Buildings
Hospital Campus

Peak Occupancy (%)

55% - 65%
66% - 75%
76% - 85%
86% - 95%
96% - 100%

Figure 11

Existing with Project Conditions Weekday Peak Occupancy

County Code Parking Requirements

As shown in **Table 16**, Existing with Project parking supply on the Dominican Hospital site exceeds County Code requirements by approximately 341 spaces.

Table 16: Existing with Project Auto Parking Requirements

Use	Code Requirement [1]	Quantity	Required Parking
Hospital	1.5 spaces per patient bed	222	333
	1.0 spaces per 200 s.f. of office	47,801 s.f.	240
Medical Office[2]	1.0 spaces per 225 s.f. of gross floor area	41,528 s.f.	185
Total Required Parking Spaces			758
Existing with Project Parking Supply			1,099
Parking Surplus over County Code Requirement			341

Notes:
1. Code requirement is for nonresidential use with hospital and medical office uses as defined in Santa Cruz County Code 13.10.525.
2. Medical Office square footage for 1575 MOB and 1595 MOB.

Source: Fehr & Peers, 2020.

As shown in **Table 17**, the project will install 40 additional bike parking spaces. As a result, Existing with Project bike parking supply would meet County Code requirements under Existing with Project Conditions.

Table 17: Existing with Project Bike Parking Requirements

Use	Code Requirement [1]	Existing Quantity	Near-Term Quantity	Existing Required Parking	Near-Term Required Parking
Hospital	0.2 space per patient bed	222	222	45	45
Medical Office[2]	1 space per 1,000 s.f.	41,528	41,528	42	42
Total Required Parking Spaces				87	87
Existing Parking Supply				52	NA
Existing with Project Parking Supply				NA	92
Parking Surplus over County Code Requirement				-35	5

Notes:
1. Code requirement is for nonresidential use with hospital and medical office uses as defined in Santa Cruz County Code 13.10.525.

Source: Fehr & Peers, 2020.

Accessible Parking Spaces Requirements

Under Project Conditions, a total of 1,099 total parking spaces would be available, including34 accessible parking spaces. The Santa Cruz County Code requires number of accessible parking spaces at least 20, plus 1 for each 100, or fraction thereof, over 1,000 (shown in **Table 11**). The minimum number of accessible parking spaces required under Existing with Project would be 21 (20+1=21). The accessible parking supply on Dominican Hospital therefore meets Santa Cruz County Code requirements under this scenario.

Driveway Analysis

Volume Redistribution

Construction of the proposed hospital modernization project will take place on parking lot 8 and 9. At completion, all 50 spaces in parking lot 8 will be unavailable, and 97 out of the 125 spaces in parking lot 9 will be unavailable. This study assumed that the displaced parking demand for these two lots will be redistributed to the new parking structure. Since new parking structure has two entrances/exits (one at Mission Drive and the other is inside of campus served by Hospital Drive), this study assumed that 60 percent of the redistributed trips will use the Mission Drive Entrance and 40 percent will use the Hospital Drive Driveway. **Table 18** shows the redistribution of trips assigned to the both the Mission Drive and Hospital Drive entrances/exits to the parking garage.

Table 18: Redistribution of Trips from Lots 6, 8, and 9

Item	AM Peak Hour			PM Peak Hour		
	In	Out	Total	In	Out	Total
Parking Lot 6						
Mission Drive Driveway	40	1	41	1	21	22
Hospital Drive Driveway	0	32	32	0	14	14
Total	**40**	**33**	**73**	**1**	**35**	**36**
Parking Lot 8 and 9						
Mission Drive Driveway	33	13	46	12	32	44
Hospital Drive Driveway	22	9	31	8	21	29
Total	**55**	**22**	**77**	**20**	**53**	**73**

Source: Fehr & Peers, 2020.

Intersection Levels of Service

Figure 12 presents the Existing with Project AM and PM peak-hour turning movement volumes and the corresponding lane configurations and traffic control devices at the study intersections. The results of the Existing with Project intersection LOS analysis are presented in Table 19, and the corresponding LOS calculation sheets are included in **Appendix B**.

All the study intersections except Mission Drive and Soquel Drive intersection operate at LOS C or better under Existing with Project Conditions. The Mission Drive and Soquel Drive intersection operates at LOS B and LOS D during the AM and PM peak hour, respectively. The westbound left turn movement at intersection Mission Drive and Parking lot operates at an acceptable level during both AM and PM peak hour.

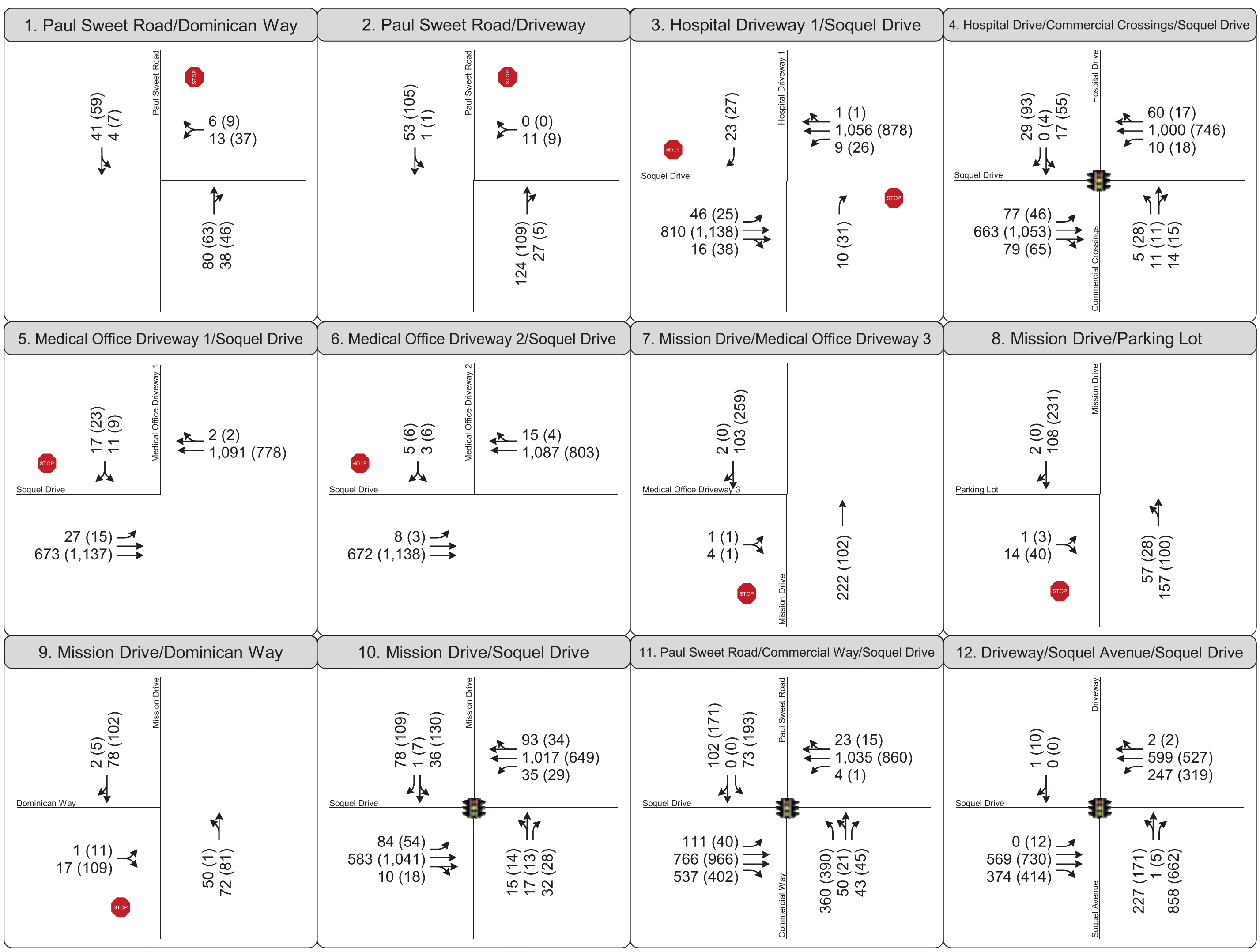
Table 19: Existing with Project Intersection Levels of Service

ID	Intersection	Control Type[1]	Jurisdiction (LOS Standard)[2]	Peak Hour[3]	Existing with Project	
					Delay[4]	LOS[5]
1	Paul Sweet Road and Dominican Way	SSSC	SCC (D)	AM PM	1.2 (9.5) 2.2 (9.5)	A (A) A (A)
2	Paul Sweet Road and Driveway	SSSC	SCC (D)	AM PM	0.5 (9.9) 0.4 (9.8)	A (A) A (A)
3	Soquel Drive and Hospital Driveway 1[6]	SSSC	SCC (D)	AM PM	0.5 (13.6) 0.3 (14.9)	A (B) A (B)
4	Commercial Crossings/Hospital Drive and Soquel Drive	Signal	SCC (D)	AM PM	11.3 11.4	B B
5	Soquel Drive and Medical Office Driveway 1	SSSC	SCC (D)	AM PM	0.4 (19.1) 0.3 (15.5)	A (C) A (C)
6	Soquel Drive and Medical Office Driveway 2	SSSC	SCC (D)	AM PM	0.1 (17.3) 0.1 (17.5)	A (C) A (C)
7	Mission Drive and Medical Office Driveway 3	SSSC	SCC (D)	AM PM	0.3 (9.3) 0.1 (10.3)	A (A) A (B)
8	Mission Drive and Parking Lot Driveway	SSSC	SCC (D)	AM PM	1.7 (9.2) 1.6 (9.9)	A (A) A (B)
9	Mission Drive and Dominican Way	SSSC	SCC (D)	AM PM	2.4 (9.1) 3.8 (9.6)	A (A) A (A)
10	Mission Drive and Soquel Drive	Signal	SCC (D)	AM PM	16.7 46.1	B D
11	Commercial Way/Paul Sweet Road and Soquel Drive/US-101 NB Ramps	Signal	SCC (D)	AM PM	27.6 30.5	C C
12	Soquel Avenue/Driveway and Soquel Drive	Signal	Caltrans (D)	AM PM	27.3 30.0	C C

Notes: **Bold text** indicates intersection operates at unacceptable level of service.

1. Signal = signalized intersection; SSSC = side-street stop-controlled intersection.
2. AM = morning peak hour, PM = evening peak hour.
3. SCC = Santa Cruz County.
4. Whole intersection weighted average control delay expressed in seconds per vehicle calculated using methods described in the 2010 Highway Capacity Manual for signalized intersections and all-way stop-controlled intersections. For side-street stop-controlled intersections, average control delay and total delay for the worst movement is reported as "average control delay (worst movement total delay)."
5. LOS = Level of Service. LOS calculations conducted using the Synchro 10 analysis software packages, which apply the methods described in the 2010 Highway Capacity Manual. For side-street stop-controlled intersections, average control LOS and total LOS for the worst movement is reported as "average control LOS (worst movement total LOS)."
6. Soquel Drive and Hospital Drive 1 intersection layout has been changed due to the new CVS and Southbound left turn is prohibited during the peak hours

Source: Fehr & Peers, 2020.



Turn Lane

AM (PM) Peak Hour Traffic Volume

Traffic Signal

Stop Sign

Figure 12

Lane Configurations, Traffic Controls, and Peak Hour Taffic Volumes Existing with Project Conditions

Appendix B: Intersection LOS Calculation Worksheets

Intersection						
Int Delay, s/veh	1.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	6	80	38	4	41
Future Vol, veh/h	13	6	80	38	4	41
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	8	101	48	5	52

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	192	130	0	0	154	0
Stage 1	130	-	-	-	-	-
Stage 2	62	-	-	-	-	-
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	797	920	-	-	1426	-
Stage 1	896	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	790	916	-	-	1419	-
Mov Cap-2 Maneuver	790	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	961	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	826	1419	-
HCM Lane V/C Ratio	-	-	0.029	0.004	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	0	124	27	1	53
Future Vol, veh/h	11	0	124	27	1	53
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	149	33	1	64

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	238	172	0	0	188	0
Stage 1	172	-	-	-	-	-
Stage 2	66	-	-	-	-	-
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	750	872	-	-	1386	-
Stage 1	858	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	745	867	-	-	1378	-
Mov Cap-2 Maneuver	745	-	-	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	957	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	9.9		0		0.1	
HCM LOS	A					

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	745	1378	-
HCM Lane V/C Ratio	-	-	0.018	0.001	-
HCM Control Delay (s)	-	-	9.9	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	46	810	1056	1	2	23
Future Vol, veh/h	46	810	1056	1	2	23
Conflicting Peds, #/hr	7	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	85	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	51	890	1160	1	2	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1168	0	-	0	1715	588
Stage 1	-	-	-	-	1168	-
Stage 2	-	-	-	-	547	-
Critical Hdwy	4.18	-	-	-	6.88	6.98
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	2.24	-	-	-	3.54	3.34
Pot Cap-1 Maneuver	583	-	-	-	79	447
Stage 1	-	-	-	-	254	-
Stage 2	-	-	-	-	538	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	579	-	-	-	71	444
Mov Cap-2 Maneuver	-	-	-	-	170	-
Stage 1	-	-	-	-	230	-
Stage 2	-	-	-	-	534	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	579	-	-	-	170	444
HCM Lane V/C Ratio	0.087	-	-	-	0.013	0.057
HCM Control Delay (s)	11.8	-	-	-	26.5	13.6
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	655	79	10	991	36	5	11	14	15	0	29
Future Volume (veh/h)	60	655	79	10	991	36	5	11	14	15	0	29
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	0.97		0.96	0.96		0.96
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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1900	1845	1845
Adj Flow Rate, veh/h	65	704	85	11	1066	39	5	12	15	16	0	31
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	2387	288	3	2484	91	137	30	37	152	0	61
Arrive On Green	0.05	1.00	1.00	0.00	1.00	1.00	0.04	0.04	0.05	0.04	0.00	0.04
Sat Flow, veh/h	1757	3144	379	1757	3445	126	1315	728	910	793	0	1502
Grp Volume(v), veh/h	65	392	397	11	542	563	5	0	27	16	0	31
Grp Sat Flow(s),veh/h/ln	1757	1752	1771	1757	1752	1819	1315	0	1637	793	0	1502
Q Serve(g_s), s	2.2	0.0	0.0	0.1	0.0	0.0	0.2	0.0	1.0	0.7	0.0	1.2
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.1	0.0	0.0	1.9	0.0	1.0	1.7	0.0	1.2
Prop In Lane	1.00		0.21	1.00		0.07	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	67	1331	1345	3	1264	1311	137	0	67	152	0	61
V/C Ratio(X)	0.97	0.29	0.30	3.76	0.43	0.43	0.04	0.00	0.41	0.11	0.00	0.51
Avail Cap(c_a), veh/h	146	1331	1345	146	1264	1311	489	0	505	503	0	463
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	0.0	30.0	0.0	0.0	29.4	0.0	27.9	28.9	0.0	28.2
Incr Delay (d2), s/veh	24.4	0.6	0.6	1304.2	1.1	1.0	0.0	0.0	1.5	0.1	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	52.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.2	0.2	1.1	0.4	0.4	0.1	0.0	0.5	0.3	0.0	0.5
LnGrp Delay(d),s/veh	52.9	0.6	0.6	1386.4	1.1	1.0	29.4	0.0	29.4	29.0	0.0	30.6
LnGrp LOS	D	A	A	F	A	A	C		C	C		C
Approach Vol, veh/h		854			1116			32			47	
Approach Delay, s/veh		4.5			14.7			29.4			30.1	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.0	49.6		6.4	6.3	47.3		6.4
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	24.5		19.0	5.5	24.5		19.0
Max Q Clear Time (g_c+I1), s	2.1	2.0		3.9	4.2	2.0		3.7
Green Ext Time (p_c), s	0.0	1.6		0.0	0.0	2.4		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.0
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	680	1058	2	11	17
Future Vol, veh/h	27	680	1058	2	11	17
Conflicting Peds, #/hr	9	0	0	9	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	29	731	1138	2	12	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1149	0	-	0	1572	579
Stage 1	-	-	-	-	1148	-
Stage 2	-	-	-	-	424	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	598	-	-	-	100	456
Stage 1	-	-	-	-	262	-
Stage 2	-	-	-	-	625	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	593	-	-	-	93	452
Mov Cap-2 Maneuver	-	-	-	-	192	-
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	619	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	18.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	593	-	-	-	295
HCM Lane V/C Ratio	0.049	-	-	-	0.102
HCM Control Delay (s)	11.4	-	-	-	18.6
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	679	1054	15	3	5
Future Vol, veh/h	8	679	1054	15	3	5
Conflicting Peds, #/hr	10	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	9	722	1121	16	3	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1147	0	-	0	1518	579
Stage 1	-	-	-	-	1139	-
Stage 2	-	-	-	-	379	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	599	-	-	-	109	456
Stage 1	-	-	-	-	265	-
Stage 2	-	-	-	-	659	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	593	-	-	-	105	452
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	652	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	16.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	593	-	-	-	311
HCM Lane V/C Ratio	0.014	-	-	-	0.027
HCM Control Delay (s)	11.2	-	-	-	16.9
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	4	6	223	101	2
Future Vol, veh/h	1	4	6	223	101	2
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	1	4	7	245	111	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	378	119	120	0	-	0
Stage 1	119	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	626	935	1474	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	787	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	613	929	1464	-	-	-
Mov Cap-2 Maneuver	613	-	-	-	-	-
Stage 1	897	-	-	-	-	-
Stage 2	781	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1464	-	842	-	-
HCM Lane V/C Ratio	0.005	-	0.007	-	-
HCM Control Delay (s)	7.5	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	1.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	63	157	108	4
Future Vol, veh/h	0	1	63	157	108	4
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	69	173	119	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	438	127	129	0	-	0
Stage 1	127	-	-	-	-	-
Stage 2	311	-	-	-	-	-
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	576	923	1457	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	539	918	1449	-	-	-
Mov Cap-2 Maneuver	539	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	739	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1449	-	918	-	-
HCM Lane V/C Ratio	0.048	-	0.001	-	-
HCM Control Delay (s)	7.6	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection						
Int Delay, s/veh	3.4					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	30	82	71	78	2
Future Vol, veh/h	2	30	82	71	78	2
Conflicting Peds, #/hr	0	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	100	100	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	35	82	71	92	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	346	111	112	0	-	0
Stage 1	111	-	-	-	-	-
Stage 2	235	-	-	-	-	-
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	651	942	1478	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	592	926	1453	-	-	-
Mov Cap-2 Maneuver	592	-	-	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	790	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	4.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1453	-	894	-	-
HCM Lane V/C Ratio	0.056	-	0.042	-	-
HCM Control Delay (s)	7.6	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	573	10	35	990	111	15	17	32	36	1	76
Future Volume (veh/h)	101	573	10	35	990	111	15	17	32	36	1	76
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	105	597	10	36	1031	116	16	18	33	38	1	79
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	119	1869	31	25	1509	170	93	74	399	130	2	399
Arrive On Green	0.14	1.00	1.00	0.01	0.48	0.48	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1757	3526	59	1757	3167	356	18	289	1562	44	7	1562
Grp Volume(v), veh/h	105	297	310	36	570	577	34	0	33	39	0	79
Grp Sat Flow(s),veh/h/ln	1757	1752	1832	1757	1752	1771	307	0	1562	52	0	1562
Q Serve(g_s), s	3.5	0.0	0.0	0.9	15.1	15.2	0.3	0.0	1.0	0.5	0.0	2.4
Cycle Q Clear(g_c), s	3.5	0.0	0.0	0.9	15.1	15.2	15.2	0.0	1.0	15.3	0.0	2.4
Prop In Lane	1.00		0.03	1.00		0.20	0.47		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	119	929	971	25	835	844	167	0	399	132	0	399
V/C Ratio(X)	0.88	0.32	0.32	1.44	0.68	0.68	0.20	0.00	0.08	0.30	0.00	0.20
Avail Cap(c_a), veh/h	176	929	971	205	835	844	299	0	534	247	0	534
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.7	0.0	0.0	29.6	12.2	12.2	18.3	0.0	17.0	29.3	0.0	17.5
Incr Delay (d2), s/veh	20.9	0.9	0.9	215.6	4.5	4.5	0.2	0.0	0.0	0.5	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	2.4	0.2	0.2	1.9	8.3	8.4	0.4	0.0	0.4	0.7	0.0	1.0
LnGrp Delay(d),s/veh	46.6	0.9	0.9	245.2	16.7	16.7	18.5	0.0	17.0	29.7	0.0	17.6
LnGrp LOS	D	A	A	F	B	B	B		B	C		B
Approach Vol, veh/h		712			1183			67			118	
Approach Delay, s/veh		7.6			23.6			17.8			21.6	
Approach LOS		A			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	32.2		19.7	4.9	35.4		19.7
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	6.5	20.5		21.0	7.5	20.5		21.0
Max Q Clear Time (g_c+I1), s	5.5	17.2		17.2	2.9	2.0		17.3
Green Ext Time (p_c), s	0.0	1.2		0.0	0.0	1.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	17.8
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	751	537	4	1035	23	357	53	42	73	0	102
Future Volume (veh/h)	111	751	537	4	1035	23	357	53	42	73	0	102
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	117	791	0	4	1089	24	416	0	0	77	0	107
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	138	1165	521	517	1966	43	492	0	219	152	0	136
Arrive On Green	0.08	0.33	0.00	0.59	1.00	1.00	0.14	0.00	0.00	0.09	0.00	0.08
Sat Flow, veh/h	1757	3505	1568	1757	3503	77	3514	0	1568	1757	0	1568
Grp Volume(v), veh/h	117	791	0	4	545	568	416	0	0	77	0	107
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1828	1757	0	1568	1757	0	1568
Q Serve(g_s), s	7.9	23.3	0.0	0.1	0.0	0.0	13.9	0.0	0.0	5.0	0.0	8.0
Cycle Q Clear(g_c), s	7.9	23.3	0.0	0.1	0.0	0.0	13.9	0.0	0.0	5.0	0.0	8.0
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	1165	521	517	984	1026	492	0	219	152	0	136
V/C Ratio(X)	0.85	0.68	0.00	0.01	0.55	0.55	0.85	0.00	0.00	0.51	0.00	0.79
Avail Cap(c_a), veh/h	230	1165	521	517	984	1026	1001	0	447	208	0	186
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.6	34.5	0.0	17.4	0.0	0.0	50.3	0.0	0.0	52.4	0.0	53.8
Incr Delay (d2), s/veh	6.3	3.2	0.0	0.0	2.2	2.2	1.6	0.0	0.0	1.0	0.0	9.9
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	4.1	11.8	0.0	0.1	0.6	0.6	6.9	0.0	0.0	2.5	0.0	3.9
LnGrp Delay(d),s/veh	60.9	37.7	0.0	17.4	2.2	2.2	51.9	0.0	0.0	53.3	0.0	63.7
LnGrp LOS	E	D		B	A	A	D			D		E
Approach Vol, veh/h		908			1117			416			184	
Approach Delay, s/veh		40.7			2.3			51.9			59.4	
Approach LOS		D			A			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	43.9		14.4	13.5	71.4		20.8
Change Period (Y+Rc), s	5.3	* 5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	12.0	* 39		* 14	16.0	38.6		34.0
Max Q Clear Time (g_c+I1), s	12.1	25.3		10.0	9.9	2.0		15.9
Green Ext Time (p_c), s	0.0	4.4		0.2	0.1	13.1		0.7

Intersection Summary		
HCM 2010 Ctrl Delay		27.4
HCM 2010 LOS		C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	563	374	247	599	2	227	1	849	0	0	1
Future Volume (veh/h)	0	563	374	247	599	2	227	1	849	0	0	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.99		1.00	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	0	1845	1900
Adj Flow Rate, veh/h	0	580	0	255	618	2	234	1	875	0	0	1
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	3	895	400	283	1715	6	659	3	887	0	0	617
Arrive On Green	0.00	0.26	0.00	0.16	0.48	0.48	0.40	0.40	0.40	0.00	0.00	0.40
Sat Flow, veh/h	1757	3505	1568	1757	3583	12	1378	7	1568	0	0	1554
Grp Volume(v), veh/h	0	580	0	255	302	318	235	0	875	0	0	1
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1842	1385	0	1568	0	0	1554
Q Serve(g_s), s	0.0	9.5	0.0	9.2	7.0	7.0	7.9	0.0	25.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.5	0.0	9.2	7.0	7.0	7.9	0.0	25.5	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	3	895	400	283	839	882	661	0	887	0	0	617
V/C Ratio(X)	0.00	0.65	0.00	0.90	0.36	0.36	0.36	0.00	0.99	0.00	0.00	0.00
Avail Cap(c_a), veh/h	273	1636	732	820	839	882	661	0	887	0	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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.4	0.0	26.4	10.6	10.6	14.1	0.0	13.7	0.0	0.0	11.6
Incr Delay (d2), s/veh	0.0	1.1	0.0	4.2	0.4	0.4	0.3	0.0	26.8	0.0	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	0.0	4.7	0.0	4.7	3.4	3.6	3.1	0.0	21.4	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	22.5	0.0	30.7	10.9	10.9	14.4	0.0	40.5	0.0	0.0	11.6
LnGrp LOS		C		C	B	B	B		D			B
Approach Vol, veh/h		580			875			1110			1	
Approach Delay, s/veh		22.5			16.7			35.0			11.6	
Approach LOS		C			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.4	20.4		29.5	0.0	34.8		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	11.2	11.5		2.0	0.0	9.0		27.5
Green Ext Time (p_c), s	0.3	4.9		0.0	0.0	5.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	9	63	46	7	59
Future Vol, veh/h	37	9	63	46	7	59
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	39	9	66	48	7	62

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	169	93	0	0	117	0
Stage 1	93	-	-	-	-	-
Stage 2	76	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	824	967	-	-	1478	-
Stage 1	933	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	817	964	-	-	1474	-
Mov Cap-2 Maneuver	817	-	-	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	950	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	842	1474	-
HCM Lane V/C Ratio	-	-	0.058	0.005	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	0	109	5	1	105
Future Vol, veh/h	9	0	109	5	1	105
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	0	118	5	1	114

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	237	121	0	0	123	0
Stage 1	121	-	-	-	-	-
Stage 2	116	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	756	936	-	-	1477	-
Stage 1	909	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	755	936	-	-	1477	-
Mov Cap-2 Maneuver	755	-	-	-	-	-
Stage 1	908	-	-	-	-	-
Stage 2	914	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	755	1477	-
HCM Lane V/C Ratio	-	-	0.013	0.001	-
HCM Control Delay (s)	-	-	9.8	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	1138	878	1	3	27
Future Vol, veh/h	25	1138	878	1	3	27
Conflicting Peds, #/hr	7	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	85	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	1308	1009	1	3	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1017	0	-	0	1729	512
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	712	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	678	-	-	-	79	507
Stage 1	-	-	-	-	310	-
Stage 2	-	-	-	-	447	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	673	-	-	-	75	504
Mov Cap-2 Maneuver	-	-	-	-	190	-
Stage 1	-	-	-	-	295	-
Stage 2	-	-	-	-	444	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	673	-	-	-	190	504
HCM Lane V/C Ratio	0.043	-	-	-	0.018	0.062
HCM Control Delay (s)	10.6	-	-	-	24.3	12.6
HCM Lane LOS	B	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	1022	65	18	720	17	28	11	15	42	4	85
Future Volume (veh/h)	46	1022	65	18	720	17	28	11	15	42	4	85
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.99		0.99	0.99		0.99
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	53	1175	75	21	828	20	32	13	17	48	5	98
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	2527	161	13	2559	62	140	61	80	176	14	131
Arrive On Green	0.06	1.00	1.00	0.01	0.73	0.73	0.08	0.08	0.09	0.08	0.08	0.08
Sat Flow, veh/h	1774	3375	215	1774	3529	85	1278	729	954	1015	167	1566
Grp Volume(v), veh/h	53	616	634	21	415	433	32	0	30	53	0	98
Grp Sat Flow(s),veh/h/ln	1774	1770	1820	1774	1770	1845	1278	0	1683	1182	0	1566
Q Serve(g_s), s	2.2	0.0	0.0	0.6	6.3	6.3	1.9	0.0	1.2	2.5	0.0	4.6
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.6	6.3	6.3	5.6	0.0	1.2	3.7	0.0	4.6
Prop In Lane	1.00		0.12	1.00		0.05	1.00		0.57	0.91		1.00
Lane Grp Cap(c), veh/h	55	1325	1363	13	1283	1338	140	0	141	191	0	131
V/C Ratio(X)	0.96	0.46	0.47	1.58	0.32	0.32	0.23	0.00	0.21	0.28	0.00	0.75
Avail Cap(c_a), veh/h	118	1325	1363	118	1283	1338	348	0	415	418	0	386
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.1	0.0	0.0	37.2	3.7	3.7	35.9	0.0	31.9	33.5	0.0	33.6
Incr Delay (d2), s/veh	25.9	1.2	1.1	286.3	0.7	0.6	0.3	0.0	0.3	0.3	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.4	0.4	1.3	3.2	3.4	0.7	0.0	0.6	1.1	0.0	2.1
LnGrp Delay(d),s/veh	61.0	1.2	1.1	332.1	4.4	4.3	36.2	0.0	32.2	33.8	0.0	36.7
LnGrp LOS	E	A	A	F	A	A	D		C	C		D
Approach Vol, veh/h		1303			869			62			151	
Approach Delay, s/veh		3.6			12.3			34.2			35.7	
Approach LOS		A			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	60.2		10.3	6.3	58.4		10.3
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	39.5		19.0	5.5	39.5		19.0
Max Q Clear Time (g_c+I1), s	2.6	2.0		7.6	4.2	8.3		6.6
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	1.7		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		9.6
HCM 2010 LOS		A

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	1096	752	2	9	23
Future Vol, veh/h	15	1096	752	2	9	23
Conflicting Peds, #/hr	0	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	17	1274	874	2	10	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	886	0	-	0	1556	448
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	671	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	766	-	-	-	105	561
Stage 1	-	-	-	-	366	-
Stage 2	-	-	-	-	472	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	759	-	-	-	101	556
Mov Cap-2 Maneuver	-	-	-	-	226	-
Stage 1	-	-	-	-	354	-
Stage 2	-	-	-	-	467	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	15.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	759	-	-	-	394
HCM Lane V/C Ratio	0.023	-	-	-	0.094
HCM Control Delay (s)	9.9	-	-	-	15.1
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.1					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1097	746	4	6	6
Future Vol, veh/h	3	1097	746	4	6	6
Conflicting Peds, #/hr	13	0	0	13	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	4	1291	878	5	7	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	896	0	-	0	1548	455
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	654	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	760	-	-	-	106	555
Stage 1	-	-	-	-	362	-
Stage 2	-	-	-	-	482	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	751	-	-	-	103	548
Mov Cap-2 Maneuver	-	-	-	-	231	-
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	476	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	751	-	-	-	325
HCM Lane V/C Ratio	0.005	-	-	-	0.043
HCM Control Delay (s)	9.8	-	-	-	16.6
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	0	102	259	0
Future Vol, veh/h	1	1	0	102	259	0
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	1	1	0	105	267	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	378	273	-	0	-	0
Stage 1	273	-	-	-	-	-
Stage 2	105	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	-	-
Pot Cap-1 Maneuver	626	768	0	-	-	-
Stage 1	775	-	0	-	-	-
Stage 2	922	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	618	764	-	-	-	-
Mov Cap-2 Maneuver	618	-	-	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	683	-	-
HCM Lane V/C Ratio	-	0.003	-	-
HCM Control Delay (s)	-	10.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	29	1	100	231	0
Future Vol, veh/h	6	29	1	100	231	0
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	6	30	1	102	236	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	347	243	243	0	-	0
Stage 1	243	-	-	-	-	-
Stage 2	104	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	652	798	1329	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	923	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	642	793	1320	-	-	-
Mov Cap-2 Maneuver	642	-	-	-	-	-
Stage 1	794	-	-	-	-	-
Stage 2	917	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1320	-	762	-	-
HCM Lane V/C Ratio	0.001	-	0.047	-	-
HCM Control Delay (s)	7.7	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	120	28	80	102	5
Future Vol, veh/h	12	120	28	80	102	5
Conflicting Peds, #/hr	0	0	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	13	126	29	84	107	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	260	118	120	0	-	0
Stage 1	118	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	731	937	1474	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	887	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	704	930	1463	-	-	-
Mov Cap-2 Maneuver	704	-	-	-	-	-
Stage 1	884	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	1.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1463	-	904	-	-
HCM Lane V/C Ratio	0.02	-	0.154	-	-
HCM Control Delay (s)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	1032	17	29	623	34	14	13	28	139	8	117
Future Volume (veh/h)	54	1032	17	29	623	34	14	13	28	139	8	117
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1881	1900	1881	1881
Adj Flow Rate, veh/h	62	1186	20	33	716	39	16	15	32	160	9	134
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	68	1989	34	24	1818	99	73	47	433	93	3	433
Arrive On Green	0.01	0.18	0.18	0.01	0.53	0.53	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1792	3595	61	1792	3439	187	0	172	1583	0	10	1583
Grp Volume(v), veh/h	62	590	616	33	372	383	31	0	32	169	0	134
Grp Sat Flow(s),veh/h/ln	1792	1787	1868	1792	1787	1840	172	0	1583	10	0	1583
Q Serve(g_s), s	2.6	22.7	22.7	1.0	9.3	9.3	0.0	0.0	1.1	0.0	0.0	5.0
Cycle Q Clear(g_c), s	2.6	22.7	22.7	1.0	9.3	9.3	20.5	0.0	1.1	20.5	0.0	5.0
Prop In Lane	1.00		0.03	1.00		0.10	0.52		1.00	0.95		1.00
Lane Grp Cap(c), veh/h	68	989	1034	24	945	973	120	0	433	96	0	433
V/C Ratio(X)	0.91	0.60	0.60	1.39	0.39	0.39	0.26	0.00	0.07	1.76	0.00	0.31
Avail Cap(c_a), veh/h	239	989	1034	167	945	973	120	0	433	96	0	433
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.9	23.0	23.0	37.0	10.5	10.5	22.4	0.0	20.2	36.9	0.0	21.6
Incr Delay (d2), s/veh	15.7	2.6	2.5	196.4	1.2	1.2	0.4	0.0	0.0	379.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	12.0	12.5	1.8	4.9	5.0	0.5	0.0	0.5	12.1	0.0	2.2
LnGrp Delay(d),s/veh	52.6	25.6	25.5	233.9	11.7	11.7	22.9	0.0	20.2	415.9	0.0	21.8
LnGrp LOS	D	C	C	F	B	B	C		C	F		C
Approach Vol, veh/h		1268			788			63			303	
Approach Delay, s/veh		26.9			21.0			21.5			241.6	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	43.7		24.5	5.0	45.5		24.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	10.5	32.5		21.0	7.5	32.5		21.0
Max Q Clear Time (g_c+I1), s	4.6	11.3		22.5	3.0	24.7		22.5
Green Ext Time (p_c), s	0.0	1.6		0.0	0.0	2.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			51.7
HCM 2010 LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	930	402	1	860	15	390	21	43	193	0	171
Future Volume (veh/h)	40	930	402	1	860	15	390	21	43	193	0	171
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1710	1676	1676	1676	1676	1676	1710
Adj Flow Rate, veh/h	43	989	0	1	915	16	431	0	0	205	0	182
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	1904	852	1	1774	31	486	0	217	230	0	206
Arrive On Green	0.04	0.60	0.00	0.00	1.00	1.00	0.15	0.00	0.00	0.14	0.00	0.14
Sat Flow, veh/h	1597	3185	1425	1597	3201	56	3193	0	1425	1597	0	1425
Grp Volume(v), veh/h	43	989	0	1	455	476	431	0	0	205	0	182
Grp Sat Flow(s),veh/h/ln	1597	1593	1425	1597	1593	1664	1597	0	1425	1597	0	1425
Q Serve(g_s), s	4.0	27.2	0.0	0.1	0.0	0.0	19.8	0.0	0.0	18.9	0.0	18.8
Cycle Q Clear(g_c), s	4.0	27.2	0.0	0.1	0.0	0.0	19.8	0.0	0.0	18.9	0.0	18.8
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	1904	852	1	883	923	486	0	217	230	0	206
V/C Ratio(X)	0.63	0.52	0.00	0.94	0.52	0.52	0.89	0.00	0.00	0.89	0.00	0.88
Avail Cap(c_a), veh/h	103	1904	852	39	883	923	941	0	420	279	0	249
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.7	17.6	0.0	75.0	0.0	0.0	62.3	0.0	0.0	63.0	0.0	63.0
Incr Delay (d2), s/veh	3.6	1.0	0.0	226.2	2.1	2.1	2.2	0.0	0.0	22.2	0.0	23.4
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	1.8	12.2	0.0	0.1	0.5	0.5	8.9	0.0	0.0	9.8	0.0	8.8
LnGrp Delay(d),s/veh	74.3	18.6	0.0	301.2	2.1	2.1	64.6	0.0	0.0	85.2	0.0	86.4
LnGrp LOS	E	B		F	A	A	E			F		F
Approach Vol, veh/h		1032			932			431			387	
Approach Delay, s/veh		20.9			2.4			64.6			85.8	
Approach LOS		C			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	3.9	93.7		25.7	10.4	87.1		26.8
Change Period (Y+Rc), s	3.7	5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	4.0	52.6		* 26	10.0	52.6		44.0
Max Q Clear Time (g_c+I1), s	2.1	29.2		20.9	6.0	2.0		21.8
Green Ext Time (p_c), s	0.0	7.4		0.5	0.0	10.9		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	30.5
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	711	414	319	527	2	171	5	645	0	0	10
Future Volume (veh/h)	12	711	414	319	527	2	171	5	645	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	0	1863	1900
Adj Flow Rate, veh/h	12	741	0	332	549	2	178	5	672	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	2	1027	459	359	1788	7	562	15	878	0	0	545
Arrive On Green	0.00	0.29	0.00	0.20	0.49	0.49	0.34	0.34	0.34	0.00	0.00	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3616	13	1350	42	1583	0	0	1579
Grp Volume(v), veh/h	12	741	0	332	269	282	183	0	672	0	0	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1860	1392	0	1583	0	0	1579
Q Serve(g_s), s	0.1	13.9	0.0	13.6	6.7	6.7	7.2	0.0	24.3	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.1	13.9	0.0	13.6	6.7	6.7	7.5	0.0	24.3	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.01	0.97		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	2	1027	459	359	875	919	576	0	878	0	0	545
V/C Ratio(X)	5.00	0.72	0.00	0.92	0.31	0.31	0.32	0.00	0.77	0.00	0.00	0.02
Avail Cap(c_a), veh/h	240	1436	643	720	875	919	576	0	878	0	0	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	37.0	23.6	0.0	28.9	11.1	11.1	18.4	0.0	12.8	0.0	0.0	15.8
Incr Delay (d2), s/veh	1872.2	1.5	0.0	4.3	0.3	0.3	0.3	0.0	4.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	7.0	0.0	7.1	3.3	3.4	2.8	0.0	11.4	0.0	0.0	0.1
LnGrp Delay(d),s/veh	1918.5	25.0	0.0	33.2	11.4	11.4	18.7	0.0	16.8	0.0	0.0	15.8
LnGrp LOS	F	C		C	B	B	B		B			B
Approach Vol, veh/h		753			883			855			10	
Approach Delay, s/veh		55.2			19.6			17.2			15.8	
Approach LOS		E			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.0	25.4		29.5	3.9	40.5		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	15.6	15.9		2.3	2.1	8.7		26.3
Green Ext Time (p_c), s	0.4	5.5		0.0	0.0	4.5		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		29.5
HCM 2010 LOS		C

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	6	80	38	4	41
Future Vol, veh/h	13	6	80	38	4	41
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	8	101	48	5	52

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	192	130	0	0	154	0
Stage 1	130	-	-	-	-	-
Stage 2	62	-	-	-	-	-
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	797	920	-	-	1426	-
Stage 1	896	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	790	916	-	-	1419	-
Mov Cap-2 Maneuver	790	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	961	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	826	1419	-
HCM Lane V/C Ratio	-	-	0.029	0.004	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection						
Int Delay, s/veh	0.5					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	0	169	27	1	53
Future Vol, veh/h	11	0	169	27	1	53
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	204	33	1	64

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	293	227	0	0	243	0
Stage 1	227	-	-	-	-	-
Stage 2	66	-	-	-	-	-
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	698	812	-	-	1323	-
Stage 1	811	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	693	807	-	-	1315	-
Mov Cap-2 Maneuver	693	-	-	-	-	-
Stage 1	805	-	-	-	-	-
Stage 2	957	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	693	1315	-
HCM Lane V/C Ratio	-	-	0.019	0.001	-
HCM Control Delay (s)	-	-	10.3	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	16	769	16	9	1065	1	0	0	10	0	0	23
Future Vol, veh/h	16	769	16	9	1065	1	0	0	10	0	0	23
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	120	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	92	92	91	91	92	92	92	91	92	91
Heavy Vehicles, %	4	4	2	2	4	4	2	2	2	4	2	4
Mvmt Flow	18	845	17	10	1170	1	0	0	11	0	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1178	0	0	862	0	0	-	-	431	-	-	593
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	4.14	-	-	-	-	6.94	-	-	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	2.22	-	-	-	-	3.32	-	-	3.34
Pot Cap-1 Maneuver	577	-	-	776	-	-	0	0	573	0	0	444
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	573	-	-	776	-	-	-	-	573	-	-	441
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.1	11.4	13.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	573	573	-	-	776	-	-	441
HCM Lane V/C Ratio	0.019	0.031	-	-	0.013	-	-	0.057
HCM Control Delay (s)	11.4	11.5	-	-	9.7	-	-	13.7
HCM Lane LOS	B	B	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	67	605	79	10	1009	41	5	11	14	17	0	29
Future Volume (veh/h)	67	605	79	10	1009	41	5	11	14	17	0	29
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	0.97		0.96	0.96		0.96
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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1900	1845	1845
Adj Flow Rate, veh/h	72	651	85	11	1085	44	5	12	15	18	0	31
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	76	2358	307	3	2449	99	137	31	39	155	0	64
Arrive On Green	0.06	1.00	1.00	0.00	1.00	1.00	0.04	0.04	0.05	0.04	0.00	0.04
Sat Flow, veh/h	1757	3113	406	1757	3429	139	1317	728	910	816	0	1502
Grp Volume(v), veh/h	72	366	370	11	554	575	5	0	27	18	0	31
Grp Sat Flow(s),veh/h/ln	1757	1752	1766	1757	1752	1816	1317	0	1638	816	0	1502
Q Serve(g_s), s	2.5	0.0	0.0	0.1	0.0	0.0	0.2	0.0	1.0	0.8	0.0	1.2
Cycle Q Clear(g_c), s	2.5	0.0	0.0	0.1	0.0	0.0	2.0	0.0	1.0	1.8	0.0	1.2
Prop In Lane	1.00		0.23	1.00		0.08	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	76	1328	1338	3	1251	1297	137	0	69	155	0	64
V/C Ratio(X)	0.94	0.28	0.28	3.76	0.44	0.44	0.04	0.00	0.39	0.12	0.00	0.49
Avail Cap(c_a), veh/h	146	1328	1338	146	1251	1297	487	0	505	503	0	463
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.2	0.0	0.0	30.0	0.0	0.0	29.3	0.0	27.8	28.8	0.0	28.1
Incr Delay (d2), s/veh	18.0	0.5	0.5	1304.2	1.1	1.1	0.0	0.0	1.3	0.1	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	52.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	0.2	0.2	1.1	0.4	0.4	0.1	0.0	0.5	0.3	0.0	0.5
LnGrp Delay(d),s/veh	46.2	0.5	0.5	1386.4	1.1	1.1	29.4	0.0	29.2	29.0	0.0	30.2
LnGrp LOS	D	A	A	F	A	A	C		C	C		C
Approach Vol, veh/h		808			1140			32			49	
Approach Delay, s/veh		4.6			14.5			29.2			29.8	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.0	49.5		6.5	6.6	46.8		6.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	24.5		19.0	5.5	24.5		19.0
Max Q Clear Time (g_c+I1), s	2.1	2.0		4.0	4.5	2.0		3.8
Green Ext Time (p_c), s	0.0	1.5		0.0	0.0	2.5		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		11.1
HCM 2010 LOS		B

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	642	1081	2	11	17
Future Vol, veh/h	27	642	1081	2	11	17
Conflicting Peds, #/hr	9	0	0	9	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	29	690	1162	2	12	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1173	0	-	0	1575	591
Stage 1	-	-	-	-	1172	-
Stage 2	-	-	-	-	403	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	586	-	-	-	100	448
Stage 1	-	-	-	-	255	-
Stage 2	-	-	-	-	641	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	581	-	-	-	93	444
Mov Cap-2 Maneuver	-	-	-	-	189	-
Stage 1	-	-	-	-	240	-
Stage 2	-	-	-	-	635	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	18.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	581	-	-	-	290
HCM Lane V/C Ratio	0.05	-	-	-	0.104
HCM Control Delay (s)	11.5	-	-	-	18.8
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	641	1087	15	3	5
Future Vol, veh/h	8	641	1087	15	3	5
Conflicting Peds, #/hr	10	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	9	682	1156	16	3	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1182	0	-	0	1533	596
Stage 1	-	-	-	-	1174	-
Stage 2	-	-	-	-	359	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	581	-	-	-	106	444
Stage 1	-	-	-	-	254	-
Stage 2	-	-	-	-	674	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	575	-	-	-	102	440
Mov Cap-2 Maneuver	-	-	-	-	198	-
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	667	-

Approach	EB		WB		SB	
HCM Control Delay, s	0.1		0		17.3	
HCM LOS					C	

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	575	-	-	-	302
HCM Lane V/C Ratio	0.015	-	-	-	0.028
HCM Control Delay (s)	11.4	-	-	-	17.3
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.4					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	4	6	160	100	2
Future Vol, veh/h	1	4	6	160	100	2
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	1	4	7	176	110	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	308	118	119	0	-	0
Stage 1	118	-	-	-	-	-
Stage 2	190	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	686	937	1475	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	845	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	673	931	1465	-	-	-
Mov Cap-2 Maneuver	673	-	-	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	839	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1465	-	865	-	-
HCM Lane V/C Ratio	0.005	-	0.006	-	-
HCM Control Delay (s)	7.5	-	9.2	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	157	108	0
Future Vol, veh/h	0	0	0	157	108	0
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	0	0	173	119	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	298	125	125	0	-	0
Stage 1	125	-	-	-	-	-
Stage 2	173	-	-	-	-	-
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	693	926	1462	-	-	-
Stage 1	901	-	-	-	-	-
Stage 2	857	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	685	921	1454	-	-	-
Mov Cap-2 Maneuver	685	-	-	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	852	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1454	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	3.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	30	82	71	74	2
Future Vol, veh/h	5	30	82	71	74	2
Conflicting Peds, #/hr	0	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	100	100	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	35	82	71	87	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	341	106	107	0	-	0
Stage 1	106	-	-	-	-	-
Stage 2	235	-	-	-	-	-
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	655	948	1484	-	-	-
Stage 1	918	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	595	932	1459	-	-	-
Mov Cap-2 Maneuver	595	-	-	-	-	-
Stage 1	849	-	-	-	-	-
Stage 2	790	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	9.4		4.1		0	
HCM LOS	A					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1459	-	862	-	-
HCM Lane V/C Ratio	0.056	-	0.048	-	-
HCM Control Delay (s)	7.6	0	9.4	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	573	11	35	1013	98	15	17	32	35	1	76
Future Volume (veh/h)	66	573	11	35	1013	98	15	17	32	35	1	76
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	69	597	11	36	1055	102	16	18	33	36	1	79
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	73	1881	35	25	1635	158	93	74	392	130	2	392
Arrive On Green	0.08	1.00	1.00	0.01	0.51	0.51	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1757	3519	65	1757	3222	311	18	294	1562	45	8	1562
Grp Volume(v), veh/h	69	297	311	36	574	583	34	0	33	37	0	79
Grp Sat Flow(s),veh/h/ln	1757	1752	1831	1757	1752	1780	312	0	1562	53	0	1562
Q Serve(g_s), s	2.3	0.0	0.0	0.9	14.4	14.4	0.3	0.0	1.0	0.5	0.0	2.4
Cycle Q Clear(g_c), s	2.3	0.0	0.0	0.9	14.4	14.4	15.0	0.0	1.0	15.1	0.0	2.4
Prop In Lane	1.00		0.04	1.00		0.17	0.47		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	73	937	979	25	889	904	167	0	392	132	0	392
V/C Ratio(X)	0.95	0.32	0.32	1.44	0.64	0.65	0.20	0.00	0.08	0.28	0.00	0.20
Avail Cap(c_a), veh/h	176	937	979	205	889	904	306	0	534	253	0	534
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.5	0.0	0.0	29.6	10.8	10.8	18.5	0.0	17.2	29.2	0.0	17.7
Incr Delay (d2), s/veh	20.2	0.9	0.9	215.6	3.6	3.5	0.2	0.0	0.0	0.4	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	1.5	0.2	0.2	1.9	7.7	7.9	0.4	0.0	0.4	0.6	0.0	1.0
LnGrp Delay(d),s/veh	47.6	0.9	0.9	245.2	14.4	14.4	18.7	0.0	17.2	29.7	0.0	17.8
LnGrp LOS	D	A	A	F	B	B	B		B	C		B
Approach Vol, veh/h		677			1193			67			116	
Approach Delay, s/veh		5.6			21.4			18.0			21.6	
Approach LOS		A			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.5	34.1		19.4	4.9	35.7		19.4
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	6.5	20.5		21.0	7.5	20.5		21.0
Max Q Clear Time (g_c+I1), s	4.3	16.4		17.0	2.9	2.0		17.1
Green Ext Time (p_c), s	0.0	1.4		0.0	0.0	1.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	136	741	537	4	1035	32	357	64	33	73	0	102
Future Volume (veh/h)	136	741	537	4	1035	32	357	64	33	73	0	102
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	143	780	0	4	1089	34	424	0	0	77	0	107
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	165	1165	521	513	1884	59	500	0	223	152	0	136
Arrive On Green	0.09	0.33	0.00	0.58	1.00	1.00	0.14	0.00	0.00	0.09	0.00	0.08
Sat Flow, veh/h	1757	3505	1568	1757	3465	108	3514	0	1568	1757	0	1568
Grp Volume(v), veh/h	143	780	0	4	551	572	424	0	0	77	0	107
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1821	1757	0	1568	1757	0	1568
Q Serve(g_s), s	9.6	22.9	0.0	0.1	0.0	0.0	14.1	0.0	0.0	5.0	0.0	8.0
Cycle Q Clear(g_c), s	9.6	22.9	0.0	0.1	0.0	0.0	14.1	0.0	0.0	5.0	0.0	8.0
Prop In Lane	1.00		1.00	1.00		0.06	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	165	1165	521	513	953	990	500	0	223	152	0	136
V/C Ratio(X)	0.86	0.67	0.00	0.01	0.58	0.58	0.85	0.00	0.00	0.51	0.00	0.79
Avail Cap(c_a), veh/h	230	1165	521	513	953	990	1001	0	447	208	0	186
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.6	34.4	0.0	17.7	0.0	0.0	50.2	0.0	0.0	52.4	0.0	53.8
Incr Delay (d2), s/veh	16.6	3.1	0.0	0.0	2.6	2.5	1.6	0.0	0.0	1.0	0.0	9.9
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	5.5	11.5	0.0	0.1	0.7	0.7	6.9	0.0	0.0	2.5	0.0	3.9
LnGrp Delay(d),s/veh	70.2	37.4	0.0	17.7	2.6	2.5	51.8	0.0	0.0	53.3	0.0	63.7
LnGrp LOS	E	D		B	A	A	D			D		E
Approach Vol, veh/h		923			1127			424			184	
Approach Delay, s/veh		42.5			2.6			51.8			59.4	
Approach LOS		D			A			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	40.6	43.9		14.4	15.3	69.2		21.1
Change Period (Y+Rc), s	5.3	* 5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	12.0	* 39		* 14	16.0	38.6		34.0
Max Q Clear Time (g_c+I1), s	2.1	24.9		10.0	11.6	2.0		16.1
Green Ext Time (p_c), s	0.0	4.4		0.2	0.1	13.3		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.2
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	570	374	247	599	2	227	1	858	0	0	1
Future Volume (veh/h)	0	570	374	247	599	2	227	1	858	0	0	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.99		1.00	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	0	1845	1900
Adj Flow Rate, veh/h	0	588	0	255	618	2	234	1	885	0	0	1
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	3	903	404	283	1723	6	656	3	885	0	0	614
Arrive On Green	0.00	0.26	0.00	0.16	0.48	0.48	0.40	0.40	0.40	0.00	0.00	0.40
Sat Flow, veh/h	1757	3505	1568	1757	3583	12	1378	7	1568	0	0	1554
Grp Volume(v), veh/h	0	588	0	255	302	318	235	0	885	0	0	1
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1842	1385	0	1568	0	0	1554
Q Serve(g_s), s	0.0	9.7	0.0	9.2	7.0	7.0	8.0	0.0	25.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.7	0.0	9.2	7.0	7.0	8.0	0.0	25.5	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	3	903	404	283	843	886	659	0	885	0	0	614
V/C Ratio(X)	0.00	0.65	0.00	0.90	0.36	0.36	0.36	0.00	1.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	272	1629	729	817	843	886	659	0	885	0	0	614
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.4	0.0	26.6	10.5	10.5	14.2	0.0	14.1	0.0	0.0	11.7
Incr Delay (d2), s/veh	0.0	1.1	0.0	4.2	0.4	0.3	0.3	0.0	30.4	0.0	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	0.0	4.8	0.0	4.8	3.4	3.6	3.1	0.0	23.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	22.5	0.0	30.8	10.9	10.9	14.5	0.0	44.4	0.0	0.0	11.7
LnGrp LOS		C		C	B	B	B		F			B
Approach Vol, veh/h		588			875			1120			1	
Approach Delay, s/veh		22.5			16.7			38.2			11.7	
Approach LOS		C			B			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.4	20.6		29.5	0.0	35.0		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	11.2	11.7		2.0	0.0	9.0		27.5
Green Ext Time (p_c), s	0.3	5.0		0.0	0.0	5.1		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		27.3
HCM 2010 LOS		C

Intersection						
Int Delay, s/veh	2.2					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	9	63	46	7	59
Future Vol, veh/h	37	9	63	46	7	59
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	39	9	66	48	7	62

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	169	93	0	0	117	0
Stage 1	93	-	-	-	-	-
Stage 2	76	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	824	967	-	-	1478	-
Stage 1	933	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	817	964	-	-	1474	-
Mov Cap-2 Maneuver	817	-	-	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	950	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	9.5		0		0.8	
HCM LOS	A					

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	842	1474	-
HCM Lane V/C Ratio	-	-	0.058	0.005	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection						
Int Delay, s/veh	0.4					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	0	110	5	1	128
Future Vol, veh/h	9	0	110	5	1	128
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	0	120	5	1	139

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	264	123	0	0	125	0
Stage 1	123	-	-	-	-	-
Stage 2	141	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	729	933	-	-	1474	-
Stage 1	907	-	-	-	-	-
Stage 2	891	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	728	933	-	-	1474	-
Mov Cap-2 Maneuver	728	-	-	-	-	-
Stage 1	906	-	-	-	-	-
Stage 2	891	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	728	1474	-
HCM Lane V/C Ratio	-	-	0.013	0.001	-
HCM Control Delay (s)	-	-	10	7.4	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection												
Int Delay, s/veh	0.6											
Movement	**EBL**	**EBT**	**EBR**	**WBL**	**WBT**	**WBR**	**NBL**	**NBT**	**NBR**	**SBL**	**SBT**	**SBR**
Lane Configurations												
Traffic Vol, veh/h	25	1143	38	26	860	1	0	0	31	0	0	30
Future Vol, veh/h	25	1143	38	26	860	1	0	0	31	0	0	30
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	120	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	92	92	87	87	92	92	92	87	92	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1314	41	28	989	1	0	0	34	0	0	34
Major/Minor	**Major1**			**Major2**			**Minor1**			**Minor2**		
Conflicting Flow All	997	0	0	1355	0	0	-	-	678	-	-	502
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	690	-	-	504	-	-	0	0	395	0	0	515
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	685	-	-	504	-	-	-	-	395	-	-	512
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	15	12.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	395	685	-	-	504	-	-	512
HCM Lane V/C Ratio	0.085	0.042	-	-	0.056	-	-	0.067
HCM Control Delay (s)	15	10.5	-	-	12.6	-	-	12.5
HCM Lane LOS	C	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.2	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	1024	65	18	723	17	28	11	15	47	4	90
Future Volume (veh/h)	46	1024	65	18	723	17	28	11	15	47	4	90
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.99		0.99	0.99		0.99
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	53	1177	75	21	831	20	32	13	17	54	5	103
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	2514	160	13	2546	61	139	64	84	183	13	137
Arrive On Green	0.06	1.00	1.00	0.01	0.72	0.72	0.09	0.09	0.09	0.09	0.09	0.09
Sat Flow, veh/h	1774	3375	215	1774	3530	85	1272	730	954	1035	148	1567
Grp Volume(v), veh/h	53	617	635	21	417	434	32	0	30	59	0	103
Grp Sat Flow(s),veh/h/ln	1774	1770	1820	1774	1770	1845	1272	0	1684	1183	0	1567
Q Serve(g_s), s	2.2	0.0	0.0	0.6	6.4	6.4	1.9	0.0	1.2	2.8	0.0	4.8
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.6	6.4	6.4	5.9	0.0	1.2	4.1	0.0	4.8
Prop In Lane	1.00		0.12	1.00		0.05	1.00		0.57	0.92		1.00
Lane Grp Cap(c), veh/h	55	1318	1356	13	1277	1331	139	0	147	196	0	137
V/C Ratio(X)	0.96	0.47	0.47	1.58	0.33	0.33	0.23	0.00	0.20	0.30	0.00	0.75
Avail Cap(c_a), veh/h	118	1318	1356	118	1277	1331	341	0	415	417	0	387
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.1	0.0	0.0	37.2	3.8	3.8	35.9	0.0	31.7	33.5	0.0	33.4
Incr Delay (d2), s/veh	25.9	1.2	1.2	286.3	0.7	0.7	0.3	0.0	0.2	0.3	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.4	0.4	1.3	3.4	3.5	0.7	0.0	0.6	1.2	0.0	2.2
LnGrp Delay(d),s/veh	61.0	1.2	1.2	332.1	4.5	4.5	36.3	0.0	31.9	33.8	0.0	36.5
LnGrp LOS	E	A	A	F	A	A	D		C	C		D
Approach Vol, veh/h		1305			872			62			162	
Approach Delay, s/veh		3.6			12.4			34.1			35.5	
Approach LOS		A			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	59.9		10.6	6.3	58.1		10.6
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	39.5		19.0	5.5	39.5		19.0
Max Q Clear Time (g_c+I1), s	2.6	2.0		7.9	4.2	8.4		6.8
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	1.7		0.1

Intersection Summary			
HCM 2010 Ctrl Delay			9.7
HCM 2010 LOS			A

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	1134	755	2	9	23
Future Vol, veh/h	15	1134	755	2	9	23
Conflicting Peds, #/hr	0	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	17	1319	878	2	10	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	890	0	-	0	1583	450
Stage 1	-	-	-	-	889	-
Stage 2	-	-	-	-	694	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	764	-	-	-	100	559
Stage 1	-	-	-	-	364	-
Stage 2	-	-	-	-	460	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	757	-	-	-	96	554
Mov Cap-2 Maneuver	-	-	-	-	221	-
Stage 1	-	-	-	-	352	-
Stage 2	-	-	-	-	455	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	757	-	-	-	389
HCM Lane V/C Ratio	0.023	-	-	-	0.096
HCM Control Delay (s)	9.9	-	-	-	15.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1135	749	4	6	6
Future Vol, veh/h	3	1135	749	4	6	6
Conflicting Peds, #/hr	13	0	0	13	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	4	1335	881	5	7	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	899	0	-	0	1573	456
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	676	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	758	-	-	-	102	554
Stage 1	-	-	-	-	361	-
Stage 2	-	-	-	-	470	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	749	-	-	-	99	547
Mov Cap-2 Maneuver	-	-	-	-	227	-
Stage 1	-	-	-	-	355	-
Stage 2	-	-	-	-	464	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	749	-	-	-	321
HCM Lane V/C Ratio	0.005	-	-	-	0.044
HCM Control Delay (s)	9.8	-	-	-	16.7
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	0	101	233	0
Future Vol, veh/h	1	1	0	101	233	0
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	1	1	0	104	240	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	350	246	-	0	-	0
Stage 1	246	-	-	-	-	-
Stage 2	104	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	-	-
Pot Cap-1 Maneuver	649	795	0	-	-	-
Stage 1	797	-	0	-	-	-
Stage 2	923	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	641	790	-	-	-	-
Mov Cap-2 Maneuver	641	-	-	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	917	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	708	-	-
HCM Lane V/C Ratio	-	0.003	-	-
HCM Control Delay (s)	-	10.1	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	0

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	0	100	234	0
Future Vol, veh/h	0	0	0	100	234	0
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	0	0	0	102	239	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	348	246	246	0	-	0
Stage 1	246	-	-	-	-	-
Stage 2	102	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	651	795	1326	-	-	-
Stage 1	797	-	-	-	-	-
Stage 2	925	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	642	790	1317	-	-	-
Mov Cap-2 Maneuver	642	-	-	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	919	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1317	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	4.4					
Movement	**EBL**	**EBR**	**NBL**	**NBT**	**SBT**	**SBR**
Lane Configurations						
Traffic Vol, veh/h	12	123	28	80	96	5
Future Vol, veh/h	12	123	28	80	96	5
Conflicting Peds, #/hr	0	0	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	13	129	29	84	101	5
Major/Minor	**Minor2**		**Major1**		**Major2**	
Conflicting Flow All	254	112	114	0	-	0
Stage 1	112	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	737	944	1481	-	-	-
Stage 1	915	-	-	-	-	-
Stage 2	887	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	710	937	1470	-	-	-
Mov Cap-2 Maneuver	710	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	880	-	-	-	-	-
Approach	**EB**		**NB**		**SB**	
HCM Control Delay, s	9.7		1.9		0	
HCM LOS	A					
Minor Lane/Major Mvmt		**NBL**	**NBT**	**EBLn1**	**SBT**	**SBR**
Capacity (veh/h)		1470	-	911	-	-
HCM Lane V/C Ratio		0.02	-	0.156	-	-
HCM Control Delay (s)		7.5	0	9.7	-	-
HCM Lane LOS		A	A	A	-	-
HCM 95th %tile Q(veh)		0.1	-	0.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	1070	17	29	649	33	14	13	28	136	8	94
Future Volume (veh/h)	54	1070	17	29	649	33	14	13	28	136	8	94
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1881	1900	1881	1881
Adj Flow Rate, veh/h	62	1230	20	33	746	38	16	15	32	156	9	108
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	68	1991	32	24	1826	93	73	47	433	93	3	433
Arrive On Green	0.01	0.18	0.18	0.01	0.53	0.53	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1792	3597	58	1792	3453	176	0	172	1583	0	11	1583
Grp Volume(v), veh/h	62	611	639	33	386	398	31	0	32	165	0	108
Grp Sat Flow(s),veh/h/ln	1792	1787	1869	1792	1787	1842	172	0	1583	11	0	1583
Q Serve(g_s), s	2.6	23.6	23.6	1.0	9.7	9.7	0.0	0.0	1.1	0.0	0.0	4.0
Cycle Q Clear(g_c), s	2.6	23.6	23.6	1.0	9.7	9.7	20.5	0.0	1.1	20.5	0.0	4.0
Prop In Lane	1.00		0.03	1.00		0.10	0.52		1.00	0.95		1.00
Lane Grp Cap(c), veh/h	68	989	1034	24	945	974	120	0	433	96	0	433
V/C Ratio(X)	0.91	0.62	0.62	1.39	0.41	0.41	0.26	0.00	0.07	1.71	0.00	0.25
Avail Cap(c_a), veh/h	239	989	1034	167	945	974	120	0	433	96	0	433
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.9	23.3	23.3	37.0	10.6	10.6	22.4	0.0	20.2	36.9	0.0	21.3
Incr Delay (d2), s/veh	15.7	2.9	2.8	196.4	1.3	1.3	0.4	0.0	0.0	361.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	12.5	13.1	1.8	5.1	5.2	0.5	0.0	0.5	11.6	0.0	1.7
LnGrp Delay(d),s/veh	52.6	26.2	26.1	233.9	11.9	11.9	22.9	0.0	20.2	398.0	0.0	21.4
LnGrp LOS	D	C	C	F	B	B	C		C	F		C
Approach Vol, veh/h		1312			817			63			273	
Approach Delay, s/veh		27.4			20.9			21.5			249.0	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	43.7		24.5	5.0	45.5		24.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	10.5	32.5		21.0	7.5	32.5		21.0
Max Q Clear Time (g_c+I1), s	4.6	11.7		22.5	3.0	25.6		22.5
Green Ext Time (p_c), s	0.0	1.7		0.0	0.0	2.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			49.6
HCM 2010 LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	966	402	1	845	15	390	21	45	198	0	189
Future Volume (veh/h)	40	966	402	1	845	15	390	21	45	198	0	189
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1710	1676	1676	1676	1676	1676	1710
Adj Flow Rate, veh/h	43	1028	0	1	899	16	431	0	0	211	0	201
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	1866	835	1	1736	31	486	0	217	249	0	222
Arrive On Green	0.04	0.59	0.00	0.00	1.00	1.00	0.15	0.00	0.00	0.16	0.00	0.15
Sat Flow, veh/h	1597	3185	1425	1597	3200	57	3193	0	1425	1597	0	1425
Grp Volume(v), veh/h	43	1028	0	1	447	468	431	0	0	211	0	201
Grp Sat Flow(s),veh/h/ln	1597	1593	1425	1597	1593	1664	1597	0	1425	1597	0	1425
Q Serve(g_s), s	4.0	29.6	0.0	0.1	0.0	0.0	19.8	0.0	0.0	19.3	0.0	20.8
Cycle Q Clear(g_c), s	4.0	29.6	0.0	0.1	0.0	0.0	19.8	0.0	0.0	19.3	0.0	20.8
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	1866	835	1	864	903	486	0	217	249	0	222
V/C Ratio(X)	0.63	0.55	0.00	0.94	0.52	0.52	0.89	0.00	0.00	0.85	0.00	0.90
Avail Cap(c_a), veh/h	103	1866	835	39	864	903	941	0	420	279	0	249
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.7	19.0	0.0	75.0	0.0	0.0	62.3	0.0	0.0	61.5	0.0	62.3
Incr Delay (d2), s/veh	3.6	1.2	0.0	226.2	2.2	2.1	2.2	0.0	0.0	17.5	0.0	29.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	13.3	0.0	0.1	0.5	0.5	8.9	0.0	0.0	9.7	0.0	10.0
LnGrp Delay(d),s/veh	74.3	20.2	0.0	301.2	2.2	2.1	64.6	0.0	0.0	79.1	0.0	91.5
LnGrp LOS	E	C		F	A	A	E			E		F
Approach Vol, veh/h		1071			916			431			412	
Approach Delay, s/veh		22.3			2.5			64.6			85.2	
Approach LOS		C			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	3.9	91.9		27.4	10.4	85.4		26.8
Change Period (Y+Rc), s	3.7	5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	4.0	52.6		* 26	10.0	52.6		44.0
Max Q Clear Time (g_c+I1), s	2.1	31.6		22.8	6.0	2.0		21.8
Green Ext Time (p_c), s	0.0	7.4		0.4	0.0	10.6		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	31.5
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	730	414	319	529	2	171	5	663	0	0	10
Future Volume (veh/h)	12	730	414	319	529	2	171	5	663	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	0	1863	1900
Adj Flow Rate, veh/h	12	760	0	332	551	2	178	5	691	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	2	1042	466	359	1803	7	557	14	873	0	0	540
Arrive On Green	0.00	0.29	0.00	0.20	0.50	0.50	0.34	0.34	0.34	0.00	0.00	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3616	13	1350	42	1583	0	0	1579
Grp Volume(v), veh/h	12	760	0	332	270	283	183	0	691	0	0	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1860	1392	0	1583	0	0	1579
Q Serve(g_s), s	0.1	14.4	0.0	13.7	6.7	6.7	7.3	0.0	25.5	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.1	14.4	0.0	13.7	6.7	6.7	7.6	0.0	25.5	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.01	0.97		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	2	1042	466	359	882	927	571	0	873	0	0	540
V/C Ratio(X)	5.04	0.73	0.00	0.92	0.31	0.31	0.32	0.00	0.79	0.00	0.00	0.02
Avail Cap(c_a), veh/h	238	1424	637	714	882	927	571	0	873	0	0	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	37.3	23.6	0.0	29.2	11.1	11.1	18.7	0.0	13.3	0.0	0.0	16.1
Incr Delay (d2), s/veh	1891.9	1.6	0.0	4.3	0.3	0.3	0.3	0.0	5.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	7.2	0.0	7.1	3.3	3.5	2.9	0.0	12.4	0.0	0.0	0.1
LnGrp Delay(d),s/veh	1938.3	25.3	0.0	33.5	11.3	11.3	19.0	0.0	18.3	0.0	0.0	16.1
LnGrp LOS	F	C		C	B	B	B		B			B
Approach Vol, veh/h		772			885			874			10	
Approach Delay, s/veh		55.0			19.6			18.5			16.1	
Approach LOS		D			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.1	26.0		29.5	3.9	41.2		29.5				
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5				
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0				
Max Q Clear Time (g_c+I1), s	15.7	16.4		2.3	2.1	8.7		27.5				
Green Ext Time (p_c), s	0.4	5.6		0.0	0.0	4.5		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			30.0									
HCM 2010 LOS			C									

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	6	80	38	4	41
Future Vol, veh/h	13	6	80	38	4	41
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	8	101	48	5	52

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	192	130	0	0	154	0
Stage 1	130	-	-	-	-	-
Stage 2	62	-	-	-	-	-
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	797	920	-	-	1426	-
Stage 1	896	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	790	916	-	-	1419	-
Mov Cap-2 Maneuver	790	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	961	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	826	1419	-
HCM Lane V/C Ratio	-	-	0.029	0.004	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection						
Int Delay, s/veh	0.5					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	0	124	27	1	53
Future Vol, veh/h	11	0	124	27	1	53
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	149	33	1	64

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	238	172	0	0	188	0
Stage 1	172	-	-	-	-	-
Stage 2	66	-	-	-	-	-
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	750	872	-	-	1386	-
Stage 1	858	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	745	867	-	-	1378	-
Mov Cap-2 Maneuver	745	-	-	-	-	-
Stage 1	852	-	-	-	-	-
Stage 2	957	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	745	1378	-
HCM Lane V/C Ratio	-	-	0.018	0.001	-
HCM Control Delay (s)	-	-	9.9	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	810	16	9	1056	1	0	0	10	0	0	23
Future Vol, veh/h	46	810	16	9	1056	1	0	0	10	0	0	23
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	120	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	92	92	91	91	92	92	92	91	92	91
Heavy Vehicles, %	4	4	2	2	4	4	2	2	2	4	2	4
Mvmt Flow	51	890	17	10	1160	1	0	0	11	0	0	25

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1168	0	0	907	0	0	-	-	454	-	-	588
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	4.14	-	-	-	-	6.94	-	-	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	2.22	-	-	-	-	3.32	-	-	3.34
Pot Cap-1 Maneuver	583	-	-	746	-	-	0	0	553	0	0	447
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	579	-	-	746	-	-	-	-	553	-	-	444
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.6	0.1	11.6	13.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	553	579	-	-	746	-	-	444
HCM Lane V/C Ratio	0.02	0.087	-	-	0.013	-	-	0.057
HCM Control Delay (s)	11.6	11.8	-	-	9.9	-	-	13.6
HCM Lane LOS	B	B	-	-	A	-	-	B
HCM 95th %tile Q(veh)	0.1	0.3	-	-	0	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	77	663	79	10	1000	60	5	11	14	17	0	29
Future Volume (veh/h)	77	663	79	10	1000	60	5	11	14	17	0	29
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	0.97		0.96	0.96		0.96
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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1900	1845	1845
Adj Flow Rate, veh/h	83	713	85	11	1075	65	5	12	15	18	0	31
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	91	2386	284	3	2366	143	137	31	39	155	0	64
Arrive On Green	0.07	1.00	1.00	0.00	1.00	1.00	0.04	0.04	0.05	0.04	0.00	0.04
Sat Flow, veh/h	1757	3149	375	1757	3353	203	1317	728	910	816	0	1502
Grp Volume(v), veh/h	83	397	401	11	562	578	5	0	27	18	0	31
Grp Sat Flow(s),veh/h/ln	1757	1752	1772	1757	1752	1803	1317	0	1638	816	0	1502
Q Serve(g_s), s	2.8	0.0	0.0	0.1	0.0	0.0	0.2	0.0	1.0	0.8	0.0	1.2
Cycle Q Clear(g_c), s	2.8	0.0	0.0	0.1	0.0	0.0	2.0	0.0	1.0	1.8	0.0	1.2
Prop In Lane	1.00		0.21	1.00		0.11	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	91	1328	1342	3	1237	1272	137	0	69	155	0	64
V/C Ratio(X)	0.91	0.30	0.30	3.76	0.45	0.45	0.04	0.00	0.39	0.12	0.00	0.49
Avail Cap(c_a), veh/h	146	1328	1342	146	1237	1272	487	0	505	503	0	463
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.8	0.0	0.0	30.0	0.0	0.0	29.3	0.0	27.8	28.8	0.0	28.1
Incr Delay (d2), s/veh	25.3	0.6	0.6	1304.2	1.2	1.2	0.0	0.0	1.3	0.1	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	52.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.2	0.2	1.1	0.4	0.4	0.1	0.0	0.5	0.3	0.0	0.5
LnGrp Delay(d),s/veh	53.1	0.6	0.6	1386.4	1.2	1.2	29.4	0.0	29.2	29.0	0.0	30.2
LnGrp LOS	D	A	A	F	A	A	C		C	C		C
Approach Vol, veh/h		881			1151			32			49	
Approach Delay, s/veh		5.5			14.4			29.2			29.8	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.0	49.5		6.5	7.1	46.3		6.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	24.5		19.0	5.5	24.5		19.0
Max Q Clear Time (g_c+I1), s	2.1	2.0		4.0	4.8	2.0		3.8
Green Ext Time (p_c), s	0.0	1.6		0.0	0.0	2.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	673	1091	2	11	17
Future Vol, veh/h	27	673	1091	2	11	17
Conflicting Peds, #/hr	9	0	0	9	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	29	724	1173	2	12	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1184	0	-	0	1603	597
Stage 1	-	-	-	-	1183	-
Stage 2	-	-	-	-	420	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	580	-	-	-	95	444
Stage 1	-	-	-	-	251	-
Stage 2	-	-	-	-	628	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	575	-	-	-	89	440
Mov Cap-2 Maneuver	-	-	-	-	185	-
Stage 1	-	-	-	-	236	-
Stage 2	-	-	-	-	622	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	19.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	575	-	-	-	285
HCM Lane V/C Ratio	0.05	-	-	-	0.106
HCM Control Delay (s)	11.6	-	-	-	19.1
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.4

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	672	1087	15	3	5
Future Vol, veh/h	8	672	1087	15	3	5
Conflicting Peds, #/hr	10	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	9	715	1156	16	3	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1182	0	-	0	1550	596
Stage 1	-	-	-	-	1174	-
Stage 2	-	-	-	-	376	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	581	-	-	-	103	444
Stage 1	-	-	-	-	254	-
Stage 2	-	-	-	-	661	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	575	-	-	-	99	440
Mov Cap-2 Maneuver	-	-	-	-	197	-
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	654	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	17.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	575	-	-	-	301
HCM Lane V/C Ratio	0.015	-	-	-	0.028
HCM Control Delay (s)	11.4	-	-	-	17.3
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	4	6	222	103	2
Future Vol, veh/h	1	4	6	222	103	2
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	1	4	7	244	113	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	379	121	122	0	-	0
Stage 1	121	-	-	-	-	-
Stage 2	258	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	625	933	1472	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	787	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	613	927	1462	-	-	-
Mov Cap-2 Maneuver	613	-	-	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	781	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1462	-	841	-	-
HCM Lane V/C Ratio	0.005	-	0.007	-	-
HCM Control Delay (s)	7.5	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	1.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	14	57	157	108	2
Future Vol, veh/h	1	14	57	157	108	2
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	15	63	173	119	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	425	126	127	0	-	0
Stage 1	126	-	-	-	-	-
Stage 2	299	-	-	-	-	-
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	586	924	1459	-	-	-
Stage 1	900	-	-	-	-	-
Stage 2	752	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	551	919	1451	-	-	-
Mov Cap-2 Maneuver	551	-	-	-	-	-
Stage 1	851	-	-	-	-	-
Stage 2	747	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1451	-	880	-	-
HCM Lane V/C Ratio	0.043	-	0.019	-	-
HCM Control Delay (s)	7.6	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.4					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	17	50	72	78	2
Future Vol, veh/h	1	17	50	72	78	2
Conflicting Peds, #/hr	0	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	100	100	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	20	50	72	92	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	283	111	112	0	-	0
Stage 1	111	-	-	-	-	-
Stage 2	172	-	-	-	-	-
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	707	942	1478	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	858	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	659	926	1453	-	-	-
Mov Cap-2 Maneuver	659	-	-	-	-	-
Stage 1	866	-	-	-	-	-
Stage 2	843	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	3.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1453	-	906	-	-
HCM Lane V/C Ratio	0.034	-	0.023	-	-
HCM Control Delay (s)	7.6	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	84	583	10	35	1017	93	15	17	32	36	1	78
Future Volume (veh/h)	84	583	10	35	1017	93	15	17	32	36	1	78
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	88	607	10	36	1059	97	16	18	33	38	1	81
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	98	1865	31	25	1579	145	93	74	401	130	2	401
Arrive On Green	0.11	1.00	1.00	0.01	0.49	0.49	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1757	3527	58	1757	3239	297	18	288	1562	45	7	1562
Grp Volume(v), veh/h	88	301	316	36	573	583	34	0	33	39	0	81
Grp Sat Flow(s),veh/h/ln	1757	1752	1833	1757	1752	1783	306	0	1562	52	0	1562
Q Serve(g_s), s	3.0	0.0	0.0	0.9	14.9	14.9	0.3	0.0	1.0	0.5	0.0	2.4
Cycle Q Clear(g_c), s	3.0	0.0	0.0	0.9	14.9	14.9	15.3	0.0	1.0	15.4	0.0	2.4
Prop In Lane	1.00		0.03	1.00		0.17	0.47		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	98	927	969	25	854	870	167	0	401	132	0	401
V/C Ratio(X)	0.90	0.33	0.33	1.44	0.67	0.67	0.20	0.00	0.08	0.30	0.00	0.20
Avail Cap(c_a), veh/h	176	927	969	205	854	870	297	0	534	246	0	534
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.5	0.0	0.0	29.6	11.7	11.7	18.3	0.0	16.9	29.3	0.0	17.5
Incr Delay (d2), s/veh	11.1	0.9	0.9	215.6	4.2	4.1	0.2	0.0	0.0	0.5	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	1.7	0.2	0.2	1.9	8.1	8.3	0.4	0.0	0.4	0.7	0.0	1.1
LnGrp Delay(d),s/veh	37.6	0.9	0.9	245.2	15.9	15.8	18.5	0.0	17.0	29.7	0.0	17.6
LnGrp LOS	D	A	A	F	B	B	B		B	C		B
Approach Vol, veh/h		705			1192			67			120	
Approach Delay, s/veh		5.5			22.8			17.7			21.5	
Approach LOS		A			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.3	32.9		19.8	4.9	35.4		19.8
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	6.5	20.5		21.0	7.5	20.5		21.0
Max Q Clear Time (g_c+I1), s	5.0	16.9		17.3	2.9	2.0		17.4
Green Ext Time (p_c), s	0.0	1.3		0.0	0.0	1.2		0.1

Intersection Summary			
HCM 2010 Ctrl Delay			16.7
HCM 2010 LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	766	537	4	1035	23	360	50	43	73	0	102
Future Volume (veh/h)	111	766	537	4	1035	23	360	50	43	73	0	102
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	117	806	0	4	1089	24	417	0	0	77	0	107
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	138	1165	521	516	1965	43	493	0	220	152	0	136
Arrive On Green	0.08	0.33	0.00	0.59	1.00	1.00	0.14	0.00	0.00	0.09	0.00	0.08
Sat Flow, veh/h	1757	3505	1568	1757	3503	77	3514	0	1568	1757	0	1568
Grp Volume(v), veh/h	117	806	0	4	545	568	417	0	0	77	0	107
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1828	1757	0	1568	1757	0	1568
Q Serve(g_s), s	7.9	23.9	0.0	0.1	0.0	0.0	13.9	0.0	0.0	5.0	0.0	8.0
Cycle Q Clear(g_c), s	7.9	23.9	0.0	0.1	0.0	0.0	13.9	0.0	0.0	5.0	0.0	8.0
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	1165	521	516	983	1025	493	0	220	152	0	136
V/C Ratio(X)	0.85	0.69	0.00	0.01	0.55	0.55	0.85	0.00	0.00	0.51	0.00	0.79
Avail Cap(c_a), veh/h	230	1165	521	516	983	1025	1001	0	447	208	0	186
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.6	34.7	0.0	17.5	0.0	0.0	50.3	0.0	0.0	52.4	0.0	53.8
Incr Delay (d2), s/veh	6.3	3.4	0.0	0.0	2.2	2.2	1.6	0.0	0.0	1.0	0.0	9.9
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	4.1	12.1	0.0	0.1	0.6	0.6	6.8	0.0	0.0	2.5	0.0	3.9
LnGrp Delay(d),s/veh	60.9	38.1	0.0	17.5	2.2	2.2	51.9	0.0	0.0	53.3	0.0	63.7
LnGrp LOS	E	D		B	A	A	D			D		E
Approach Vol, veh/h		923			1117			417			184	
Approach Delay, s/veh		41.0			2.3			51.9			59.4	
Approach LOS		D			A			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	40.9	43.9		14.4	13.5	71.3		20.8
Change Period (Y+Rc), s	5.3	* 5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	12.0	* 39		* 14	16.0	38.6		34.0
Max Q Clear Time (g_c+I1), s	2.1	25.9		10.0	9.9	2.0		15.9
Green Ext Time (p_c), s	0.0	4.4		0.2	0.1	13.1		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	27.6
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	569	374	247	599	2	227	1	858	0	0	1
Future Volume (veh/h)	0	569	374	247	599	2	227	1	858	0	0	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.99		1.00	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	0	1845	1900
Adj Flow Rate, veh/h	0	587	0	255	618	2	234	1	885	0	0	1
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	3	902	404	283	1722	6	656	3	885	0	0	614
Arrive On Green	0.00	0.26	0.00	0.16	0.48	0.48	0.40	0.40	0.40	0.00	0.00	0.40
Sat Flow, veh/h	1757	3505	1568	1757	3583	12	1378	7	1568	0	0	1554
Grp Volume(v), veh/h	0	587	0	255	302	318	235	0	885	0	0	1
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1842	1385	0	1568	0	0	1554
Q Serve(g_s), s	0.0	9.6	0.0	9.2	7.0	7.0	8.0	0.0	25.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.6	0.0	9.2	7.0	7.0	8.0	0.0	25.5	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	3	902	404	283	842	885	659	0	885	0	0	614
V/C Ratio(X)	0.00	0.65	0.00	0.90	0.36	0.36	0.36	0.00	1.00	0.00	0.00	0.00
Avail Cap(c_a), veh/h	272	1630	729	817	842	885	659	0	885	0	0	614
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.4	0.0	26.5	10.5	10.5	14.2	0.0	14.0	0.0	0.0	11.7
Incr Delay (d2), s/veh	0.0	1.1	0.0	4.2	0.4	0.4	0.3	0.0	30.3	0.0	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	0.0	4.8	0.0	4.8	3.4	3.6	3.1	0.0	23.0	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	22.5	0.0	30.8	10.9	10.9	14.5	0.0	44.3	0.0	0.0	11.7
LnGrp LOS		C		C	B	B	B		F			B
Approach Vol, veh/h		587			875			1120			1	
Approach Delay, s/veh		22.5			16.7			38.1			11.7	
Approach LOS		C			B			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.4	20.6		29.5	0.0	35.0		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	11.2	11.6		2.0	0.0	9.0		27.5
Green Ext Time (p_c), s	0.3	5.0		0.0	0.0	5.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	27.3
HCM 2010 LOS	C

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	9	63	46	7	59
Future Vol, veh/h	37	9	63	46	7	59
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	39	9	66	48	7	62

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	169	93	0	0	117	0
Stage 1	93	-	-	-	-	-
Stage 2	76	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	824	967	-	-	1478	-
Stage 1	933	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	817	964	-	-	1474	-
Mov Cap-2 Maneuver	817	-	-	-	-	-
Stage 1	926	-	-	-	-	-
Stage 2	950	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	842	1474	-
HCM Lane V/C Ratio	-	-	0.058	0.005	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	0	109	5	1	105
Future Vol, veh/h	9	0	109	5	1	105
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	0	118	5	1	114

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	237	121	0	0	123	0
Stage 1	121	-	-	-	-	-
Stage 2	116	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	756	936	-	-	1477	-
Stage 1	909	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	755	936	-	-	1477	-
Mov Cap-2 Maneuver	755	-	-	-	-	-
Stage 1	908	-	-	-	-	-
Stage 2	914	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	755	1477	-
HCM Lane V/C Ratio	-	-	0.013	0.001	-
HCM Control Delay (s)	-	-	9.8	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	1138	38	26	878	1	0	0	31	0	0	27
Future Vol, veh/h	25	1138	38	26	878	1	0	0	31	0	0	27
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	120	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	92	92	87	87	92	92	92	87	92	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	1308	41	28	1009	1	0	0	34	0	0	31

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1017	0	0	1349	0	0	-	-	675	-	-	512
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	-	-	3.32
Pot Cap-1 Maneuver	678	-	-	506	-	-	0	0	396	0	0	507
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	673	-	-	506	-	-	-	-	396	-	-	504
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	14.9	12.6
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	396	673	-	-	506	-	-	504
HCM Lane V/C Ratio	0.085	0.043	-	-	0.056	-	-	0.062
HCM Control Delay (s)	14.9	10.6	-	-	12.5	-	-	12.6
HCM Lane LOS	B	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0.2	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	1053	65	18	746	17	28	11	15	55	4	93
Future Volume (veh/h)	46	1053	65	18	746	17	28	11	15	55	4	93
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.99		0.99	0.99		0.99
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	53	1210	75	21	857	20	32	13	17	63	5	107
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	2508	155	13	2537	59	134	66	87	188	12	142
Arrive On Green	0.06	1.00	1.00	0.01	0.48	0.48	0.09	0.09	0.10	0.09	0.09	0.09
Sat Flow, veh/h	1774	3382	209	1774	3533	82	1268	730	954	1054	127	1568
Grp Volume(v), veh/h	53	632	653	21	429	448	32	0	30	68	0	107
Grp Sat Flow(s),veh/h/ln	1774	1770	1821	1774	1770	1846	1268	0	1684	1181	0	1568
Q Serve(g_s), s	2.2	0.0	0.0	0.6	11.3	11.3	1.9	0.0	1.2	3.3	0.0	5.0
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.6	11.3	11.3	6.5	0.0	1.2	4.6	0.0	5.0
Prop In Lane	1.00		0.11	1.00		0.04	1.00		0.57	0.93		1.00
Lane Grp Cap(c), veh/h	55	1313	1351	13	1271	1325	134	0	153	200	0	142
V/C Ratio(X)	0.96	0.48	0.48	1.58	0.34	0.34	0.24	0.00	0.20	0.34	0.00	0.75
Avail Cap(c_a), veh/h	118	1313	1351	118	1271	1325	331	0	415	416	0	387
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.1	0.0	0.0	37.3	8.4	8.4	36.2	0.0	31.4	33.5	0.0	33.3
Incr Delay (d2), s/veh	25.9	1.3	1.2	286.3	0.7	0.7	0.3	0.0	0.2	0.4	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.5	0.5	1.3	5.8	6.0	0.7	0.0	0.6	1.4	0.0	2.3
LnGrp Delay(d),s/veh	61.0	1.3	1.2	332.2	9.1	9.1	36.6	0.0	31.7	33.9	0.0	36.3
LnGrp LOS	E	A	A	F	A	A	D		C	C		D
Approach Vol, veh/h		1338			898			62			175	
Approach Delay, s/veh		3.6			16.7			34.2			35.3	
Approach LOS		A			B			C			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	59.6		10.8	6.3	57.9		10.8
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	39.5		19.0	5.5	39.5		19.0
Max Q Clear Time (g_c+I1), s	2.6	2.0		8.5	4.2	13.3		7.0
Green Ext Time (p_c), s	0.0	3.0		0.0	0.0	1.8		0.2

Intersection Summary			
HCM 2010 Ctrl Delay			11.4
HCM 2010 LOS			B

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	1137	778	2	9	23
Future Vol, veh/h	15	1137	778	2	9	23
Conflicting Peds, #/hr	0	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	17	1322	905	2	10	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	917	0	-	0	1611	464
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	695	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	746	-	-	-	96	548
Stage 1	-	-	-	-	353	-
Stage 2	-	-	-	-	459	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	739	-	-	-	92	543
Mov Cap-2 Maneuver	-	-	-	-	216	-
Stage 1	-	-	-	-	341	-
Stage 2	-	-	-	-	454	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	739	-	-	-	381
HCM Lane V/C Ratio	0.024	-	-	-	0.098
HCM Control Delay (s)	10	-	-	-	15.5
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1138	803	4	6	6
Future Vol, veh/h	3	1138	803	4	6	6
Conflicting Peds, #/hr	13	0	0	13	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	4	1339	945	5	7	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	963	0	-	0	1639	488
Stage 1	-	-	-	-	961	-
Stage 2	-	-	-	-	678	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	717	-	-	-	92	528
Stage 1	-	-	-	-	334	-
Stage 2	-	-	-	-	468	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	708	-	-	-	89	521
Mov Cap-2 Maneuver	-	-	-	-	214	-
Stage 1	-	-	-	-	328	-
Stage 2	-	-	-	-	462	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	17.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	708	-	-	-	303
HCM Lane V/C Ratio	0.005	-	-	-	0.047
HCM Control Delay (s)	10.1	-	-	-	17.5
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	0	102	259	0
Future Vol, veh/h	1	1	0	102	259	0
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	1	1	0	105	267	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	378	273	-	0	-	0
Stage 1	273	-	-	-	-	-
Stage 2	105	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	-	-
Pot Cap-1 Maneuver	626	768	0	-	-	-
Stage 1	775	-	0	-	-	-
Stage 2	922	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	618	764	-	-	-	-
Mov Cap-2 Maneuver	618	-	-	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	683	-	-
HCM Lane V/C Ratio	-	0.003	-	-
HCM Control Delay (s)	-	10.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	40	28	100	231	0
Future Vol, veh/h	3	40	28	100	231	0
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	3	41	29	102	236	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	403	243	243	0	-	0
Stage 1	243	-	-	-	-	-
Stage 2	160	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	605	798	1329	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	871	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	583	793	1320	-	-	-
Mov Cap-2 Maneuver	583	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	865	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.9	1.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1320	-	774	-	-
HCM Lane V/C Ratio	0.022	-	0.057	-	-
HCM Control Delay (s)	7.8	0	9.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.2	-	-

Intersection						
Int Delay, s/veh	3.8					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	109	1	81	102	5
Future Vol, veh/h	11	109	1	81	102	5
Conflicting Peds, #/hr	0	0	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	12	115	1	85	107	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	205	118	120	0	-	0
Stage 1	118	-	-	-	-	-
Stage 2	87	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	786	937	1474	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	939	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	773	930	1463	-	-	-
Mov Cap-2 Maneuver	773	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	931	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1463	-	913	-	-
HCM Lane V/C Ratio	0.001	-	0.138	-	-
HCM Control Delay (s)	7.5	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	1041	18	29	649	34	14	13	28	130	7	109
Future Volume (veh/h)	54	1041	18	29	649	34	14	13	28	130	7	109
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1881	1900	1881	1881
Adj Flow Rate, veh/h	62	1197	21	33	746	39	16	15	32	149	8	125
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	68	1988	35	24	1823	95	73	47	433	94	3	433
Arrive On Green	0.01	0.18	0.18	0.01	0.53	0.53	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1792	3592	63	1792	3448	180	0	172	1583	0	10	1583
Grp Volume(v), veh/h	62	595	623	33	386	399	31	0	32	157	0	125
Grp Sat Flow(s),veh/h/ln	1792	1787	1868	1792	1787	1841	172	0	1583	10	0	1583
Q Serve(g_s), s	2.6	22.9	23.0	1.0	9.8	9.8	0.0	0.0	1.1	0.0	0.0	4.7
Cycle Q Clear(g_c), s	2.6	22.9	23.0	1.0	9.8	9.8	20.5	0.0	1.1	20.5	0.0	4.7
Prop In Lane	1.00		0.03	1.00		0.10	0.52		1.00	0.95		1.00
Lane Grp Cap(c), veh/h	68	989	1034	24	945	973	120	0	433	96	0	433
V/C Ratio(X)	0.91	0.60	0.60	1.39	0.41	0.41	0.26	0.00	0.07	1.63	0.00	0.29
Avail Cap(c_a), veh/h	239	989	1034	167	945	973	120	0	433	96	0	433
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.9	23.1	23.1	37.0	10.6	10.6	22.4	0.0	20.2	36.9	0.0	21.5
Incr Delay (d2), s/veh	15.7	2.7	2.6	196.4	1.3	1.3	0.4	0.0	0.0	326.1	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	12.1	12.6	1.8	5.1	5.2	0.5	0.0	0.5	10.7	0.0	2.0
LnGrp Delay(d),s/veh	52.6	25.8	25.7	233.9	11.9	11.9	22.9	0.0	20.2	363.1	0.0	21.6
LnGrp LOS	D	C	C	F	B	B	C		C	F		C
Approach Vol, veh/h		1280			818			63			282	
Approach Delay, s/veh		27.0			20.9			21.5			211.7	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	43.7		24.5	5.0	45.5		24.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	10.5	32.5		21.0	7.5	32.5		21.0
Max Q Clear Time (g_c+I1), s	4.6	11.8		22.5	3.0	25.0		22.5
Green Ext Time (p_c), s	0.0	1.7		0.0	0.0	2.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	46.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	966	402	1	860	15	390	21	45	193	0	171
Future Volume (veh/h)	40	966	402	1	860	15	390	21	45	193	0	171
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1710	1676	1676	1676	1676	1676	1710
Adj Flow Rate, veh/h	43	1028	0	1	915	16	431	0	0	205	0	182
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	1904	852	1	1774	31	486	0	217	230	0	206
Arrive On Green	0.04	0.60	0.00	0.00	1.00	1.00	0.15	0.00	0.00	0.14	0.00	0.14
Sat Flow, veh/h	1597	3185	1425	1597	3201	56	3193	0	1425	1597	0	1425
Grp Volume(v), veh/h	43	1028	0	1	455	476	431	0	0	205	0	182
Grp Sat Flow(s),veh/h/ln	1597	1593	1425	1597	1593	1664	1597	0	1425	1597	0	1425
Q Serve(g_s), s	4.0	28.8	0.0	0.1	0.0	0.0	19.8	0.0	0.0	18.9	0.0	18.8
Cycle Q Clear(g_c), s	4.0	28.8	0.0	0.1	0.0	0.0	19.8	0.0	0.0	18.9	0.0	18.8
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	1904	852	1	883	923	486	0	217	230	0	206
V/C Ratio(X)	0.63	0.54	0.00	0.94	0.52	0.52	0.89	0.00	0.00	0.89	0.00	0.88
Avail Cap(c_a), veh/h	103	1904	852	39	883	923	941	0	420	279	0	249
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.7	17.9	0.0	75.0	0.0	0.0	62.3	0.0	0.0	63.0	0.0	63.0
Incr Delay (d2), s/veh	3.6	1.1	0.0	226.2	2.1	2.1	2.2	0.0	0.0	22.2	0.0	23.4
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	1.8	12.9	0.0	0.1	0.5	0.5	8.9	0.0	0.0	9.8	0.0	8.8
LnGrp Delay(d),s/veh	74.3	19.0	0.0	301.2	2.1	2.1	64.6	0.0	0.0	85.2	0.0	86.4
LnGrp LOS	E	B		F	A	A	E			F		F
Approach Vol, veh/h		1071			932			431			387	
Approach Delay, s/veh		21.2			2.4			64.6			85.8	
Approach LOS		C			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	3.9	93.7		25.7	10.4	87.1		26.8
Change Period (Y+Rc), s	3.7	5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	4.0	52.6		* 26	10.0	52.6		44.0
Max Q Clear Time (g_c+I1), s	2.1	30.8		20.9	6.0	2.0		21.8
Green Ext Time (p_c), s	0.0	7.5		0.5	0.0	10.9		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	30.5
HCM 2010 LOS	C

Notes

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	730	414	319	527	2	171	5	662	0	0	10
Future Volume (veh/h)	12	730	414	319	527	2	171	5	662	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	0	1863	1900
Adj Flow Rate, veh/h	12	760	0	332	549	2	178	5	690	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	2	1042	466	359	1803	7	557	14	873	0	0	540
Arrive On Green	0.00	0.29	0.00	0.20	0.50	0.50	0.34	0.34	0.34	0.00	0.00	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3616	13	1350	42	1583	0	0	1579
Grp Volume(v), veh/h	12	760	0	332	269	282	183	0	690	0	0	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1860	1392	0	1583	0	0	1579
Q Serve(g_s), s	0.1	14.4	0.0	13.7	6.7	6.7	7.3	0.0	25.5	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.1	14.4	0.0	13.7	6.7	6.7	7.6	0.0	25.5	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.01	0.97		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	2	1042	466	359	882	927	571	0	873	0	0	540
V/C Ratio(X)	5.04	0.73	0.00	0.92	0.30	0.30	0.32	0.00	0.79	0.00	0.00	0.02
Avail Cap(c_a), veh/h	238	1424	637	714	882	927	571	0	873	0	0	540
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	37.3	23.6	0.0	29.2	11.0	11.0	18.7	0.0	13.3	0.0	0.0	16.1
Incr Delay (d2), s/veh	1891.9	1.6	0.0	4.3	0.3	0.3	0.3	0.0	5.0	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	9.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	7.2	0.0	7.1	3.3	3.4	2.9	0.0	12.4	0.0	0.0	0.1
LnGrp Delay(d),s/veh	1938.3	25.3	0.0	33.5	11.3	11.3	19.0	0.0	18.3	0.0	0.0	16.1
LnGrp LOS	F	C		C	B	B	B		B			B
Approach Vol, veh/h		772			883			873			10	
Approach Delay, s/veh		55.0			19.7			18.4			16.1	
Approach LOS		D			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.1	26.0		29.5	3.9	41.2		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	15.7	16.4		2.3	2.1	8.7		27.5
Green Ext Time (p_c), s	0.4	5.6		0.0	0.0	4.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	30.0
HCM 2010 LOS	C

Appendix C: Parking Surveys

Date: June 5, 2019

Lot 1	General	ADA	MRI	Valet
	149	**3**	**3**	**20**
7:00 AM	61	1	2	13
8:00 AM	52	1	2	6
9:00 AM	55	1	1	6
10:00 AM	117	1	2	7
11:00 AM	109	2	2	7
12:00 PM	107	3	1	7
1:00 PM	105	3	1	6
2:00 PM	109	0	1	5
3:00 PM	110	3	2	5
4:00 PM	112	0	2	-
5:00 PM	114	2	0	-
6:00 PM	116	2	2	-

Lot 7	Patient	ADA
	55	**5**
7:00 AM	10	1
8:00 AM	12	3
9:00 AM	48	3
10:00 AM	36	2
11:00 AM	25	1
12:00 PM	16	1
1:00 PM	26	2
2:00 PM	33	1
3:00 PM	35	0
4:00 PM	29	1
5:00 PM	10	0
6:00 PM	4	1

Lot 2	General	Blocked
	46	**-**
7:00 AM	9	-
8:00 AM	12	-
9:00 AM	23	-
10:00 AM	46	-
11:00 AM	45	-
12:00 PM	43	-
1:00 PM	41	-
2:00 PM	42	-
3:00 PM	44	-
4:00 PM	41	-
5:00 PM	33	-
6:00 PM	41	-

Lot 8	Emergency	Stemi	Stroke	ADA	Visitors	Pick up/ Drop off
	41	**1**	**1**	**1**	**5**	**1**
7:00 AM	23	1	0	1	0	0
8:00 AM	22	1	0	1	2	0
9:00 AM	30	1	0	1	5	0
10:00 AM	28	1	0	1	3	0
11:00 AM	30	1	0	0	3	0
12:00 PM	32	1	0	0	3	0
1:00 PM	33	0	0	0	4	0
2:00 PM	30	0	0	0	3	1
3:00 PM	27	0	0	0	2	0
4:00 PM	30	0	0	0	3	0
5:00 PM	29	0	0	0	3	1
6:00 PM	30	0	0	0	4	0

Lot 3	Employee	Blocked
	83	**-**
7:00 AM	40	-
8:00 AM	60	-
9:00 AM	62	-
10:00 AM	73	-
11:00 AM	63	-
12:00 PM	72	-
1:00 PM	64	-
2:00 PM	55	-
3:00 PM	63	-
4:00 PM	55	-
5:00 PM	44	-
6:00 PM	29	-

Lot 9	1595 MOB Patient	Patient
	102	23
7:00 AM	24	5
8:00 AM	24	5
9:00 AM	54	12
10:00 AM	49	11
11:00 AM	67	15
12:00 PM	59	13
1:00 PM	52	12
2:00 PM	52	12
3:00 PM	57	13
4:00 PM	61	14
5:00 PM	46	10
6:00 PM	36	8

Lot 4	General
	28
7:00 AM	28
8:00 AM	28
9:00 AM	28
10:00 AM	28
11:00 AM	28
12:00 PM	28
1:00 PM	28
2:00 PM	28
3:00 PM	24
4:00 PM	21
5:00 PM	20
6:00 PM	14

Lot 10	1595 MOB Patient	1595 ADA
	39	**4**
7:00 AM	11	0
8:00 AM	12	1
9:00 AM	39	4
10:00 AM	39	4
11:00 AM	35	3
12:00 PM	29	2
1:00 PM	30	3
2:00 PM	33	3
3:00 PM	38	4
4:00 PM	30	2
5:00 PM	14	1
6:00 PM	7	0

Lot 5	General	ADA	Employee	HEV
	28	**8**	**188**	**7**
7:00 AM	26	2	126	6
8:00 AM	26	1	171	6
9:00 AM	27	3	180	7
10:00 AM	28	5	182	7
11:00 AM	27	5	182	7
12:00 PM	28	6	181	7
1:00 PM	28	5	182	6
2:00 PM	28	4	181	6
3:00 PM	24	6	157	2
4:00 PM	21	3	125	2
5:00 PM	13	2	72	2
6:00 PM	9	4	56	1

Lot 11	Valet	Expectant Mothers	Shuttle	ADA
	11	**2**	**1**	**8**
7:00 AM	4	1	0	5
8:00 AM	2	1	1	5
9:00 AM	2	1	0	8
10:00 AM	2	1	0	5
11:00 AM	5	1	0	4
12:00 PM	4	2	1	7
1:00 PM	3	1	1	7
2:00 PM	8	1	1	5
3:00 PM	5	1	1	7
4:00 PM	3	1	1	3
5:00 PM	0	0	1	0
6:00 PM	0	0	1	0

Lot 6	Employee	Overflow
	210	**-**
7:00 AM	84	2
8:00 AM	141	4
9:00 AM	182	9
10:00 AM	190	16
11:00 AM	191	17
12:00 PM	182	17
1:00 PM	178	19
2:00 PM	170	16
3:00 PM	162	16
4:00 PM	95	13
5:00 PM	56	5
6:00 PM	33	3

Lot 12	Reserved	General	ADA	Radiologist
	25	**1**	**4**	**2**
7:00 AM	8	0	0	2
8:00 AM	15	0	0	2
9:00 AM	25	1	0	2
10:00 AM	22	0	3	2
11:00 AM	24	1	1	2
12:00 PM	22	1	0	2
1:00 PM	25	1	0	2
2:00 PM	18	1	1	2
3:00 PM	22	0	1	2
4:00 PM	16	0	2	1
5:00 PM	8	0	1	1
6:00 PM	5	0	1	1

Date: June 6, 2019

Lot 1	General	ADA	MRI	Valet
	149	**3**	**3**	**20**
7:00 AM	52	2	1	14
8:00 AM	43	2	1	9
9:00 AM	64	2	1	8
10:00 AM	84	2	0	8
11:00 AM	101	3	0	7
12:00 PM	105	3	0	6
1:00 PM	109	3	0	7
2:00 PM	113	2	1	8
3:00 PM	114	2	3	-
4:00 PM	115	2	2	-
5:00 PM	114	2	2	-
6:00 PM	102	2	2	-

Lot 7	Patient	ADA
	55	**5**
7:00 AM	18	0
8:00 AM	33	0
9:00 AM	49	1
10:00 AM	48	2
11:00 AM	53	5
12:00 PM	24	2
1:00 PM	41	3
2:00 PM	41	3
3:00 PM	36	2
4:00 PM	31	1
5:00 PM	10	0
6:00 PM	1	0

Lot 2	General	Blocked
	46	**-**
7:00 AM	9	-
8:00 AM	13	-
9:00 AM	32	-
10:00 AM	39	-
11:00 AM	40	-
12:00 PM	37	1
1:00 PM	38	1
2:00 PM	39	1
3:00 PM	38	1
4:00 PM	38	1
5:00 PM	26	1
6:00 PM	24	1

Lot 8	Emergency	Stemi	Stroke	ADA	Visitors	Pick up/ Drop off
	41	**1**	**1**	**1**	**5**	**1**
7:00 AM	21	1	0	1	3	0
8:00 AM	22	1	0	1	4	0
9:00 AM	26	1	0	1	4	0
10:00 AM	32	1	0	1	4	0
11:00 AM	32	1	0	1	3	0
12:00 PM	24	1	0	1	4	0
1:00 PM	28	1	0	1	4	0
2:00 PM	34	1	0	1	4	0
3:00 PM	26	1	0	0	4	1
4:00 PM	24	1	1	0	4	1
5:00 PM	27	1	1	0	3	0
6:00 PM	20	1	0	0	4	0

Lot 3	Employee	Blocked
	83	**-**
7:00 AM	23	-
8:00 AM	55	-
9:00 AM	68	-
10:00 AM	74	-
11:00 AM	76	-
12:00 PM	76	2
1:00 PM	73	2
2:00 PM	75	2
3:00 PM	55	2
4:00 PM	50	2
5:00 PM	44	2
6:00 PM	36	2

Lot 9	1595 MOB Patient	Patient
	102	23
7:00 AM	21	5
8:00 AM	26	6
9:00 AM	39	9
10:00 AM	49	11
11:00 AM	60	14
12:00 PM	51	11
1:00 PM	47	10
2:00 PM	54	12
3:00 PM	64	14
4:00 PM	53	12
5:00 PM	47	11
6:00 PM	29	6

Lot 4	General
	28
7:00 AM	28
8:00 AM	28
9:00 AM	28
10:00 AM	28
11:00 AM	28
12:00 PM	28
1:00 PM	28
2:00 PM	28
3:00 PM	24
4:00 PM	21
5:00 PM	20
6:00 PM	14

Lot 10	1595 MOB Patient	1595 ADA
	39	**4**
7:00 AM	4	0
8:00 AM	11	1
9:00 AM	21	3
10:00 AM	32	4
11:00 AM	39	4
12:00 PM	28	3
1:00 PM	26	3
2:00 PM	35	3
3:00 PM	39	3
4:00 PM	34	4
5:00 PM	13	1
6:00 PM	4	0

Lot 5	General	ADA	Employee	HEV
	28	**8**	**188**	**7**
7:00 AM	28	2	129	7
8:00 AM	27	4	169	7
9:00 AM	27	4	177	7
10:00 AM	27	5	177	7
11:00 AM	28	4	177	7
12:00 PM	28	4	169	7
1:00 PM	28	3	165	7
2:00 PM	27	3	174	7
3:00 PM	24	4	158	7
4:00 PM	17	2	115	3
5:00 PM	11	2	80	2
6:00 PM	11	2	61	2

Lot 11	Valet	Expectant Mothers	Shuttle	ADA
	11	**2**	**1**	**8**
7:00 AM	4	2	1	4
8:00 AM	0	2	1	5
9:00 AM	2	2	1	5
10:00 AM	3	1	1	6
11:00 AM	2	1	1	8
12:00 PM	3	1	1	7
1:00 PM	5	1	1	8
2:00 PM	7	1	1	5
3:00 PM	3	2	1	4
4:00 PM	2	2	1	5
5:00 PM	2	2	1	7
6:00 PM	0	2	1	5

Lot 6	Employee	Overflow
	210	**-**
7:00 AM	104	2
8:00 AM	170	5
9:00 AM	191	14
10:00 AM	192	16
11:00 AM	193	17
12:00 PM	184	10
1:00 PM	186	19
2:00 PM	177	18
3:00 PM	168	18
4:00 PM	101	15
5:00 PM	79	12
6:00 PM	28	4

Lot 12	Reserved	General	ADA	Radiologist
	25	**1**	**4**	**2**
7:00 AM	13	1	1	2
8:00 AM	14	1	0	2
9:00 AM	23	1	0	2
10:00 AM	23	1	0	2
11:00 AM	21	1	2	2
12:00 PM	19	1	0	2
1:00 PM	18	0	0	2
2:00 PM	15	0	1	2
3:00 PM	16	0	0	2
4:00 PM	17	0	2	2
5:00 PM	10	0	2	1
6:00 PM	4	0	0	1

Appendix D: Hourly Parking Occupancy by Lot

Lot 1				
Time	General	ADA	MRI	Valet
7:00 AM	38%	67%	67%	70%
8:00 AM	32%	67%	67%	40%
9:00 AM	40%	67%	33%	35%
10:00 AM	68%	67%	33%	40%
11:00 AM	70%	100%	33%	35%
12:00 PM	71%	100%	33%	35%
1:00 PM	72%	100%	33%	35%
2:00 PM	74%	33%	33%	35%
3:00 PM	75%	100%	100%	25%
4:00 PM	77%	33%	67%	
5:00 PM	77%	67%	33%	
6:00 PM	73%	67%	67%	

Lot 2	
Time	Employee
7:00 AM	20%
8:00 AM	28%
9:00 AM	61%
10:00 AM	93%
11:00 AM	93%
12:00 PM	87%
1:00 PM	87%
2:00 PM	89%
3:00 PM	89%
4:00 PM	87%
5:00 PM	65%
6:00 PM	72%

Lot 3	
Time	Employee
7:00 AM	39%
8:00 AM	70%
9:00 AM	78%
10:00 AM	89%
11:00 AM	84%
12:00 PM	89%
1:00 PM	83%
2:00 PM	78%
3:00 PM	71%
4:00 PM	64%
5:00 PM	53%
6:00 PM	40%

Lot 4	
Time	General
7:00 AM	100%
8:00 AM	100%
9:00 AM	100%
10:00 AM	100%
11:00 AM	100%
12:00 PM	100%
1:00 PM	100%
2:00 PM	100%
3:00 PM	86%
4:00 PM	75%
5:00 PM	71%
6:00 PM	50%

Lot 5				
Time	General	ADA	Employee	HEV
7:00 AM	96%	25%	68%	100%
8:00 AM	96%	38%	90%	100%
9:00 AM	96%	50%	95%	100%
10:00 AM	100%	63%	96%	100%
11:00 AM	100%	63%	96%	100%
12:00 PM	100%	63%	93%	100%
1:00 PM	100%	50%	93%	100%
2:00 PM	100%	50%	95%	100%
3:00 PM	86%	63%	84%	71%
4:00 PM	68%	38%	64%	43%
5:00 PM	43%	25%	40%	29%
6:00 PM	36%	38%	31%	29%

Lot 6	
Time	Employee
7:00 AM	46%
8:00 AM	77%
9:00 AM	95%
10:00 AM	99%
11:00 AM	100%
12:00 PM	94%
1:00 PM	96%
2:00 PM	91%
3:00 PM	87%
4:00 PM	53%
5:00 PM	37%
6:00 PM	17%

Lot 7		
Time	ADA	Patient
7:00 AM	20%	25%
8:00 AM	40%	42%
9:00 AM	40%	89%
10:00 AM	40%	76%
11:00 AM	60%	71%
12:00 PM	40%	36%
1:00 PM	60%	62%
2:00 PM	40%	67%
3:00 PM	20%	65%
4:00 PM	20%	55%
5:00 PM	0%	18%
6:00 PM	20%	5%

Lot 8				
Time	ADA	Emergency	Stemi	Stroke
7:00 AM	100%	54%	100%	0%
8:00 AM	100%	54%	100%	0%
9:00 AM	100%	68%	100%	0%
10:00 AM	100%	73%	100%	0%
11:00 AM	100%	76%	100%	0%
12:00 PM	100%	68%	100%	0%
1:00 PM	100%	76%	100%	0%
2:00 PM	100%	78%	100%	0%
3:00 PM	0%	66%	100%	0%
4:00 PM	0%	66%	100%	100%
5:00 PM	0%	68%	100%	100%
6:00 PM	0%	61%	100%	0%

Lot 9		
Time	Patient	1595 Patient
7:00 AM	22%	23%
8:00 AM	26%	25%
9:00 AM	48%	46%
10:00 AM	48%	48%
11:00 AM	65%	63%
12:00 PM	52%	54%
1:00 PM	48%	49%
2:00 PM	52%	52%
3:00 PM	61%	60%
4:00 PM	57%	56%
5:00 PM	48%	46%
6:00 PM	30%	32%

Lot 10		
Time	ADA	1595 Patient
7:00 AM	0%	21%
8:00 AM	25%	31%
9:00 AM	100%	77%
10:00 AM	100%	92%
11:00 AM	100%	95%
12:00 PM	75%	74%
1:00 PM	75%	72%
2:00 PM	75%	87%
3:00 PM	100%	100%
4:00 PM	75%	82%
5:00 PM	25%	36%
6:00 PM	0%	15%

Lot 11				
Time	ADA	Valet	Expectant Mothers	Shuttle
7:00 AM	63%	36%	100%	100%
8:00 AM	63%	9%	100%	100%
9:00 AM	88%	18%	100%	100%
10:00 AM	75%	27%	50%	100%
11:00 AM	75%	36%	50%	100%
12:00 PM	88%	36%	100%	100%
1:00 PM	100%	36%	50%	100%
2:00 PM	63%	73%	50%	100%
3:00 PM	75%	36%	100%	100%
4:00 PM	50%	27%	100%	100%
5:00 PM	50%	9%	50%	100%
6:00 PM	38%	0%	50%	100%

Lot 12		
Time	ADA	1575 Patient
7:00 AM	25%	50%
8:00 AM	0%	64%
9:00 AM	0%	96%
10:00 AM	50%	93%
11:00 AM	50%	93%
12:00 PM	0%	86%
1:00 PM	0%	89%
2:00 PM	25%	71%
3:00 PM	25%	75%
4:00 PM	50%	68%
5:00 PM	50%	36%
6:00 PM	25%	21%

Appendix B:
Existing Intersection Counts

Traffic Data Service

San Jose, CA
(408) 622-4787
tdsbay@cs.com

File Name : 1AM FINAL
Site Code : 00000001
Start Date : 6/6/2019
Page No : 1

Groups Printed- Lights - Buses - Trucks

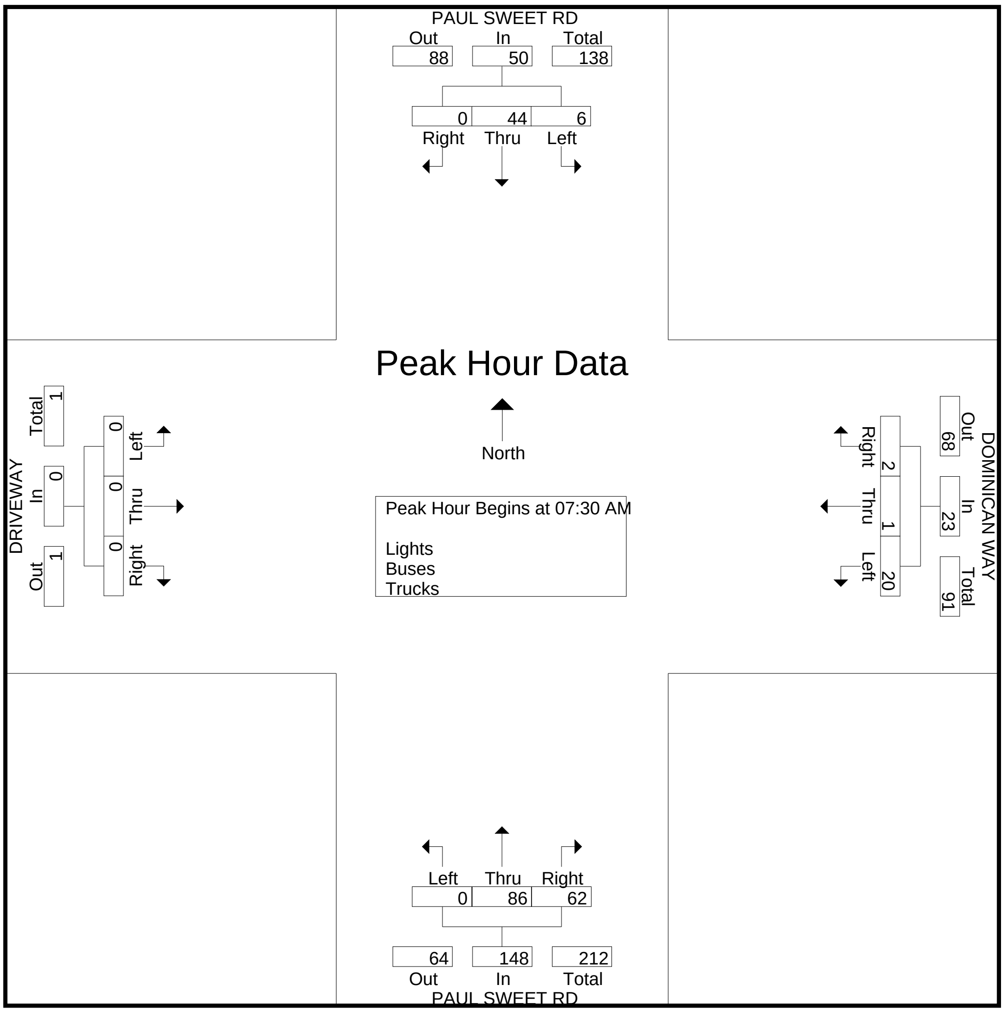
	PAUL SWEET RD Southbound					DOMINICAN WAY Westbound					PAUL SWEET RD Northbound					DRIVEWAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	7	1	1	9	0	0	3	1	4	12	12	1	4	29	0	0	0	3	3	45
07:15 AM	0	5	1	0	6	0	0	4	1	5	9	11	0	0	20	0	0	0	0	0	31
07:30 AM	0	14	2	0	16	0	0	10	1	11	11	21	0	1	33	0	0	0	0	0	60
07:45 AM	0	8	1	1	10	0	1	6	6	13	29	25	0	1	55	0	0	0	0	0	78
Total	0	34	5	2	41	0	1	23	9	33	61	69	1	6	137	0	0	0	3	3	214
08:00 AM	0	14	2	0	16	2	0	1	0	3	16	18	0	0	34	0	0	0	0	0	53
08:15 AM	0	8	1	0	9	0	0	3	2	5	6	22	0	2	30	0	0	0	0	0	44
08:30 AM	0	12	1	1	14	1	0	3	3	7	7	22	0	0	29	0	0	0	1	1	51
08:45 AM	0	7	0	0	7	3	0	6	0	9	9	18	0	0	27	0	0	0	0	0	43
Total	0	41	4	1	46	6	0	13	5	24	38	80	0	2	120	0	0	0	1	1	191
Grand Total	0	75	9	3	87	6	1	36	14	57	99	149	1	8	257	0	0	0	4	4	405
Apprch %	0	86.2	10.3	3.4		10.5	1.8	63.2	24.6		38.5	58	0.4	3.1		0	0	0	100		
Total %	0	18.5	2.2	0.7	21.5	1.5	0.2	8.9	3.5	14.1	24.4	36.8	0.2	2	63.5	0	0	0	1	1	
Lights	0	72	9	3	84	6	1	32	14	53	97	145	1	8	251	0	0	0	4	4	392
% Lights	0	96	100	100	96.6	100	100	88.9	100	93	98	97.3	100	100	97.7	0	0	0	100	100	96.8
Buses	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	2.8	0	1.8	0	0	0	0	0	0	0	0	0	0	0.2
Trucks	0	3	0	0	3	0	0	3	0	3	2	4	0	0	6	0	0	0	0	0	12
% Trucks	0	4	0	0	3.4	0	0	8.3	0	5.3	2	2.7	0	0	2.3	0	0	0	0	0	3

	PAUL SWEET RD Southbound				DOMINICAN WAY Westbound				PAUL SWEET RD Northbound				DRIVEWAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	**14**	**2**	**16**	0	0	**10**	**10**	11	21	0	32	0	0	0	0	58
07:45 AM	0	8	1	9	0	**1**	6	7	**29**	**25**	0	**54**	0	0	0	0	**70**
08:00 AM	0	14	2	16	**2**	0	1	3	16	18	0	34	0	0	0	0	53
08:15 AM	0	8	1	9	0	0	3	3	6	22	0	28	0	0	0	0	40
Total Volume	0	44	6	50	2	1	20	23	62	86	0	148	0	0	0	0	221
% App. Total	0	88	12		8.7	4.3	87		41.9	58.1	0		0	0	0		
PHF	.000	.786	.750	.781	.250	.250	.500	.575	.534	.860	.000	.685	.000	.000	.000	.000	.789

Traffic Data Service

San Jose, CA
(408) 622-4787
tdsbay@cs.com

File Name : 1AM FINAL
Site Code : 00000001
Start Date : 6/6/2019
Page No : 2



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File Name : 1AM FINAL
Site Code : 00000001
Start Date : 6/6/2019
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Groups Printed- Bikes

	PAUL SWEET RD Southbound					DOMINICAN WAY Westbound					PAUL SWEET RD Northbound					DRIVEWAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	3
08:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Grand Total	0	2	0	0	2	0	0	0	0	0	1	1	0	0	2	0	1	0	0	1	5
Apprch %	0	100	0	0		0	0	0	0		50	50	0	0		0	100	0	0		
Total %	0	40	0	0	40	0	0	0	0	0	20	20	0	0	40	0	20	0	0	20	

	PAUL SWEET RD Southbound				DOMINICAN WAY Westbound				PAUL SWEET RD Northbound				DRIVEWAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	**1**	0	0	**1**	0	0	0	0	1
08:00 AM	0	1	0	1	0	0	0	0	0	**1**	0	1	0	0	0	0	**2**
Total Volume	0	2	0	2	0	0	0	0	1	1	0	2	0	0	0	0	4
% App. Total	0	100	0		0	0	0		50	50	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.250	.250	.000	.500	.000	.000	.000	.000	.500

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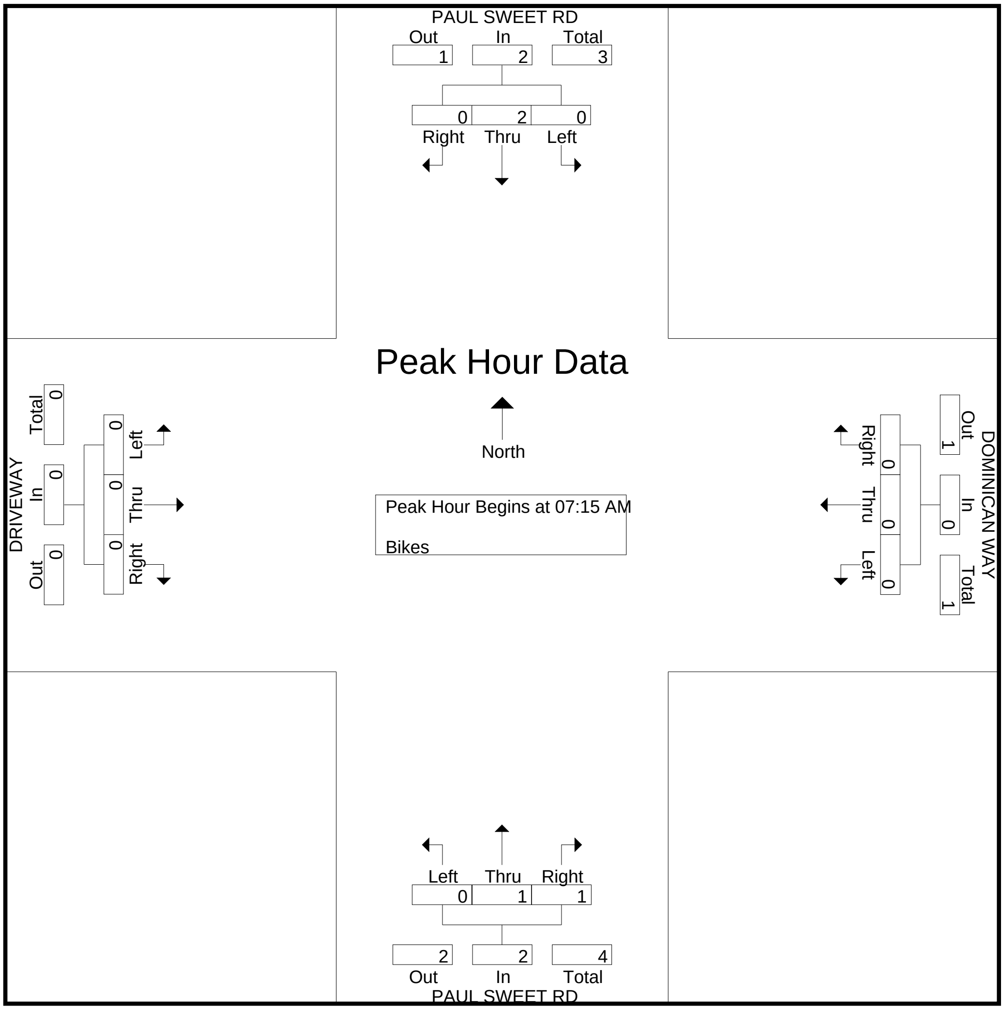

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File Name : 1PM FINAL
Site Code : 00000001
Start Date : 6/6/2019
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Groups Printed- Lights - Buses - Trucks

	PAUL SWEET RD Southbound					DOMINICAN WAY Westbound					PAUL SWEET RD Northbound					DRIVEWAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	15	4	0	19	3	0	7	1	11	15	15	0	1	31	0	1	0	0	1	62
04:15 PM	0	16	1	0	17	4	0	10	0	14	13	14	0	0	27	0	2	0	0	2	60
04:30 PM	0	16	0	0	16	0	0	13	2	15	5	21	0	1	27	1	1	1	1	4	62
04:45 PM	0	12	2	0	14	2	0	7	0	9	13	13	0	0	26	0	0	0	0	0	49
Total	0	59	7	0	66	9	0	37	3	49	46	63	0	2	111	1	4	1	1	7	233
05:00 PM	0	10	1	0	11	1	0	3	1	5	7	11	1	1	20	1	0	0	0	1	37
05:15 PM	0	14	1	2	17	2	0	5	0	7	5	18	0	1	24	2	0	0	2	4	52
05:30 PM	0	15	0	0	15	3	0	11	0	14	5	19	0	0	24	2	1	0	0	3	56
05:45 PM	0	15	0	0	15	4	1	3	2	10	7	23	0	0	30	1	0	0	0	1	56
Total	0	54	2	2	58	10	1	22	3	36	24	71	1	2	98	6	1	0	2	9	201
Grand Total	0	113	9	2	124	19	1	59	6	85	70	134	1	4	209	7	5	1	3	16	434
Apprch %	0	91.1	7.3	1.6		22.4	1.2	69.4	7.1		33.5	64.1	0.5	1.9		43.8	31.2	6.2	18.8		
Total %	0	26	2.1	0.5	28.6	4.4	0.2	13.6	1.4	19.6	16.1	30.9	0.2	0.9	48.2	1.6	1.2	0.2	0.7	3.7	
Lights	0	113	8	2	123	19	1	58	6	84	70	134	1	4	209	7	5	1	3	16	432
% Lights	0	100	88.9	100	99.2	100	100	98.3	100	98.8	100	100	100	100	100	100	100	100	100	100	99.5
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
% Trucks	0	0	11.1	0	0.8	0	0	1.7	0	1.2	0	0	0	0	0	0	0	0	0	0	0.5

	PAUL SWEET RD Southbound				DOMINICAN WAY Westbound				PAUL SWEET RD Northbound				DRIVEWAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	15	**4**	**19**	3	0	7	10	**15**	15	0	**30**	0	1	0	1	**60**
04:15 PM	0	**16**	1	17	**4**	0	10	**14**	13	14	0	27	0	**2**	0	2	60
04:30 PM	0	16	0	16	0	0	**13**	13	5	**21**	0	26	**1**	1	**1**	**3**	58
04:45 PM	0	12	2	14	2	0	7	9	13	13	0	26	0	0	0	0	49
Total Volume	0	59	7	66	9	0	37	46	46	63	0	109	1	4	1	6	227
% App. Total	0	89.4	10.6		19.6	0	80.4		42.2	57.8	0		16.7	66.7	16.7		
PHF	.000	.922	.438	.868	.563	.000	.712	.821	.767	.750	.000	.908	.250	.500	.250	.500	.946

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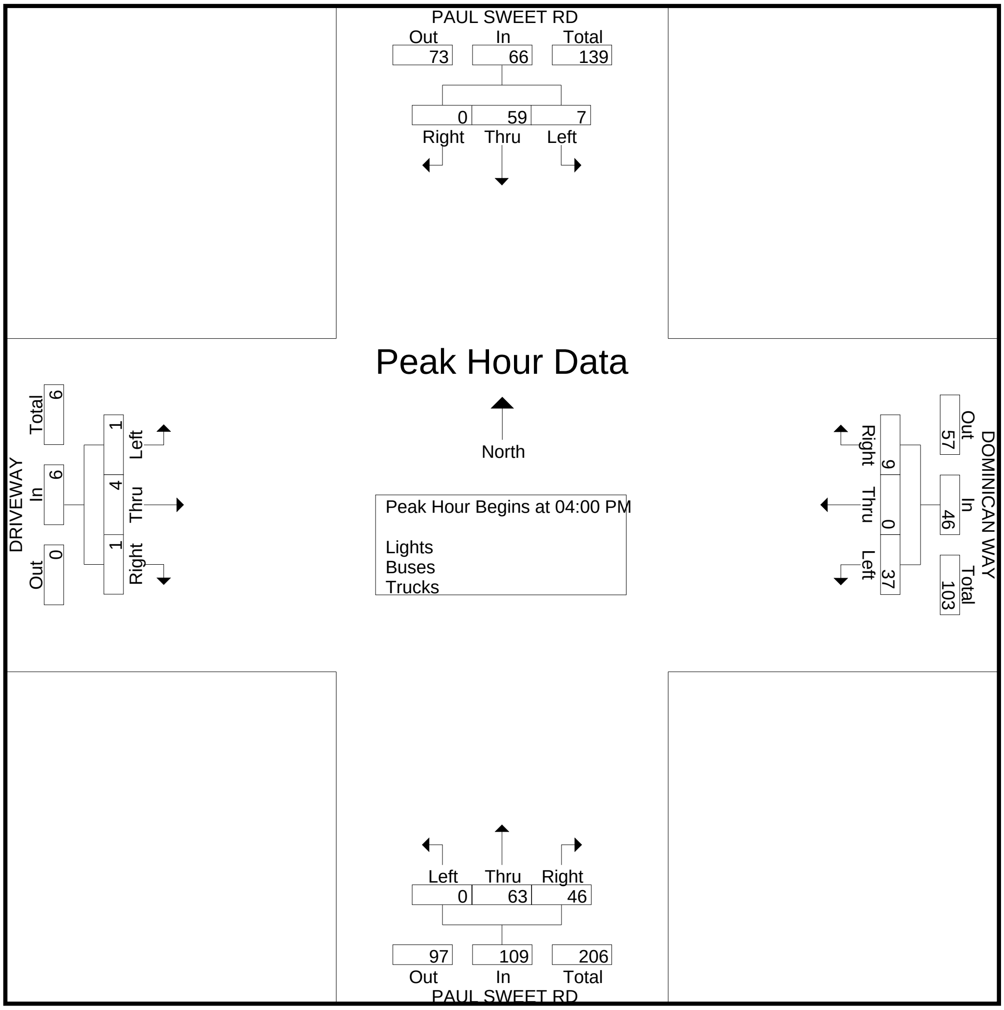

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File Name : 1PM FINAL
Site Code : 00000001
Start Date : 6/6/2019
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Groups Printed- Bikes

	PAUL SWEET RD Southbound					DOMINICAN WAY Westbound					PAUL SWEET RD Northbound					DRIVEWAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	2
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	3
05:00 PM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	2
05:15 PM	0	0	1	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	1	0	2	0	0	2	0	2	0	1	0	0	1	0	0	0	0	0	5
Grand Total	0	2	1	0	3	0	0	3	0	3	1	1	0	0	2	0	0	0	0	0	8
Apprch %	0	66.7	33.3	0		0	0	100	0		50	50	0	0		0	0	0	0		
Total %	0	25	12.5	0	37.5	0	0	37.5	0	37.5	12.5	12.5	0	0	25	0	0	0	0	0	

	PAUL SWEET RD Southbound				DOMINICAN WAY Westbound				PAUL SWEET RD Northbound				DRIVEWAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	0	**1**	**1**	**1**	0	0	**1**	0	0	0	0	**2**
04:45 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	0	0	0	0	0	1	1	0	**1**	0	1	0	0	0	0	2
05:15 PM	0	0	**1**	1	0	0	1	1	0	0	0	0	0	0	0	0	2
Total Volume	0	1	1	2	0	0	3	3	1	1	0	2	0	0	0	0	7
% App. Total	0	50	50		0	0	100		50	50	0		0	0	0		
PHF	.000	.250	.250	.500	.000	.000	.750	.750	.250	.250	.000	.500	.000	.000	.000	.000	.875

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File Name : 1PM FINAL
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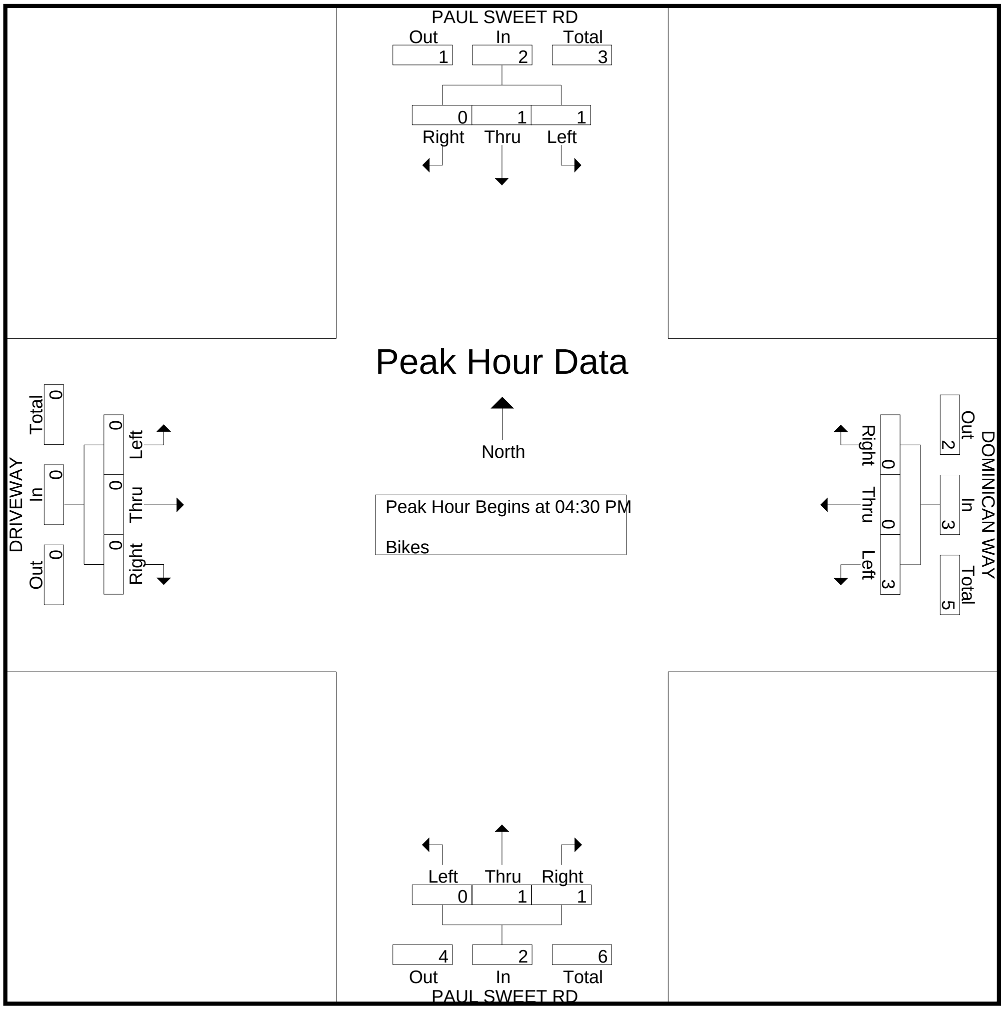

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File Name : 2AM FINAL
Site Code : 00000002
Start Date : 6/6/2019

Groups Printed- Lights - Buses - Trucks

	PAUL SWEET RD Southbound					PROJECT DW Westbound					PAUL SWEET RD Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	12	1	0	13	0	0	0	1	1	6	26	0	0	32	0	0	0	0	0	46
07:15 AM	0	10	0	0	10	0	0	3	0	3	17	22	0	0	39	0	0	0	0	0	52
07:30 AM	0	25	0	0	25	0	0	1	1	2	9	33	0	0	42	0	0	0	0	0	69
07:45 AM	0	13	0	0	13	0	0	0	0	0	9	54	0	0	63	0	0	0	0	0	76
Total	0	60	1	0	61	0	0	4	2	6	41	135	0	0	176	0	0	0	0	0	243
08:00 AM	0	12	0	0	12	0	0	1	0	1	7	37	0	1	45	0	0	0	0	0	58
08:15 AM	0	14	0	0	14	0	0	4	1	5	5	28	0	0	33	0	0	0	0	0	52
08:30 AM	0	15	0	0	15	0	0	4	1	5	6	32	0	0	38	0	0	0	0	0	58
08:45 AM	0	12	1	0	13	0	0	2	4	6	9	27	0	1	37	0	0	0	0	0	56
Total	0	53	1	0	54	0	0	11	6	17	27	124	0	2	153	0	0	0	0	0	224
Grand Total	0	113	2	0	115	0	0	15	8	23	68	259	0	2	329	0	0	0	0	0	467
Apprch %	0	98.3	1.7	0		0	0	65.2	34.8		20.7	78.7	0	0.6		0	0	0	0		
Total %	0	24.2	0.4	0	24.6	0	0	3.2	1.7	4.9	14.6	55.5	0	0.4	70.4	0	0	0	0	0	
Lights	0	106	2	0	108	0	0	15	8	23	68	253	0	2	323	0	0	0	0	0	454
% Lights	0	93.8	100	0	93.9	0	0	100	100	100	100	97.7	0	100	98.2	0	0	0	0	0	97.2
Buses	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Buses	0	0.9	0	0	0.9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2
Trucks	0	6	0	0	6	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	12
% Trucks	0	5.3	0	0	5.2	0	0	0	0	0	0	2.3	0	0	1.8	0	0	0	0	0	2.6

	PAUL SWEET RD Southbound				PROJECT DW Westbound				PAUL SWEET RD Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	10	0	10	0	0	**3**	**3**	**17**	22	0	39	0	0	0	0	52
07:30 AM	0	**25**	0	**25**	0	0	1	1	9	33	0	42	0	0	0	0	68
07:45 AM	0	13	0	13	0	0	0	0	9	**54**	0	**63**	0	0	0	0	**76**
08:00 AM	0	12	0	12	0	0	1	1	7	37	0	44	0	0	0	0	57
Total Volume	0	60	0	60	0	0	5	5	42	146	0	188	0	0	0	0	253
% App. Total	0	100	0		0	0	100		22.3	77.7	0		0	0	0		
PHF	.000	.600	.000	.600	.000	.000	.417	.417	.618	.676	.000	.746	.000	.000	.000	.000	.832

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File Name : 2AM FINAL
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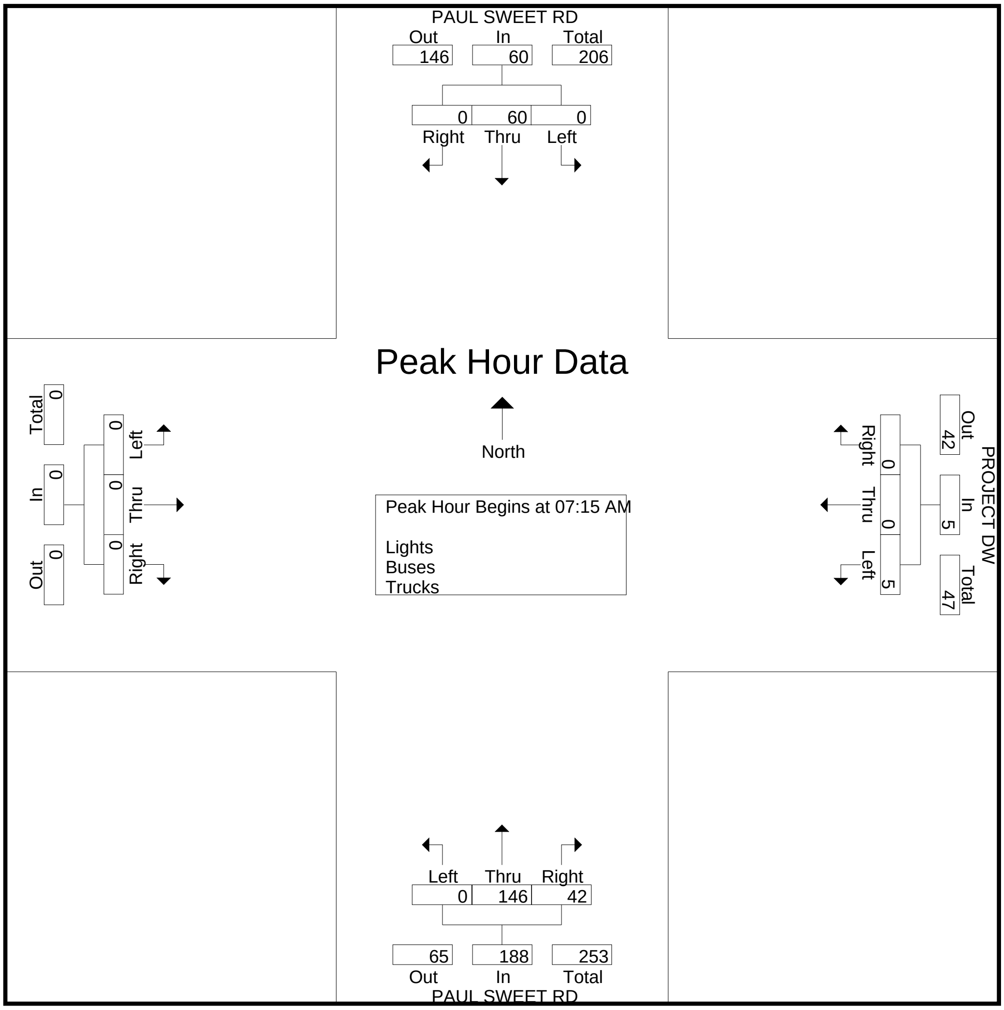

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File Name : 2AM FINAL
Site Code : 00000002
Start Date : 6/6/2019

Groups Printed- Bikes

	PAUL SWEET RD Southbound					PROJECT DW Westbound					PAUL SWEET RD Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
08:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Grand Total	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	60	0	0	60	0	0	0	0	0	0	40	0	0	40	0	0	0	0	0	

	PAUL SWEET RD Southbound				PROJECT DW Westbound				PAUL SWEET RD Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
08:00 AM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	**2**
Total Volume	0	2	0	2	0	0	0	0	0	2	0	2	0	0	0	0	4
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.500	.000	.500	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.500

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File Name : 2AM FINAL
Site Code : 00000002
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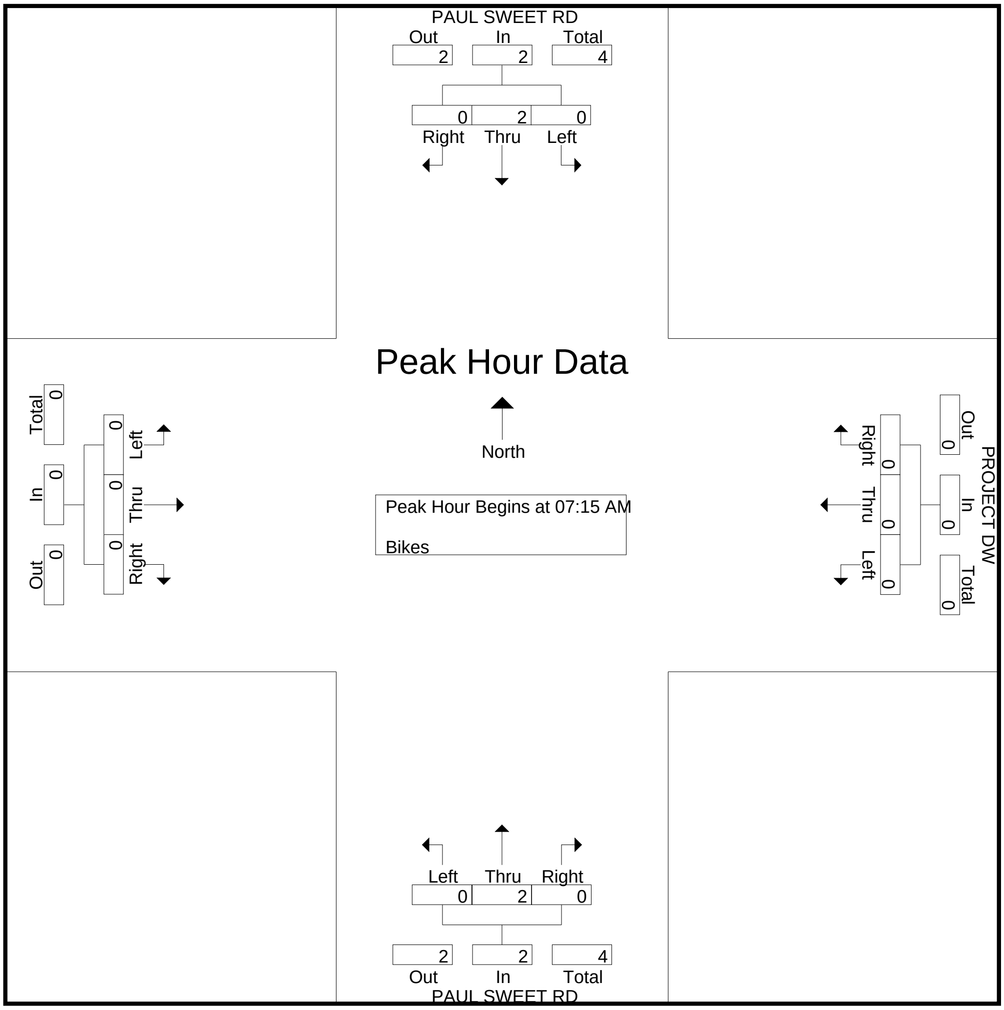

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File Name : 2PM FINAL
Site Code : 00000002
Start Date : 6/6/2019
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Groups Printed- Lights - Buses - Trucks

	PAUL SWEET RD Southbound					PROJECT DW Westbound					PAUL SWEET RD Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	22	0	1	23	0	0	2	1	3	1	29	0	0	30	0	0	0	0	0	56
04:15 PM	0	27	0	0	27	0	0	3	1	4	1	27	0	0	28	0	0	0	0	0	59
04:30 PM	0	35	0	0	35	0	0	0	1	1	0	26	2	0	28	0	0	0	0	0	64
04:45 PM	0	21	1	0	22	0	0	4	0	4	3	27	0	0	30	0	0	0	0	0	56
Total	0	105	1	1	107	0	0	9	3	12	5	109	2	0	116	0	0	0	0	0	235
05:00 PM	0	20	0	0	20	0	0	4	1	5	2	19	0	0	21	0	0	0	0	0	46
05:15 PM	0	26	0	0	26	0	0	2	0	2	2	24	0	0	26	0	0	0	0	0	54
05:30 PM	0	31	0	1	32	1	0	3	1	5	2	24	0	0	26	0	0	0	0	0	63
05:45 PM	0	21	0	0	21	0	0	4	1	5	0	29	0	0	29	0	0	0	0	0	55
Total	0	98	0	1	99	1	0	13	3	17	6	96	0	0	102	0	0	0	0	0	218
Grand Total	0	203	1	2	206	1	0	22	6	29	11	205	2	0	218	0	0	0	0	0	453
Apprch %	0	98.5	0.5	1		3.4	0	75.9	20.7		5	94	0.9	0		0	0	0	0		
Total %	0	44.8	0.2	0.4	45.5	0.2	0	4.9	1.3	6.4	2.4	45.3	0.4	0	48.1	0	0	0	0	0	
Lights	0	203	1	2	206	1	0	22	6	29	11	205	2	0	218	0	0	0	0	0	453
% Lights	0	100	100	100	100	100	0	100	100	100	100	100	100	0	100	0	0	0	0	0	100
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	PAUL SWEET RD Southbound				PROJECT DW Westbound				PAUL SWEET RD Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	22	0	22	0	0	2	2	1	**29**	0	**30**	0	0	0	0	54
04:15 PM	0	27	0	27	0	0	3	3	1	27	0	28	0	0	0	0	58
04:30 PM	0	**35**	0	**35**	0	0	0	0	0	26	**2**	28	0	0	0	0	**63**
04:45 PM	0	21	**1**	22	0	0	**4**	**4**	**3**	27	0	30	0	0	0	0	56
Total Volume	0	105	1	106	0	0	9	9	5	109	2	116	0	0	0	0	231
% App. Total	0	99.1	0.9		0	0	100		4.3	94	1.7		0	0	0		
PHF	.000	.750	.250	.757	.000	.000	.563	.563	.417	.940	.250	.967	.000	.000	.000	.000	.917

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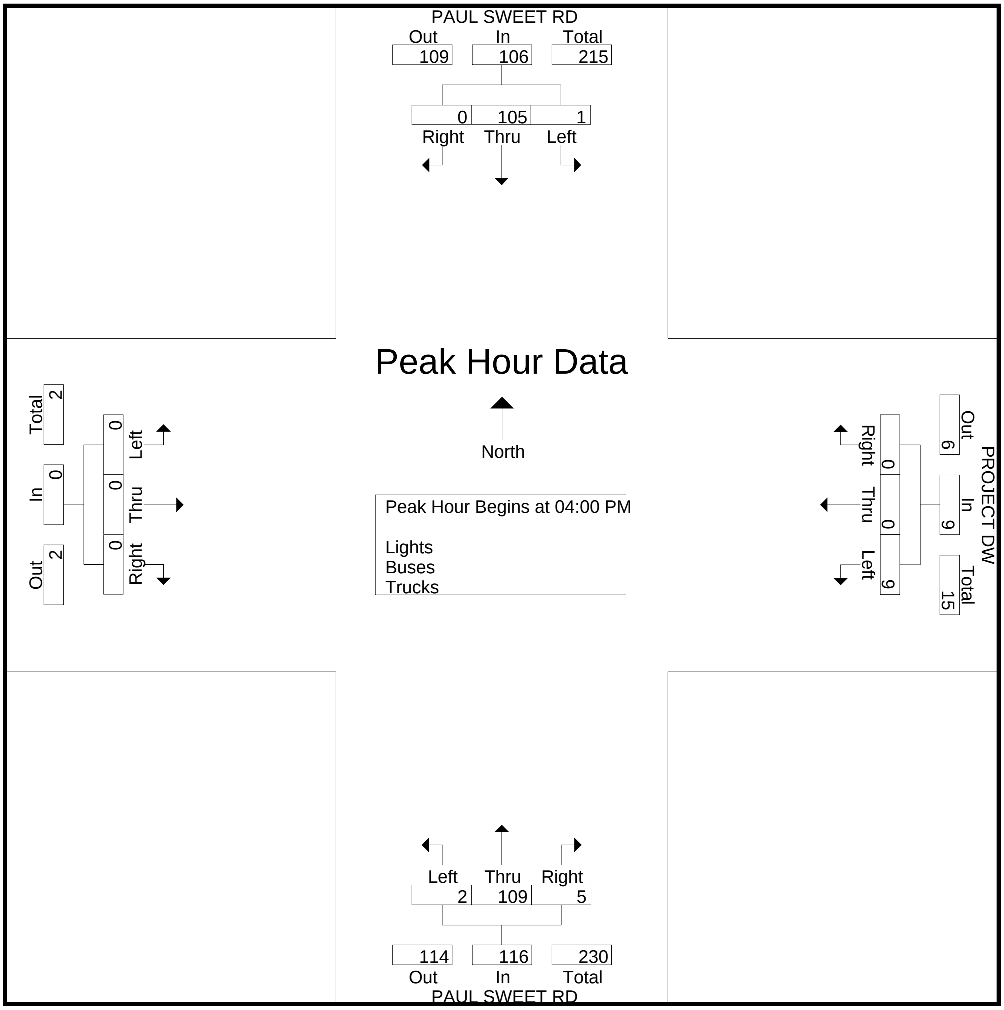

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Groups Printed- Bikes

	PAUL SWEET RD Southbound					PROJECT DW Westbound					PAUL SWEET RD Northbound					Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
05:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	3	0	0	3	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	7
Grand Total	0	5	0	0	5	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	9
Apprch %	0	100	0	0		0	0	100	0		0	100	0	0		0	0	0	0		
Total %	0	55.6	0	0	55.6	0	0	11.1	0	11.1	0	33.3	0	0	33.3	0	0	0	0	0	

	PAUL SWEET RD Southbound				PROJECT DW Westbound				PAUL SWEET RD Northbound				Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00 PM	0	1	0	1	0	0	0	0	0	**2**	0	**2**	0	0	0	0	**3**
05:15 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	1	0	1	0	0	**1**	**1**	0	0	0	0	0	0	0	0	2
Total Volume	0	4	0	4	0	0	1	1	0	2	0	2	0	0	0	0	7
% App. Total	0	100	0		0	0	100		0	100	0		0	0	0		
PHF	.000	1.00	.000	1.00	.000	.000	.250	.250	.000	.250	.000	.250	.000	.000	.000	.000	.583

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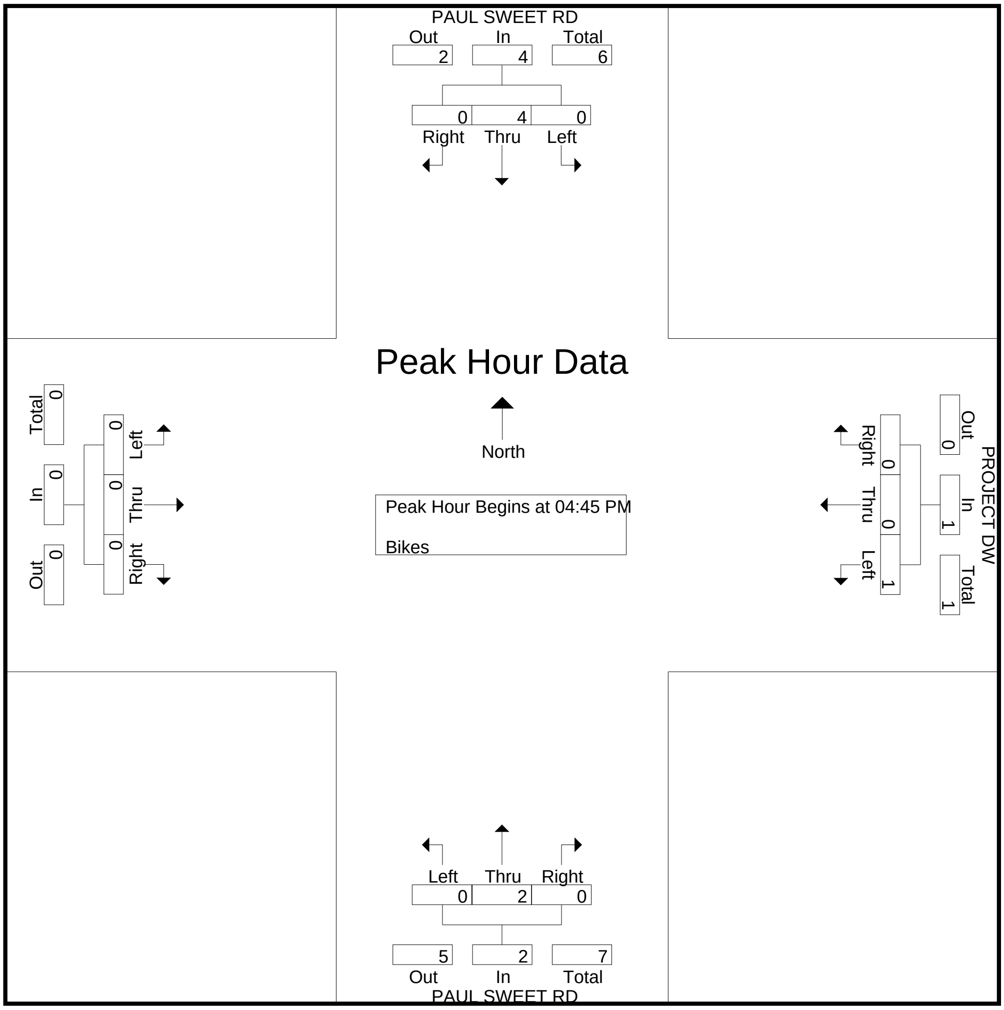

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Groups Printed- Lights - Buses - Trucks

	PROJECT DW Southbound					SOQUEL DR Westbound					Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	0	0	0	2	1	117	0	0	118	0	0	0	0	0	0	92	7	0	99	219
07:15 AM	3	0	1	0	4	1	153	0	0	154	0	0	0	0	0	0	123	10	0	133	291
07:30 AM	18	0	0	0	18	0	238	0	0	238	0	0	0	0	0	0	168	9	0	177	433
07:45 AM	12	0	1	0	13	2	262	0	0	264	0	0	0	0	0	0	188	12	0	200	477
Total	35	0	2	0	37	4	770	0	0	774	0	0	0	0	0	0	571	38	0	609	1420
08:00 AM	5	0	0	1	6	0	247	0	0	247	0	0	0	0	0	0	193	9	0	202	455
08:15 AM	4	0	0	2	6	0	249	0	0	249	0	0	0	0	0	0	178	11	0	189	444
08:30 AM	4	0	0	3	7	1	271	0	0	272	0	0	0	0	0	0	221	12	0	233	512
08:45 AM	10	0	2	1	13	0	289	0	0	289	0	0	0	0	0	0	218	14	0	232	534
Total	23	0	2	7	32	1	1056	0	0	1057	0	0	0	0	0	0	810	46	0	856	1945
Grand Total	58	0	4	7	69	5	1826	0	0	1831	0	0	0	0	0	0	1381	84	0	1465	3365
Apprch %	84.1	0	5.8	10.1		0.3	99.7	0	0		0	0	0	0		0	94.3	5.7	0		
Total %	1.7	0	0.1	0.2	2.1	0.1	54.3	0	0	54.4	0	0	0	0	0	0	41	2.5	0	43.5	
Lights	58	0	4	7	69	5	1776	0	0	1781	0	0	0	0	0	0	1334	84	0	1418	3268
% Lights	100	0	100	100	100	100	97.3	0	0	97.3	0	0	0	0	0	0	96.6	100	0	96.8	97.1
Buses	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	6	0	0	6	16
% Buses	0	0	0	0	0	0	0.5	0	0	0.5	0	0	0	0	0	0	0.4	0	0	0.4	0.5
Trucks	0	0	0	0	0	0	40	0	0	40	0	0	0	0	0	0	41	0	0	41	81
% Trucks	0	0	0	0	0	0	2.2	0	0	2.2	0	0	0	0	0	0	3	0	0	2.8	2.4

	PROJECT DW Southbound				SOQUEL DR Westbound				Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	5	0	0	5	0	247	0	247	0	0	0	0	0	193	9	202	454
08:15 AM	4	0	0	4	0	249	0	249	0	0	0	0	0	178	11	189	442
08:30 AM	4	0	0	4	**1**	271	0	272	0	0	0	0	0	**221**	12	**233**	509
08:45 AM	**10**	0	**2**	**12**	0	**289**	0	**289**	0	0	0	0	0	218	**14**	232	**533**
Total Volume	23	0	2	25	1	1056	0	1057	0	0	0	0	0	810	46	856	1938
% App. Total	92	0	8		0.1	99.9	0		0	0	0		0	94.6	5.4		
PHF	.575	.000	.250	.521	.250	.913	.000	.914	.000	.000	.000	.000	.000	.916	.821	.918	.909

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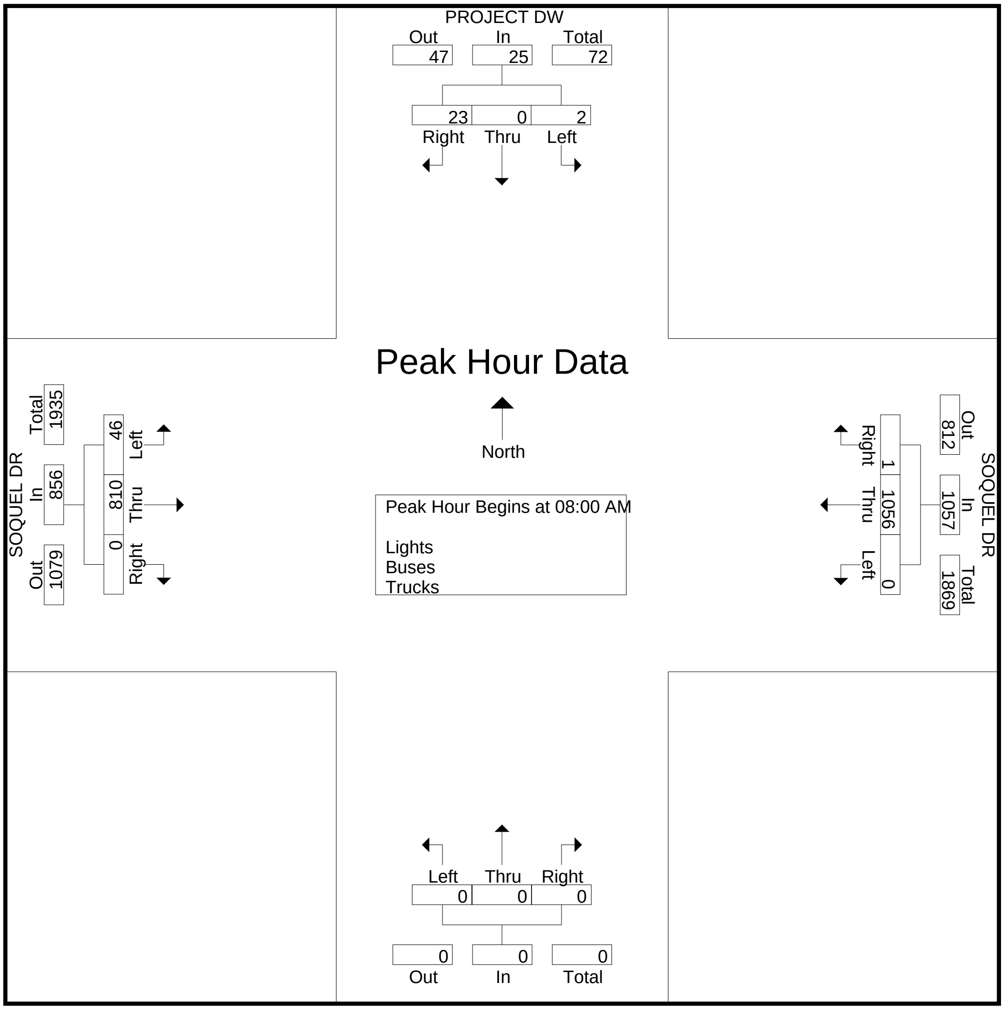

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Groups Printed- Bikes

	PROJECT DW Southbound					SOQUEL DR Westbound					Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	1	0	0	1	8
07:15 AM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	4	0	0	4	11
07:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
07:45 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	5
Total	0	0	0	0	0	0	20	0	0	20	0	0	0	0	0	0	9	0	0	9	29
08:00 AM	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	5
08:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	6
08:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	3
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
Total	1	0	0	0	1	0	8	0	0	8	0	0	0	0	0	0	9	1	0	10	19
Grand Total	1	0	0	0	1	0	28	0	0	28	0	0	0	0	0	0	18	1	0	19	48
Apprch %	100	0	0	0		0	100	0	0		0	0	0	0		0	94.7	5.3	0		
Total %	2.1	0	0	0	2.1	0	58.3	0	0	58.3	0	0	0	0	0	0	37.5	2.1	0	39.6	

	PROJECT DW Southbound				SOQUEL DR Westbound				Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**7**	0	**7**	0	0	0	0	0	1	0	1	8
07:15 AM	0	0	0	0	0	7	0	7	0	0	0	0	0	**4**	0	**4**	**11**
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	5
07:45 AM	0	0	0	0	0	4	0	4	0	0	0	0	0	1	0	1	5
Total Volume	0	0	0	0	0	20	0	20	0	0	0	0	0	9	0	9	29
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.714	.000	.714	.000	.000	.000	.000	.000	.563	.000	.563	.659

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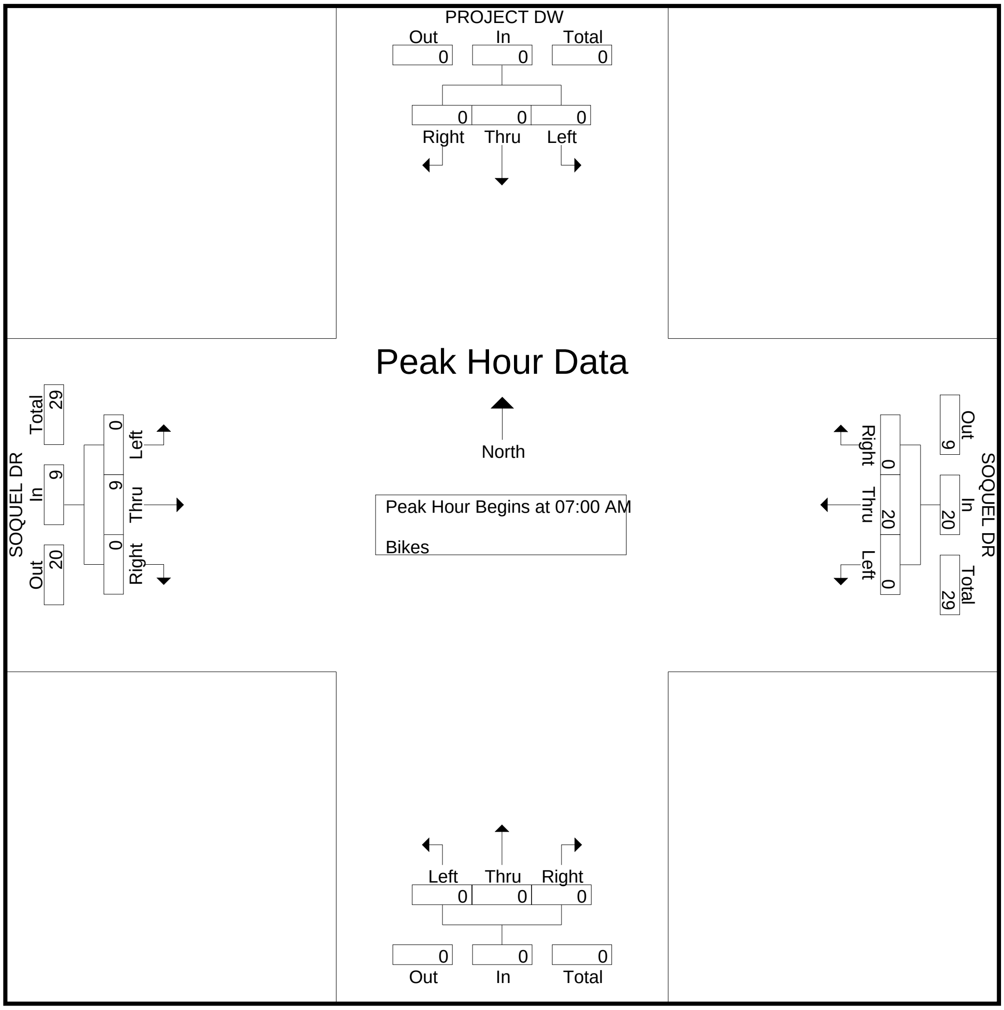

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Groups Printed- Lights - Buses - Trucks

	PROJECT DW Southbound					SOQUEL DR Westbound					Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	3	0	2	2	7	0	223	0	0	223	0	0	0	0	0	0	234	5	0	239	469
04:15 PM	7	0	0	3	10	1	202	0	0	203	0	0	0	0	0	0	310	10	0	320	533
04:30 PM	9	0	1	2	12	0	236	0	0	236	0	0	0	0	0	0	344	4	0	348	596
04:45 PM	8	0	0	0	8	0	217	0	0	217	0	0	0	0	0	0	250	6	0	256	481
Total	27	0	3	7	37	1	878	0	0	879	0	0	0	0	0	0	1138	25	0	1163	2079
05:00 PM	5	0	0	3	8	0	236	0	0	236	0	0	0	0	0	0	206	10	0	216	460
05:15 PM	6	0	1	2	9	0	204	0	0	204	0	0	0	0	0	0	271	7	0	278	491
05:30 PM	10	0	1	1	12	0	217	0	0	217	0	0	0	0	0	0	277	4	0	281	510
05:45 PM	6	0	1	0	7	1	195	0	0	196	0	0	0	0	0	0	282	4	0	286	489
Total	27	0	3	6	36	1	852	0	0	853	0	0	0	0	0	0	1036	25	0	1061	1950
Grand Total	54	0	6	13	73	2	1730	0	0	1732	0	0	0	0	0	0	2174	50	0	2224	4029
Apprch %	74	0	8.2	17.8		0.1	99.9	0	0		0	0	0	0		0	97.8	2.2	0		
Total %	1.3	0	0.1	0.3	1.8	0	42.9	0	0	43	0	0	0	0	0	0	54	1.2	0	55.2	
Lights	53	0	5	13	71	2	1711	0	0	1713	0	0	0	0	0	0	2133	49	0	2182	3966
% Lights	98.1	0	83.3	100	97.3	100	98.9	0	0	98.9	0	0	0	0	0	0	98.1	98	0	98.1	98.4
Buses	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	8	1	0	9	15
% Buses	1.9	0	0	0	1.4	0	0.3	0	0	0.3	0	0	0	0	0	0	0.4	2	0	0.4	0.4
Trucks	0	0	1	0	1	0	14	0	0	14	0	0	0	0	0	0	33	0	0	33	48
% Trucks	0	0	16.7	0	1.4	0	0.8	0	0	0.8	0	0	0	0	0	0	1.5	0	0	1.5	1.2

	PROJECT DW Southbound				SOQUEL DR Westbound				Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	3	0	**2**	5	0	223	0	223	0	0	0	0	0	234	5	239	467
04:15 PM	7	0	0	7	**1**	202	0	203	0	0	0	0	0	310	**10**	320	530
04:30 PM	**9**	0	1	**10**	0	**236**	0	**236**	0	0	0	0	0	**344**	4	**348**	**594**
04:45 PM	8	0	0	8	0	217	0	217	0	0	0	0	0	250	6	256	481
Total Volume	27	0	3	30	1	878	0	879	0	0	0	0	0	1138	25	1163	2072
% App. Total	90	0	10		0.1	99.9	0		0	0	0		0	97.9	2.1		
PHF	.750	.000	.375	.750	.250	.930	.000	.931	.000	.000	.000	.000	.000	.827	.625	.835	.872

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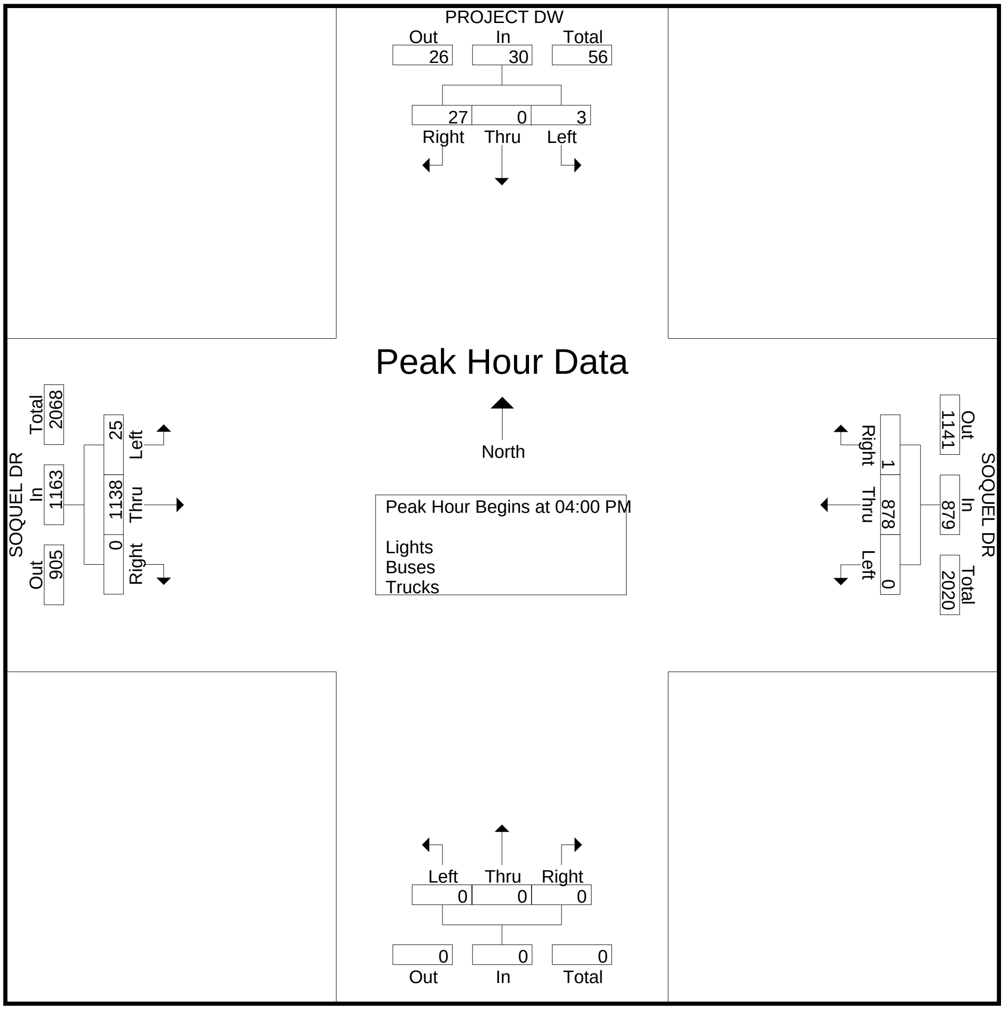

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Groups Printed- Bikes

	PROJECT DW Southbound					SOQUEL DR Westbound					Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	3
04:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
04:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
Total	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	0	8	0	0	8	15
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	6
05:15 PM	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	0	2	1	0	3	7
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
05:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
Total	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	13	1	0	14	20
Grand Total	1	0	0	0	1	1	11	0	0	12	0	0	0	0	0	0	21	1	0	22	35
Apprch %	100	0	0	0		8.3	91.7	0	0		0	0	0	0		0	95.5	4.5	0		
Total %	2.9	0	0	0	2.9	2.9	31.4	0	0	34.3	0	0	0	0	0	0	60	2.9	0	62.9	

	PROJECT DW Southbound				SOQUEL DR Westbound				Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	5
04:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	0	2	3
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**	0	**6**	6
05:15 PM	**1**	0	0	**1**	0	**3**	0	**3**	0	0	0	0	0	2	**1**	3	**7**
Total Volume	1	0	0	1	0	6	0	6	0	0	0	0	0	13	1	14	21
% App. Total	100	0	0		0	100	0		0	0	0		0	92.9	7.1		
PHF	.250	.000	.000	.250	.000	.500	.000	.500	.000	.000	.000	.000	.000	.542	.250	.583	.750

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File Name : 4PM FINAL
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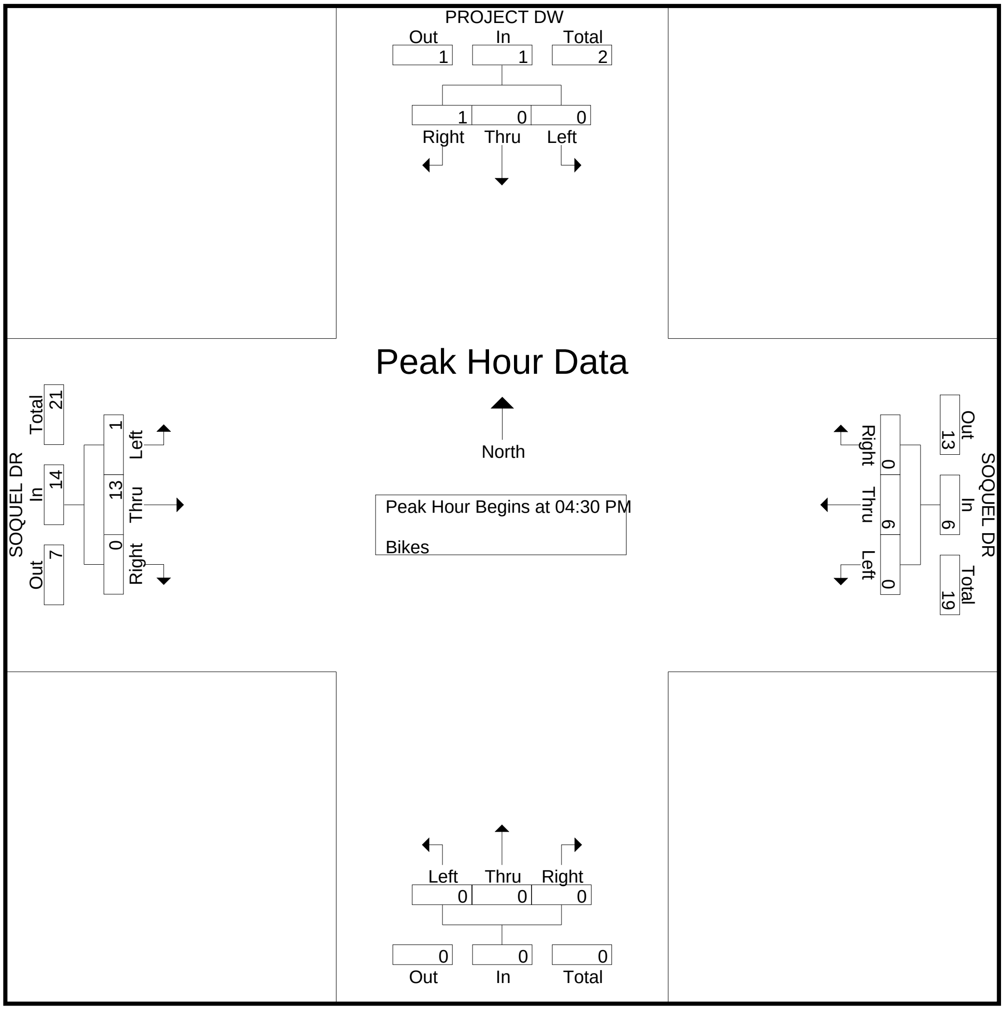

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File Name : 5AM FINAL
Site Code : 00000005
Start Date : 6/6/2019
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Groups Printed- Lights - Buses - Trucks

	HOSPITAL DR Southbound					SOQUEL DR Westbound					COMMERCIAL CROSSING Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	3	0	3	0	6	5	121	1	1	128	2	3	0	0	5	11	78	3	0	92	231
07:15 AM	3	0	4	3	10	9	143	0	1	153	1	4	3	0	8	5	107	10	0	122	293
07:30 AM	13	0	6	2	21	7	229	2	1	239	4	5	3	0	12	14	147	7	0	168	440
07:45 AM	9	1	3	4	17	8	259	3	4	274	9	3	4	3	19	18	149	17	0	184	494
Total	28	1	16	9	54	29	752	6	7	794	16	15	10	3	44	48	481	37	0	566	1458
08:00 AM	9	0	5	0	14	9	237	2	4	252	3	2	0	2	7	20	161	11	0	192	465
08:15 AM	5	0	5	2	12	8	236	1	3	248	4	4	0	3	11	16	142	11	1	170	441
08:30 AM	6	0	3	0	9	6	259	3	0	268	3	2	2	1	8	18	181	17	1	217	502
08:45 AM	9	0	2	0	11	13	259	4	0	276	4	3	3	0	10	25	171	21	0	217	514
Total	29	0	15	2	46	36	991	10	7	1044	14	11	5	6	36	79	655	60	2	796	1922
Grand Total	57	1	31	11	100	65	1743	16	14	1838	30	26	15	9	80	127	1136	97	2	1362	3380
Apprch %	57	1	31	11		3.5	94.8	0.9	0.8		37.5	32.5	18.8	11.2		9.3	83.4	7.1	0.1		
Total %	1.7	0	0.9	0.3	3	1.9	51.6	0.5	0.4	54.4	0.9	0.8	0.4	0.3	2.4	3.8	33.6	2.9	0.1	40.3	
Lights	56	1	31	11	99	64	1698	16	14	1792	30	25	14	9	78	123	1104	96	2	1325	3294
% Lights	98.2	100	100	100	99	98.5	97.4	100	100	97.5	100	96.2	93.3	100	97.5	96.9	97.2	99	100	97.3	97.5
Buses	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	7	0	0	7	17
% Buses	0	0	0	0	0	0	0.6	0	0	0.5	0	0	0	0	0	0	0.6	0	0	0.5	0.5
Trucks	1	0	0	0	1	1	35	0	0	36	0	1	1	0	2	4	25	1	0	30	69
% Trucks	1.8	0	0	0	1	1.5	2	0	0	2	0	3.8	6.7	0	2.5	3.1	2.2	1	0	2.2	2

	HOSPITAL DR Southbound				SOQUEL DR Westbound				COMMERCIAL CROSSING Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	**9**	0	**5**	**14**	9	237	2	248	3	2	0	5	20	161	11	192	459
08:15 AM	5	0	5	10	8	236	1	245	**4**	**4**	0	8	16	142	11	169	432
08:30 AM	6	0	3	9	6	**259**	3	268	3	2	2	7	18	**181**	17	216	500
08:45 AM	9	0	2	11	**13**	259	**4**	**276**	4	3	**3**	**10**	**25**	171	**21**	**217**	**514**
Total Volume	29	0	15	44	36	991	10	1037	14	11	5	30	79	655	60	794	1905
% App. Total	65.9	0	34.1		3.5	95.6	1		46.7	36.7	16.7		9.9	82.5	7.6		
PHF	.806	.000	.750	.786	.692	.957	.625	.939	.875	.688	.417	.750	.790	.905	.714	.915	.927

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File Name : 5AM FINAL
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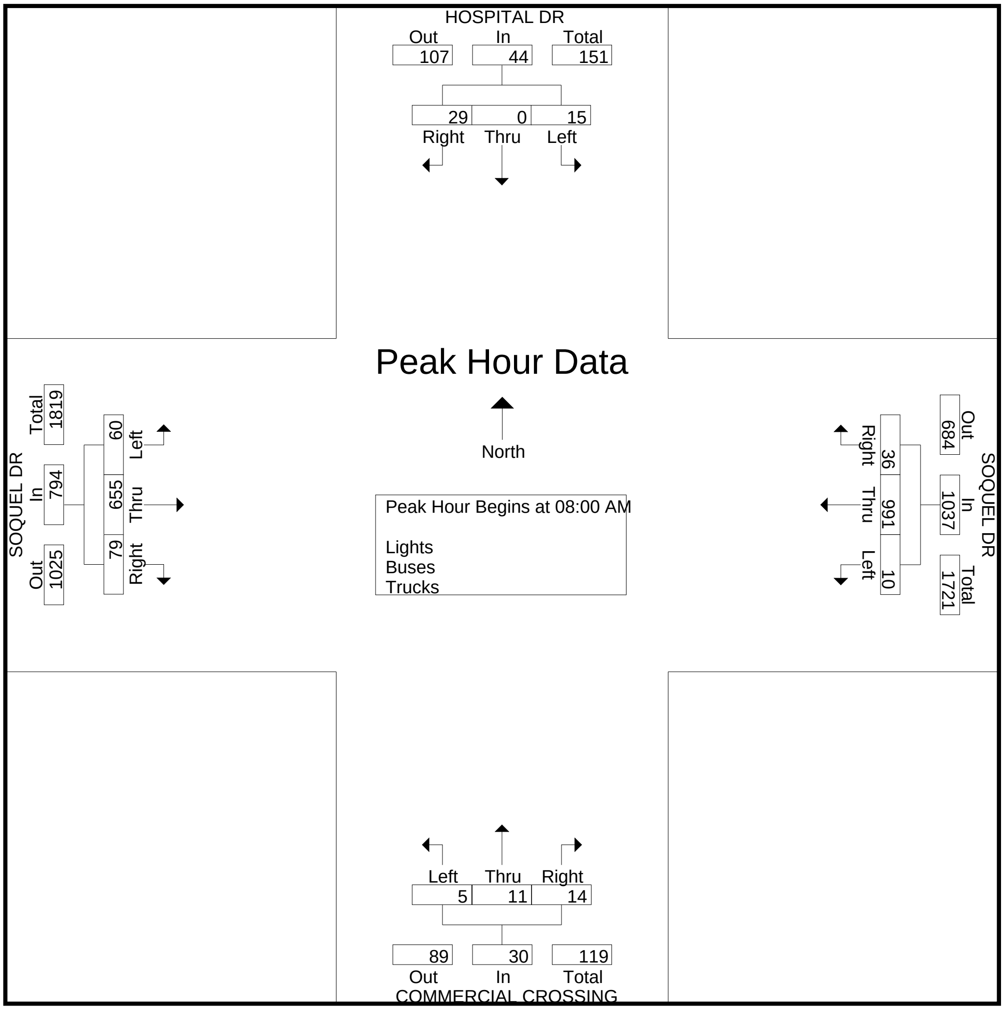

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Groups Printed- Bikes

	HOSPITAL DR Southbound					SOQUEL DR Westbound					COMMERCIAL CROSSING Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	1	0	0	1	8
07:15 AM	0	0	0	0	0	1	6	0	0	7	0	0	0	0	0	1	3	0	0	4	11
07:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	1	0	0	2	4
07:45 AM	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	0	0	0	0	5
Total	0	0	0	0	0	2	19	0	0	21	0	0	0	0	0	2	5	0	0	7	28
08:00 AM	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	3
08:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
08:30 AM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	2	7	0	0	9	0	0	0	0	0	0	1	0	0	1	10
Grand Total	0	0	0	0	0	4	26	0	0	30	0	0	0	0	0	2	6	0	0	8	38
Apprch %	0	0	0	0		13.3	86.7	0	0		0	0	0	0		25	75	0	0		
Total %	0	0	0	0	0	10.5	68.4	0	0	78.9	0	0	0	0	0	5.3	15.8	0	0	21.1	

	HOSPITAL DR Southbound				SOQUEL DR Westbound				COMMERCIAL CROSSING Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	**7**	0	**7**	0	0	0	0	0	1	0	1	8
07:15 AM	0	0	0	0	**1**	6	0	7	0	0	0	0	**1**	**3**	0	**4**	**11**
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	1	1	0	2	4
07:45 AM	0	0	0	0	1	4	0	5	0	0	0	0	0	0	0	0	5
Total Volume	0	0	0	0	2	19	0	21	0	0	0	0	2	5	0	7	28
% App. Total	0	0	0		9.5	90.5	0		0	0	0		28.6	71.4	0		
PHF	.000	.000	.000	.000	.500	.679	.000	.750	.000	.000	.000	.000	.500	.417	.000	.438	.636

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File Name : 5AM FINAL
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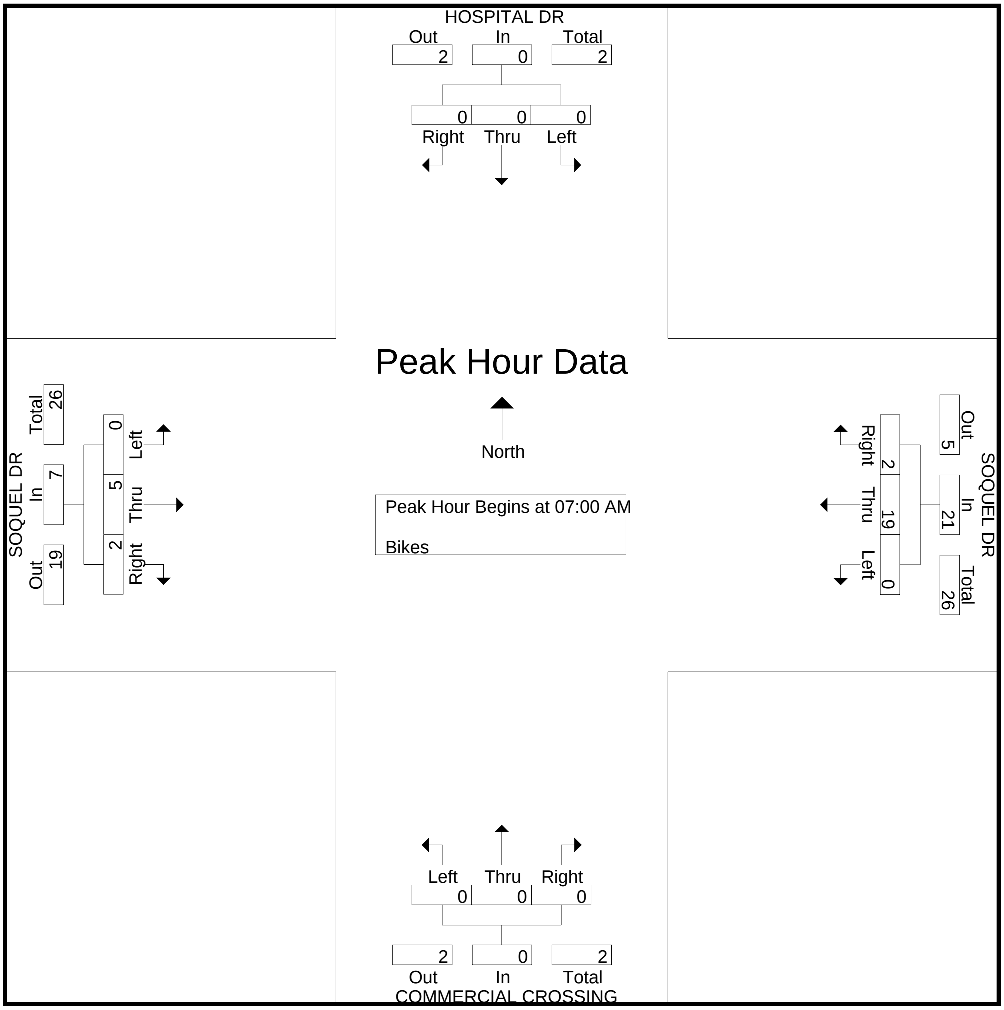

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File Name : 5PM FINAL
Site Code : 00000005
Start Date : 6/6/2019

Groups Printed- Lights - Buses - Trucks

	HOSPITAL DR Southbound					SOQUEL DR Westbound					COMMERCIAL CROSSING Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	19	1	8	2	30	6	198	1	0	205	4	4	7	2	17	17	212	15	0	244	496
04:15 PM	18	1	10	1	30	2	172	6	0	180	5	4	8	3	20	15	271	11	2	299	529
04:30 PM	33	1	11	1	46	6	179	6	2	193	2	2	4	3	11	16	329	7	0	352	602
04:45 PM	15	1	13	2	31	3	171	5	1	180	4	1	9	2	16	17	210	13	0	240	467
Total	85	4	42	6	137	17	720	18	3	758	15	11	28	10	64	65	1022	46	2	1135	2094
05:00 PM	21	1	5	3	30	4	191	2	3	200	3	1	12	1	17	22	180	6	0	208	455
05:15 PM	22	1	12	2	37	4	180	3	2	189	1	1	5	0	7	22	243	2	1	268	501
05:30 PM	8	0	8	1	17	3	197	0	2	202	4	1	6	3	14	16	260	7	0	283	516
05:45 PM	6	0	5	0	11	4	176	6	0	186	3	1	8	3	15	13	250	8	1	272	484
Total	57	2	30	6	95	15	744	11	7	777	11	4	31	7	53	73	933	23	2	1031	1956
Grand Total	142	6	72	12	232	32	1464	29	10	1535	26	15	59	17	117	138	1955	69	4	2166	4050
Apprch %	61.2	2.6	31	5.2		2.1	95.4	1.9	0.7		22.2	12.8	50.4	14.5		6.4	90.3	3.2	0.2		
Total %	3.5	0.1	1.8	0.3	5.7	0.8	36.1	0.7	0.2	37.9	0.6	0.4	1.5	0.4	2.9	3.4	48.3	1.7	0.1	53.5	
Lights	141	6	69	12	228	31	1445	29	10	1515	26	15	59	17	117	131	1922	66	4	2123	3983
% Lights	99.3	100	95.8	100	98.3	96.9	98.7	100	100	98.7	100	100	100	100	100	94.9	98.3	95.7	100	98	98.3
Buses	0	0	2	0	2	0	4	0	0	4	0	0	0	0	0	1	9	1	0	11	17
% Buses	0	0	2.8	0	0.9	0	0.3	0	0	0.3	0	0	0	0	0	0.7	0.5	1.4	0	0.5	0.4
Trucks	1	0	1	0	2	1	15	0	0	16	0	0	0	0	0	6	24	2	0	32	50
% Trucks	0.7	0	1.4	0	0.9	3.1	1	0	0	1	0	0	0	0	0	4.3	1.2	2.9	0	1.5	1.2

	HOSPITAL DR Southbound				SOQUEL DR Westbound				COMMERCIAL CROSSING Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	19	**1**	8	28	**6**	**198**	1	**205**	4	**4**	7	15	**17**	212	**15**	244	492
04:15 PM	18	1	10	29	2	172	**6**	180	**5**	4	8	**17**	15	271	11	297	523
04:30 PM	**33**	1	11	**45**	6	179	6	191	2	2	4	8	16	**329**	7	**352**	**596**
04:45 PM	15	1	**13**	29	3	171	5	179	4	1	**9**	14	17	210	13	240	462
Total Volume	85	4	42	131	17	720	18	755	15	11	28	54	65	1022	46	1133	2073
% App. Total	64.9	3.1	32.1		2.3	95.4	2.4		27.8	20.4	51.9		5.7	90.2	4.1		
PHF	.644	1.00	.808	.728	.708	.909	.750	.921	.750	.688	.778	.794	.956	.777	.767	.805	.870

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File Name : 5PM FINAL
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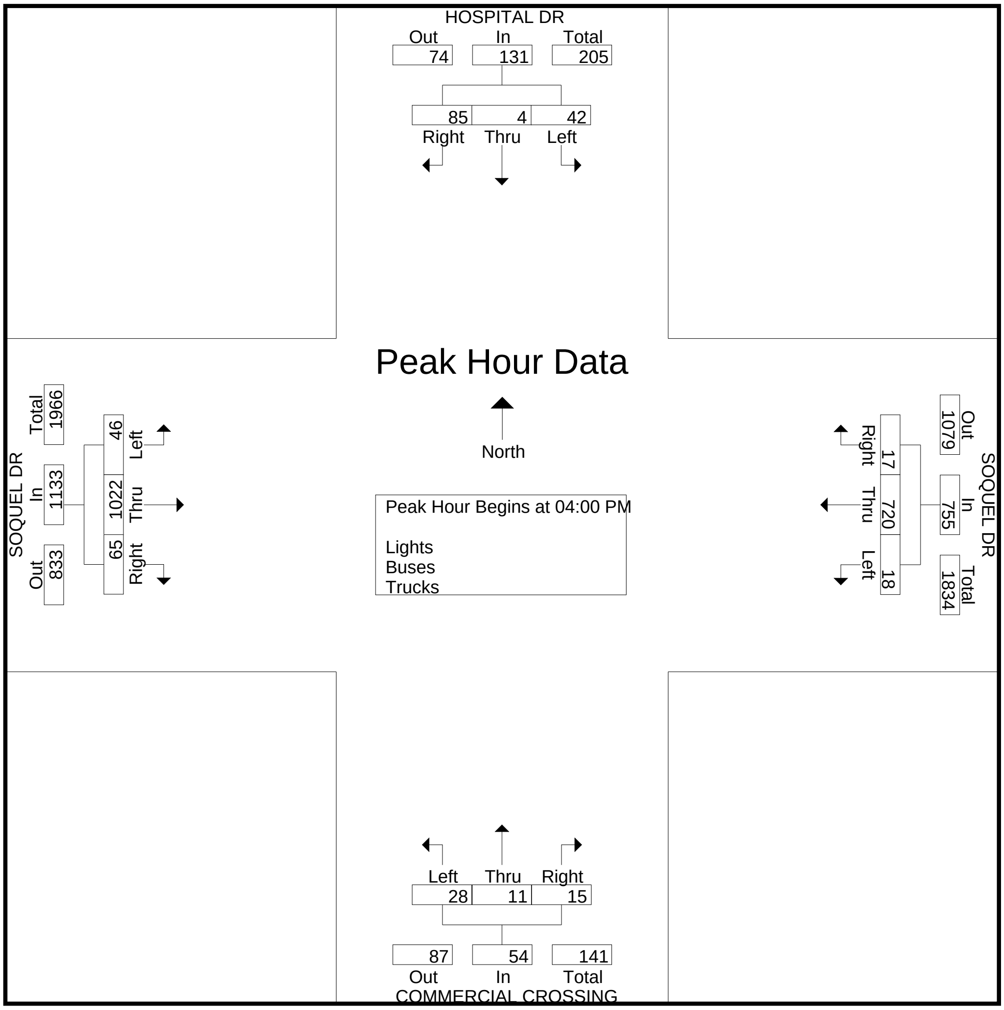

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File Name : 5PM FINAL
Site Code : 00000005
Start Date : 6/6/2019

Groups Printed- Bikes

	HOSPITAL DR Southbound					SOQUEL DR Westbound					COMMERCIAL CROSSING Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
04:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	3
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
04:45 PM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	4
Total	1	0	1	0	2	0	4	0	0	4	0	0	0	0	0	1	5	0	0	6	12
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	5
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	2
05:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
05:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Total	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	1	6	0	0	7	12
Grand Total	1	0	1	0	2	0	9	0	0	9	0	0	0	0	0	2	11	0	0	13	24
Apprch %	50	0	50	0		0	100	0	0		0	0	0	0		15.4	84.6	0	0		
Total %	4.2	0	4.2	0	8.3	0	37.5	0	0	37.5	0	0	0	0	0	8.3	45.8	0	0	54.2	

	HOSPITAL DR Southbound				SOQUEL DR Westbound				COMMERCIAL CROSSING Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	**1**	0	0	**1**	0	0	0	0	0	0	0	0	**1**	1	0	2	3
04:30 PM	0	0	0	0	0	**1**	0	**1**	0	0	0	0	0	2	0	2	3
04:45 PM	0	0	**1**	1	0	1	0	1	0	0	0	0	0	2	0	2	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**5**	0	**5**	**5**
Total Volume	1	0	1	2	0	2	0	2	0	0	0	0	1	10	0	11	15
% App. Total	50	0	50		0	100	0		0	0	0		9.1	90.9	0		
PHF	.250	.000	.250	.500	.000	.500	.000	.500	.000	.000	.000	.000	.250	.500	.000	.550	.750

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File Name : 5PM FINAL
Site Code : 00000005
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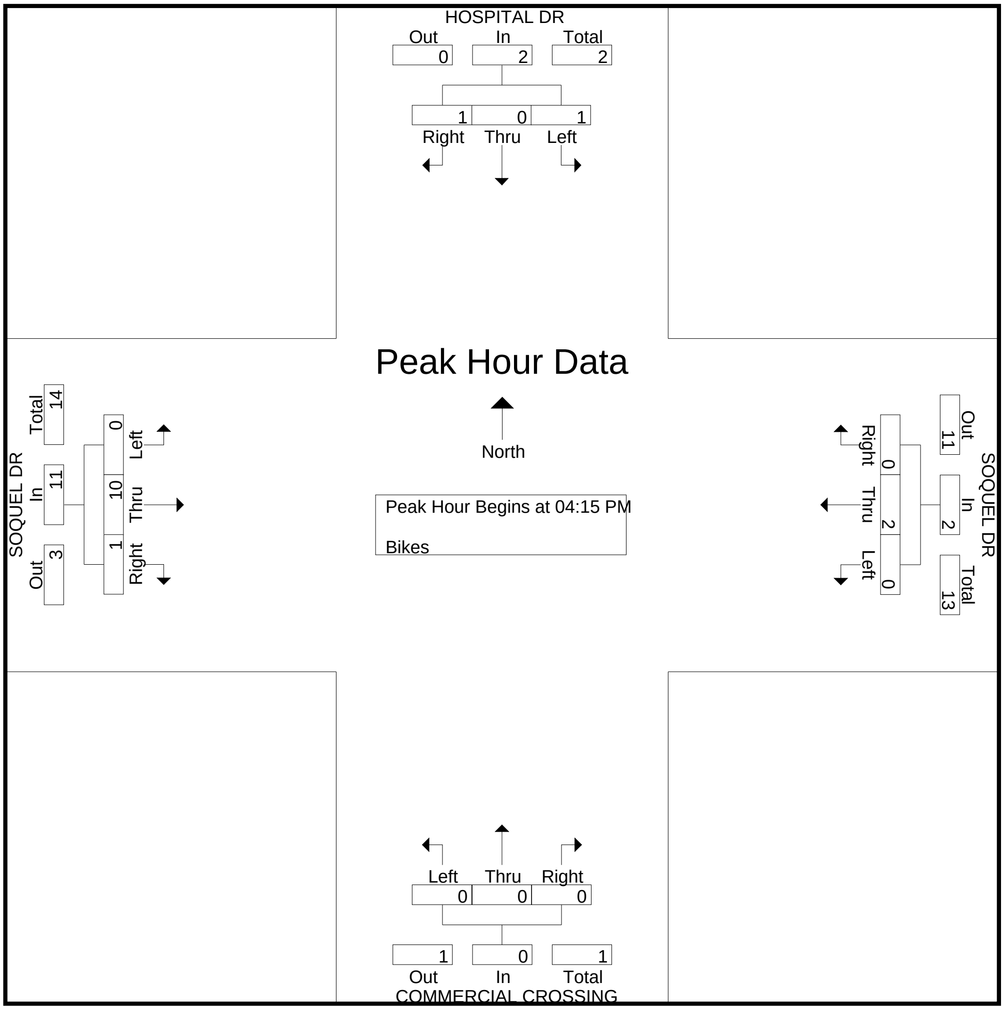

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File Name : 6AM FINAL
Site Code : 00000006
Start Date : 6/6/2019
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Groups Printed- Lights - Buses - Trucks

	MEDICAL OFFICE DR 1 Southbound					SOQUEL DR Westbound					Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	0	0	1	2	0	127	0	0	127	0	0	0	0	0	0	82	3	0	85	214
07:15 AM	1	0	0	2	3	0	148	0	0	148	0	0	0	0	0	0	114	2	0	116	267
07:30 AM	3	0	2	2	7	0	233	0	0	233	0	0	0	0	0	0	154	3	0	157	397
07:45 AM	3	0	0	4	7	0	267	0	0	267	0	0	0	0	0	0	150	8	0	158	432
Total	8	0	2	9	19	0	775	0	0	775	0	0	0	0	0	0	500	16	0	516	1310
08:00 AM	6	0	0	1	7	0	245	0	0	245	0	0	0	0	0	0	172	7	0	179	431
08:15 AM	5	0	5	3	13	0	244	0	0	244	0	0	0	0	0	0	151	6	0	157	414
08:30 AM	4	0	2	4	10	1	282	0	0	283	0	0	0	0	0	0	189	3	0	192	485
08:45 AM	2	0	4	1	7	1	287	0	0	288	0	0	0	0	0	0	168	11	0	179	474
Total	17	0	11	9	37	2	1058	0	0	1060	0	0	0	0	0	0	680	27	0	707	1804
Grand Total	25	0	13	18	56	2	1833	0	0	1835	0	0	0	0	0	0	1180	43	0	1223	3114
Apprch %	44.6	0	23.2	32.1		0.1	99.9	0	0		0	0	0	0		0	96.5	3.5	0		
Total %	0.8	0	0.4	0.6	1.8	0.1	58.9	0	0	58.9	0	0	0	0	0	0	37.9	1.4	0	39.3	
Lights	24	0	13	18	55	2	1784	0	0	1786	0	0	0	0	0	0	1155	42	0	1197	3038
% Lights	96	0	100	100	98.2	100	97.3	0	0	97.3	0	0	0	0	0	0	97.9	97.7	0	97.9	97.6
Buses	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	8	0	0	8	18
% Buses	0	0	0	0	0	0	0.5	0	0	0.5	0	0	0	0	0	0	0.7	0	0	0.7	0.6
Trucks	1	0	0	0	1	0	39	0	0	39	0	0	0	0	0	0	17	1	0	18	58
% Trucks	4	0	0	0	1.8	0	2.1	0	0	2.1	0	0	0	0	0	0	1.4	2.3	0	1.5	1.9

	MEDICAL OFFICE DR 1 Southbound				SOQUEL DR Westbound				Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	**6**	0	0	6	0	245	0	245	0	0	0	0	0	172	7	179	430
08:15 AM	5	0	**5**	**10**	0	244	0	244	0	0	0	0	0	151	6	157	411
08:30 AM	4	0	2	6	**1**	282	0	283	0	0	0	0	0	**189**	3	**192**	**481**
08:45 AM	2	0	4	6	1	**287**	0	**288**	0	0	0	0	0	168	**11**	179	473
Total Volume	17	0	11	28	2	1058	0	1060	0	0	0	0	0	680	27	707	1795
% App. Total	60.7	0	39.3		0.2	99.8	0		0	0	0		0	96.2	3.8		
PHF	.708	.000	.550	.700	.500	.922	.000	.920	.000	.000	.000	.000	.000	.899	.614	.921	.933

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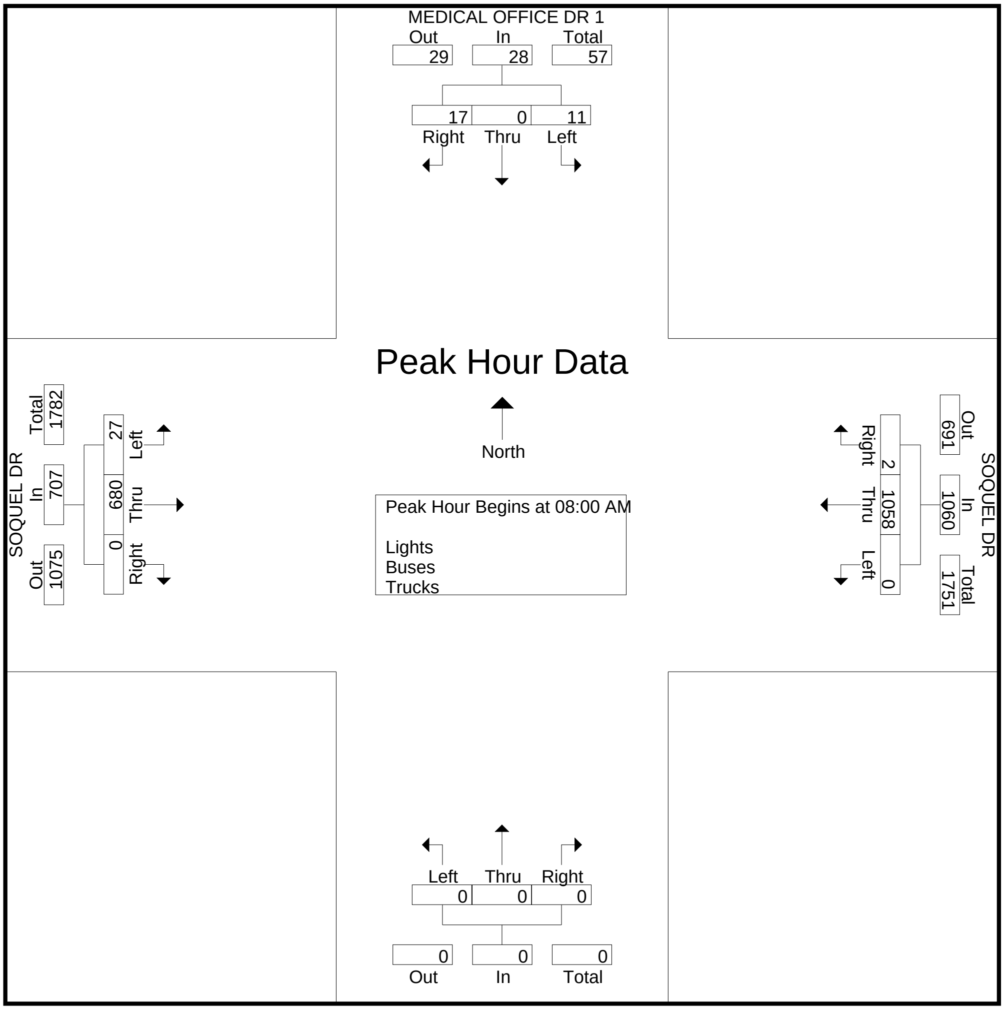

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Groups Printed- Bikes

	MEDICAL OFFICE DR 1 Southbound					SOQUEL DR Westbound					Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	6
07:15 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	3	0	0	3	11
07:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
07:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
Total	0	0	0	0	0	0	18	0	0	18	0	0	0	0	0	0	8	0	0	8	26
08:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
08:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	6	0	0	6	14
Grand Total	0	0	0	0	0	0	26	0	0	26	0	0	0	0	0	0	14	0	0	14	40
Apprch %	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	65	0	0	65	0	0	0	0	0	0	35	0	0	35	

	MEDICAL OFFICE DR 1 Southbound				SOQUEL DR Westbound				Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	5	0	5	0	0	0	0	0	1	0	1	6
07:15 AM	0	0	0	0	0	**8**	0	**8**	0	0	0	0	0	**3**	0	**3**	**11**
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
07:45 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2	5
Total Volume	0	0	0	0	0	18	0	18	0	0	0	0	0	8	0	8	26
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.563	.000	.563	.000	.000	.000	.000	.000	.667	.000	.667	.591

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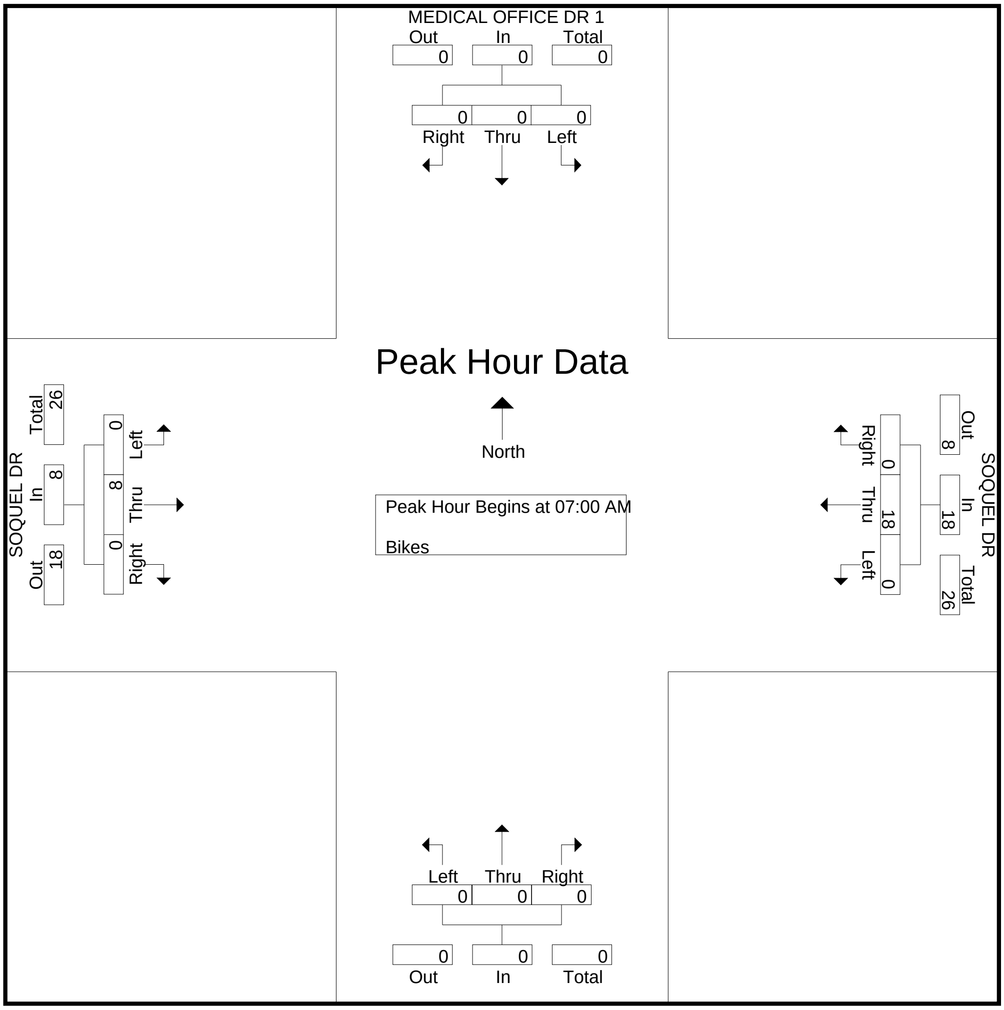

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File Name : 6PM FINAL
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Groups Printed- Lights - Buses - Trucks

	MEDICAL OFFICE DR 1 Southbound					SOQUEL DR Westbound					Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	6	0	2	3	11	0	189	0	0	189	0	0	0	0	0	0	227	7	0	234	434
04:15 PM	4	0	2	3	9	0	178	0	0	178	0	0	0	0	0	0	291	6	0	297	484
04:30 PM	6	0	1	2	9	1	192	0	0	193	0	0	0	0	0	0	349	2	0	351	553
04:45 PM	7	0	4	2	13	1	193	0	0	194	0	0	0	0	0	0	229	0	0	229	436
Total	23	0	9	10	42	2	752	0	0	754	0	0	0	0	0	0	1096	15	0	1111	1907
05:00 PM	6	0	1	9	16	0	187	0	0	187	0	0	0	0	0	0	198	0	0	198	401
05:15 PM	1	0	1	2	4	0	180	0	0	180	0	0	0	0	0	0	258	1	0	259	443
05:30 PM	0	0	1	0	1	0	195	0	0	195	0	0	0	0	0	0	272	1	0	273	469
05:45 PM	0	0	1	1	2	0	183	0	0	183	0	0	0	0	0	0	259	0	0	259	444
Total	7	0	4	12	23	0	745	0	0	745	0	0	0	0	0	0	987	2	0	989	1757
Grand Total	30	0	13	22	65	2	1497	0	0	1499	0	0	0	0	0	0	2083	17	0	2100	3664
Apprch %	46.2	0	20	33.8		0.1	99.9	0	0		0	0	0	0		0	99.2	0.8	0		
Total %	0.8	0	0.4	0.6	1.8	0.1	40.9	0	0	40.9	0	0	0	0	0	0	56.9	0.5	0	57.3	
Lights	30	0	13	22	65	2	1480	0	0	1482	0	0	0	0	0	0	2050	17	0	2067	3614
% Lights	100	0	100	100	100	100	98.9	0	0	98.9	0	0	0	0	0	0	98.4	100	0	98.4	98.6
Buses	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	10	0	0	10	14
% Buses	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0	0.5	0	0	0.5	0.4
Trucks	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	0	23	0	0	23	36
% Trucks	0	0	0	0	0	0	0.9	0	0	0.9	0	0	0	0	0	0	1.1	0	0	1.1	1

	MEDICAL OFFICE DR 1 Southbound				SOQUEL DR Westbound				Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	6	0	2	8	0	189	0	189	0	0	0	0	0	227	**7**	234	431
04:15 PM	4	0	2	6	0	178	0	178	0	0	0	0	0	291	6	297	481
04:30 PM	6	0	1	7	**1**	192	0	193	0	0	0	0	0	**349**	2	**351**	**551**
04:45 PM	**7**	0	**4**	**11**	1	**193**	0	**194**	0	0	0	0	0	229	0	229	434
Total Volume	23	0	9	32	2	752	0	754	0	0	0	0	0	1096	15	1111	1897
% App. Total	71.9	0	28.1		0.3	99.7	0		0	0	0		0	98.6	1.4		
PHF	.821	.000	.563	.727	.500	.974	.000	.972	.000	.000	.000	.000	.000	.785	.536	.791	.861

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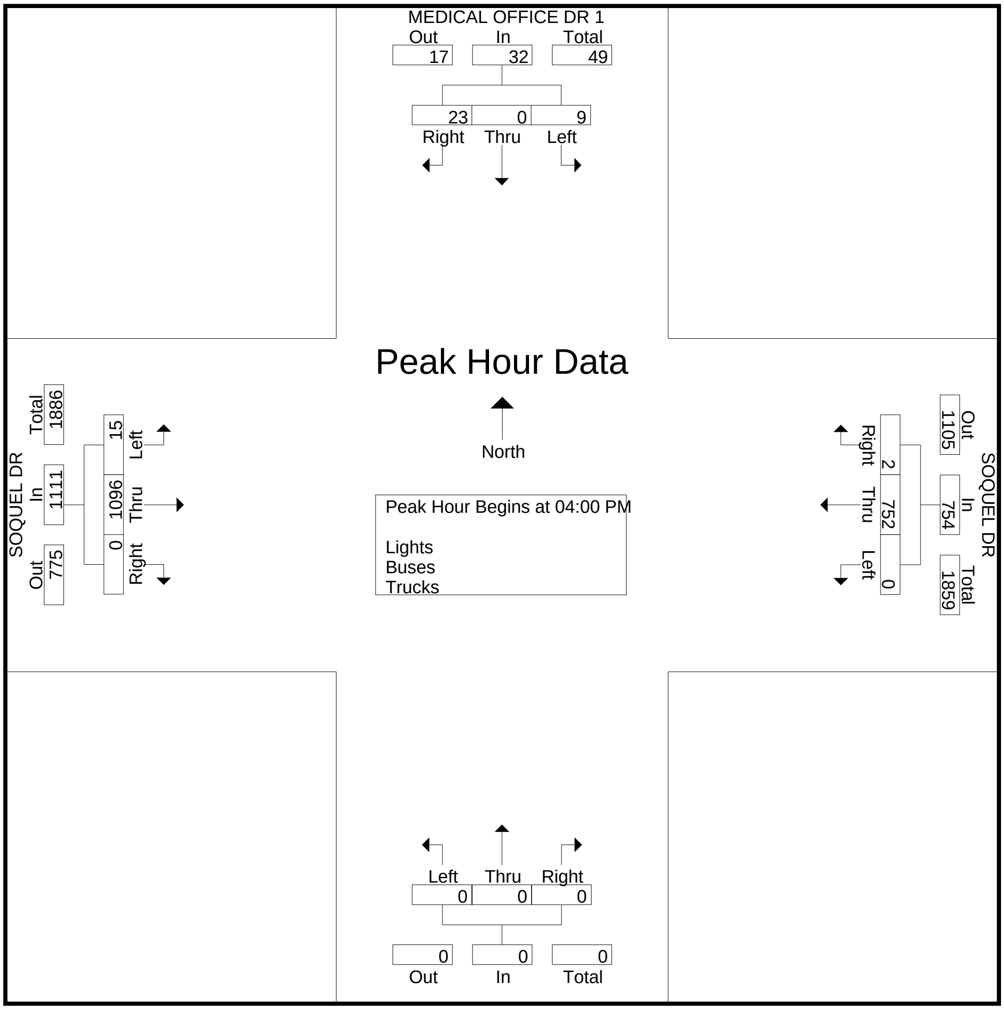

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Groups Printed- Bikes

	MEDICAL OFFICE DR 1 Southbound					SOQUEL DR Westbound					Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	0	0	9	9
05:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
05:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
05:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
Total	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	0	16	0	0	16	22
Grand Total	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	16	0	0	16	24
Apprch %	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	33.3	0	0	33.3	0	0	0	0	0	0	66.7	0	0	66.7	

	MEDICAL OFFICE DR 1 Southbound				SOQUEL DR Westbound				Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**9**	0	**9**	**9**
05:15 PM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	2	0	2	4
05:30 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
05:45 PM	0	0	0	0	0	2	0	2	0	0	0	0	0	3	0	3	5
Total Volume	0	0	0	0	0	6	0	6	0	0	0	0	0	16	0	16	22
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.750	.000	.750	.000	.000	.000	.000	.000	.444	.000	.444	.611

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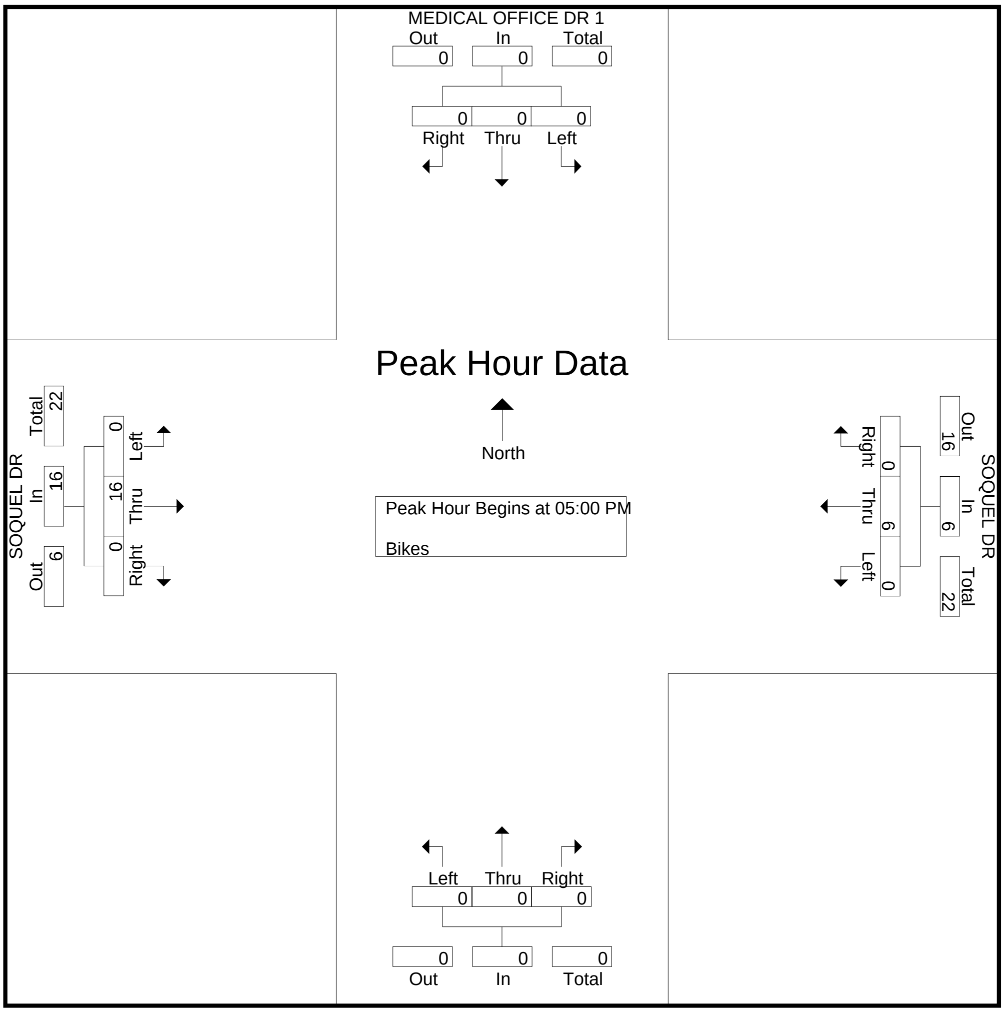

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Groups Printed- Lights - Buses - Trucks

	MEDICAL OFFICE DR 2 Southbound					SOQUEL DR Westbound					DRIVEWAY Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	1	0	1	2	125	0	0	127	0	0	1	0	1	6	74	2	0	82	211
07:15 AM	0	0	0	4	4	4	160	0	0	164	0	0	0	0	0	1	112	0	0	113	281
07:30 AM	0	0	0	1	1	3	231	0	0	234	0	0	0	0	0	0	157	1	0	158	393
07:45 AM	1	0	3	5	9	7	274	0	0	281	0	0	0	0	0	0	143	2	0	145	435
Total	1	0	4	10	15	16	790	0	0	806	0	0	1	0	1	7	486	5	0	498	1320
08:00 AM	1	0	1	1	3	6	244	0	0	250	1	0	1	1	3	1	165	1	0	167	423
08:15 AM	0	0	0	2	2	5	247	0	0	252	0	0	0	0	0	0	158	3	0	161	415
08:30 AM	2	0	0	3	5	2	275	0	0	277	1	0	0	1	2	2	183	4	0	189	473
08:45 AM	2	0	2	1	5	2	288	0	0	290	0	0	0	1	1	0	173	0	0	173	469
Total	5	0	3	7	15	15	1054	0	0	1069	2	0	1	3	6	3	679	8	0	690	1780
Grand Total	6	0	7	17	30	31	1844	0	0	1875	2	0	2	3	7	10	1165	13	0	1188	3100
Apprch %	20	0	23.3	56.7		1.7	98.3	0	0		28.6	0	28.6	42.9		0.8	98.1	1.1	0		
Total %	0.2	0	0.2	0.5	1	1	59.5	0	0	60.5	0.1	0	0.1	0.1	0.2	0.3	37.6	0.4	0	38.3	
Lights	6	0	7	17	30	31	1794	0	0	1825	2	0	2	3	7	10	1134	13	0	1157	3019
% Lights	100	0	100	100	100	100	97.3	0	0	97.3	100	0	100	100	100	100	97.3	100	0	97.4	97.4
Buses	0	0	0	0	0	0	10	0	0	10	0	0	0	0	0	0	8	0	0	8	18
% Buses	0	0	0	0	0	0	0.5	0	0	0.5	0	0	0	0	0	0	0.7	0	0	0.7	0.6
Trucks	0	0	0	0	0	0	40	0	0	40	0	0	0	0	0	0	23	0	0	23	63
% Trucks	0	0	0	0	0	0	2.2	0	0	2.1	0	0	0	0	0	0	2	0	0	1.9	2

	MEDICAL OFFICE DR 2 Southbound				SOQUEL DR Westbound				DRIVEWAY Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	1	0	1	2	**6**	244	0	250	**1**	0	**1**	**2**	1	165	1	167	421
08:15 AM	0	0	0	0	5	247	0	252	0	0	0	0	0	158	3	161	413
08:30 AM	**2**	0	0	2	2	275	0	277	1	0	0	1	**2**	**183**	**4**	**189**	**469**
08:45 AM	2	0	**2**	**4**	2	**288**	0	**290**	0	0	0	0	0	173	0	173	467
Total Volume	5	0	3	8	15	1054	0	1069	2	0	1	3	3	679	8	690	1770
% App. Total	62.5	0	37.5		1.4	98.6	0		66.7	0	33.3		0.4	98.4	1.2		
PHF	.625	.000	.375	.500	.625	.915	.000	.922	.500	.000	.250	.375	.375	.928	.500	.913	.943

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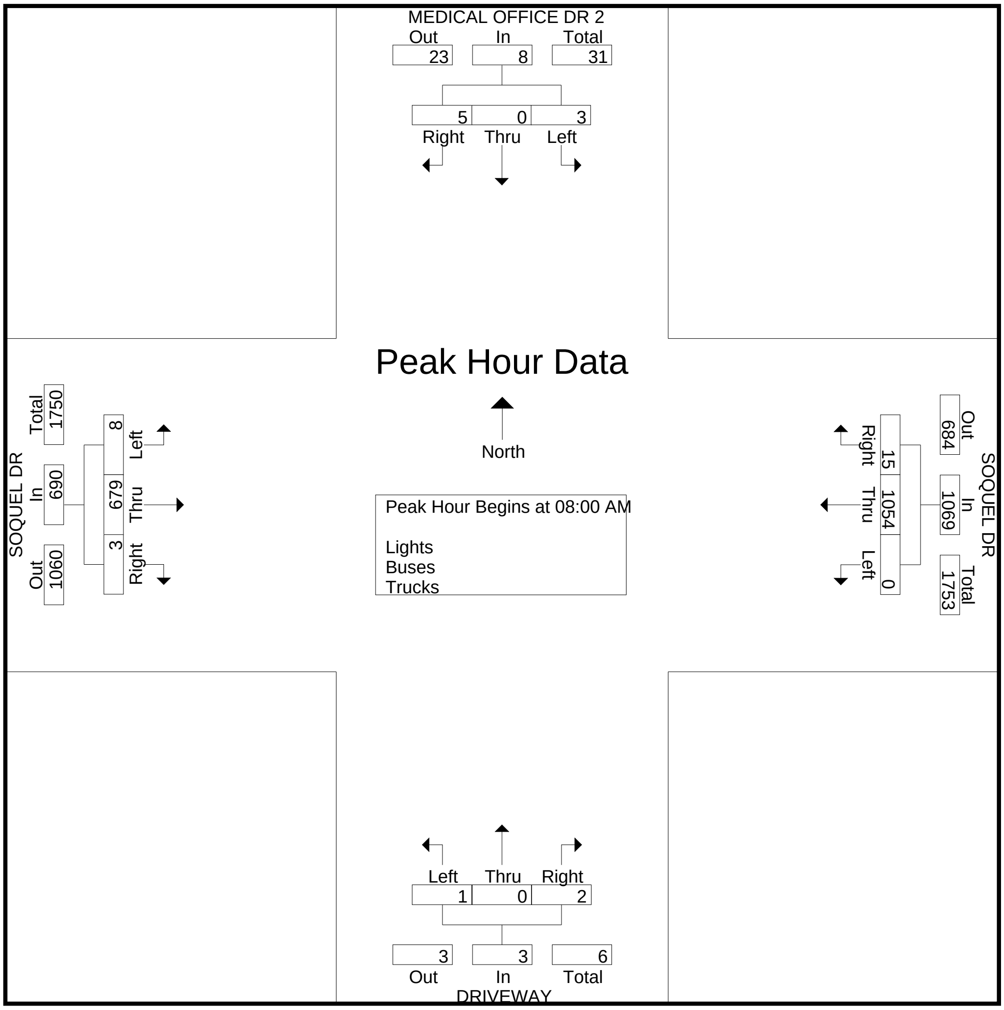

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Groups Printed- Bikes

	MEDICAL OFFICE DR 2 Southbound					SOQUEL DR Westbound					DRIVEWAY Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	6
07:15 AM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	3	0	0	3	10
07:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
07:45 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
Total	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	8	0	0	8	25
08:00 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	12
Grand Total	0	0	0	0	0	0	22	0	0	22	0	0	0	0	0	0	15	0	0	15	37
Apprch %	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	59.5	0	0	59.5	0	0	0	0	0	0	40.5	0	0	40.5	

	MEDICAL OFFICE DR 2 Southbound				SOQUEL DR Westbound				DRIVEWAY Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	5	0	5	0	0	0	0	0	1	0	1	6
07:15 AM	0	0	0	0	0	**7**	0	**7**	0	0	0	0	0	**3**	0	**3**	**10**
07:30 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	2	0	2	4
07:45 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	2	0	2	5
Total Volume	0	0	0	0	0	17	0	17	0	0	0	0	0	8	0	8	25
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.607	.000	.607	.000	.000	.000	.000	.000	.667	.000	.667	.625

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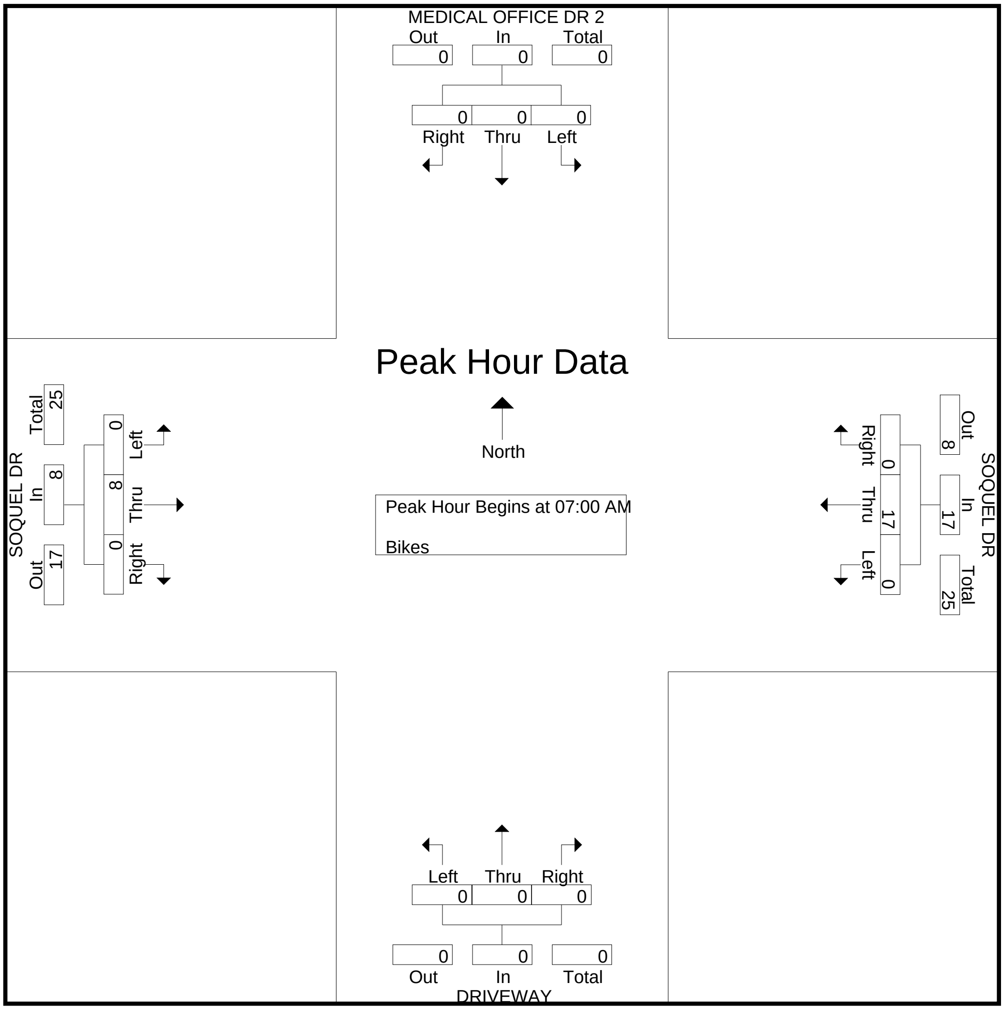

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Groups Printed- Lights - Buses - Trucks

	MEDICAL OFFICE DR 2 Southbound					SOQUEL DR Westbound					DRIVEWAY Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	3	0	1	5	9	3	183	0	0	186	0	0	0	1	1	2	231	1	0	234	430
04:15 PM	0	0	1	4	5	0	181	0	0	181	2	0	0	2	4	1	283	0	0	284	474
04:30 PM	1	1	2	3	7	1	195	0	0	196	1	0	0	2	3	1	349	1	0	351	557
04:45 PM	2	0	2	1	5	0	187	1	0	188	1	0	1	3	5	2	234	1	0	237	435
Total	6	1	6	13	26	4	746	1	0	751	4	0	1	8	13	6	1097	3	0	1106	1896
05:00 PM	0	0	0	11	11	0	192	0	0	192	0	0	1	2	3	0	198	0	0	198	404
05:15 PM	1	0	3	2	6	0	183	1	0	184	3	0	0	0	3	0	257	0	0	257	450
05:30 PM	0	0	0	0	0	1	201	0	0	202	1	0	1	0	2	1	275	0	0	276	480
05:45 PM	1	0	0	1	2	0	192	0	0	192	0	0	0	3	3	0	258	1	0	259	456
Total	2	0	3	14	19	1	768	1	0	770	4	0	2	5	11	1	988	1	0	990	1790
Grand Total	8	1	9	27	45	5	1514	2	0	1521	8	0	3	13	24	7	2085	4	0	2096	3686
Apprch %	17.8	2.2	20	60		0.3	99.5	0.1	0		33.3	0	12.5	54.2		0.3	99.5	0.2	0		
Total %	0.2	0	0.2	0.7	1.2	0.1	41.1	0.1	0	41.3	0.2	0	0.1	0.4	0.7	0.2	56.6	0.1	0	56.9	
Lights	8	1	9	27	45	5	1494	2	0	1501	8	0	3	13	24	7	2054	4	0	2065	3635
% Lights	100	100	100	100	100	100	98.7	100	0	98.7	100	0	100	100	100	100	98.5	100	0	98.5	98.6
Buses	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	8	0	0	8	13
% Buses	0	0	0	0	0	0	0.3	0	0	0.3	0	0	0	0	0	0	0.4	0	0	0.4	0.4
Trucks	0	0	0	0	0	0	15	0	0	15	0	0	0	0	0	0	23	0	0	23	38
% Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1.1	0	0	1.1	1

	MEDICAL OFFICE DR 2 Southbound				SOQUEL DR Westbound				DRIVEWAY Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**3**	0	1	**4**	**3**	183	0	186	0	0	0	0	**2**	231	**1**	234	424
04:15 PM	0	0	1	1	0	181	0	181	**2**	0	0	**2**	1	283	0	284	468
04:30 PM	1	**1**	**2**	4	1	**195**	0	**196**	1	0	0	1	1	**349**	1	**351**	**552**
04:45 PM	2	0	2	4	0	187	**1**	188	1	0	**1**	2	2	234	1	237	431
Total Volume	6	1	6	13	4	746	1	751	4	0	1	5	6	1097	3	1106	1875
% App. Total	46.2	7.7	46.2		0.5	99.3	0.1		80	0	20		0.5	99.2	0.3		
PHF	.500	.250	.750	.813	.333	.956	.250	.958	.500	.000	.250	.625	.750	.786	.750	.788	.849

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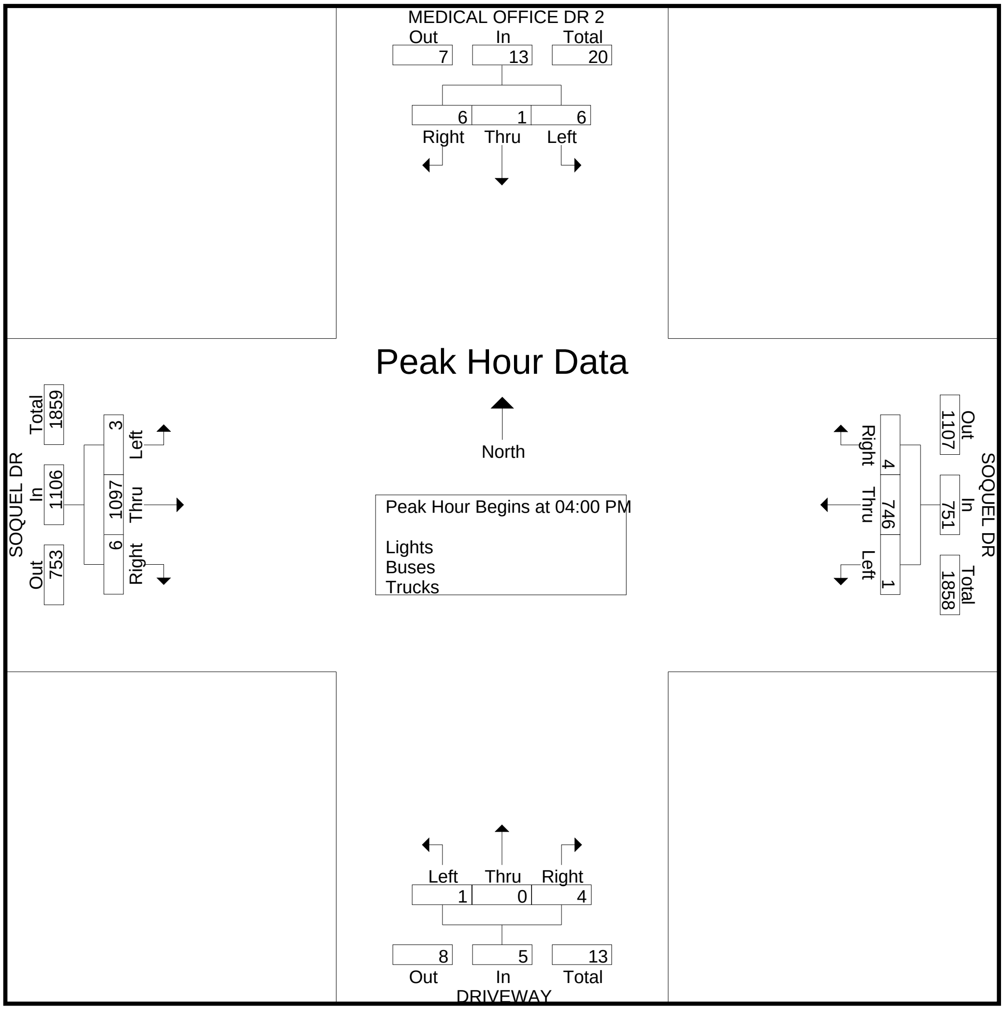

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Groups Printed- Bikes

	MEDICAL OFFICE DR 2 Southbound					SOQUEL DR Westbound					DRIVEWAY Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
04:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4
Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	9	0	0	9	12
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	6	6
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
05:30 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	4
05:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	5
Total	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	13	0	0	13	17
Grand Total	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	22	0	0	22	29
Apprch %	0	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	0	0	0	0	0	0	24.1	0	0	24.1	0	0	0	0	0	0	75.9	0	0	75.9	

	MEDICAL OFFICE DR 2 Southbound				SOQUEL DR Westbound				DRIVEWAY Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**	0	**6**	**6**
05:15 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	1	2
05:30 PM	0	0	0	0	0	**2**	0	**2**	0	0	0	0	0	2	0	2	4
05:45 PM	0	0	0	0	0	1	0	1	0	0	0	0	0	4	0	4	5
Total Volume	0	0	0	0	0	4	0	4	0	0	0	0	0	13	0	13	17
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.000	.542	.000	.542	.708

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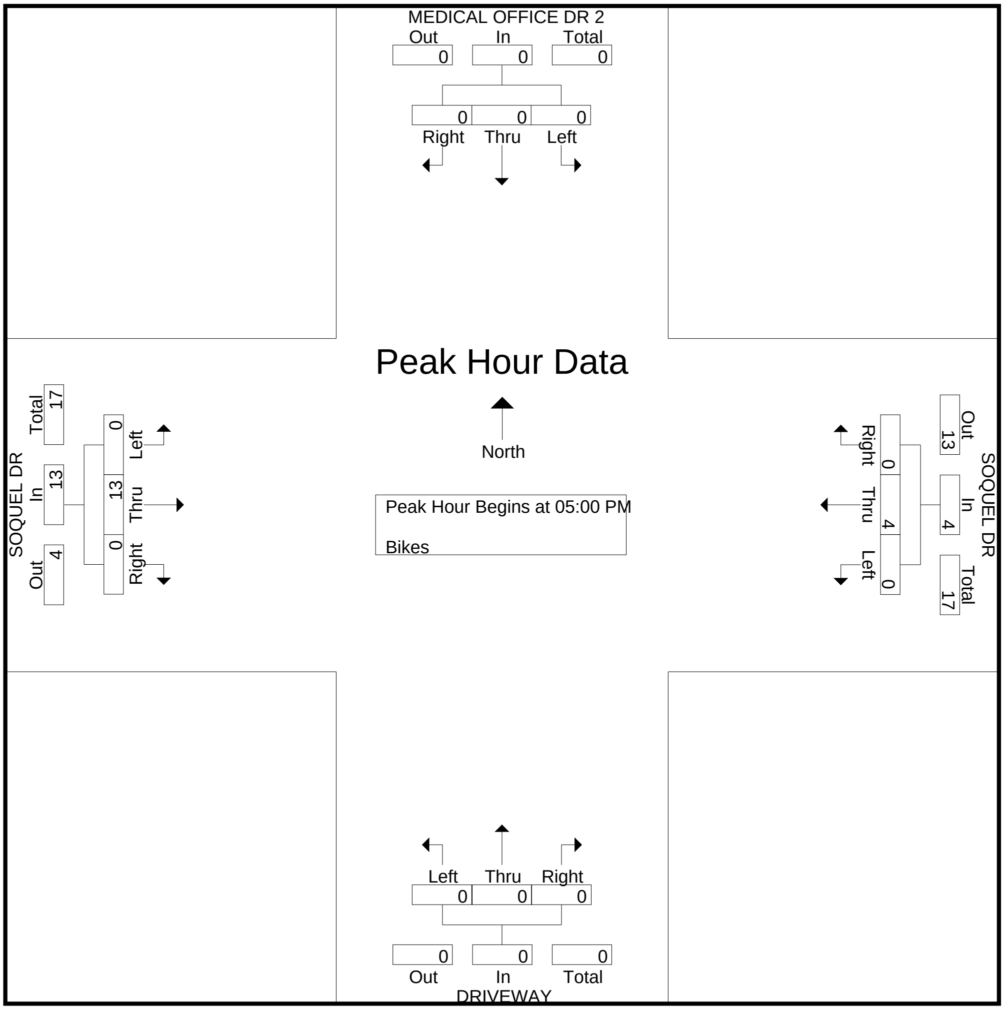

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File Name : 8AM FINAL
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Groups Printed- Lights - Buses - Trucks

	MISSION DR Southbound					DRIVEWAY Westbound					MISSION DR Northbound					MEDICAL OFFICE DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	12	0	0	12	0	0	0	1	1	0	24	7	1	32	0	1	0	0	1	46
07:15 AM	0	13	0	0	13	0	0	0	2	2	0	40	2	2	44	0	0	1	1	2	61
07:30 AM	1	33	0	0	34	0	0	0	1	1	0	61	0	3	64	0	0	3	0	3	102
07:45 AM	0	40	1	0	41	0	0	0	1	1	1	55	1	3	60	0	0	1	6	7	109
Total	1	98	1	0	100	0	0	0	5	5	1	180	10	9	200	0	1	5	7	13	318
08:00 AM	0	22	0	0	22	0	0	0	1	1	0	51	3	2	56	1	0	0	1	2	81
08:15 AM	1	24	0	0	25	0	0	0	1	1	0	58	1	1	60	1	0	0	1	2	88
08:30 AM	1	27	0	0	28	0	0	1	1	2	0	65	0	2	67	0	0	0	0	0	97
08:45 AM	0	28	0	0	28	0	0	0	0	0	0	49	2	0	51	2	0	1	1	4	83
Total	2	101	0	0	103	0	0	1	3	4	0	223	6	5	234	4	0	1	3	8	349
Grand Total	3	199	1	0	203	0	0	1	8	9	1	403	16	14	434	4	1	6	10	21	667
Apprch %	1.5	98	0.5	0		0	0	11.1	88.9		0.2	92.9	3.7	3.2		19	4.8	28.6	47.6		
Total %	0.4	29.8	0.1	0	30.4	0	0	0.1	1.2	1.3	0.1	60.4	2.4	2.1	65.1	0.6	0.1	0.9	1.5	3.1	
Lights	3	196	0	0	199	0	0	1	8	9	1	399	16	14	430	4	1	6	10	21	659
% Lights	100	98.5	0	0	98	0	0	100	100	100	100	99	100	100	99.1	100	100	100	100	100	98.8
Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.2	0	0	0	0	0	0.1
Trucks	0	3	1	0	4	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	7
% Trucks	0	1.5	100	0	2	0	0	0	0	0	0	0.7	0	0	0.7	0	0	0	0	0	1

	MISSION DR Southbound				DRIVEWAY Westbound				MISSION DR Northbound				MEDICAL OFFICE DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**1**	33	0	34	0	0	0	0	0	**61**	0	**61**	0	0	**3**	**3**	98
07:45 AM	0	**40**	**1**	**41**	0	0	0	0	**1**	55	1	57	0	0	1	1	**99**
08:00 AM	0	22	0	22	0	0	0	0	0	51	**3**	54	**1**	0	0	1	77
08:15 AM	1	24	0	25	0	0	0	0	0	58	1	59	1	0	0	1	85
Total Volume	2	119	1	122	0	0	0	0	1	225	5	231	2	0	4	6	359
% App. Total	1.6	97.5	0.8		0	0	0		0.4	97.4	2.2		33.3	0	66.7		
PHF	.500	.744	.250	.744	.000	.000	.000	.000	.250	.922	.417	.947	.500	.000	.333	.500	.907

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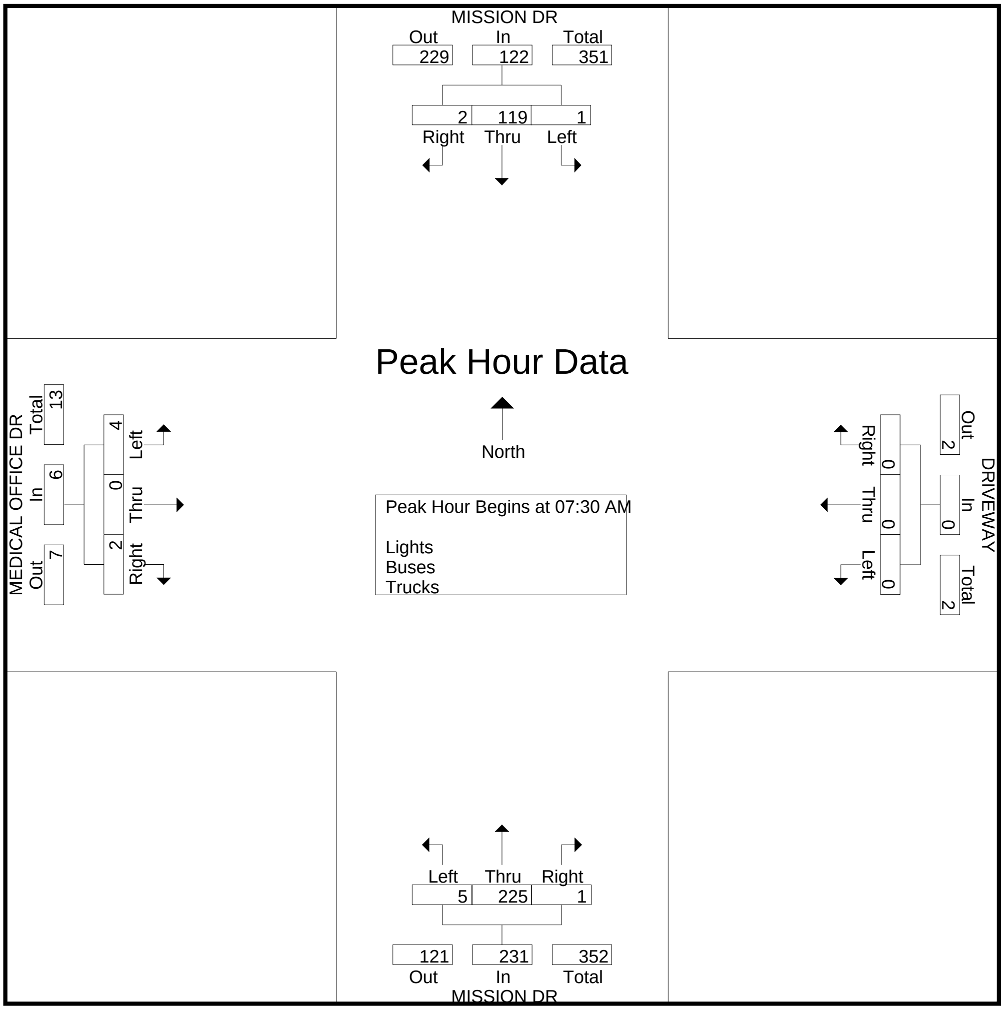

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Groups Printed- Bikes

	MISSION DR Southbound					DRIVEWAY Westbound					MISSION DR Northbound					MEDICAL OFFICE DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Apprch %	0	0	100	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	0	50	0	50	0	0	0	0	0	0	50	0	0	50	0	0	0	0	0	

	MISSION DR Southbound				DRIVEWAY Westbound				MISSION DR Northbound				MEDICAL OFFICE DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	**1**	**1**	0	0	0	0	0	0	0	0	0	0	0	0	**1**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	1	1	0	0	0	0	0	1	0	1	0	0	0	0	2
% App. Total	0	0	100		0	0	0		0	100	0		0	0	0		
PHF	.000	.000	.250	.250	.000	.000	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000	.500

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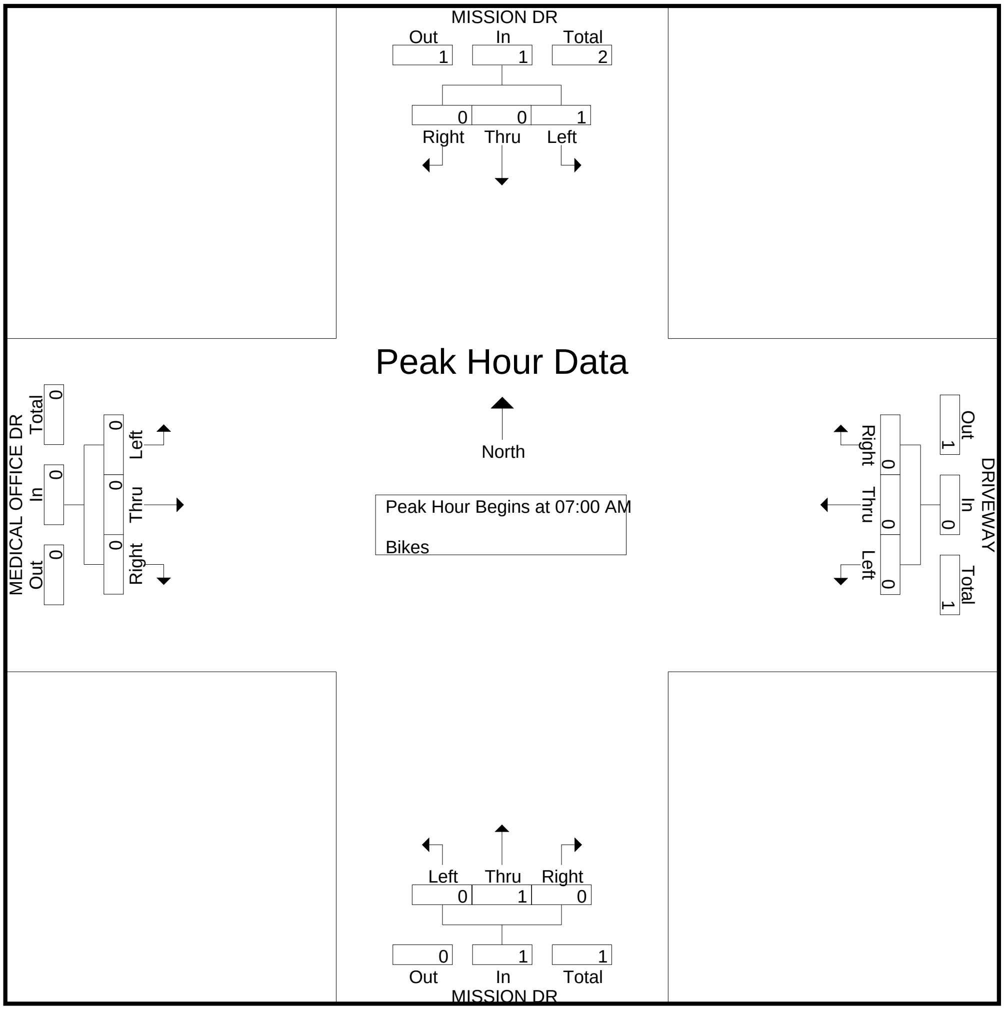

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Groups Printed- Lights - Buses - Trucks

	MISSION DR Southbound					DRIVEWAY Westbound					MISSION DR Northbound					MEDICAL OFFICE DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	70	0	0	70	0	0	0	1	1	0	20	0	1	21	0	0	0	1	1	93
04:15 PM	0	60	0	1	61	0	0	0	2	2	0	31	0	2	33	0	0	0	1	1	97
04:30 PM	0	67	0	1	68	0	0	0	2	2	0	26	0	1	27	0	0	0	2	2	99
04:45 PM	0	62	0	0	62	0	0	0	2	2	0	25	0	3	28	0	0	0	2	2	94
Total	0	259	0	2	261	0	0	0	7	7	0	102	0	7	109	0	0	0	6	6	383
05:00 PM	0	84	0	0	84	0	0	0	1	1	0	27	0	0	27	0	0	0	3	3	115
05:15 PM	0	54	0	1	55	0	0	0	2	2	0	17	0	0	17	3	0	0	0	3	77
05:30 PM	0	51	0	0	51	0	0	0	0	0	0	13	0	0	13	1	0	0	0	1	65
05:45 PM	0	42	0	0	42	0	0	0	3	3	0	17	0	0	17	2	0	0	0	2	64
Total	0	231	0	1	232	0	0	0	6	6	0	74	0	0	74	6	0	0	3	9	321
Grand Total	0	490	0	3	493	0	0	0	13	13	0	176	0	7	183	6	0	0	9	15	704
Apprch %	0	99.4	0	0.6		0	0	0	100		0	96.2	0	3.8		40	0	0	60		
Total %	0	69.6	0	0.4	70	0	0	0	1.8	1.8	0	25	0	1	26	0.9	0	0	1.3	2.1	
Lights	0	488	0	3	491	0	0	0	13	13	0	176	0	7	183	6	0	0	9	15	702
% Lights	0	99.6	0	100	99.6	0	0	0	100	100	0	100	0	100	100	100	0	0	100	100	99.7
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Trucks	0	0.4	0	0	0.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3

	MISSION DR Southbound				DRIVEWAY Westbound				MISSION DR Northbound				MEDICAL OFFICE DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	60	0	60	0	0	0	0	0	**31**	0	**31**	0	0	0	0	91
04:30 PM	0	67	0	67	0	0	0	0	0	26	0	26	0	0	0	0	93
04:45 PM	0	62	0	62	0	0	0	0	0	25	0	25	0	0	0	0	87
05:00 PM	0	**84**	0	**84**	0	0	0	0	0	27	0	27	0	0	0	0	**111**
Total Volume	0	273	0	273	0	0	0	0	0	109	0	109	0	0	0	0	382
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.813	.000	.813	.000	.000	.000	.000	.000	.879	.000	.879	.000	.000	.000	.000	.860

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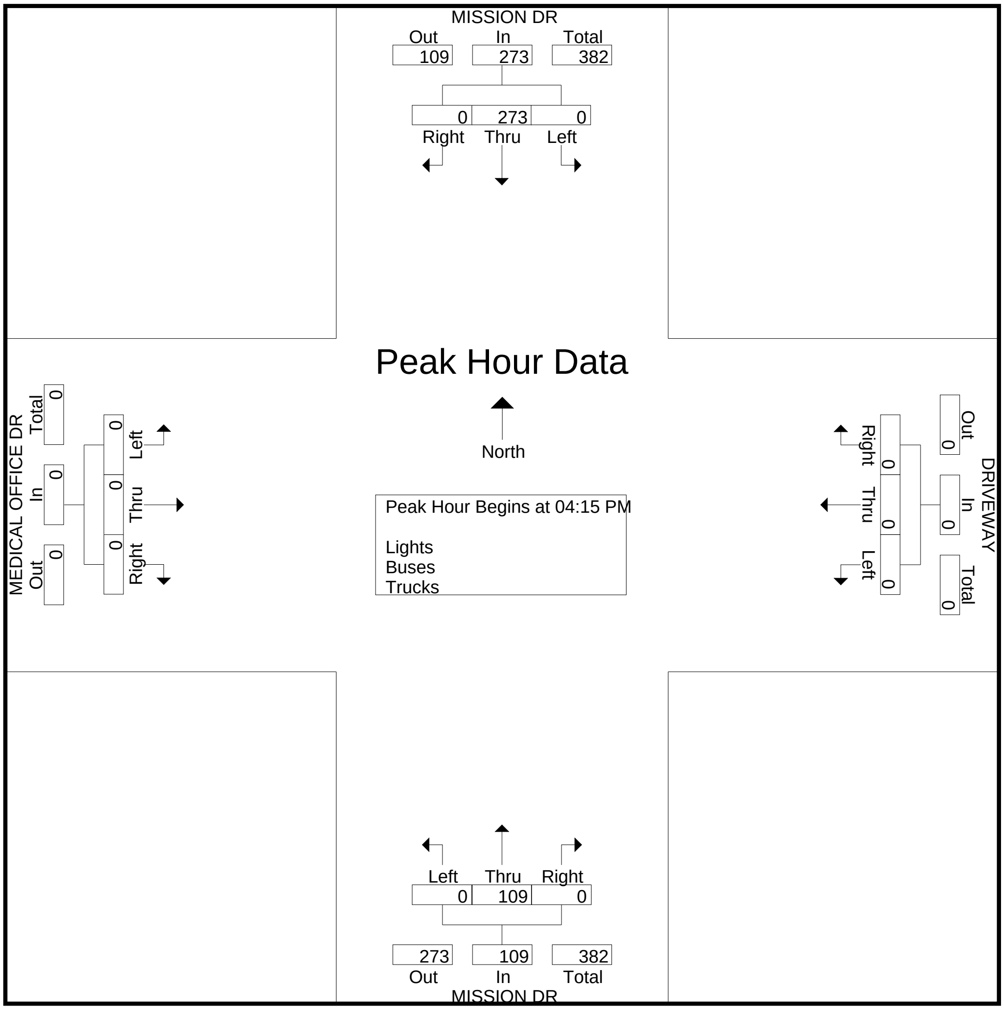

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Groups Printed- Bikes

	MISSION DR Southbound					DRIVEWAY Westbound					MISSION DR Northbound					MEDICAL OFFICE DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
05:15 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
05:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	7	0	0	7	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	9
Grand Total	0	9	0	0	9	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	11
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	81.8	0	0	81.8	0	0	0	0	0	0	18.2	0	0	18.2	0	0	0	0	0	

	MISSION DR Southbound				DRIVEWAY Westbound				MISSION DR Northbound				MEDICAL OFFICE DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	1	0	1	0	0	0	0	0	**1**	0	**1**	0	0	0	0	2
05:15 PM	0	2	0	2	0	0	0	0	0	1	0	1	0	0	0	0	**3**
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	**3**	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	3
Total Volume	0	7	0	7	0	0	0	0	0	2	0	2	0	0	0	0	9
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.583	.000	.583	.000	.000	.000	.000	.000	.500	.000	.500	.000	.000	.000	.000	.750

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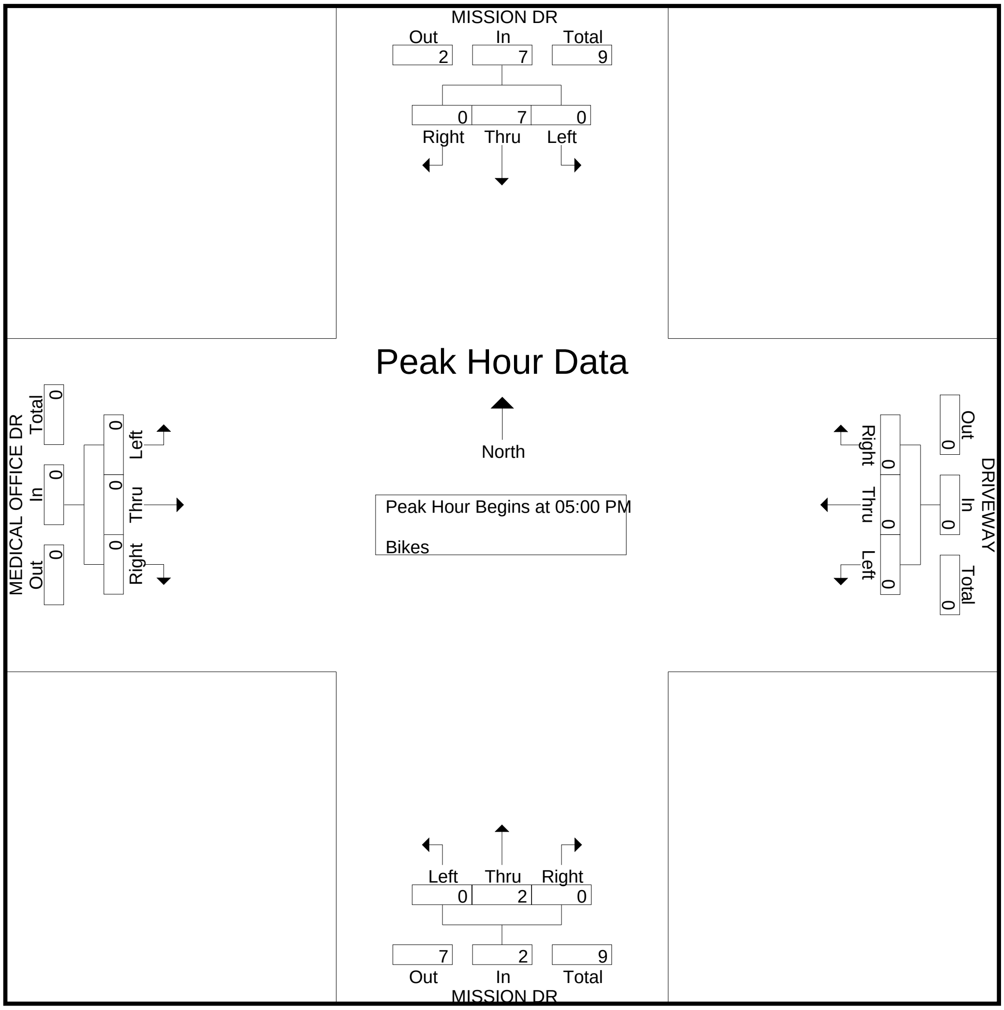

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Groups Printed- Lights - Buses - Trucks

	MISSION DR Southbound					DRIVEWAY Westbound					MISSION DR Northbound					PARKING LOT DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	12	0	0	12	0	0	0	1	1	0	14	10	2	26	0	0	0	1	1	40
07:15 AM	2	13	0	0	15	0	0	0	1	1	0	26	15	0	41	0	0	0	1	1	58
07:30 AM	0	36	0	1	37	0	0	0	1	1	0	45	19	0	64	0	0	0	1	1	103
07:45 AM	1	39	0	4	44	0	0	0	1	1	1	35	22	0	58	0	0	0	7	7	110
Total	3	100	0	5	108	0	0	0	4	4	1	120	66	2	189	0	0	0	10	10	311
08:00 AM	3	28	0	2	33	0	0	0	1	1	0	28	22	0	50	0	0	0	3	3	87
08:15 AM	0	25	0	1	26	0	0	0	1	1	0	42	16	0	58	0	0	0	1	1	86
08:30 AM	1	27	0	3	31	0	0	0	1	1	0	46	17	0	63	1	0	0	1	2	97
08:45 AM	0	28	0	2	30	0	0	0	0	0	0	41	8	0	49	0	0	0	1	1	80
Total	4	108	0	8	120	0	0	0	3	3	0	157	63	0	220	1	0	0	6	7	350
Grand Total	7	208	0	13	228	0	0	0	7	7	1	277	129	2	409	1	0	0	16	17	661
Apprch %	3.1	91.2	0	5.7		0	0	0	100		0.2	67.7	31.5	0.5		5.9	0	0	94.1		
Total %	1.1	31.5	0	2	34.5	0	0	0	1.1	1.1	0.2	41.9	19.5	0.3	61.9	0.2	0	0	2.4	2.6	
Lights	7	203	0	13	223	0	0	0	7	7	1	273	129	2	405	1	0	0	16	17	652
% Lights	100	97.6	0	100	97.8	0	0	0	100	100	100	98.6	100	100	99	100	0	0	100	100	98.6
Buses	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
% Buses	0	0.5	0	0	0.4	0	0	0	0	0	0	0.4	0	0	0.2	0	0	0	0	0	0.3
Trucks	0	4	0	0	4	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	7
% Trucks	0	1.9	0	0	1.8	0	0	0	0	0	0	1.1	0	0	0.7	0	0	0	0	0	1.1

	MISSION DR Southbound				DRIVEWAY Westbound				MISSION DR Northbound				PARKING LOT DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	36	0	36	0	0	0	0	0	**45**	19	**64**	0	0	0	0	**100**
07:45 AM	1	**39**	0	**40**	0	0	0	0	**1**	35	**22**	58	0	0	0	0	98
08:00 AM	**3**	28	0	31	0	0	0	0	0	28	22	50	0	0	0	0	81
08:15 AM	0	25	0	25	0	0	0	0	0	42	16	58	0	0	0	0	83
Total Volume	4	128	0	132	0	0	0	0	1	150	79	230	0	0	0	0	362
% App. Total	3	97	0		0	0	0		0.4	65.2	34.3		0	0	0		
PHF	.333	.821	.000	.825	.000	.000	.000	.000	.250	.833	.898	.898	.000	.000	.000	.000	.905

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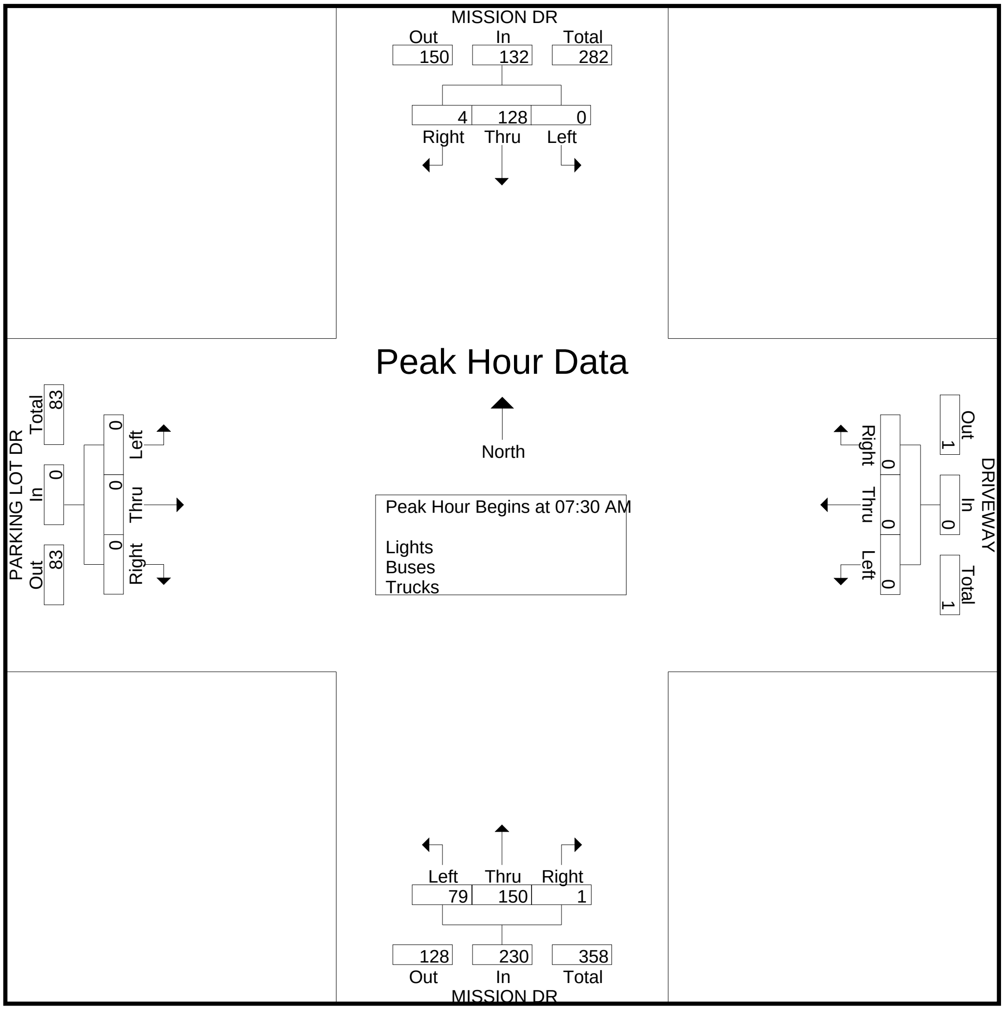

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Groups Printed- Bikes

	MISSION DR Southbound					DRIVEWAY Westbound					MISSION DR Northbound					PARKING LOT DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
Apprch %	0	0	0	0		0	0	0	0		0	100	0	0		100	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	50	0	0	50	50	0	0	0	50	

	MISSION DR Southbound				DRIVEWAY Westbound				MISSION DR Northbound				PARKING LOT DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	**1**	**1**
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	**1**	0	**1**	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	1	2
% App. Total	0	0	0		0	0	0		0	100	0		100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250	.000	.000	.250	.500

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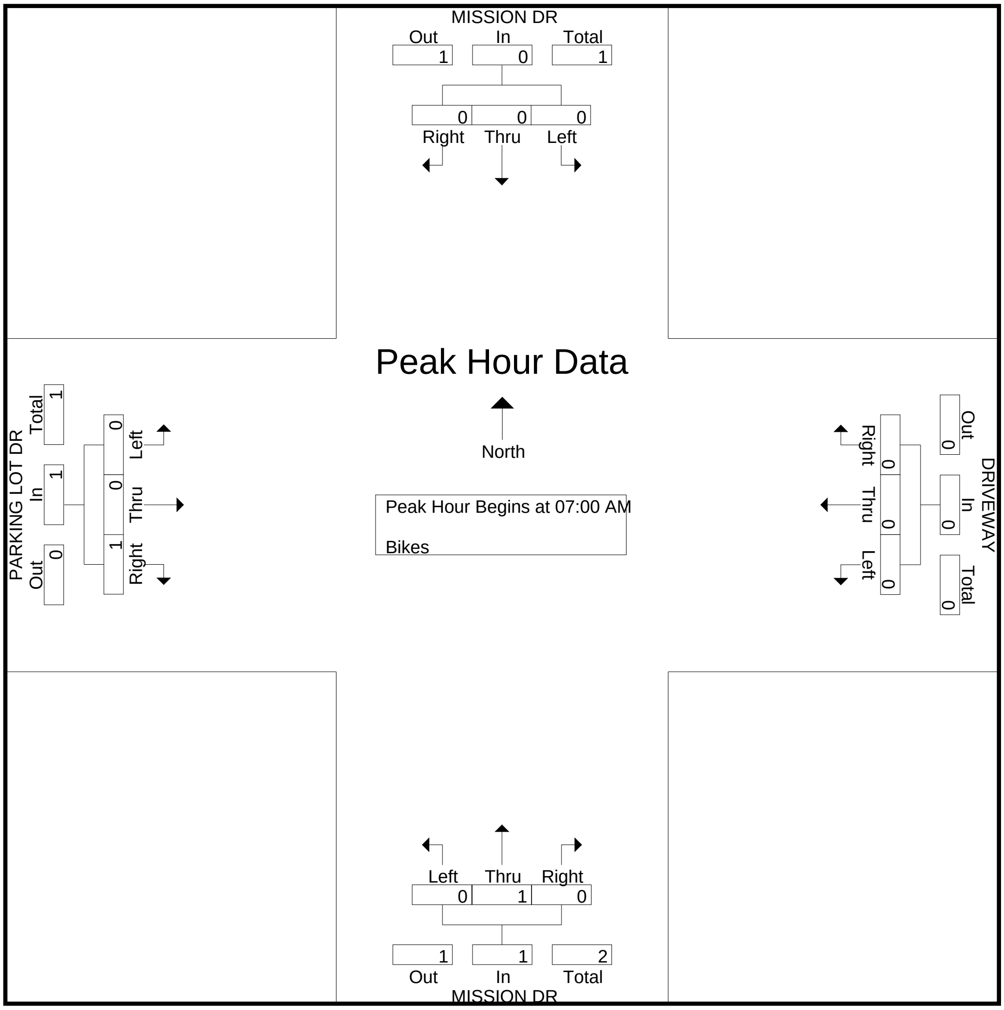

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Groups Printed- Lights - Buses - Trucks

	MISSION DR Southbound					DRIVEWAY Westbound					MISSION DR Northbound					PARKING LOT DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	62	0	1	63	0	0	0	1	1	0	20	0	0	20	10	0	1	1	12	96
04:15 PM	0	53	0	3	56	0	0	1	0	1	1	29	1	1	32	4	0	3	1	8	97
04:30 PM	0	59	0	1	60	0	0	0	2	2	0	26	0	0	26	8	0	1	3	12	100
04:45 PM	0	57	0	1	58	0	0	0	2	2	0	25	0	0	25	7	0	1	2	10	95
Total	0	231	0	6	237	0	0	1	5	6	1	100	1	1	103	29	0	6	7	42	388
05:00 PM	0	57	0	0	57	0	0	1	2	3	0	29	0	0	29	25	0	0	3	28	117
05:15 PM	0	42	0	0	42	0	0	0	2	2	0	17	0	1	18	10	0	0	0	10	72
05:30 PM	0	37	0	0	37	0	0	0	0	0	0	13	0	0	13	14	0	1	0	15	65
05:45 PM	0	35	0	0	35	0	0	0	1	1	1	16	0	0	17	8	0	0	0	8	61
Total	0	171	0	0	171	0	0	1	5	6	1	75	0	1	77	57	0	1	3	61	315
Grand Total	0	402	0	6	408	0	0	2	10	12	2	175	1	2	180	86	0	7	10	103	703
Apprch %	0	98.5	0	1.5		0	0	16.7	83.3		1.1	97.2	0.6	1.1		83.5	0	6.8	9.7		
Total %	0	57.2	0	0.9	58	0	0	0.3	1.4	1.7	0.3	24.9	0.1	0.3	25.6	12.2	0	1	1.4	14.7	
Lights	0	399	0	6	405	0	0	2	10	12	2	175	1	2	180	86	0	7	10	103	700
% Lights	0	99.3	0	100	99.3	0	0	100	100	100	100	100	100	100	100	100	0	100	100	100	99.6
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
% Trucks	0	0.7	0	0	0.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.4

	MISSION DR Southbound				DRIVEWAY Westbound				MISSION DR Northbound				PARKING LOT DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	53	0	53	0	0	**1**	**1**	**1**	**29**	**1**	**31**	4	0	**3**	7	92
04:30 PM	0	**59**	0	**59**	0	0	0	0	0	26	0	26	8	0	1	9	94
04:45 PM	0	57	0	57	0	0	0	0	0	25	0	25	7	0	1	8	90
05:00 PM	0	57	0	57	0	0	1	1	0	29	0	29	**25**	0	0	**25**	**112**
Total Volume	0	226	0	226	0	0	2	2	1	109	1	111	44	0	5	49	388
% App. Total	0	100	0		0	0	100		0.9	98.2	0.9		89.8	0	10.2		
PHF	.000	.958	.000	.958	.000	.000	.500	.500	.250	.940	.250	.895	.440	.000	.417	.490	.866

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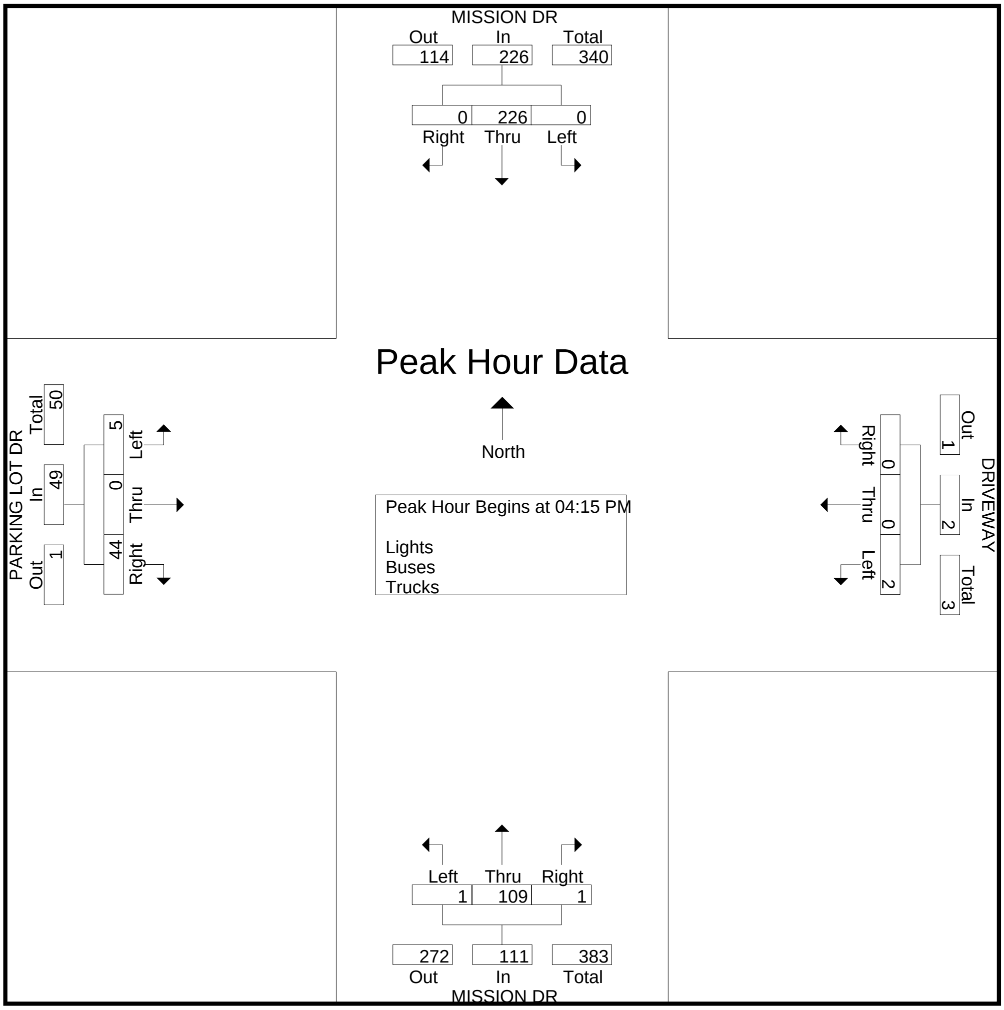

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Groups Printed- Bikes

	MISSION DR Southbound					DRIVEWAY Westbound					MISSION DR Northbound					PARKING LOT DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
05:15 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
05:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	7	0	0	7	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	10
Grand Total	0	9	0	0	9	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	12
Apprch %	0	100	0	0		0	0	0	0		0	100	0	0		0	0	0	0		
Total %	0	75	0	0	75	0	0	0	0	0	0	25	0	0	25	0	0	0	0	0	

	MISSION DR Southbound				DRIVEWAY Westbound				MISSION DR Northbound				PARKING LOT DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	1	0	1	0	0	0	0	0	1	0	1	0	0	0	0	2
05:15 PM	0	2	0	2	0	0	0	0	0	**2**	0	**2**	0	0	0	0	**4**
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	**3**	0	**3**	0	0	0	0	0	0	0	0	0	0	0	0	3
Total Volume	0	7	0	7	0	0	0	0	0	3	0	3	0	0	0	0	10
% App. Total	0	100	0		0	0	0		0	100	0		0	0	0		
PHF	.000	.583	.000	.583	.000	.000	.000	.000	.000	.375	.000	.375	.000	.000	.000	.000	.625

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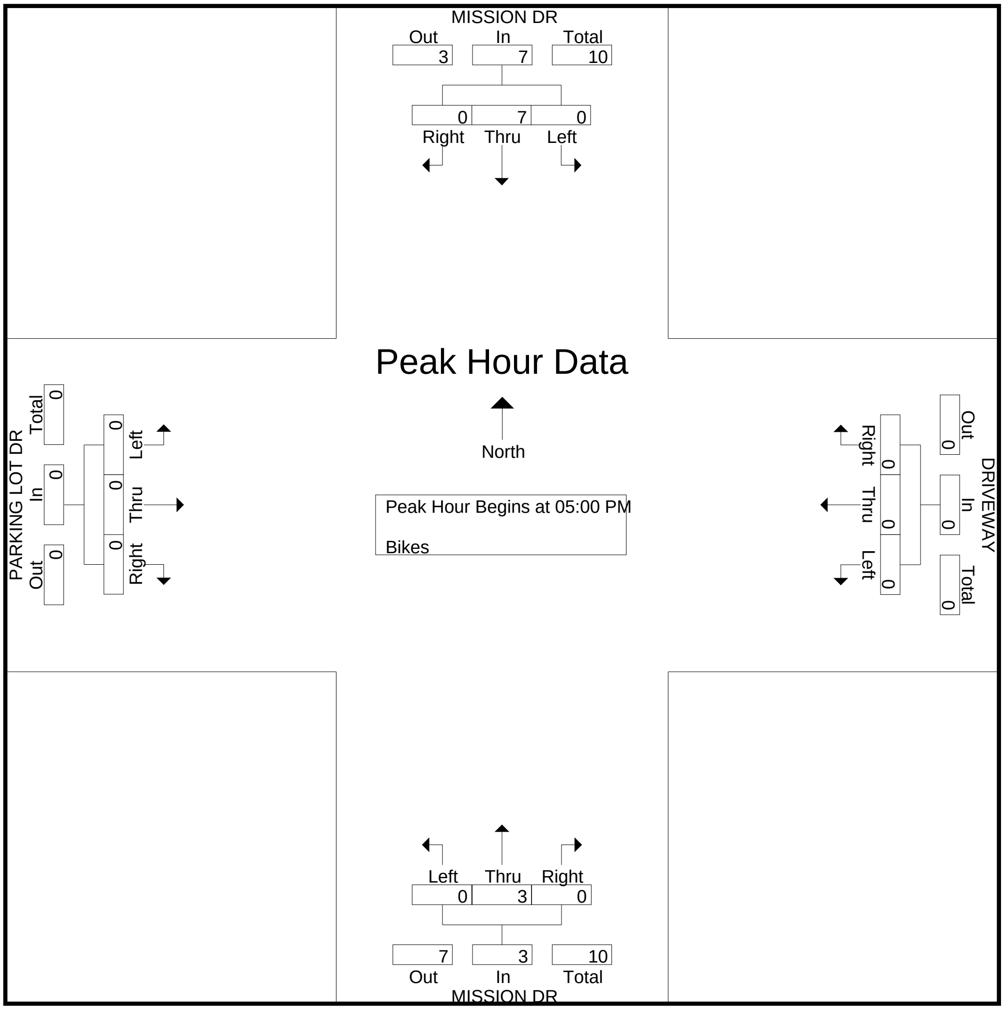

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File Name : 10AM FINAL
Site Code : 00000010
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Groups Printed- Lights - Buses - Trucks

	MISSION DR Southbound					Westbound					MISSION DR Northbound					DOMINICAN WAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	2	8	0	0	10	0	0	0	0	0	0	5	7	0	12	4	0	0	1	5	27
07:15 AM	0	8	0	0	8	0	0	0	0	0	0	22	5	0	27	7	0	0	4	11	46
07:30 AM	4	29	0	0	33	0	0	0	0	0	0	27	16	0	43	8	0	0	3	11	87
07:45 AM	4	33	0	0	37	0	0	0	0	0	0	21	12	0	33	6	0	1	10	17	87
Total	10	78	0	0	88	0	0	0	0	0	0	75	40	0	115	25	0	1	18	44	247
08:00 AM	1	21	0	0	22	0	0	0	0	0	0	9	19	1	29	10	0	2	9	21	72
08:15 AM	0	19	0	0	19	0	0	0	0	0	0	23	16	1	40	6	0	0	1	7	66
08:30 AM	0	17	0	0	17	0	0	0	0	0	0	18	29	0	47	7	0	0	7	14	78
08:45 AM	1	21	0	0	22	0	0	0	1	1	0	21	18	1	40	7	0	0	1	8	71
Total	2	78	0	0	80	0	0	0	1	1	0	71	82	3	156	30	0	2	18	50	287
Grand Total	12	156	0	0	168	0	0	0	1	1	0	146	122	3	271	55	0	3	36	94	534
Apprch %	7.1	92.9	0	0		0	0	0	100		0	53.9	45	1.1		58.5	0	3.2	38.3		
Total %	2.2	29.2	0	0	31.5	0	0	0	0.2	0.2	0	27.3	22.8	0.6	50.7	10.3	0	0.6	6.7	17.6	
Lights	11	154	0	0	165	0	0	0	1	1	0	143	121	3	267	54	0	3	36	93	526
% Lights	91.7	98.7	0	0	98.2	0	0	0	100	100	0	97.9	99.2	100	98.5	98.2	0	100	100	98.9	98.5
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	1	2	0	0	3	0	0	0	0	0	0	3	1	0	4	1	0	0	0	1	8
% Trucks	8.3	1.3	0	0	1.8	0	0	0	0	0	0	2.1	0.8	0	1.5	1.8	0	0	0	1.1	1.5

	MISSION DR Southbound				Westbound				MISSION DR Northbound				DOMINICAN WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	**4**	29	0	33	0	0	0	0	0	**27**	16	**43**	8	0	0	8	**84**
07:45 AM	4	**33**	0	**37**	0	0	0	0	0	21	12	33	6	0	1	7	77
08:00 AM	1	21	0	22	0	0	0	0	0	9	**19**	28	**10**	0	**2**	**12**	62
08:15 AM	0	19	0	19	0	0	0	0	0	23	16	39	6	0	0	6	64
Total Volume	9	102	0	111	0	0	0	0	0	80	63	143	30	0	3	33	287
% App. Total	8.1	91.9	0		0	0	0		0	55.9	44.1		90.9	0	9.1		
PHF	.563	.773	.000	.750	.000	.000	.000	.000	.000	.741	.829	.831	.750	.000	.375	.688	.854

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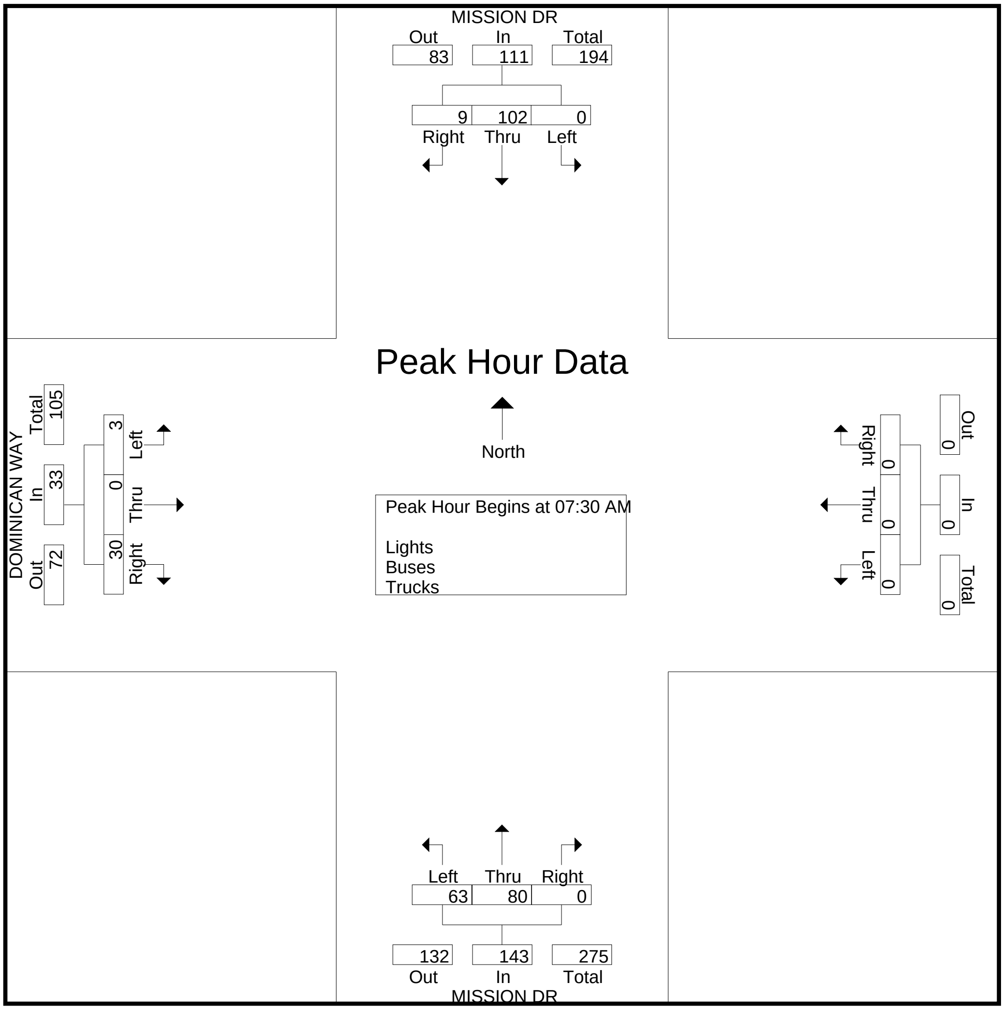

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File Name : 10AM FINAL
Site Code : 00000010
Start Date : 6/6/2019

Groups Printed- Bikes

	MISSION DR Southbound					Westbound					MISSION DR Northbound					DOMINICAN WAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
Apprch %	0	0	0	0		0	0	0	0		0	100	0	0		100	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	50	0	0	50	50	0	0	0	50	

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

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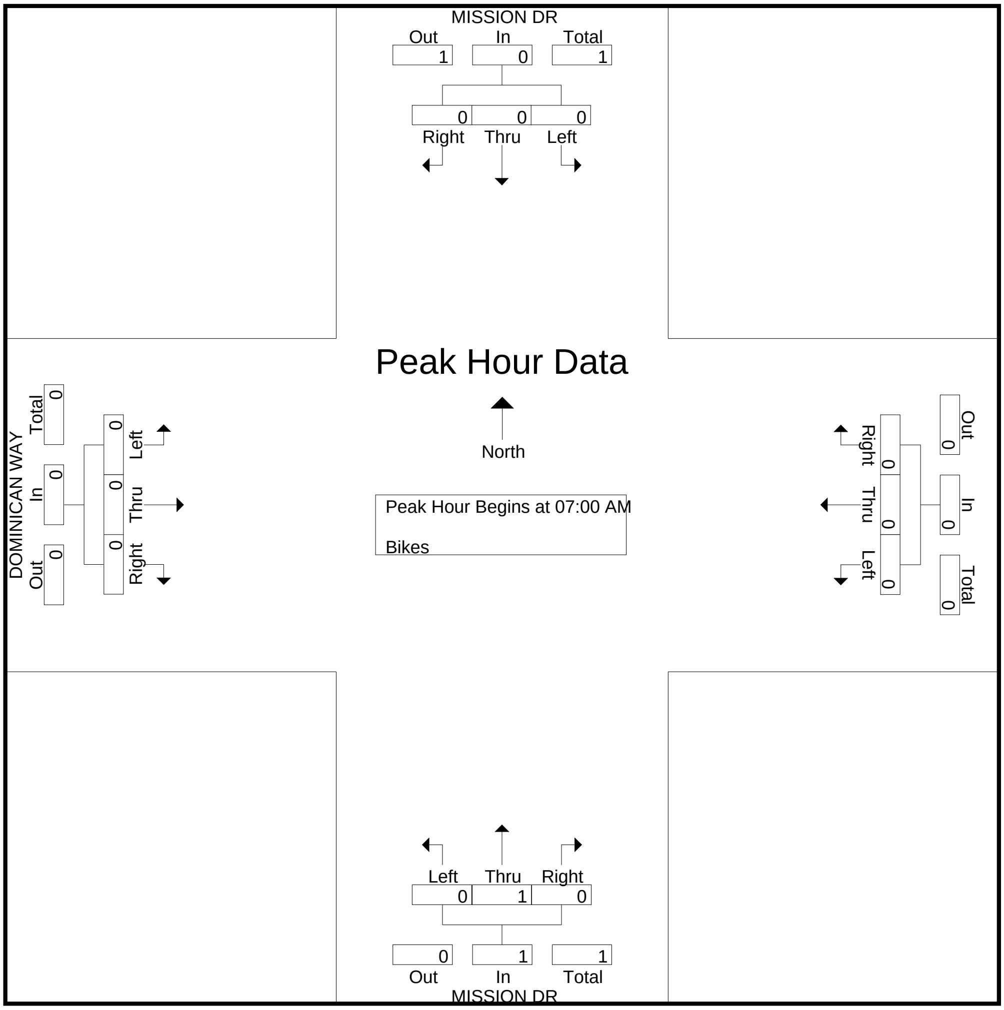

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File Name : 10PM FINAL
Site Code : 00000010
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Groups Printed- Lights - Buses - Trucks

	MISSION DR Southbound					Westbound					MISSION DR Northbound					DOMINICAN WAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	2	28	0	0	30	0	0	0	1	1	0	17	5	0	22	34	0	4	1	39	92
04:15 PM	0	20	0	0	20	0	0	0	0	0	0	22	10	0	32	29	0	0	3	32	84
04:30 PM	1	25	0	0	26	0	0	0	1	1	0	22	5	1	28	31	0	1	1	33	88
04:45 PM	2	29	0	0	31	0	0	0	1	1	0	19	8	1	28	26	0	7	3	36	96
Total	5	102	0	0	107	0	0	0	3	3	0	80	28	2	110	120	0	12	8	140	360
05:00 PM	1	32	0	2	35	0	0	0	3	3	0	23	3	0	26	26	0	1	6	33	97
05:15 PM	0	23	0	1	24	0	0	0	0	0	0	14	3	0	17	17	0	4	1	22	63
05:30 PM	0	16	0	0	16	0	0	0	0	0	0	10	3	0	13	17	0	1	4	22	51
05:45 PM	1	24	0	0	25	0	0	0	2	2	0	14	3	0	17	10	0	3	0	13	57
Total	2	95	0	3	100	0	0	0	5	5	0	61	12	0	73	70	0	9	11	90	268
Grand Total	7	197	0	3	207	0	0	0	8	8	0	141	40	2	183	190	0	21	19	230	628
Apprch %	3.4	95.2	0	1.4		0	0	0	100		0	77	21.9	1.1		82.6	0	9.1	8.3		
Total %	1.1	31.4	0	0.5	33	0	0	0	1.3	1.3	0	22.5	6.4	0.3	29.1	30.3	0	3.3	3	36.6	
Lights	7	195	0	3	205	0	0	0	8	8	0	141	40	2	183	190	0	21	19	230	626
% Lights	100	99	0	100	99	0	0	0	100	100	0	100	100	100	100	100	0	100	100	100	99.7
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Trucks	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Trucks	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.3

	MISSION DR Southbound				Westbound				MISSION DR Northbound				DOMINICAN WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**2**	28	0	30	0	0	0	0	0	17	5	22	**34**	0	4	**38**	90
04:15 PM	0	20	0	20	0	0	0	0	0	**22**	**10**	**32**	29	0	0	29	81
04:30 PM	1	25	0	26	0	0	0	0	0	22	5	27	31	0	1	32	85
04:45 PM	2	**29**	0	**31**	0	0	0	0	0	19	8	27	26	0	**7**	33	**91**
Total Volume	5	102	0	107	0	0	0	0	0	80	28	108	120	0	12	132	347
% App. Total	4.7	95.3	0		0	0	0		0	74.1	25.9		90.9	0	9.1		
PHF	.625	.879	.000	.863	.000	.000	.000	.000	.000	.909	.700	.844	.882	.000	.429	.868	.953

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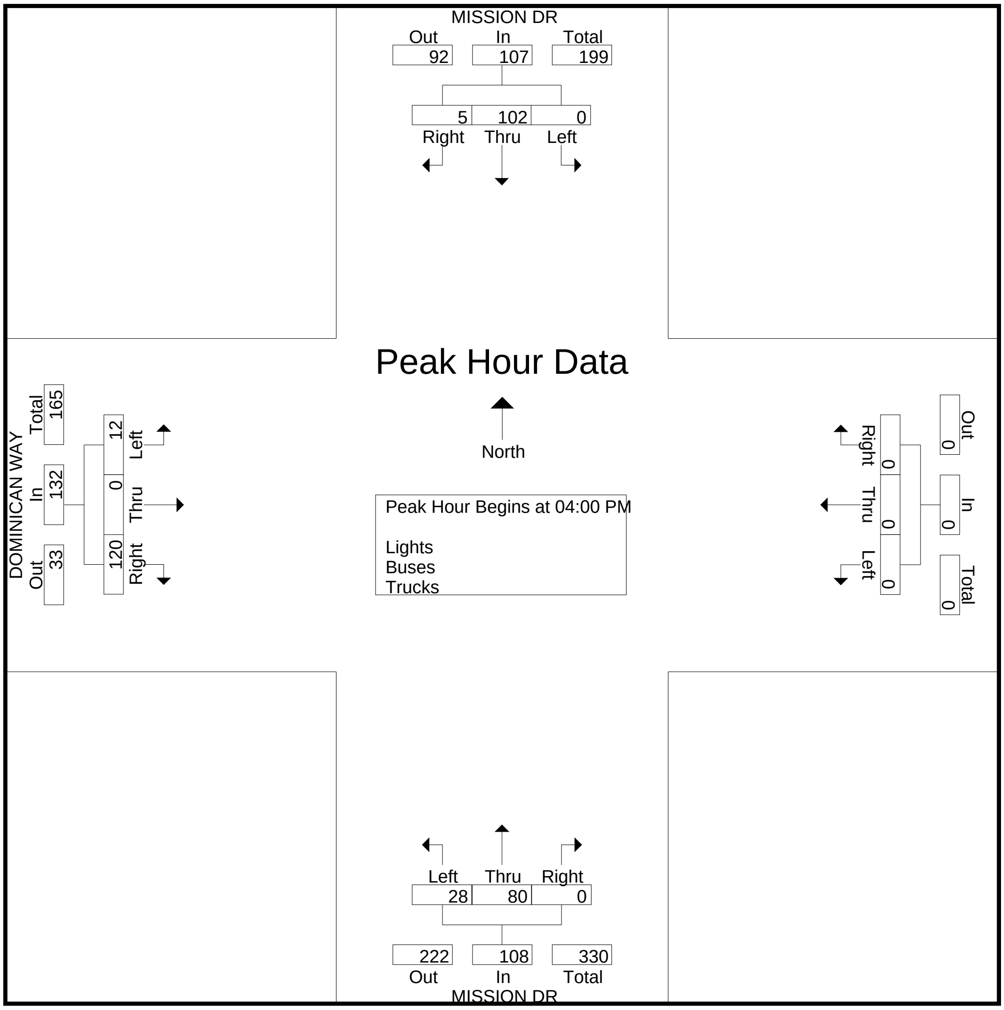

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File Name : 10PM FINAL
Site Code : 00000010
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Groups Printed- Bikes

	MISSION DR Southbound					Westbound					MISSION DR Northbound					DOMINICAN WAY Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	2
05:15 PM	0	1	0	0	1	0	0	0	0	0	0	3	1	0	4	0	0	1	0	1	6
05:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	4	0	0	4	0	0	0	0	0	0	3	2	0	5	1	0	1	0	2	11
Grand Total	0	5	0	0	5	0	0	0	0	0	0	3	2	0	5	1	0	2	0	3	13
Apprch %	0	100	0	0		0	0	0	0		0	60	40	0		33.3	0	66.7	0		
Total %	0	38.5	0	0	38.5	0	0	0	0	0	0	23.1	15.4	0	38.5	7.7	0	15.4	0	23.1	

	MISSION DR Southbound				Westbound				MISSION DR Northbound				DOMINICAN WAY Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	0	**1**	0	**1**	0	0	0	0	0	0	0	0	0	0	**1**	**1**	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	**1**	1	**1**	0	0	1	2
05:15 PM	0	1	0	1	0	0	0	0	0	**3**	1	**4**	0	0	1	1	**6**
05:30 PM	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	3	0	3	0	0	0	0	0	3	2	5	1	0	2	3	11
% App. Total	0	100	0		0	0	0		0	60	40		33.3	0	66.7		
PHF	.000	.750	.000	.750	.000	.000	.000	.000	.000	.250	.500	.313	.250	.000	.500	.750	.458

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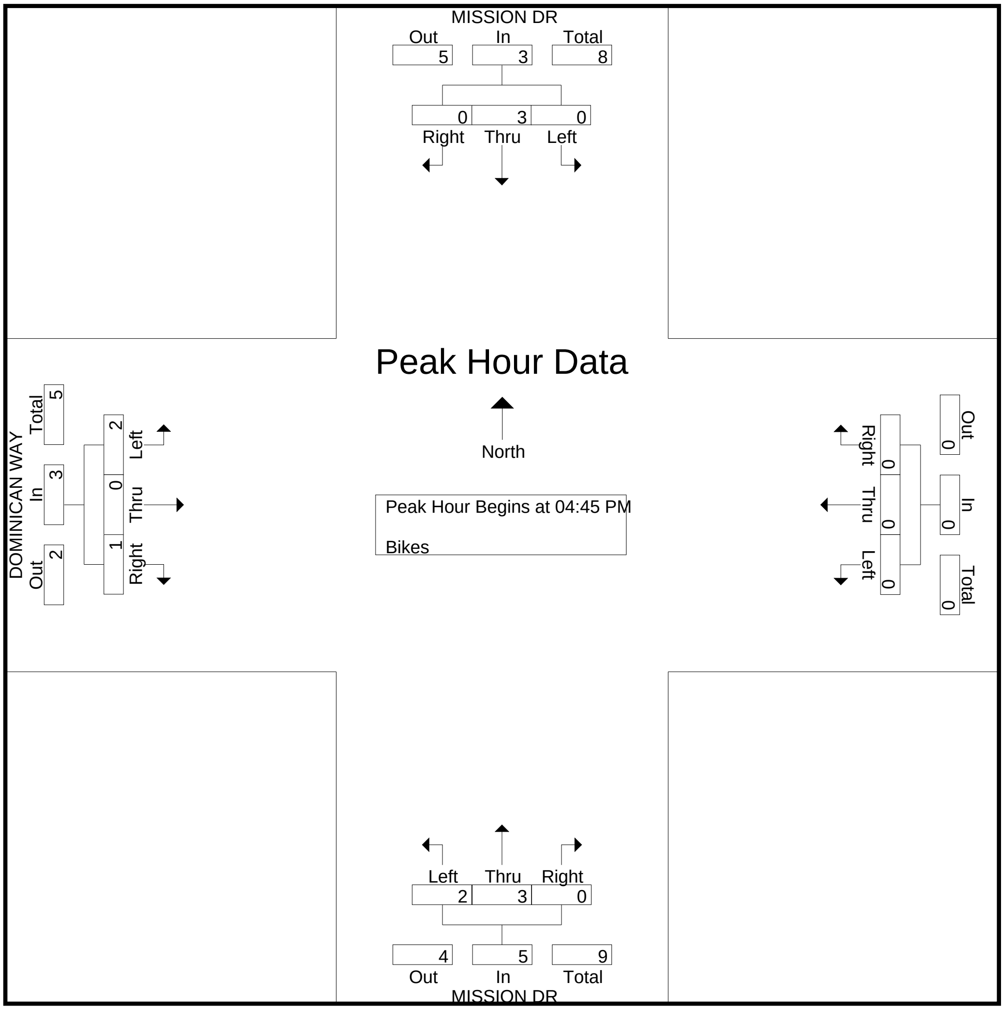

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File Name : 11AM FINAL
Site Code : 00000011
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Groups Printed- Lights - Buses - Trucks

	MISSION DR Southbound					SOQUEL DR Westbound					MISSION DR Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	9	0	4	3	16	11	115	5	0	131	0	7	0	1	8	3	61	12	0	76	231
07:15 AM	9	0	4	5	18	17	149	5	0	171	4	8	3	1	16	1	96	17	4	118	323
07:30 AM	18	0	16	3	37	24	213	7	0	244	5	9	1	0	15	2	125	27	0	154	450
07:45 AM	27	0	10	5	42	25	251	8	0	284	6	5	4	1	16	1	118	26	2	147	489
Total	63	0	34	16	113	77	728	25	0	830	15	29	8	3	55	7	400	82	6	495	1493
08:00 AM	20	0	10	1	31	33	231	10	0	274	13	3	0	2	18	4	143	18	2	167	490
08:15 AM	17	0	9	0	26	30	237	12	0	279	4	3	3	0	10	1	135	25	0	161	476
08:30 AM	18	0	9	0	27	25	253	8	1	287	8	6	7	0	21	2	145	34	0	181	516
08:45 AM	21	1	8	0	30	23	269	5	0	297	7	5	5	1	18	3	150	24	1	178	523
Total	76	1	36	1	114	111	990	35	1	1137	32	17	15	3	67	10	573	101	3	687	2005
Grand Total	139	1	70	17	227	188	1718	60	1	1967	47	46	23	6	122	17	973	183	9	1182	3498
Apprch %	61.2	0.4	30.8	7.5		9.6	87.3	3.1	0.1		38.5	37.7	18.9	4.9		1.4	82.3	15.5	0.8		
Total %	4	0	2	0.5	6.5	5.4	49.1	1.7	0	56.2	1.3	1.3	0.7	0.2	3.5	0.5	27.8	5.2	0.3	33.8	
Lights	137	1	68	17	223	186	1673	60	1	1920	46	46	22	6	120	17	943	181	9	1150	3413
% Lights	98.6	100	97.1	100	98.2	98.9	97.4	100	100	97.6	97.9	100	95.7	100	98.4	100	96.9	98.9	100	97.3	97.6
Buses	0	0	1	0	1	1	10	0	0	11	0	0	0	0	0	0	8	0	0	8	20
% Buses	0	0	1.4	0	0.4	0.5	0.6	0	0	0.6	0	0	0	0	0	0	0.8	0	0	0.7	0.6
Trucks	2	0	1	0	3	1	35	0	0	36	1	0	1	0	2	0	22	2	0	24	65
% Trucks	1.4	0	1.4	0	1.3	0.5	2	0	0	1.8	2.1	0	4.3	0	1.6	0	2.3	1.1	0	2	1.9

	MISSION DR Southbound				SOQUEL DR Westbound				MISSION DR Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	20	0	**10**	**30**	**33**	231	10	274	**13**	3	0	16	**4**	143	18	165	485
08:15 AM	17	0	9	26	30	237	**12**	279	4	3	3	10	1	135	25	161	476
08:30 AM	18	0	9	27	25	253	8	286	8	**6**	**7**	**21**	2	145	**34**	**181**	515
08:45 AM	**21**	**1**	8	30	23	**269**	5	**297**	7	5	5	17	3	**150**	24	177	**521**
Total Volume	76	1	36	113	111	990	35	1136	32	17	15	64	10	573	101	684	1997
% App. Total	67.3	0.9	31.9		9.8	87.1	3.1		50	26.6	23.4		1.5	83.8	14.8		
PHF	.905	.250	.900	.942	.841	.920	.729	.956	.615	.708	.536	.762	.625	.955	.743	.945	.958

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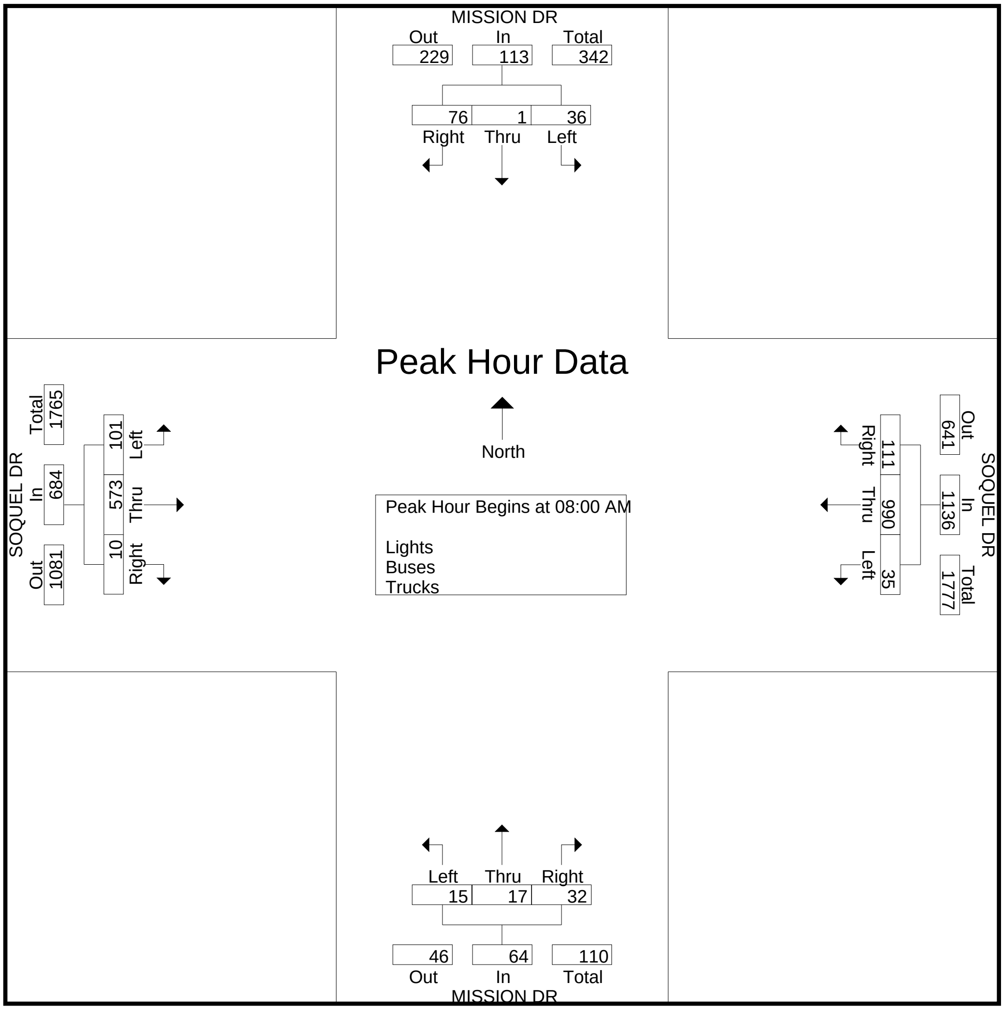

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File Name : 11AM FINAL
Site Code : 00000011
Start Date : 6/6/2019
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Groups Printed- Bikes

	MISSION DR Southbound					SOQUEL DR Westbound					MISSION DR Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	5
07:15 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	0	0	0	2	0	0	2	10
07:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
07:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3
Total	0	0	0	0	0	0	17	0	0	17	0	0	0	0	0	0	5	0	0	5	22
08:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
08:45 AM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
Total	1	0	0	0	1	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	12
Grand Total	1	0	0	0	1	0	22	0	0	22	0	0	0	0	0	0	11	0	0	11	34
Apprch %	100	0	0	0		0	100	0	0		0	0	0	0		0	100	0	0		
Total %	2.9	0	0	0	2.9	0	64.7	0	0	64.7	0	0	0	0	0	0	32.4	0	0	32.4	

	MISSION DR Southbound				SOQUEL DR Westbound				MISSION DR Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
07:00 AM	0	0	0	0	0	4	0	4	0	0	0	0	0	1	0	1	5
07:15 AM	0	0	0	0	0	**8**	0	**8**	0	0	0	0	0	**2**	0	**2**	**10**
07:30 AM	0	0	0	0	0	3	0	3	0	0	0	0	0	1	0	1	4
07:45 AM	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	3
Total Volume	0	0	0	0	0	17	0	17	0	0	0	0	0	5	0	5	22
% App. Total	0	0	0		0	100	0		0	0	0		0	100	0		
PHF	.000	.000	.000	.000	.000	.531	.000	.531	.000	.000	.000	.000	.000	.625	.000	.625	.550

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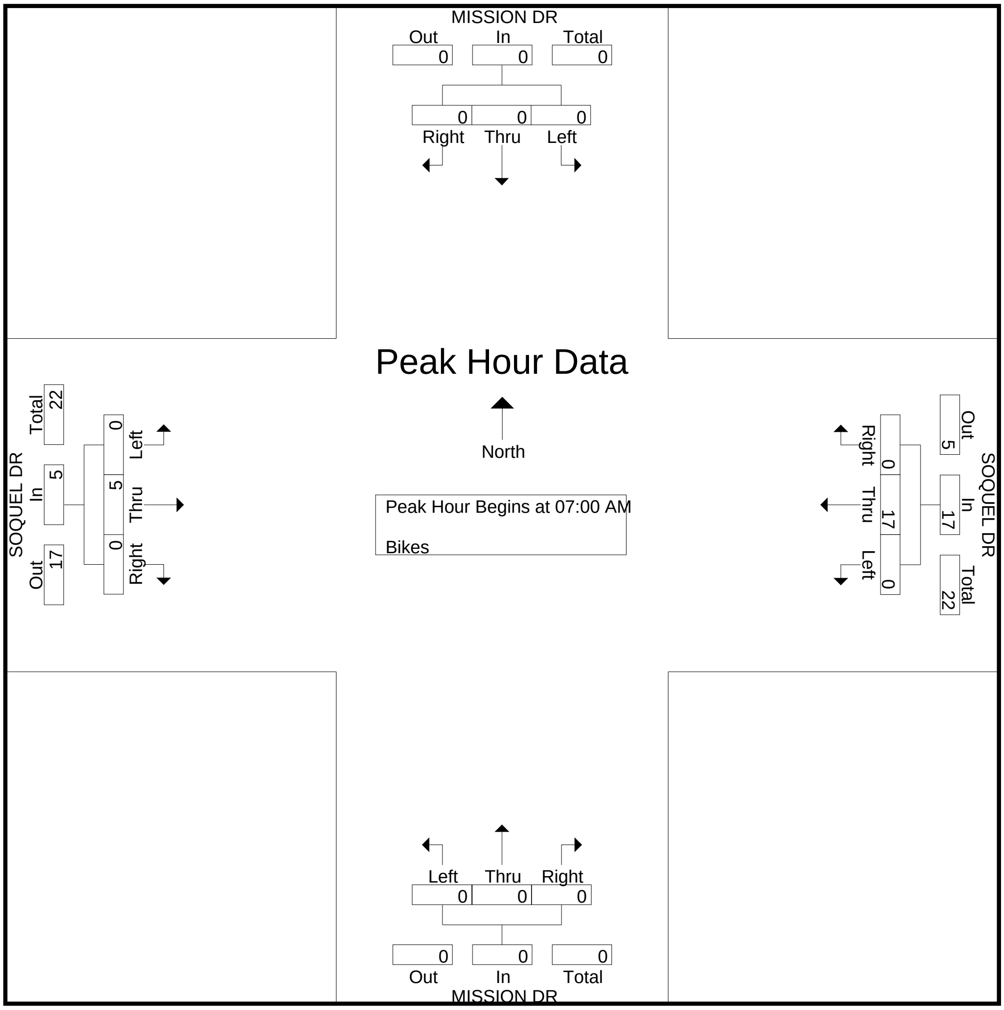

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File Name : 11PM FINAL
Site Code : 00000011
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Groups Printed- Lights - Buses - Trucks

	MISSION DR Southbound					SOQUEL DR Westbound					MISSION DR Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	35	2	36	7	80	8	148	6	0	162	10	0	4	1	15	6	210	12	4	232	489
04:15 PM	23	2	37	4	66	8	155	6	0	169	7	5	3	2	17	1	265	19	2	287	539
04:30 PM	31	3	33	1	68	11	167	9	1	188	4	4	1	1	10	4	330	11	1	346	612
04:45 PM	28	1	33	3	65	7	153	8	1	169	7	4	6	4	21	6	227	12	2	247	502
Total	117	8	139	15	279	34	623	29	2	688	28	13	14	8	63	17	1032	54	9	1112	2142
05:00 PM	37	1	47	4	89	12	156	9	0	177	9	4	4	1	18	1	185	11	1	198	482
05:15 PM	24	0	32	3	59	6	149	6	0	161	5	1	7	0	13	4	246	10	1	261	494
05:30 PM	28	2	22	0	52	8	175	2	0	185	2	0	3	0	5	3	268	6	0	277	519
05:45 PM	20	0	23	1	44	10	178	4	1	193	4	0	1	1	6	0	251	7	0	258	501
Total	109	3	124	8	244	36	658	21	1	716	20	5	15	2	42	8	950	34	2	994	1996
Grand Total	226	11	263	23	523	70	1281	50	3	1404	48	18	29	10	105	25	1982	88	11	2106	4138
Apprch %	43.2	2.1	50.3	4.4		5	91.2	3.6	0.2		45.7	17.1	27.6	9.5		1.2	94.1	4.2	0.5		
Total %	5.5	0.3	6.4	0.6	12.6	1.7	31	1.2	0.1	33.9	1.2	0.4	0.7	0.2	2.5	0.6	47.9	2.1	0.3	50.9	
Lights	226	11	262	23	522	70	1264	49	3	1386	48	18	28	10	104	24	1952	88	11	2075	4087
% Lights	100	100	99.6	100	99.8	100	98.7	98	100	98.7	100	100	96.6	100	99	96	98.5	100	100	98.5	98.8
Buses	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	9	0	0	9	14
% Buses	0	0	0	0	0	0	0.4	0	0	0.4	0	0	0	0	0	0	0.5	0	0	0.4	0.3
Trucks	0	0	1	0	1	0	12	1	0	13	0	0	1	0	1	1	21	0	0	22	37
% Trucks	0	0	0.4	0	0.2	0	0.9	2	0	0.9	0	0	3.4	0	1	4	1.1	0	0	1	0.9

	MISSION DR Southbound				SOQUEL DR Westbound				MISSION DR Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	**35**	2	36	**73**	8	148	6	162	**10**	0	4	14	**6**	210	12	228	477
04:15 PM	23	2	**37**	62	8	155	6	169	7	**5**	3	15	1	265	**19**	285	531
04:30 PM	31	**3**	33	67	**11**	**167**	**9**	**187**	4	4	1	9	4	**330**	11	**345**	**608**
04:45 PM	28	1	33	62	7	153	8	168	7	4	**6**	**17**	6	227	12	245	492
Total Volume	117	8	139	264	34	623	29	686	28	13	14	55	17	1032	54	1103	2108
% App. Total	44.3	3	52.7		5	90.8	4.2		50.9	23.6	25.5		1.5	93.6	4.9		
PHF	.836	.667	.939	.904	.773	.933	.806	.917	.700	.650	.583	.809	.708	.782	.711	.799	.867

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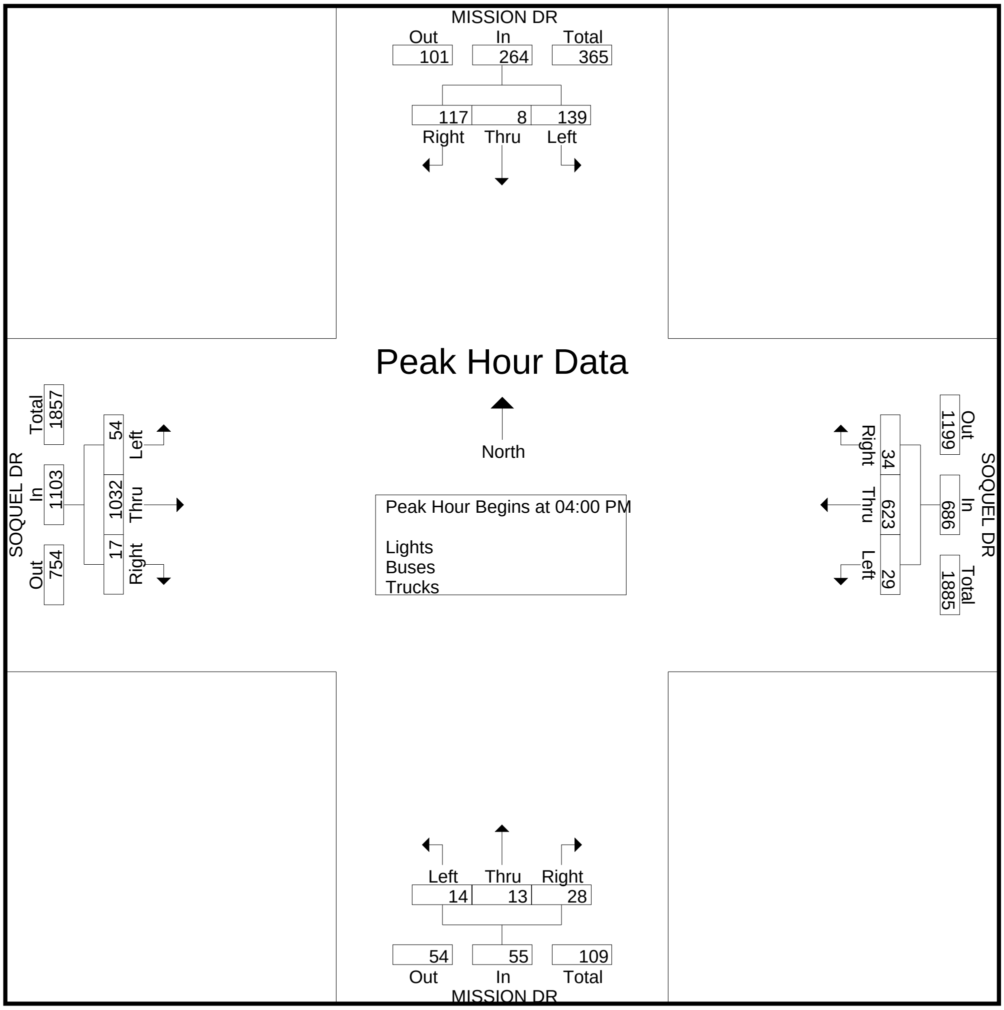

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Groups Printed- Bikes

	MISSION DR Southbound					SOQUEL DR Westbound					MISSION DR Northbound					SOQUEL DR Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3
04:15 PM	0	0	0	0	0	0	1	0	0	1	3	0	0	0	3	3	0	0	0	3	7
04:30 PM	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	1	2	0	0	3	6
04:45 PM	0	0	1	0	1	0	1	0	0	1	2	0	0	0	2	2	4	0	0	6	10
Total	1	0	1	0	2	0	5	0	0	5	6	0	0	0	6	6	7	0	0	13	26
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5	6
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	3
05:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	6
Total	0	1	0	0	1	0	4	0	0	4	0	0	0	0	0	0	12	0	0	12	17
Grand Total	1	1	1	0	3	0	9	0	0	9	6	0	0	0	6	6	19	0	0	25	43
Apprch %	33.3	33.3	33.3	0		0	100	0	0		100	0	0	0		24	76	0	0		
Total %	2.3	2.3	2.3	0	7	0	20.9	0	0	20.9	14	0	0	0	14	14	44.2	0	0	58.1	

	MISSION DR Southbound				SOQUEL DR Westbound				MISSION DR Northbound				SOQUEL DR Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	0	0	0	0	0	1	0	1	**3**	0	0	**3**	**3**	0	0	3	7
04:30 PM	0	0	0	0	0	**2**	0	**2**	1	0	0	1	1	2	0	3	6
04:45 PM	0	0	**1**	**1**	0	1	0	1	2	0	0	2	2	4	0	**6**	**10**
05:00 PM	0	**1**	0	1	0	0	0	0	0	0	0	0	0	**5**	0	5	6
Total Volume	0	1	1	2	0	4	0	4	6	0	0	6	6	11	0	17	29
% App. Total	0	50	50		0	100	0		100	0	0		35.3	64.7	0		
PHF	.000	.250	.250	.500	.000	.500	.000	.500	.500	.000	.000	.500	.500	.550	.000	.708	.725

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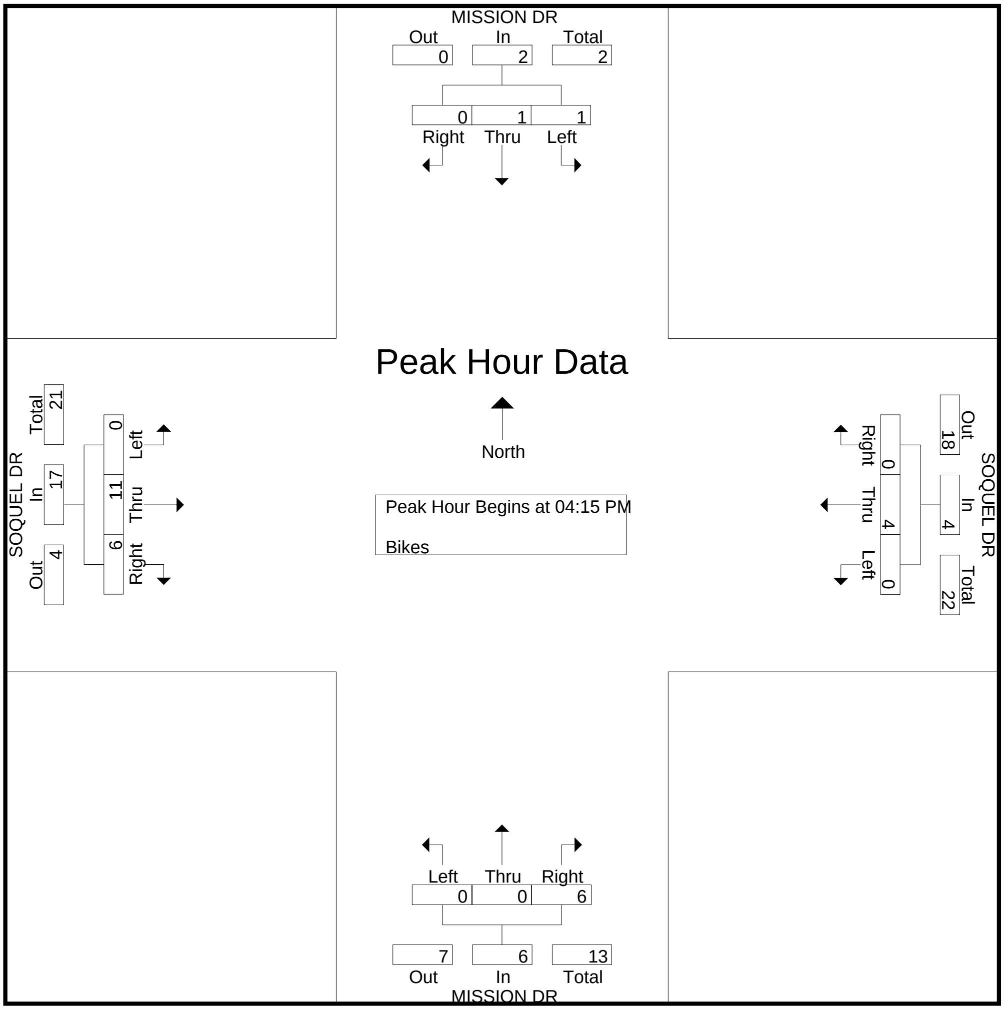

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File Name : 12AM FINAL
Site Code : 00000012
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Groups Printed- Lights - Buses - Trucks

	PAUL SWEET RD Southbound						SOQUEL DR Westbound						COMMERCIAL WAY Northbound						SOQUEL DR Eastbound						HWY-1 NB ON-RAMP Southeastbound						
Start Time	Hard Right	Right	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Left	Peds	App. Total	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Int. Total
07:00 AM	6	8	0	3	2	19	5	54	46	0	0	105	3	18	13	97	0	131	102	92	15	0	0	209	0	0	0	0	0	0	464
07:15 AM	9	8	0	9	1	27	5	97	64	0	0	166	7	19	8	70	1	105	126	120	22	0	0	268	0	0	0	0	0	0	566
07:30 AM	15	19	0	12	0	46	12	124	99	0	3	238	7	14	19	75	1	116	128	159	25	0	0	312	0	0	0	0	0	0	712
07:45 AM	7	16	0	13	0	36	5	147	122	2	0	276	9	22	9	106	1	147	153	163	52	0	0	368	0	0	0	0	0	0	827
Total	37	51	0	37	3	128	27	422	331	2	3	785	26	73	49	348	3	499	509	534	114	0	0	1157	0	0	0	0	0	0	2569
08:00 AM	9	11	0	20	2	42	5	117	130	2	2	256	12	19	16	101	1	149	152	174	28	2	0	356	0	0	0	0	0	0	803
08:15 AM	17	16	0	16	5	54	3	123	102	0	1	229	15	11	12	81	0	119	132	169	28	1	0	330	0	0	0	0	0	0	732
08:30 AM	9	22	0	18	4	53	8	150	119	2	1	280	8	7	14	66	0	95	137	200	23	0	0	360	0	0	0	0	0	0	788
08:45 AM	8	10	0	19	1	38	7	152	142	0	0	301	7	16	15	57	0	95	116	208	27	5	0	356	0	0	0	0	0	0	790
Total	43	59	0	73	12	187	23	542	493	4	4	1066	42	53	57	305	1	458	537	751	106	8	0	1402	0	0	0	0	0	0	3113
Grand Total	80	110	0	110	15	315	50	964	824	6	7	1851	68	126	106	653	4	957	1046	1285	220	8	0	2559	0	0	0	0	0	0	5682
Apprch %	25.4	34.9	0	34.9	4.8		2.7	52.1	44.5	0.3	0.4		7.1	13.2	11.1	68.2	0.4		40.9	50.2	8.6	0.3	0		0	0	0	0	0		
Total %	1.4	1.9	0	1.9	0.3	5.5	0.9	17	14.5	0.1	0.1	32.6	1.2	2.2	1.9	11.5	0.1	16.8	18.4	22.6	3.9	0.1	0	45	0	0	0	0	0	0	
Lights	76	107	0	105	15	303	49	947	797	6	7	1806	65	125	102	631	4	927	1016	1253	218	8	0	2495	0	0	0	0	0	0	5531
% Lights	95	97.3	0	95.5	100	96.2	98	98.2	96.7	100	100	97.6	95.6	99.2	96.2	96.6	100	96.9	97.1	97.5	99.1	100	0	97.5	0	0	0	0	0	0	97.3
Buses	1	0	0	2	0	3	0	3	10	0	0	13	1	0	0	3	0	4	1	7	0	0	0	8	0	0	0	0	0	0	28
% Buses	1.2	0	0	1.8	0	1	0	0.3	1.2	0	0	0.7	1.5	0	0	0.5	0	0.4	0.1	0.5	0	0	0	0.3	0	0	0	0	0	0	0.5
Trucks	3	3	0	3	0	9	1	14	17	0	0	32	2	1	4	19	0	26	29	25	2	0	0	56	0	0	0	0	0	0	123
% Trucks	3.8	2.7	0	2.7	0	2.9	2	1.5	2.1	0	0	1.7	2.9	0.8	3.8	2.9	0	2.7	2.8	1.9	0.9	0	0	2.2	0	0	0	0	0	0	2.2

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Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Entire Intersection Begins at 07:45 AM

	PAUL SWEET RD Southbound					SOQUEL DR Westbound					COMMERCIAL WAY Northbound					SOQUEL DR Eastbound					HWY-1 NB ON-RAMP Southeastbound					
Start Time	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Int. Total
07:45 AM	7	16	0	13	36	5	147	122	**2**	276	9	**22**	9	**106**	146	**153**	163	**52**	0	**368**	0	0	0	0	0	**826**
08:00 AM	9	11	0	**20**	40	5	117	**130**	2	254	12	19	**16**	101	**148**	152	174	28	**2**	356	0	0	0	0	0	798
08:15 AM	**17**	16	0	16	**49**	3	123	102	0	228	**15**	11	12	81	119	132	169	28	1	330	0	0	0	0	0	726
08:30 AM	9	**22**	0	18	49	**8**	**150**	119	2	**279**	8	7	14	66	95	137	**200**	23	0	360	0	0	0	0	0	783
Total Volume	42	65	0	67	174	21	537	473	6	1037	44	59	51	354	508	574	706	131	3	1414	0	0	0	0	0	3133
% App. Total	24.1	37.4	0	38.5		2	51.8	45.6	0.6		8.7	11.6	10	69.7		40.6	49.9	9.3	0.2		0	0	0	0		
PHF	.618	.739	.000	.838	.888	.656	.895	.910	.750	.929	.733	.670	.797	.835	.858	.938	.883	.630	.375	.961	.000	.000	.000	.000	.000	.948

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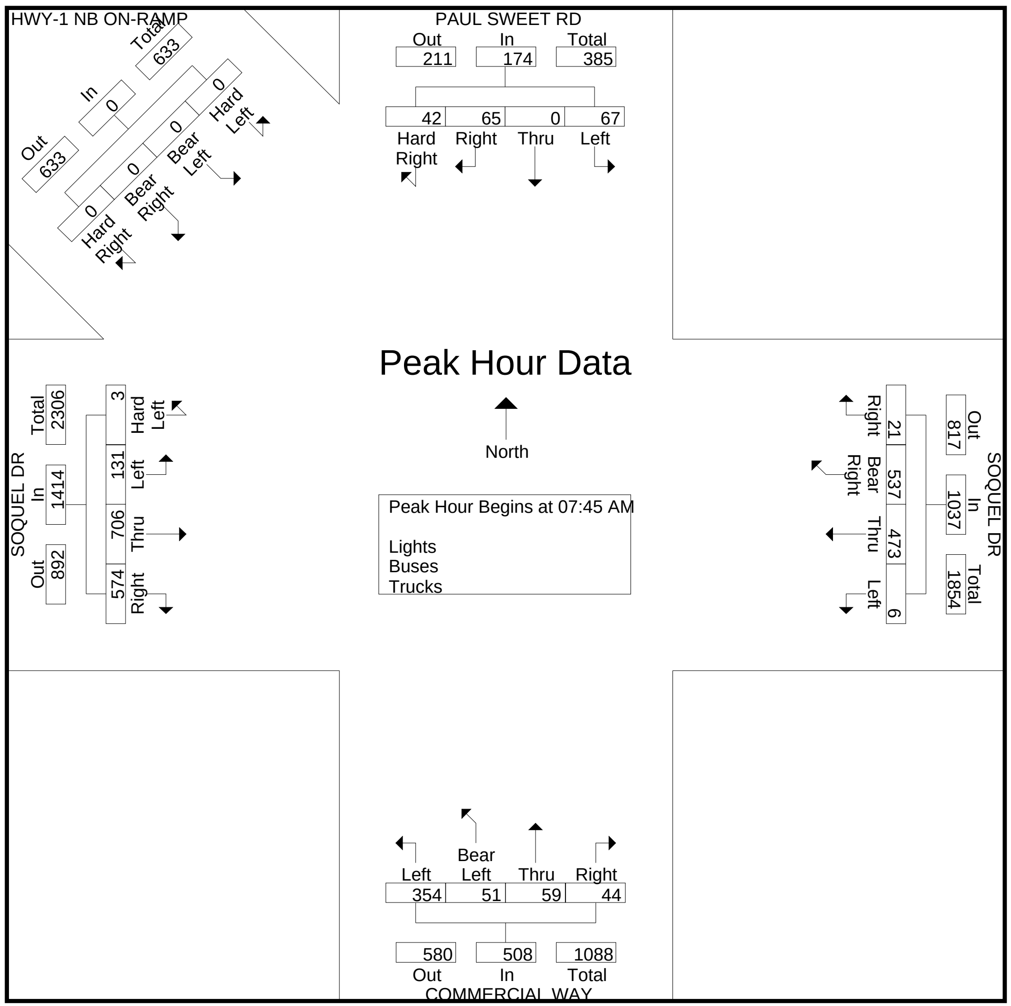

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Groups Printed- Bikes

	PAUL SWEET RD Southbound						SOQUEL DR Westbound						COMMERCIAL WAY Northbound						SOQUEL DR Eastbound						HWY-1 NB ON-RAMP Southeastbound						
Start Time	Hard Right	Right	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Left	Peds	App. Total	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Int. Total
07:00 AM	0	1	0	0	0	1	1	0	2	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	5
07:15 AM	0	0	0	0	0	0	1	0	7	0	0	8	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	12
07:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	2	0	2	0	3	1	0	0	4	0	0	0	0	0	0	7
07:45 AM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	6
Total	0	1	0	0	0	1	2	0	14	0	0	16	0	0	0	2	0	2	0	10	1	0	0	11	0	0	0	0	0	0	30
08:00 AM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	5
08:15 AM	0	0	0	1	0	1	0	0	3	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	7
08:30 AM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	4
08:45 AM	0	1	0	0	0	1	1	0	1	0	0	2	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	4
Total	0	1	0	1	0	2	1	0	7	0	0	8	0	0	0	0	0	0	0	10	0	0	0	10	0	0	0	0	0	0	20
Grand Total	0	2	0	1	0	3	3	0	21	0	0	24	0	0	0	2	0	2	0	20	1	0	0	21	0	0	0	0	0	0	50
Apprch %	0	66.7	0	33.3	0		12.5	0	87.5	0	0		0	0	0	100	0		0	95.2	4.8	0	0		0	0	0	0	0		
Total %	0	4	0	2	0	6	6	0	42	0	0	48	0	0	0	4	0	4	0	40	2	0	0	42	0	0	0	0	0	0	

	PAUL SWEET RD Southbound					SOQUEL DR Westbound					COMMERCIAL WAY Northbound					SOQUEL DR Eastbound					HWY-1 NB ON-RAMP Southeastbound					
Start Time	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 07:00 AM																										
07:00 AM	0	**1**	0	0	**1**	**1**	0	2	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
07:15 AM	0	0	0	0	0	1	0	**7**	0	**8**	0	0	0	0	0	0	**4**	0	0	**4**	0	0	0	0	0	**12**
07:30 AM	0	0	0	0	0	0	0	1	0	1	0	0	0	**2**	**2**	0	3	**1**	0	4	0	0	0	0	0	7
07:45 AM	0	0	0	0	0	0	0	4	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
Total Volume	0	1	0	0	1	2	0	14	0	16	0	0	0	2	2	0	10	1	0	11	0	0	0	0	0	30
% App. Total	0	100	0	0		12.5	0	87.5	0		0	0	0	100		0	90.9	9.1	0		0	0	0	0		
PHF	.000	.250	.000	.000	.250	.500	.000	.500	.000	.500	.000	.000	.000	.250	.250	.000	.625	.250	.000	.688	.000	.000	.000	.000	.000	.625

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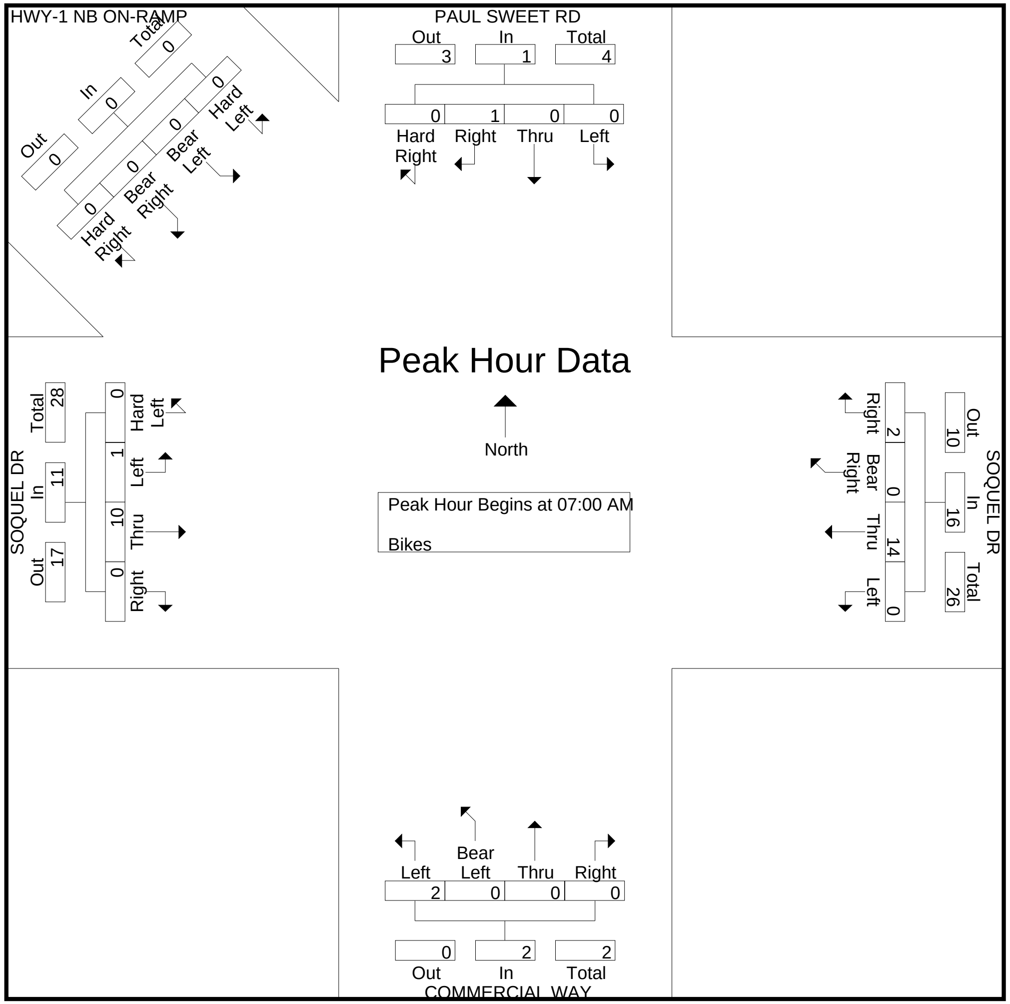

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Groups Printed- Lights - Buses - Trucks

	PAUL SWEET RD Southbound						SOQUEL DR Westbound						COMMERCIAL WAY Northbound						SOQUEL DR Eastbound						HWY-1 NB ON-RAMP Southeastbound						
Start Time	Hard Right	Right	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Left	Peds	App. Total	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Int. Total
04:00 PM	23	19	0	38	3	83	3	89	129	1	2	224	14	5	20	80	3	122	97	188	5	1	0	291	0	0	0	0	0	0	720
04:15 PM	18	29	0	63	5	115	4	113	85	0	1	203	9	6	17	69	0	101	102	269	8	1	0	380	0	0	0	0	0	0	799
04:30 PM	24	27	0	54	3	108	4	99	126	0	0	229	10	4	24	72	1	111	91	264	14	1	0	370	0	0	0	0	0	0	818
04:45 PM	16	15	0	38	1	70	4	110	109	0	0	223	10	6	22	86	0	124	112	209	11	1	0	333	0	0	0	0	0	0	750
Total	81	90	0	193	12	376	15	411	449	1	3	879	43	21	83	307	4	458	402	930	38	4	0	1374	0	0	0	0	0	0	3087
05:00 PM	14	28	0	24	5	71	3	106	120	0	0	229	3	4	33	101	3	144	111	186	10	1	0	308	0	0	0	0	0	0	752
05:15 PM	19	21	0	40	3	83	2	109	100	2	1	214	6	12	24	74	1	117	97	241	12	0	0	350	0	0	0	0	0	0	764
05:30 PM	18	29	0	29	0	76	6	103	113	0	1	223	2	4	15	73	0	94	88	241	9	2	0	340	0	0	0	0	0	0	733
05:45 PM	11	15	0	24	1	51	4	103	94	0	1	202	4	6	21	56	0	87	92	264	20	1	1	378	0	0	0	0	0	0	718
Total	62	93	0	117	9	281	15	421	427	2	3	868	15	26	93	304	4	442	388	932	51	4	1	1376	0	0	0	0	0	0	2967
Grand Total	143	183	0	310	21	657	30	832	876	3	6	1747	58	47	176	611	8	900	790	1862	89	8	1	2750	0	0	0	0	0	0	6054
Apprch %	21.8	27.9	0	47.2	3.2		1.7	47.6	50.1	0.2	0.3		6.4	5.2	19.6	67.9	0.9		28.7	67.7	3.2	0.3	0		0	0	0	0	0		
Total %	2.4	3	0	5.1	0.3	10.9	0.5	13.7	14.5	0	0.1	28.9	1	0.8	2.9	10.1	0.1	14.9	13	30.8	1.5	0.1	0	45.4	0	0	0	0	0	0	
Lights	143	182	0	304	21	650	30	825	859	3	6	1723	57	47	171	601	8	884	773	1831	88	7	1	2700	0	0	0	0	0	0	5957
% Lights	100	99.5	0	98.1	100	98.9	100	99.2	98.1	100	100	98.6	98.3	100	97.2	98.4	100	98.2	97.8	98.3	98.9	87.5	100	98.2	0	0	0	0	0	0	98.4
Buses	0	0	0	0	0	0	0	1	4	0	0	5	0	0	0	2	0	2	4	9	0	1	0	14	0	0	0	0	0	0	21
% Buses	0	0	0	0	0	0	0	0.1	0.5	0	0	0.3	0	0	0	0.3	0	0.2	0.5	0.5	0	12.5	0	0.5	0	0	0	0	0	0	0.3
Trucks	0	1	0	6	0	7	0	6	13	0	0	19	1	0	5	8	0	14	13	22	1	0	0	36	0	0	0	0	0	0	76
% Trucks	0	0.5	0	1.9	0	1.1	0	0.7	1.5	0	0	1.1	1.7	0	2.8	1.3	0	1.6	1.6	1.2	1.1	0	0	1.3	0	0	0	0	0	0	1.3

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	PAUL SWEET RD Southbound					SOQUEL DR Westbound					COMMERCIAL WAY Northbound					SOQUEL DR Eastbound					HWY-1 NB ON-RAMP Southeastbound					
Start Time	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 04:15 PM																										
04:15 PM	18	**29**	0	**63**	**110**	**4**	**113**	85	0	202	9	**6**	17	69	101	102	**269**	8	**1**	**380**	0	0	0	0	0	793
04:30 PM	**24**	27	0	54	105	4	99	**126**	0	**229**	**10**	4	24	72	110	91	264	**14**	1	370	0	0	0	0	0	**814**
04:45 PM	16	15	0	38	69	4	110	109	0	223	10	6	22	86	124	**112**	209	11	1	333	0	0	0	0	0	749
05:00 PM	14	28	0	24	66	3	106	120	0	229	3	4	**33**	**101**	**141**	111	186	10	1	308	0	0	0	0	0	744
Total Volume	72	99	0	179	350	15	428	440	0	883	32	20	96	328	476	416	928	43	4	1391	0	0	0	0	0	3100
% App. Total	20.6	28.3	0	51.1		1.7	48.5	49.8	0		6.7	4.2	20.2	68.9		29.9	66.7	3.1	0.3		0	0	0	0		
PHF	.750	.853	.000	.710	.795	.938	.947	.873	.000	.964	.800	.833	.727	.812	.844	.929	.862	.768	1.00	.915	.000	.000	.000	.000	.000	.952

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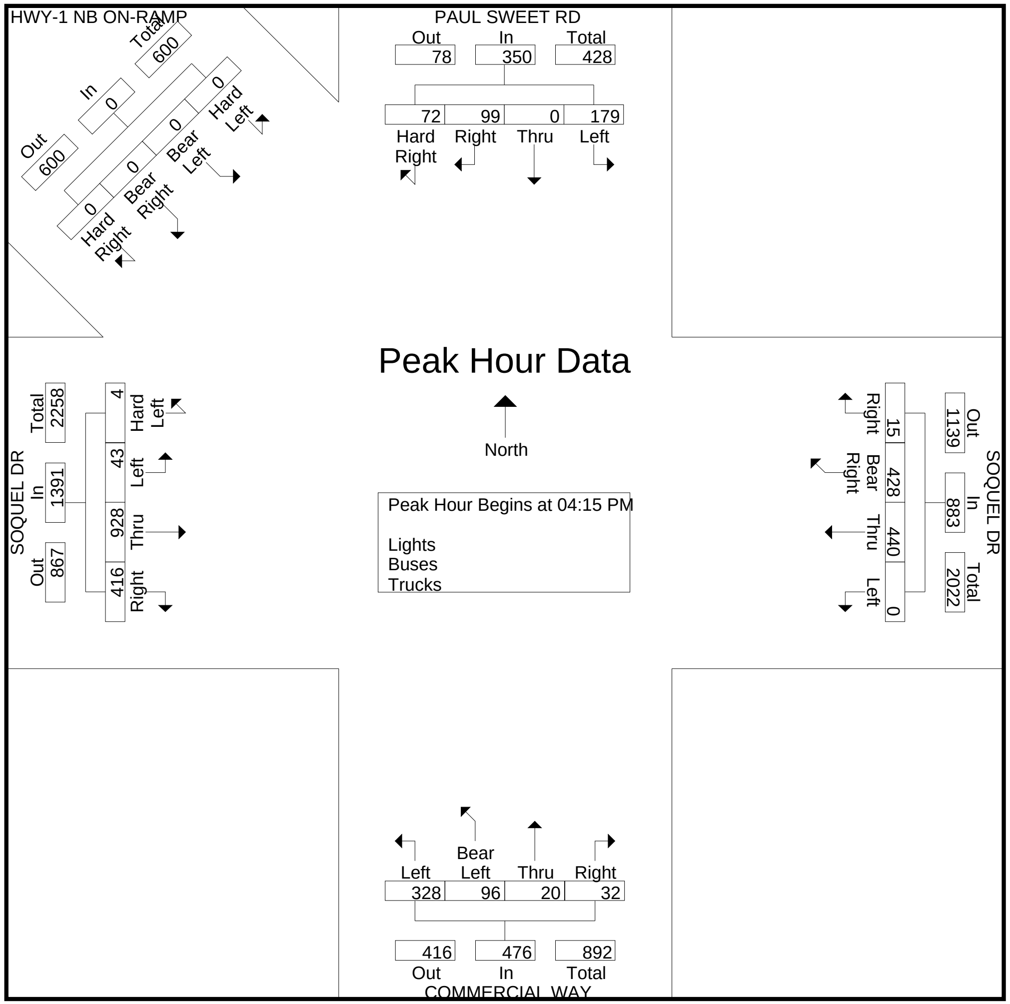

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Groups Printed- Bikes

	PAUL SWEET RD Southbound						SOQUEL DR Westbound						COMMERCIAL WAY Northbound						SOQUEL DR Eastbound						HWY-1 NB ON-RAMP Southeastbound						
Start Time	Hard Right	Right	Thru	Left	Peds	App. Total	Right	Bear Right	Thru	Left	Peds	App. Total	Right	Thru	Bear Left	Left	Peds	App. Total	Right	Thru	Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Int. Total
04:00 PM	0	2	0	0	0	2	0	0	3	0	0	3	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	6
04:15 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	4	0	0	0	4	0	0	0	0	0	0	5
04:30 PM	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	5
04:45 PM	0	3	0	0	0	3	0	0	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	6
Total	0	5	0	0	0	5	0	0	7	0	0	7	0	0	0	0	0	0	0	10	0	0	0	10	0	0	0	0	0	0	22
05:00 PM	0	0	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	0	0	0	7
05:15 PM	0	0	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0	0	0	7
05:30 PM	0	0	0	1	0	1	0	0	2	0	0	2	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	5
05:45 PM	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	2	1	0	0	4	0	0	0	0	0	0	5
Total	0	0	0	2	0	2	1	0	7	0	0	8	0	0	0	0	0	0	1	12	1	0	0	14	0	0	0	0	0	0	24
Grand Total	0	5	0	2	0	7	1	0	14	0	0	15	0	0	0	0	0	0	1	22	1	0	0	24	0	0	0	0	0	0	46
Apprch %	0	71.4	0	28.6	0		6.7	0	93.3	0	0		0	0	0	0	0		4.2	91.7	4.2	0	0		0	0	0	0	0		
Total %	0	10.9	0	4.3	0	15.2	2.2	0	30.4	0	0	32.6	0	0	0	0	0	0	2.2	47.8	2.2	0	0	52.2	0	0	0	0	0	0	

	PAUL SWEET RD Southbound					SOQUEL DR Westbound					COMMERCIAL WAY Northbound					SOQUEL DR Eastbound					HWY-1 NB ON-RAMP Southeastbound					
Start Time	Hard Right	Right	Thru	Left	App. Total	Right	Bear Right	Thru	Left	App. Total	Right	Thru	Bear Left	Left	App. Total	Right	Thru	Left	Hard Left	App. Total	Hard Right	Bear Right	Bear Left	Hard Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																										
Peak Hour for Entire Intersection Begins at 04:30 PM																										
04:30 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5
04:45 PM	0	**3**	0	0	**3**	0	0	1	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
05:00 PM	0	0	0	**1**	1	**1**	0	0	0	1	0	0	0	0	0	0	**5**	0	0	**5**	0	0	0	0	0	**7**
05:15 PM	0	0	0	0	0	0	0	**4**	0	**4**	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	7
Total Volume	0	3	0	1	4	1	0	7	0	8	0	0	0	0	0	0	13	0	0	13	0	0	0	0	0	25
% App. Total	0	75	0	25		12.5	0	87.5	0		0	0	0	0		0	100	0	0		0	0	0	0		
PHF	.000	.250	.000	.250	.333	.250	.000	.438	.000	.500	.000	.000	.000	.000	.000	.000	.650	.000	.000	.650	.000	.000	.000	.000	.000	.893

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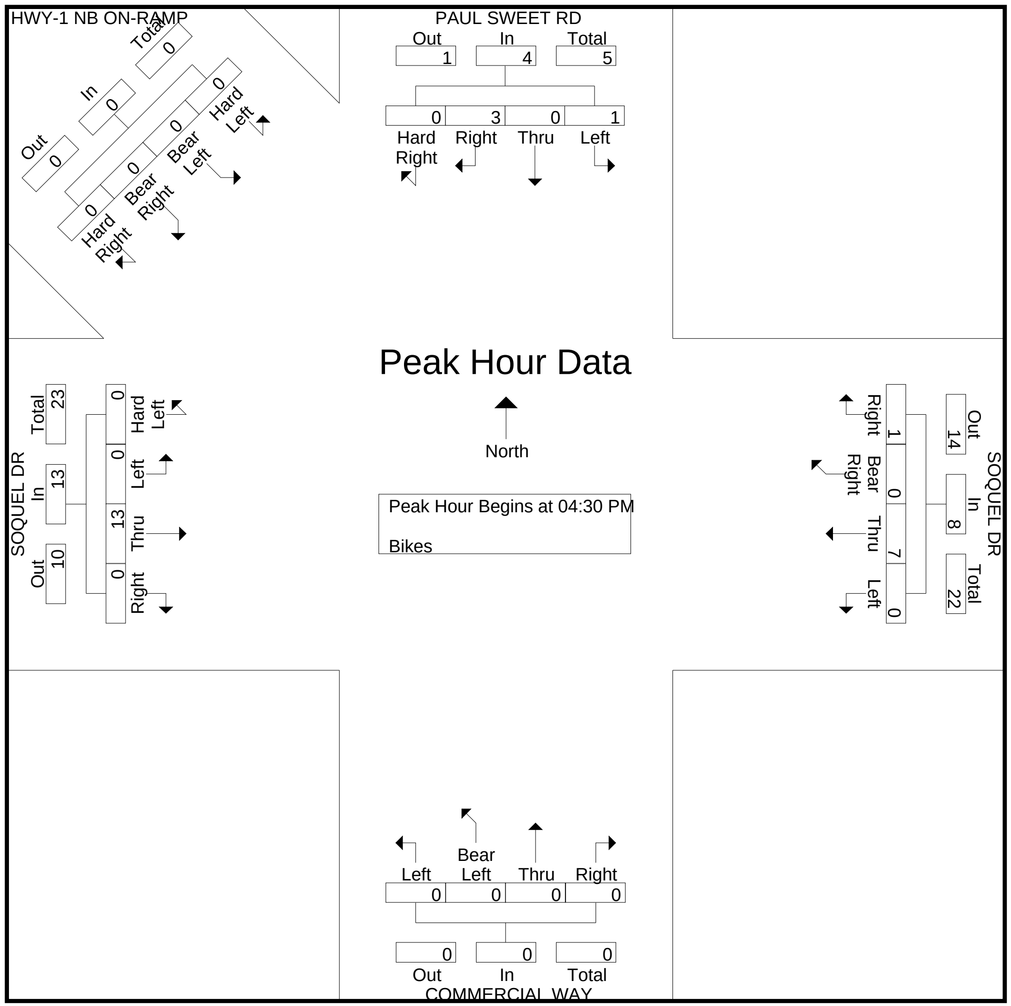

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Groups Printed- Lights - Buses - Trucks

	DRIVEWAY Southbound					SOQUEL DR Westbound					SOQUEL AVE Northbound					SOQUEL AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	2	2	0	108	38	0	146	145	0	24	0	169	45	69	0	0	114	431
07:15 AM	0	1	0	5	6	0	102	50	0	152	178	0	29	0	207	54	86	0	1	141	506
07:30 AM	0	0	1	4	5	2	116	76	0	194	195	1	45	0	241	69	126	0	4	199	639
07:45 AM	0	0	1	7	8	1	157	77	0	235	233	0	41	0	274	80	149	1	2	232	749
Total	0	1	2	18	21	3	483	241	0	727	751	1	139	0	891	248	430	1	7	686	2325
08:00 AM	0	0	0	6	6	1	166	68	0	235	205	1	57	0	263	100	149	0	1	250	754
08:15 AM	0	0	1	3	4	0	144	51	0	195	208	0	78	0	286	87	126	0	6	219	704
08:30 AM	0	0	1	4	5	0	140	68	0	208	221	0	37	0	258	97	152	0	3	252	723
08:45 AM	1	0	2	2	5	1	149	60	0	210	215	0	55	0	270	90	136	0	2	228	713
Total	1	0	4	15	20	2	599	247	0	848	849	1	227	0	1077	374	563	0	12	949	2894
Grand Total	1	1	6	33	41	5	1082	488	0	1575	1600	2	366	0	1968	622	993	1	19	1635	5219
Apprch %	2.4	2.4	14.6	80.5		0.3	68.7	31	0		81.3	0.1	18.6	0		38	60.7	0.1	1.2		
Total %	0	0	0.1	0.6	0.8	0.1	20.7	9.4	0	30.2	30.7	0	7	0	37.7	11.9	19	0	0.4	31.3	
Lights	1	1	6	33	41	5	1049	481	0	1535	1565	2	354	0	1921	602	962	1	19	1584	5081
% Lights	100	100	100	100	100	100	97	98.6	0	97.5	97.8	100	96.7	0	97.6	96.8	96.9	100	100	96.9	97.4
Buses	0	0	0	0	0	0	10	0	0	10	0	0	1	0	1	2	6	0	0	8	19
% Buses	0	0	0	0	0	0	0.9	0	0	0.6	0	0	0.3	0	0.1	0.3	0.6	0	0	0.5	0.4
Trucks	0	0	0	0	0	0	23	7	0	30	35	0	11	0	46	18	25	0	0	43	119
% Trucks	0	0	0	0	0	0	2.1	1.4	0	1.9	2.2	0	3	0	2.3	2.9	2.5	0	0	2.6	2.3

	DRIVEWAY Southbound				SOQUEL DR Westbound				SOQUEL AVE Northbound				SOQUEL AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:45 AM																	
07:45 AM	0	0	**1**	**1**	**1**	157	**77**	**235**	**233**	0	41	274	80	149	**1**	230	740
08:00 AM	0	0	0	0	1	**166**	68	235	205	**1**	57	263	**100**	149	0	**249**	**747**
08:15 AM	0	0	1	1	0	144	51	195	208	0	**78**	**286**	87	126	0	213	695
08:30 AM	0	0	1	1	0	140	68	208	221	0	37	258	97	**152**	0	249	716
Total Volume	0	0	3	3	2	607	264	873	867	1	213	1081	364	576	1	941	2898
% App. Total	0	0	100		0.2	69.5	30.2		80.2	0.1	19.7		38.7	61.2	0.1		
PHF	.000	.000	.750	.750	.500	.914	.857	.929	.930	.250	.683	.945	.910	.947	.250	.945	.970

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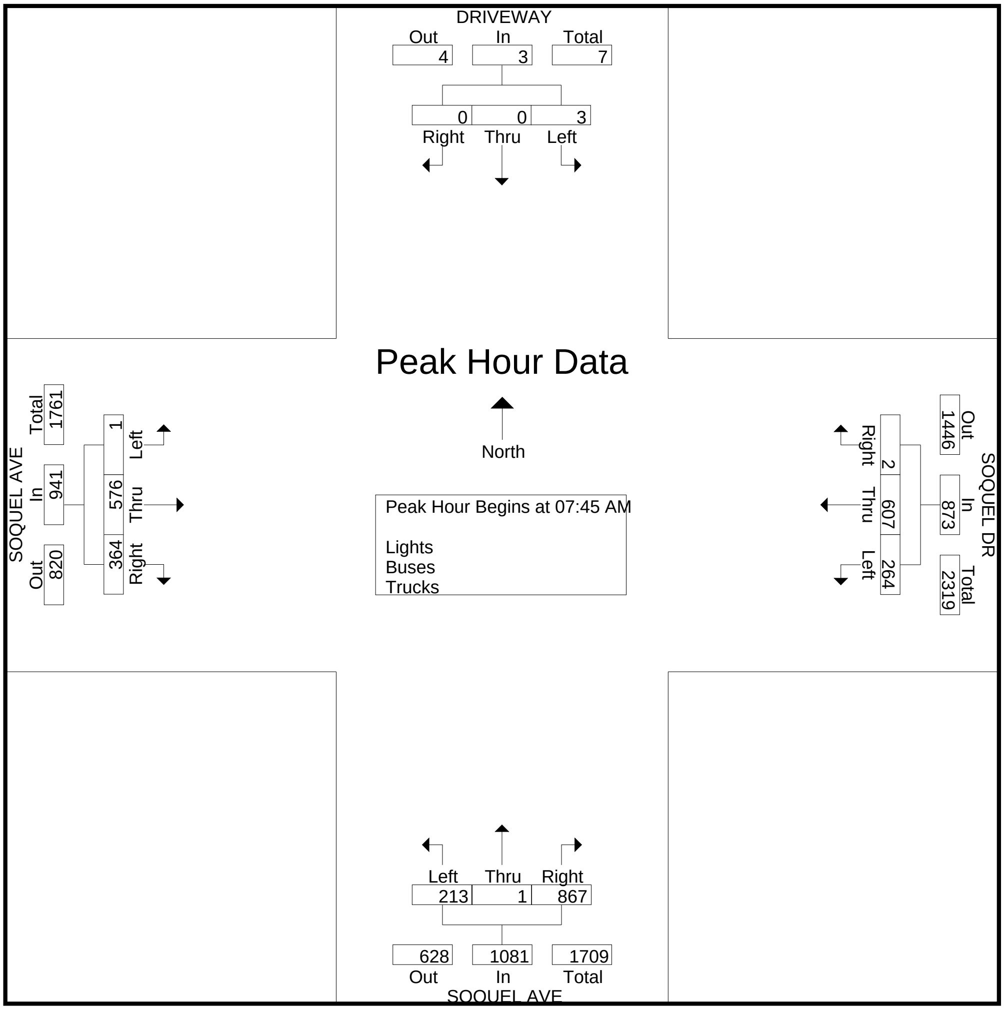

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Groups Printed- Bikes

	DRIVEWAY Southbound					SOQUEL DR Westbound					SOQUEL AVE Northbound					SOQUEL AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	3
07:15 AM	0	0	0	0	0	0	6	0	0	6	3	0	0	0	3	0	2	0	0	2	11
07:30 AM	0	0	0	0	0	0	3	2	0	5	1	0	0	0	1	2	1	0	0	3	9
07:45 AM	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	1	2	0	0	3	6
Total	0	0	0	0	0	0	12	3	0	15	5	0	0	0	5	3	6	0	0	9	29
08:00 AM	0	0	0	0	0	0	2	1	0	3	1	0	0	0	1	0	3	0	0	3	7
08:15 AM	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	1	4	0	0	5	8
08:30 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
08:45 AM	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	1	0	0	0	1	4
Total	0	0	0	0	0	0	8	1	0	9	2	0	1	0	3	2	7	0	0	9	21
Grand Total	0	0	0	0	0	0	20	4	0	24	7	0	1	0	8	5	13	0	0	18	50
Apprch %	0	0	0	0		0	83.3	16.7	0		87.5	0	12.5	0		27.8	72.2	0	0		
Total %	0	0	0	0	0	0	40	8	0	48	14	0	2	0	16	10	26	0	0	36	

	DRIVEWAY Southbound				SOQUEL DR Westbound				SOQUEL AVE Northbound				SOQUEL AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:15 AM																	
07:15 AM	0	0	0	0	0	**6**	0	**6**	**3**	0	0	**3**	0	2	0	2	**11**
07:30 AM	0	0	0	0	0	3	**2**	5	1	0	0	1	**2**	1	0	**3**	9
07:45 AM	0	0	0	0	0	2	0	2	1	0	0	1	1	2	0	3	6
08:00 AM	0	0	0	0	0	2	1	3	1	0	0	1	0	**3**	0	3	7
Total Volume	0	0	0	0	0	13	3	16	6	0	0	6	3	8	0	11	33
% App. Total	0	0	0		0	81.2	18.8		100	0	0		27.3	72.7	0		
PHF	.000	.000	.000	.000	.000	.542	.375	.667	.500	.000	.000	.500	.375	.667	.000	.917	.750

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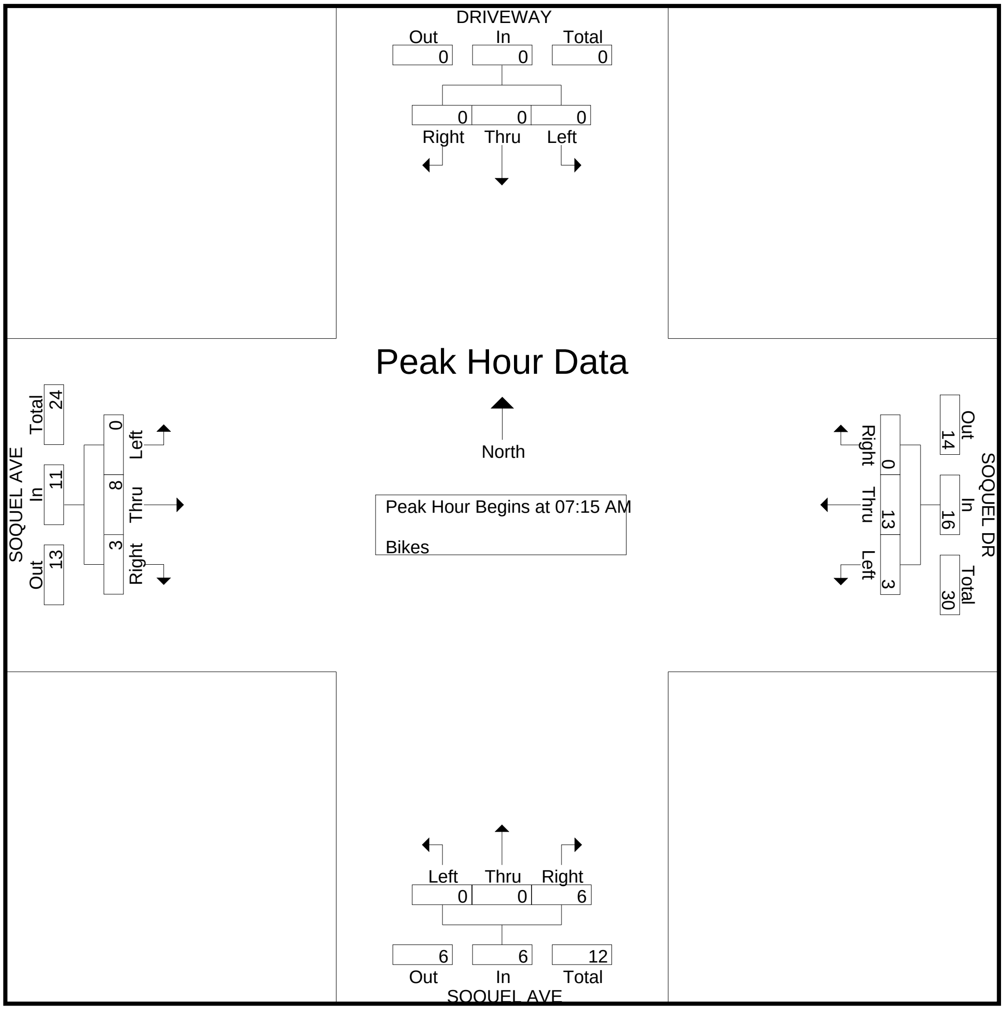

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Groups Printed- Lights - Buses - Trucks

	DRIVEWAY Southbound					SOQUEL DR Westbound					SOQUEL AVE Northbound					SOQUEL AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	3	0	1	3	7	0	134	95	1	230	138	0	49	0	187	102	154	4	1	261	685
04:15 PM	1	0	2	4	7	0	132	69	0	201	182	0	38	0	220	108	193	1	1	303	731
04:30 PM	3	0	1	3	7	0	136	82	0	218	171	0	38	1	210	106	195	3	1	305	740
04:45 PM	3	1	0	2	6	2	125	73	0	200	154	5	46	0	205	98	169	4	0	271	682
Total	10	1	4	12	27	2	527	319	1	849	645	5	171	1	822	414	711	12	3	1140	2838
05:00 PM	4	0	0	5	9	4	153	97	0	254	148	0	29	0	177	95	170	0	2	267	707
05:15 PM	3	1	0	7	11	3	130	70	0	203	159	0	48	0	207	97	196	3	5	301	722
05:30 PM	0	1	5	0	6	0	154	61	0	215	171	0	52	0	223	108	189	1	1	299	743
05:45 PM	3	0	1	3	7	2	118	48	0	168	201	1	44	0	246	79	165	4	0	248	669
Total	10	2	6	15	33	9	555	276	0	840	679	1	173	0	853	379	720	8	8	1115	2841
Grand Total	20	3	10	27	60	11	1082	595	1	1689	1324	6	344	1	1675	793	1431	20	11	2255	5679
Apprch %	33.3	5	16.7	45		0.7	64.1	35.2	0.1		79	0.4	20.5	0.1		35.2	63.5	0.9	0.5		
Total %	0.4	0.1	0.2	0.5	1.1	0.2	19.1	10.5	0	29.7	23.3	0.1	6.1	0	29.5	14	25.2	0.4	0.2	39.7	
Lights	19	3	8	27	57	10	1067	591	1	1669	1305	6	340	1	1652	784	1403	18	11	2216	5594
% Lights	95	100	80	100	95	90.9	98.6	99.3	100	98.8	98.6	100	98.8	100	98.6	98.9	98	90	100	98.3	98.5
Buses	0	0	0	0	0	0	4	1	0	5	4	0	0	0	4	0	7	0	0	7	16
% Buses	0	0	0	0	0	0	0.4	0.2	0	0.3	0.3	0	0	0	0.2	0	0.5	0	0	0.3	0.3
Trucks	1	0	2	0	3	1	11	3	0	15	15	0	4	0	19	9	21	2	0	32	69
% Trucks	5	0	20	0	5	9.1	1	0.5	0	0.9	1.1	0	1.2	0	1.1	1.1	1.5	10	0	1.4	1.2

	DRIVEWAY Southbound				SOQUEL DR Westbound				SOQUEL AVE Northbound				SOQUEL AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
04:15 PM	1	0	**2**	3	0	132	69	201	**182**	0	38	**220**	**108**	193	1	302	726
04:30 PM	3	0	1	**4**	0	136	82	218	171	0	38	209	106	**195**	3	**304**	**735**
04:45 PM	3	**1**	0	4	2	125	73	200	154	**5**	**46**	205	98	169	**4**	271	680
05:00 PM	**4**	0	0	4	**4**	**153**	**97**	**254**	148	0	29	177	95	170	0	265	700
Total Volume	11	1	3	15	6	546	321	873	655	5	151	811	407	727	8	1142	2841
% App. Total	73.3	6.7	20		0.7	62.5	36.8		80.8	0.6	18.6		35.6	63.7	0.7		
PHF	.688	.250	.375	.938	.375	.892	.827	.859	.900	.250	.821	.922	.942	.932	.500	.939	.966

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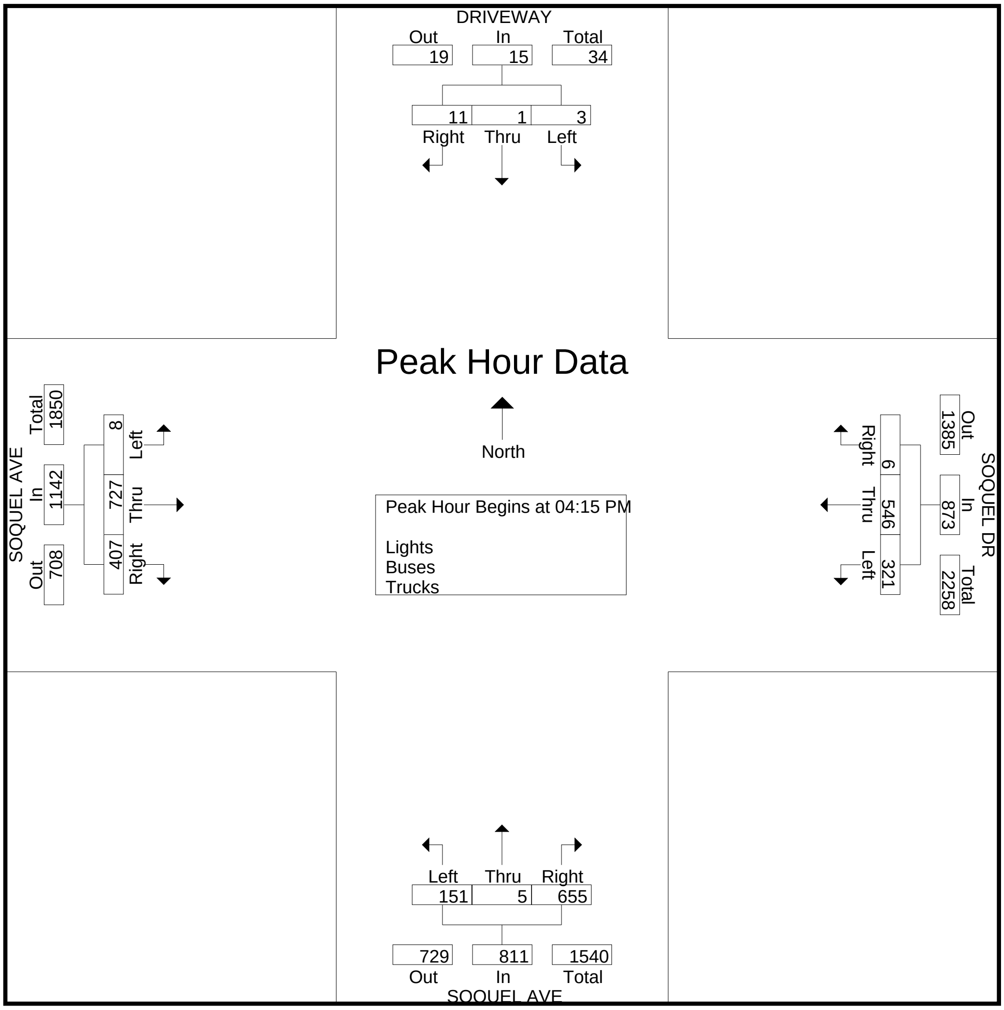

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Groups Printed- Bikes

	DRIVEWAY Southbound					SOQUEL DR Westbound					SOQUEL AVE Northbound					SOQUEL AVE Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
04:00 PM	0	0	0	0	0	0	6	1	0	7	0	0	1	0	1	0	1	0	0	1	9
04:15 PM	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	0	4	0	0	4	6
04:30 PM	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	2	0	0	2	5
04:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	6
Total	0	0	0	0	0	0	13	1	0	14	2	0	1	0	3	0	9	0	0	9	26
05:00 PM	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	0	5	0	0	5	8
05:15 PM	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	1	0	0	0	1	4
05:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	7	1	0	8	1	0	0	0	1	1	5	0	0	6	15
Grand Total	0	0	0	0	0	0	20	2	0	22	3	0	1	0	4	1	14	0	0	15	41
Apprch %	0	0	0	0		0	90.9	9.1	0		75	0	25	0		6.7	93.3	0	0		
Total %	0	0	0	0	0	0	48.8	4.9	0	53.7	7.3	0	2.4	0	9.8	2.4	34.1	0	0	36.6	

	DRIVEWAY Southbound				SOQUEL DR Westbound				SOQUEL AVE Northbound				SOQUEL AVE Eastbound				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:00 PM																	
04:00 PM	0	0	0	0	0	**6**	**1**	**7**	0	0	**1**	**1**	0	1	0	1	**9**
04:15 PM	0	0	0	0	0	1	0	1	**1**	0	0	1	0	**4**	0	**4**	6
04:30 PM	0	0	0	0	0	2	0	2	1	0	0	1	0	2	0	2	5
04:45 PM	0	0	0	0	0	4	0	4	0	0	0	0	0	2	0	2	6
Total Volume	0	0	0	0	0	13	1	14	2	0	1	3	0	9	0	9	26
% App. Total	0	0	0		0	92.9	7.1		66.7	0	33.3		0	100	0		
PHF	.000	.000	.000	.000	.000	.542	.250	.500	.500	.000	.250	.750	.000	.563	.000	.563	.722

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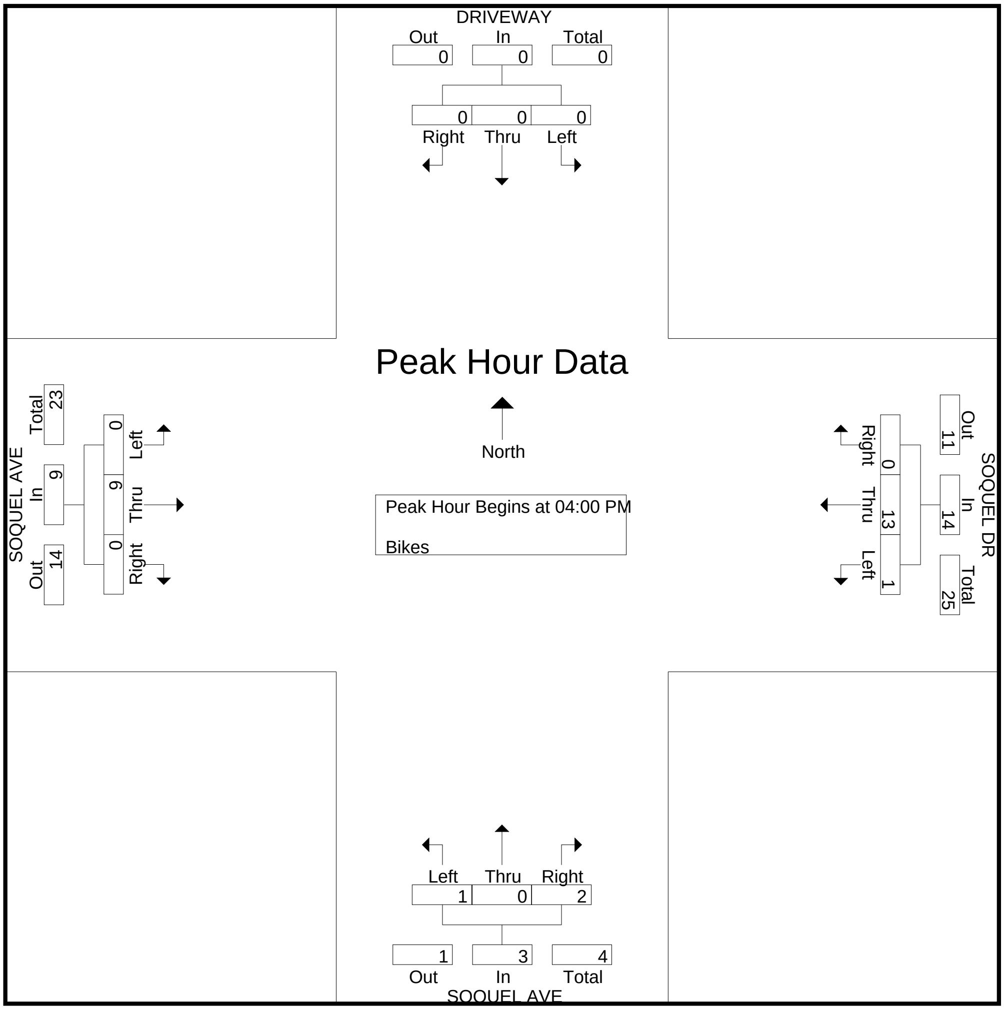

Appendix C: Intersection LOS Calculation Worksheets

Intersection	
Int Delay, s/veh	1.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	13	6	80	38	4	41
Future Vol, veh/h	13	6	80	38	4	41
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	8	101	48	5	52

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	192	130	0	0	154	0
Stage 1	130	-	-	-	-	-
Stage 2	62	-	-	-	-	-
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	797	920	-	-	1426	-
Stage 1	896	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	790	916	-	-	1419	-
Mov Cap-2 Maneuver	790	-	-	-	-	-
Stage 1	892	-	-	-	-	-
Stage 2	957	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	826	1419	-
HCM Lane V/C Ratio	-	-	0.029	0.004	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection						
Int Delay, s/veh	0.5					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	0	124	27	1	53
Future Vol, veh/h	11	0	124	27	1	53
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	149	33	1	64

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	238	172	0	0	188	0
Stage 1	172	-	-	-	-	-
Stage 2	66	-	-	-	-	-
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	750	872	-	-	1386	-
Stage 1	858	-	-	-	-	-
Stage 2	957	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	745	867	-	-	1378	-
Mov Cap-2 Maneuver	745	-	-	-	-	-
Stage 1	853	-	-	-	-	-
Stage 2	956	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	745	1378	-
HCM Lane V/C Ratio	-	-	0.018	0.001	-
HCM Control Delay (s)	-	-	9.9	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	46	810	1056	1	2	23
Future Vol, veh/h	46	810	1056	1	2	23
Conflicting Peds, #/hr	7	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	85	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	51	890	1160	1	2	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1168	0	-	0	1715	588
Stage 1	-	-	-	-	1168	-
Stage 2	-	-	-	-	547	-
Critical Hdwy	4.18	-	-	-	6.88	6.98
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	2.24	-	-	-	3.54	3.34
Pot Cap-1 Maneuver	583	-	-	-	79	447
Stage 1	-	-	-	-	254	-
Stage 2	-	-	-	-	538	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	579	-	-	-	71	444
Mov Cap-2 Maneuver	-	-	-	-	173	-
Stage 1	-	-	-	-	230	-
Stage 2	-	-	-	-	534	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	579	-	-	-	173	444
HCM Lane V/C Ratio	0.087	-	-	-	0.013	0.057
HCM Control Delay (s)	11.8	-	-	-	26.1	13.6
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	655	79	10	991	36	5	11	14	15	0	29
Future Volume (veh/h)	60	655	79	10	991	36	5	11	14	15	0	29
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.98	0.97		0.96	0.96		0.96
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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1900	1845	1845
Adj Flow Rate, veh/h	65	704	85	11	1066	39	5	12	15	16	0	31
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	2387	288	3	2484	91	137	30	37	152	0	61
Arrive On Green	0.05	1.00	1.00	0.00	1.00	1.00	0.04	0.04	0.05	0.04	0.00	0.04
Sat Flow, veh/h	1757	3144	379	1757	3445	126	1315	728	910	793	0	1502
Grp Volume(v), veh/h	65	392	397	11	542	563	5	0	27	16	0	31
Grp Sat Flow(s),veh/h/ln	1757	1752	1771	1757	1752	1819	1315	0	1637	793	0	1502
Q Serve(g_s), s	2.2	0.0	0.0	0.1	0.0	0.0	0.2	0.0	1.0	0.7	0.0	1.2
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.1	0.0	0.0	1.9	0.0	1.0	1.7	0.0	1.2
Prop In Lane	1.00		0.21	1.00		0.07	1.00		0.56	1.00		1.00
Lane Grp Cap(c), veh/h	67	1331	1345	3	1264	1311	137	0	67	152	0	61
V/C Ratio(X)	0.97	0.29	0.30	3.76	0.43	0.43	0.04	0.00	0.41	0.11	0.00	0.51
Avail Cap(c_a), veh/h	146	1331	1345	146	1264	1311	489	0	505	503	0	463
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	0.0	30.0	0.0	0.0	29.4	0.0	27.9	28.9	0.0	28.2
Incr Delay (d2), s/veh	24.4	0.6	0.6	1304.2	1.1	1.0	0.0	0.0	1.5	0.1	0.0	2.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	52.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.2	0.2	1.1	0.4	0.4	0.1	0.0	0.5	0.3	0.0	0.5
LnGrp Delay(d),s/veh	52.9	0.6	0.6	1386.4	1.1	1.0	29.4	0.0	29.4	29.0	0.0	30.6
LnGrp LOS	D	A	A	F	A	A	C		C	C		C
Approach Vol, veh/h		854			1116			32			47	
Approach Delay, s/veh		4.5			14.7			29.4			30.1	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.0	49.6		6.4	6.3	47.3		6.4
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	24.5		19.0	5.5	24.5		19.0
Max Q Clear Time (g_c+I1), s	2.1	2.0		3.9	4.2	2.0		3.7
Green Ext Time (p_c), s	0.0	1.6		0.0	0.0	2.4		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			11.0
HCM 2010 LOS			B

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	680	1058	2	11	17
Future Vol, veh/h	27	680	1058	2	11	17
Conflicting Peds, #/hr	9	0	0	9	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	29	731	1138	2	12	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1149	0	-	0	1572	579
Stage 1	-	-	-	-	1148	-
Stage 2	-	-	-	-	424	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	598	-	-	-	100	456
Stage 1	-	-	-	-	262	-
Stage 2	-	-	-	-	625	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	593	-	-	-	93	452
Mov Cap-2 Maneuver	-	-	-	-	194	-
Stage 1	-	-	-	-	247	-
Stage 2	-	-	-	-	619	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	18.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	593	-	-	-	297
HCM Lane V/C Ratio	0.049	-	-	-	0.101
HCM Control Delay (s)	11.4	-	-	-	18.5
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	679	1054	15	3	5
Future Vol, veh/h	8	679	1054	15	3	5
Conflicting Peds, #/hr	10	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	9	722	1121	16	3	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1147	0	-	0	1518	579
Stage 1	-	-	-	-	1139	-
Stage 2	-	-	-	-	379	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	599	-	-	-	109	456
Stage 1	-	-	-	-	265	-
Stage 2	-	-	-	-	659	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	593	-	-	-	105	452
Mov Cap-2 Maneuver	-	-	-	-	205	-
Stage 1	-	-	-	-	258	-
Stage 2	-	-	-	-	652	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	16.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	593	-	-	-	311
HCM Lane V/C Ratio	0.014	-	-	-	0.027
HCM Control Delay (s)	11.2	-	-	-	16.9
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	4	6	223	101	2
Future Vol, veh/h	1	4	6	223	101	2
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	1	4	7	245	111	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	378	119	120	0	-	0
Stage 1	119	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	626	935	1474	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	787	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	613	929	1464	-	-	-
Mov Cap-2 Maneuver	613	-	-	-	-	-
Stage 1	897	-	-	-	-	-
Stage 2	781	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1464	-	842	-	-
HCM Lane V/C Ratio	0.005	-	0.007	-	-
HCM Control Delay (s)	7.5	-	9.3	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection						
Int Delay, s/veh	1.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	1	63	157	108	4
Future Vol, veh/h	0	1	63	157	108	4
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	69	173	119	4

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	438	127	129	0	-	0
Stage 1	127	-	-	-	-	-
Stage 2	311	-	-	-	-	-
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	576	923	1457	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	539	918	1449	-	-	-
Mov Cap-2 Maneuver	539	-	-	-	-	-
Stage 1	846	-	-	-	-	-
Stage 2	739	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.9	2.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1449	-	918	-	-
HCM Lane V/C Ratio	0.048	-	0.001	-	-
HCM Control Delay (s)	7.6	0	8.9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	-	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	2	30	82	71	78	2
Future Vol, veh/h	2	30	82	71	78	2
Conflicting Peds, #/hr	0	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	100	100	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	2	35	82	71	92	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	346	111	112	0	-	0
Stage 1	111	-	-	-	-	-
Stage 2	235	-	-	-	-	-
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	651	942	1478	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	804	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	592	926	1453	-	-	-
Mov Cap-2 Maneuver	592	-	-	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	790	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	4.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1453	-	894	-	-
HCM Lane V/C Ratio	0.056	-	0.042	-	-
HCM Control Delay (s)	7.6	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	101	573	10	35	990	111	15	17	32	36	1	76
Future Volume (veh/h)	101	573	10	35	990	111	15	17	32	36	1	76
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	105	597	10	36	1031	116	16	18	33	38	1	79
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	119	1869	31	25	1509	170	93	74	399	130	2	399
Arrive On Green	0.14	1.00	1.00	0.01	0.32	0.32	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1757	3526	59	1757	3167	356	18	289	1562	44	7	1562
Grp Volume(v), veh/h	105	297	310	36	570	577	34	0	33	39	0	79
Grp Sat Flow(s),veh/h/ln	1757	1752	1832	1757	1752	1771	307	0	1562	52	0	1562
Q Serve(g_s), s	3.5	0.0	0.0	0.9	17.0	17.0	0.3	0.0	1.0	0.5	0.0	2.4
Cycle Q Clear(g_c), s	3.5	0.0	0.0	0.9	17.0	17.0	15.2	0.0	1.0	15.3	0.0	2.4
Prop In Lane	1.00		0.03	1.00		0.20	0.47		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	119	929	971	25	835	844	167	0	399	132	0	399
V/C Ratio(X)	0.88	0.32	0.32	1.44	0.68	0.68	0.20	0.00	0.08	0.30	0.00	0.20
Avail Cap(c_a), veh/h	176	929	971	205	835	844	299	0	534	247	0	534
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.89	0.89	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.7	0.0	0.0	29.7	16.5	16.5	18.3	0.0	17.0	29.3	0.0	17.5
Incr Delay (d2), s/veh	20.9	0.9	0.9	213.8	4.0	4.0	0.2	0.0	0.0	0.5	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	2.4	0.2	0.2	1.9	9.2	9.3	0.4	0.0	0.4	0.7	0.0	1.0
LnGrp Delay(d),s/veh	46.6	0.9	0.9	243.5	20.5	20.5	18.5	0.0	17.0	29.7	0.0	17.6
LnGrp LOS	D	A	A	F	C	C	B		B	C		B
Approach Vol, veh/h		712			1183			67			118	
Approach Delay, s/veh		7.6			27.3			17.8			21.6	
Approach LOS		A			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.1	32.2		19.7	4.9	35.4		19.7
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	6.5	20.5		21.0	7.5	20.5		21.0
Max Q Clear Time (g_c+I1), s	5.5	19.0		17.2	2.9	2.0		17.3
Green Ext Time (p_c), s	0.0	0.6		0.0	0.0	1.1		0.1

Intersection Summary		
HCM 2010 Ctrl Delay		19.9
HCM 2010 LOS		B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	751	537	4	1035	23	357	53	42	73	0	102
Future Volume (veh/h)	111	751	537	4	1035	23	357	53	42	73	0	102
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	117	791	0	4	1089	24	416	0	0	77	0	107
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	138	1165	521	517	1966	43	492	0	219	152	0	136
Arrive On Green	0.08	0.33	0.00	0.59	1.00	1.00	0.14	0.00	0.00	0.09	0.00	0.08
Sat Flow, veh/h	1757	3505	1568	1757	3503	77	3514	0	1568	1757	0	1568
Grp Volume(v), veh/h	117	791	0	4	545	568	416	0	0	77	0	107
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1828	1757	0	1568	1757	0	1568
Q Serve(g_s), s	7.9	23.3	0.0	0.1	0.0	0.0	13.9	0.0	0.0	5.0	0.0	8.0
Cycle Q Clear(g_c), s	7.9	23.3	0.0	0.1	0.0	0.0	13.9	0.0	0.0	5.0	0.0	8.0
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	138	1165	521	517	984	1026	492	0	219	152	0	136
V/C Ratio(X)	0.85	0.68	0.00	0.01	0.55	0.55	0.85	0.00	0.00	0.51	0.00	0.79
Avail Cap(c_a), veh/h	230	1165	521	517	984	1026	1001	0	447	208	0	186
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.6	34.5	0.0	17.4	0.0	0.0	50.3	0.0	0.0	52.4	0.0	53.8
Incr Delay (d2), s/veh	6.3	3.2	0.0	0.0	2.2	2.2	1.6	0.0	0.0	1.0	0.0	9.9
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	4.1	11.8	0.0	0.1	0.6	0.6	6.9	0.0	0.0	2.5	0.0	3.9
LnGrp Delay(d),s/veh	60.9	37.7	0.0	17.4	2.2	2.2	51.9	0.0	0.0	53.3	0.0	63.7
LnGrp LOS	E	D		B	A	A	D			D		E
Approach Vol, veh/h		908			1117			416			184	
Approach Delay, s/veh		40.7			2.3			51.9			59.4	
Approach LOS		D			A			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	43.9		14.4	13.5	71.4		20.8
Change Period (Y+Rc), s	5.3	* 5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	12.0	* 39		* 14	16.0	38.6		34.0
Max Q Clear Time (g_c+I1), s	12.1	25.3		10.0	9.9	2.0		15.9
Green Ext Time (p_c), s	0.0	4.4		0.2	0.1	13.1		0.7

Intersection Summary		
HCM 2010 Ctrl Delay		27.4
HCM 2010 LOS		C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	563	374	247	599	2	227	1	849	0	0	1
Future Volume (veh/h)	0	563	374	247	599	2	227	1	849	0	0	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.99		1.00	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	0	1845	1900
Adj Flow Rate, veh/h	0	580	0	255	618	2	234	1	875	0	0	1
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	3	895	400	283	1715	6	659	3	887	0	0	617
Arrive On Green	0.00	0.26	0.00	0.16	0.48	0.48	0.40	0.40	0.40	0.00	0.00	0.40
Sat Flow, veh/h	1757	3505	1568	1757	3583	12	1378	7	1568	0	0	1554
Grp Volume(v), veh/h	0	580	0	255	302	318	235	0	875	0	0	1
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1842	1385	0	1568	0	0	1554
Q Serve(g_s), s	0.0	9.5	0.0	9.2	7.0	7.0	7.9	0.0	25.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.5	0.0	9.2	7.0	7.0	7.9	0.0	25.5	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	3	895	400	283	839	882	661	0	887	0	0	617
V/C Ratio(X)	0.00	0.65	0.00	0.90	0.36	0.36	0.36	0.00	0.99	0.00	0.00	0.00
Avail Cap(c_a), veh/h	273	1636	732	820	839	882	661	0	887	0	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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.4	0.0	26.4	10.6	10.6	14.1	0.0	13.7	0.0	0.0	11.6
Incr Delay (d2), s/veh	0.0	1.1	0.0	4.2	0.4	0.4	0.3	0.0	26.8	0.0	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	0.0	4.7	0.0	4.7	3.4	3.6	3.1	0.0	21.4	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	22.5	0.0	30.7	10.9	10.9	14.4	0.0	40.5	0.0	0.0	11.6
LnGrp LOS		C		C	B	B	B		D			B
Approach Vol, veh/h		580			875			1110			1	
Approach Delay, s/veh		22.5			16.7			35.0			11.6	
Approach LOS		C			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.4	20.4		29.5	0.0	34.8		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	11.2	11.5		2.0	0.0	9.0		27.5
Green Ext Time (p_c), s	0.3	4.9		0.0	0.0	5.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	25.9
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	500	0	0	920	40	0	0	50	140	0	160
Future Volume (vph)	90	500	0	0	920	40	0	0	50	140	0	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			0.99				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1752	3505			3476				1596	1752		1543
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1752	3505			3476				1596	1752		1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	543	0	0	1000	43	0	0	54	152	0	174
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	24	0	0	47
Lane Group Flow (vph)	98	543	0	0	1040	0	0	0	30	152	0	127
Confl. Peds. (#/hr)						10						10
Confl. Bikes (#/hr)			6			5						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA				Perm	Prot		Perm
Protected Phases	1	6			2					4		
Permitted Phases									2			6
Actuated Green, G (s)	6.8	43.7			33.4				33.4	8.8		43.7
Effective Green, g (s)	6.8	43.7			33.4				33.4	8.8		43.7
Actuated g/C Ratio	0.11	0.73			0.56				0.56	0.15		0.73
Clearance Time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Vehicle Extension (s)	2.0	1.5			1.5				1.5	1.0		1.5
Lane Grp Cap (vph)	198	2552			1934				888	256		1123
v/s Ratio Prot	c0.06	0.15			c0.30					c0.09		
v/s Ratio Perm									0.02			0.08
v/c Ratio	0.49	0.21			0.54				0.03	0.59		0.11
Uniform Delay, d1	25.0	2.6			8.4				6.0	23.9		2.4
Progression Factor	1.09	1.09			1.00				1.00	1.00		1.00
Incremental Delay, d2	0.7	0.2			1.1				0.1	2.5		0.2
Delay (s)	27.9	3.1			9.5				6.1	26.4		2.6
Level of Service	C	A			A				A	C		A
Approach Delay (s)		6.9			9.5			6.1			13.7	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	49.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	37	9	63	46	7	59
Future Vol, veh/h	37	9	63	46	7	59
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	39	9	66	48	7	62

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	169	93	0	0	117	0
Stage 1	93	-	-	-	-	-
Stage 2	76	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	824	967	-	-	1478	-
Stage 1	933	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	817	964	-	-	1474	-
Mov Cap-2 Maneuver	817	-	-	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	945	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	842	1474	-
HCM Lane V/C Ratio	-	-	0.058	0.005	-
HCM Control Delay (s)	-	-	9.5	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	0	109	5	1	105
Future Vol, veh/h	9	0	109	5	1	105
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	0	118	5	1	114

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	237	121	0	0	123	0
Stage 1	121	-	-	-	-	-
Stage 2	116	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	756	936	-	-	1477	-
Stage 1	909	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	755	936	-	-	1477	-
Mov Cap-2 Maneuver	755	-	-	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	913	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	755	1477	-
HCM Lane V/C Ratio	-	-	0.013	0.001	-
HCM Control Delay (s)	-	-	9.8	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	1138	878	1	3	27
Future Vol, veh/h	25	1138	878	1	3	27
Conflicting Peds, #/hr	7	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	85	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	1308	1009	1	3	31

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1017	0	-	0	1729	512
Stage 1	-	-	-	-	1017	-
Stage 2	-	-	-	-	712	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	678	-	-	-	79	507
Stage 1	-	-	-	-	310	-
Stage 2	-	-	-	-	447	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	673	-	-	-	75	504
Mov Cap-2 Maneuver	-	-	-	-	194	-
Stage 1	-	-	-	-	295	-
Stage 2	-	-	-	-	444	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	673	-	-	-	194	504
HCM Lane V/C Ratio	0.043	-	-	-	0.018	0.062
HCM Control Delay (s)	10.6	-	-	-	23.9	12.6
HCM Lane LOS	B	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	46	1022	65	18	720	17	28	11	15	42	4	85
Future Volume (veh/h)	46	1022	65	18	720	17	28	11	15	42	4	85
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.99		0.99	0.99		0.99
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	53	1175	75	21	828	20	32	13	17	48	5	98
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	55	2527	161	13	2559	62	140	61	80	176	14	131
Arrive On Green	0.06	1.00	1.00	0.01	0.73	0.73	0.08	0.08	0.09	0.08	0.08	0.08
Sat Flow, veh/h	1774	3375	215	1774	3529	85	1278	729	954	1015	167	1566
Grp Volume(v), veh/h	53	616	634	21	415	433	32	0	30	53	0	98
Grp Sat Flow(s),veh/h/ln	1774	1770	1820	1774	1770	1845	1278	0	1683	1182	0	1566
Q Serve(g_s), s	2.2	0.0	0.0	0.6	6.3	6.3	1.9	0.0	1.2	2.5	0.0	4.6
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.6	6.3	6.3	5.6	0.0	1.2	3.7	0.0	4.6
Prop In Lane	1.00		0.12	1.00		0.05	1.00		0.57	0.91		1.00
Lane Grp Cap(c), veh/h	55	1325	1363	13	1283	1338	140	0	141	191	0	131
V/C Ratio(X)	0.96	0.46	0.47	1.58	0.32	0.32	0.23	0.00	0.21	0.28	0.00	0.75
Avail Cap(c_a), veh/h	118	1325	1363	118	1283	1338	348	0	415	418	0	386
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.1	0.0	0.0	37.2	3.7	3.7	35.9	0.0	31.9	33.5	0.0	33.6
Incr Delay (d2), s/veh	25.9	1.2	1.1	286.3	0.7	0.6	0.3	0.0	0.3	0.3	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.4	0.4	1.3	3.2	3.4	0.7	0.0	0.6	1.1	0.0	2.1
LnGrp Delay(d),s/veh	61.0	1.2	1.1	332.1	4.4	4.3	36.2	0.0	32.2	33.8	0.0	36.7
LnGrp LOS	E	A	A	F	A	A	D		C	C		D
Approach Vol, veh/h		1303			869			62			151	
Approach Delay, s/veh		3.6			12.3			34.2			35.7	
Approach LOS		A			B			C			D	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	60.2		10.3	6.3	58.4		10.3				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	5.5	39.5		19.0	5.5	39.5		19.0				
Max Q Clear Time (g_c+I1), s	2.6	2.0		7.6	4.2	8.3		6.6				
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	1.7		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			9.6									
HCM 2010 LOS			A									

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	1096	752	2	9	23
Future Vol, veh/h	15	1096	752	2	9	23
Conflicting Peds, #/hr	0	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	17	1274	874	2	10	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	886	0	-	0	1556	448
Stage 1	-	-	-	-	885	-
Stage 2	-	-	-	-	671	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	766	-	-	-	105	561
Stage 1	-	-	-	-	366	-
Stage 2	-	-	-	-	472	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	759	-	-	-	101	556
Mov Cap-2 Maneuver	-	-	-	-	229	-
Stage 1	-	-	-	-	354	-
Stage 2	-	-	-	-	467	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	759	-	-	-	397
HCM Lane V/C Ratio	0.023	-	-	-	0.094
HCM Control Delay (s)	9.9	-	-	-	15
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1097	746	4	6	6
Future Vol, veh/h	3	1097	746	4	6	6
Conflicting Peds, #/hr	13	0	0	13	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	4	1291	878	5	7	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	896	0	-	0	1548	455
Stage 1	-	-	-	-	894	-
Stage 2	-	-	-	-	654	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	760	-	-	-	106	555
Stage 1	-	-	-	-	362	-
Stage 2	-	-	-	-	482	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	751	-	-	-	103	548
Mov Cap-2 Maneuver	-	-	-	-	232	-
Stage 1	-	-	-	-	356	-
Stage 2	-	-	-	-	476	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	751	-	-	-	326
HCM Lane V/C Ratio	0.005	-	-	-	0.043
HCM Control Delay (s)	9.8	-	-	-	16.5
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	0	102	259	0
Future Vol, veh/h	1	1	0	102	259	0
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	1	1	0	105	267	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	378	273	-	0	-	0
Stage 1	273	-	-	-	-	-
Stage 2	105	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	-	-
Pot Cap-1 Maneuver	626	768	0	-	-	-
Stage 1	775	-	0	-	-	-
Stage 2	922	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	618	764	-	-	-	-
Mov Cap-2 Maneuver	618	-	-	-	-	-
Stage 1	770	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	683	-	-
HCM Lane V/C Ratio	-	0.003	-	-
HCM Control Delay (s)	-	10.3	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection						
Int Delay, s/veh	1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	29	1	100	231	0
Future Vol, veh/h	6	29	1	100	231	0
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	6	30	1	102	236	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	347	243	243	0	-	0
Stage 1	243	-	-	-	-	-
Stage 2	104	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	652	798	1329	-	-	-
Stage 1	800	-	-	-	-	-
Stage 2	923	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	642	793	1320	-	-	-
Mov Cap-2 Maneuver	642	-	-	-	-	-
Stage 1	794	-	-	-	-	-
Stage 2	917	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1320	-	762	-	-
HCM Lane V/C Ratio	0.001	-	0.047	-	-
HCM Control Delay (s)	7.7	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	120	28	80	102	5
Future Vol, veh/h	12	120	28	80	102	5
Conflicting Peds, #/hr	0	0	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	13	126	29	84	107	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	260	118	120	0	-	0
Stage 1	118	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	731	937	1474	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	887	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	704	930	1463	-	-	-
Mov Cap-2 Maneuver	704	-	-	-	-	-
Stage 1	884	-	-	-	-	-
Stage 2	880	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	1.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1463	-	904	-	-
HCM Lane V/C Ratio	0.02	-	0.154	-	-
HCM Control Delay (s)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	54	1032	17	29	623	34	14	13	28	139	8	117
Future Volume (veh/h)	54	1032	17	29	623	34	14	13	28	139	8	117
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1881	1900	1881	1881
Adj Flow Rate, veh/h	62	1186	20	33	716	39	16	15	32	160	9	134
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	68	1989	34	24	1818	99	73	47	433	93	3	433
Arrive On Green	0.01	0.18	0.18	0.00	0.17	0.17	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1792	3595	61	1792	3439	187	0	172	1583	0	10	1583
Grp Volume(v), veh/h	62	590	616	33	372	383	31	0	32	169	0	134
Grp Sat Flow(s),veh/h/ln	1792	1787	1868	1792	1787	1840	172	0	1583	10	0	1583
Q Serve(g_s), s	2.6	22.7	22.7	1.0	13.8	13.8	0.0	0.0	1.1	0.0	0.0	5.0
Cycle Q Clear(g_c), s	2.6	22.7	22.7	1.0	13.8	13.8	20.5	0.0	1.1	20.5	0.0	5.0
Prop In Lane	1.00		0.03	1.00		0.10	0.52		1.00	0.95		1.00
Lane Grp Cap(c), veh/h	68	989	1034	24	945	973	120	0	433	96	0	433
V/C Ratio(X)	0.91	0.60	0.60	1.39	0.39	0.39	0.26	0.00	0.07	1.76	0.00	0.31
Avail Cap(c_a), veh/h	239	989	1034	167	945	973	120	0	433	96	0	433
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.96	0.96	0.96	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.9	23.0	23.0	37.3	20.3	20.3	22.4	0.0	20.2	36.9	0.0	21.6
Incr Delay (d2), s/veh	15.7	2.6	2.5	195.8	1.2	1.2	0.4	0.0	0.0	379.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	12.0	12.5	1.8	7.2	7.4	0.5	0.0	0.5	12.1	0.0	2.2
LnGrp Delay(d),s/veh	52.6	25.6	25.5	233.6	21.5	21.5	22.9	0.0	20.2	415.9	0.0	21.8
LnGrp LOS	D	C	C	F	C	C	C		C	F		C
Approach Vol, veh/h		1268			788			63			303	
Approach Delay, s/veh		26.9			30.4			21.5			241.6	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	6.8	43.7		24.5	5.0	45.5		24.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	10.5	32.5		21.0	7.5	32.5		21.0
Max Q Clear Time (g_c+I1), s	4.6	15.8		22.5	3.0	24.7		22.5
Green Ext Time (p_c), s	0.0	1.6		0.0	0.0	2.0		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			54.7
HCM 2010 LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	930	402	1	860	15	390	21	43	193	0	171
Future Volume (veh/h)	40	930	402	1	860	15	390	21	43	193	0	171
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1710	1676	1676	1676	1676	1676	1710
Adj Flow Rate, veh/h	43	989	0	1	915	16	431	0	0	205	0	182
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	1904	852	1	1774	31	486	0	217	230	0	206
Arrive On Green	0.04	0.60	0.00	0.00	1.00	1.00	0.15	0.00	0.00	0.14	0.00	0.14
Sat Flow, veh/h	1597	3185	1425	1597	3201	56	3193	0	1425	1597	0	1425
Grp Volume(v), veh/h	43	989	0	1	455	476	431	0	0	205	0	182
Grp Sat Flow(s),veh/h/ln	1597	1593	1425	1597	1593	1664	1597	0	1425	1597	0	1425
Q Serve(g_s), s	4.0	27.2	0.0	0.1	0.0	0.0	19.8	0.0	0.0	18.9	0.0	18.8
Cycle Q Clear(g_c), s	4.0	27.2	0.0	0.1	0.0	0.0	19.8	0.0	0.0	18.9	0.0	18.8
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	1904	852	1	883	923	486	0	217	230	0	206
V/C Ratio(X)	0.63	0.52	0.00	0.94	0.52	0.52	0.89	0.00	0.00	0.89	0.00	0.88
Avail Cap(c_a), veh/h	103	1904	852	39	883	923	941	0	420	279	0	249
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.7	17.6	0.0	75.0	0.0	0.0	62.3	0.0	0.0	63.0	0.0	63.0
Incr Delay (d2), s/veh	3.6	1.0	0.0	226.2	2.1	2.1	2.2	0.0	0.0	22.2	0.0	23.4
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	1.8	12.2	0.0	0.1	0.5	0.5	8.9	0.0	0.0	9.8	0.0	8.8
LnGrp Delay(d),s/veh	74.3	18.6	0.0	301.2	2.1	2.1	64.6	0.0	0.0	85.2	0.0	86.4
LnGrp LOS	E	B		F	A	A	E			F		F
Approach Vol, veh/h		1032			932			431			387	
Approach Delay, s/veh		20.9			2.4			64.6			85.8	
Approach LOS		C			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	3.9	93.7		25.7	10.4	87.1		26.8
Change Period (Y+Rc), s	3.7	5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	4.0	52.6		* 26	10.0	52.6		44.0
Max Q Clear Time (g_c+I1), s	2.1	29.2		20.9	6.0	2.0		21.8
Green Ext Time (p_c), s	0.0	7.4		0.5	0.0	10.9		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	30.5
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	711	414	319	527	2	171	5	645	0	0	10
Future Volume (veh/h)	12	711	414	319	527	2	171	5	645	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	0	1863	1900
Adj Flow Rate, veh/h	12	741	0	332	549	2	178	5	672	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	2	1027	459	359	1788	7	562	15	878	0	0	545
Arrive On Green	0.00	0.29	0.00	0.20	0.49	0.49	0.34	0.34	0.34	0.00	0.00	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3616	13	1350	42	1583	0	0	1579
Grp Volume(v), veh/h	12	741	0	332	269	282	183	0	672	0	0	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1860	1392	0	1583	0	0	1579
Q Serve(g_s), s	0.1	13.9	0.0	13.6	6.7	6.7	7.2	0.0	24.3	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.1	13.9	0.0	13.6	6.7	6.7	7.5	0.0	24.3	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.01	0.97		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	2	1027	459	359	875	919	576	0	878	0	0	545
V/C Ratio(X)	5.00	0.72	0.00	0.92	0.31	0.31	0.32	0.00	0.77	0.00	0.00	0.02
Avail Cap(c_a), veh/h	240	1436	643	720	875	919	576	0	878	0	0	545
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	37.0	23.6	0.0	28.9	11.1	11.1	18.4	0.0	12.8	0.0	0.0	15.8
Incr Delay (d2), s/veh	1872.2	1.5	0.0	4.3	0.3	0.3	0.3	0.0	4.1	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	9.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	7.0	0.0	7.1	3.3	3.4	2.8	0.0	11.4	0.0	0.0	0.1
LnGrp Delay(d),s/veh	1918.5	25.0	0.0	33.2	11.4	11.4	18.7	0.0	16.8	0.0	0.0	15.8
LnGrp LOS	F	C		C	B	B	B		B			B
Approach Vol, veh/h		753			883			855			10	
Approach Delay, s/veh		55.2			19.6			17.2			15.8	
Approach LOS		E			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	19.0	25.4		29.5	3.9	40.5		29.5				
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5				
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0				
Max Q Clear Time (g_c+I1), s	15.6	15.9		2.3	2.1	8.7		26.3				
Green Ext Time (p_c), s	0.4	5.5		0.0	0.0	4.5		0.0				

Intersection Summary	
HCM 2010 Ctrl Delay	29.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	980	0	0	610	80	0	0	120	50	0	100
Future Volume (vph)	150	980	0	0	610	80	0	0	120	50	0	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			0.99				1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			0.98				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1752	3505			3423				1596	1752		1544
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1752	3505			3423				1596	1752		1544
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	1065	0	0	663	87	0	0	130	54	0	109
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	48	0	0	20
Lane Group Flow (vph)	163	1065	0	0	741	0	0	0	82	54	0	89
Confl. Peds. (#/hr)						10						10
Confl. Bikes (#/hr)						5						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA				Perm	Prot		Perm
Protected Phases	1	6			2					4		
Permitted Phases									2			6
Actuated Green, G (s)	10.6	61.4			47.3				47.3	6.1		61.4
Effective Green, g (s)	10.6	61.4			47.3				47.3	6.1		61.4
Actuated g/C Ratio	0.14	0.82			0.63				0.63	0.08		0.82
Clearance Time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Vehicle Extension (s)	2.0	1.5			1.5				1.5	1.0		1.5
Lane Grp Cap (vph)	247	2869			2158				1006	142		1264
v/s Ratio Prot	c0.09	c0.30			0.22					c0.03		
v/s Ratio Perm									0.05			0.06
v/c Ratio	0.66	0.37			0.34				0.08	0.38		0.07
Uniform Delay, d1	30.5	1.8			6.5				5.4	32.7		1.3
Progression Factor	0.86	2.46			1.00				1.00	1.00		1.00
Incremental Delay, d2	4.2	0.3			0.4				0.2	0.6		0.1
Delay (s)	30.4	4.7			7.0				5.6	33.3		1.4
Level of Service	C	A			A				A	C		A
Approach Delay (s)		8.1			7.0			5.6			12.0	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	48.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	6	80	43	4	41
Future Vol, veh/h	16	6	80	43	4	41
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	8	101	54	5	52

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	195	133	0	0	160	0
Stage 1	133	-	-	-	-	-
Stage 2	62	-	-	-	-	-
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	794	916	-	-	1419	-
Stage 1	893	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	787	912	-	-	1412	-
Mov Cap-2 Maneuver	787	-	-	-	-	-
Stage 1	889	-	-	-	-	-
Stage 2	957	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	818	1412	-
HCM Lane V/C Ratio	-	-	0.034	0.004	-
HCM Control Delay (s)	-	-	9.6	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	0	129	27	1	56
Future Vol, veh/h	11	0	129	27	1	56
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	0	155	33	1	67

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	247	178	0	0	194	0
Stage 1	178	-	-	-	-	-
Stage 2	69	-	-	-	-	-
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	741	865	-	-	1379	-
Stage 1	853	-	-	-	-	-
Stage 2	954	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	736	860	-	-	1371	-
Mov Cap-2 Maneuver	736	-	-	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	953	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	736	1371	-
HCM Lane V/C Ratio	-	-	0.018	0.001	-
HCM Control Delay (s)	-	-	10	7.6	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	50	836	1074	1	2	25
Future Vol, veh/h	50	836	1074	1	2	25
Conflicting Peds, #/hr	7	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	85	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	55	919	1180	1	2	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1188	0	-	0	1758	598
Stage 1	-	-	-	-	1188	-
Stage 2	-	-	-	-	570	-
Critical Hdwy	4.18	-	-	-	6.88	6.98
Critical Hdwy Stg 1	-	-	-	-	5.88	-
Critical Hdwy Stg 2	-	-	-	-	5.88	-
Follow-up Hdwy	2.24	-	-	-	3.54	3.34
Pot Cap-1 Maneuver	572	-	-	-	74	440
Stage 1	-	-	-	-	248	-
Stage 2	-	-	-	-	524	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	568	-	-	-	66	437
Mov Cap-2 Maneuver	-	-	-	-	166	-
Stage 1	-	-	-	-	222	-
Stage 2	-	-	-	-	520	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	14.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	568	-	-	-	166	437
HCM Lane V/C Ratio	0.097	-	-	-	0.013	0.063
HCM Control Delay (s)	12	-	-	-	27	13.8
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	666	79	10	1000	63	5	12	14	16	0	38
Future Volume (veh/h)	92	666	79	10	1000	63	5	12	14	16	0	38
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	0.97		0.96	0.96		0.96
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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1900	1845	1845
Adj Flow Rate, veh/h	99	716	85	11	1075	68	5	13	15	17	0	41
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	112	2376	282	3	2308	146	142	35	40	159	0	69
Arrive On Green	0.08	1.00	1.00	0.00	1.00	1.00	0.05	0.05	0.05	0.05	0.00	0.05
Sat Flow, veh/h	1757	3151	374	1757	3342	211	1307	765	882	842	0	1502
Grp Volume(v), veh/h	99	398	403	11	563	580	5	0	28	17	0	41
Grp Sat Flow(s),veh/h/ln	1757	1752	1772	1757	1752	1801	1307	0	1647	842	0	1502
Q Serve(g_s), s	3.3	0.0	0.0	0.1	0.0	0.0	0.2	0.0	1.0	0.8	0.0	1.6
Cycle Q Clear(g_c), s	3.3	0.0	0.0	0.1	0.0	0.0	2.0	0.0	1.0	1.8	0.0	1.6
Prop In Lane	1.00		0.21	1.00		0.12	1.00		0.54	1.00		1.00
Lane Grp Cap(c), veh/h	112	1322	1336	3	1210	1244	142	0	76	159	0	69
V/C Ratio(X)	0.89	0.30	0.30	3.76	0.47	0.47	0.04	0.00	0.37	0.11	0.00	0.60
Avail Cap(c_a), veh/h	146	1322	1336	146	1210	1244	485	0	508	503	0	463
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.2	0.0	0.0	30.0	0.0	0.0	29.1	0.0	27.7	28.6	0.0	28.1
Incr Delay (d2), s/veh	31.3	0.6	0.6	1304.2	1.3	1.3	0.0	0.0	1.1	0.1	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	52.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.2	0.2	1.1	0.4	0.4	0.1	0.0	0.5	0.3	0.0	0.7
LnGrp Delay(d),s/veh	58.5	0.6	0.6	1386.4	1.3	1.3	29.2	0.0	28.8	28.7	0.0	31.1
LnGrp LOS	E	A	A	F	A	A	C		C	C		C
Approach Vol, veh/h		900			1154			33			58	
Approach Delay, s/veh		7.0			14.5			28.8			30.4	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.0	49.2		6.8	7.8	45.4		6.8
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	24.5		19.0	5.5	24.5		19.0
Max Q Clear Time (g_c+I1), s	2.1	2.0		4.0	5.3	2.0		3.8
Green Ext Time (p_c), s	0.0	1.6		0.0	0.0	2.5		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		12.0
HCM 2010 LOS		B

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	675	1094	2	11	17
Future Vol, veh/h	27	675	1094	2	11	17
Conflicting Peds, #/hr	9	0	0	9	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	29	726	1176	2	12	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1187	0	-	0	1607	598
Stage 1	-	-	-	-	1186	-
Stage 2	-	-	-	-	421	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	578	-	-	-	95	443
Stage 1	-	-	-	-	250	-
Stage 2	-	-	-	-	627	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	573	-	-	-	89	439
Mov Cap-2 Maneuver	-	-	-	-	186	-
Stage 1	-	-	-	-	235	-
Stage 2	-	-	-	-	621	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	19.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	573	-	-	-	286
HCM Lane V/C Ratio	0.051	-	-	-	0.105
HCM Control Delay (s)	11.6	-	-	-	19.1
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	674	1090	15	3	5
Future Vol, veh/h	8	674	1090	15	3	5
Conflicting Peds, #/hr	10	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	9	717	1160	16	3	5

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1186	0	-	0	1555	598
Stage 1	-	-	-	-	1178	-
Stage 2	-	-	-	-	377	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	579	-	-	-	103	443
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	660	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	573	-	-	-	99	439
Mov Cap-2 Maneuver	-	-	-	-	196	-
Stage 1	-	-	-	-	246	-
Stage 2	-	-	-	-	653	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	17.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	573	-	-	-	300
HCM Lane V/C Ratio	0.015	-	-	-	0.028
HCM Control Delay (s)	11.4	-	-	-	17.4
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	4	6	246	116	2
Future Vol, veh/h	1	4	6	246	116	2
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	1	4	7	270	127	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	419	135	136	0	-	0
Stage 1	135	-	-	-	-	-
Stage 2	284	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	593	917	1454	-	-	-
Stage 1	894	-	-	-	-	-
Stage 2	766	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	581	911	1444	-	-	-
Mov Cap-2 Maneuver	581	-	-	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	761	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.4	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1444	-	818	-	-
HCM Lane V/C Ratio	0.005	-	0.007	-	-
HCM Control Delay (s)	7.5	-	9.4	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	26	79	159	109	2
Future Vol, veh/h	1	26	79	159	109	2
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	29	87	175	120	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	476	127	128	0	-	0
Stage 1	127	-	-	-	-	-
Stage 2	349	-	-	-	-	-
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	548	923	1458	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	714	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	506	918	1450	-	-	-
Mov Cap-2 Maneuver	506	-	-	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	710	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	2.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1450	-	891	-	-
HCM Lane V/C Ratio	0.06	-	0.033	-	-
HCM Control Delay (s)	7.6	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	18	52	72	78	2
Future Vol, veh/h	1	18	52	72	78	2
Conflicting Peds, #/hr	0	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	100	100	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	21	52	72	92	2

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	287	111	112	0	-	0
Stage 1	111	-	-	-	-	-
Stage 2	176	-	-	-	-	-
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	703	942	1478	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	654	926	1453	-	-	-
Mov Cap-2 Maneuver	654	-	-	-	-	-
Stage 1	866	-	-	-	-	-
Stage 2	840	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.1	3.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1453	-	906	-	-
HCM Lane V/C Ratio	0.036	-	0.025	-	-
HCM Control Delay (s)	7.6	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	573	374	254	605	2	227	1	867	0	0	1
Future Volume (veh/h)	0	573	374	254	605	2	227	1	867	0	0	1
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.99		1.00	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	0	1845	1900
Adj Flow Rate, veh/h	0	591	0	262	624	2	234	1	894	0	0	1
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	3	904	404	290	1737	6	651	3	886	0	0	609
Arrive On Green	0.00	0.26	0.00	0.17	0.48	0.48	0.39	0.39	0.39	0.00	0.00	0.40
Sat Flow, veh/h	1757	3505	1568	1757	3583	11	1378	7	1568	0	0	1554
Grp Volume(v), veh/h	0	591	0	262	305	321	235	0	894	0	0	1
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1842	1385	0	1568	0	0	1554
Q Serve(g_s), s	0.0	9.8	0.0	9.5	7.1	7.1	8.1	0.0	25.5	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.0	9.8	0.0	9.5	7.1	7.1	8.1	0.0	25.5	0.0	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	3	904	404	290	849	893	654	0	886	0	0	609
V/C Ratio(X)	0.00	0.65	0.00	0.90	0.36	0.36	0.36	0.00	1.01	0.00	0.00	0.00
Avail Cap(c_a), veh/h	270	1617	724	811	849	893	654	0	886	0	0	609
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.5	0.0	26.6	10.5	10.5	14.5	0.0	14.1	0.0	0.0	11.9
Incr Delay (d2), s/veh	0.0	1.1	0.0	4.2	0.4	0.3	0.3	0.0	32.4	0.0	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	0.0	4.8	0.0	4.9	3.5	3.7	3.1	0.0	23.5	0.0	0.0	0.0
LnGrp Delay(d),s/veh	0.0	22.7	0.0	30.8	10.8	10.8	14.8	0.0	46.5	0.0	0.0	11.9
LnGrp LOS		C		C	B	B	B		F			B
Approach Vol, veh/h		591			888			1129			1	
Approach Delay, s/veh		22.7			16.7			39.9			11.9	
Approach LOS		C			B			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.7	20.8		29.5	0.0	35.5		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	11.5	11.8		2.0	0.0	9.1		27.5
Green Ext Time (p_c), s	0.3	5.0		0.0	0.0	5.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	28.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	114	776	537	4	1055	23	360	52	47	73	0	105
Future Volume (veh/h)	114	776	537	4	1055	23	360	52	47	73	0	105
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	120	817	0	4	1111	24	418	0	0	77	0	111
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	142	1165	521	512	1950	42	494	0	220	156	0	140
Arrive On Green	0.08	0.33	0.00	0.58	1.00	1.00	0.14	0.00	0.00	0.09	0.00	0.09
Sat Flow, veh/h	1757	3505	1568	1757	3505	76	3514	0	1568	1757	0	1568
Grp Volume(v), veh/h	120	817	0	4	555	580	418	0	0	77	0	111
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1828	1757	0	1568	1757	0	1568
Q Serve(g_s), s	8.1	24.3	0.0	0.1	0.0	0.0	13.9	0.0	0.0	5.0	0.0	8.3
Cycle Q Clear(g_c), s	8.1	24.3	0.0	0.1	0.0	0.0	13.9	0.0	0.0	5.0	0.0	8.3
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	142	1165	521	512	975	1017	494	0	220	156	0	140
V/C Ratio(X)	0.85	0.70	0.00	0.01	0.57	0.57	0.85	0.00	0.00	0.49	0.00	0.79
Avail Cap(c_a), veh/h	230	1165	521	512	975	1017	1001	0	447	208	0	186
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.4	34.9	0.0	17.8	0.0	0.0	50.3	0.0	0.0	52.1	0.0	53.7
Incr Delay (d2), s/veh	7.7	3.5	0.0	0.0	2.4	2.3	1.6	0.0	0.0	0.9	0.0	11.6
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	4.2	12.4	0.0	0.1	0.7	0.7	6.8	0.0	0.0	2.5	0.0	4.1
LnGrp Delay(d),s/veh	62.1	38.4	0.0	17.8	2.4	2.3	51.9	0.0	0.0	53.0	0.0	65.3
LnGrp LOS	E	D		B	A	A	D			D		E
Approach Vol, veh/h		937			1139			418			188	
Approach Delay, s/veh		41.4			2.4			51.9			60.2	
Approach LOS		D			A			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	43.9		14.7	13.7	70.8		20.9
Change Period (Y+Rc), s	5.3	* 5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	12.0	* 39		* 14	16.0	38.6		34.0
Max Q Clear Time (g_c+I1), s	10.1	26.3		10.3	10.1	2.0		15.9
Green Ext Time (p_c), s	0.0	4.4		0.2	0.1	13.5		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	27.8
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	574	10	35	1011	101	15	22	32	40	1	87
Future Volume (veh/h)	95	574	10	35	1011	101	15	22	32	40	1	87
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	99	598	10	36	1053	105	16	23	33	42	1	91
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	112	1783	30	25	1466	146	89	94	438	131	2	438
Arrive On Green	0.13	1.00	1.00	0.01	0.31	0.31	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1757	3526	59	1757	3211	320	17	336	1563	44	6	1563
Grp Volume(v), veh/h	99	297	311	36	574	584	39	0	33	43	0	91
Grp Sat Flow(s),veh/h/ln	1757	1752	1832	1757	1752	1778	353	0	1563	50	0	1563
Q Serve(g_s), s	3.3	0.0	0.0	0.9	17.5	17.5	0.3	0.0	0.9	0.6	0.0	2.7
Cycle Q Clear(g_c), s	3.3	0.0	0.0	0.9	17.5	17.5	16.7	0.0	0.9	16.8	0.0	2.7
Prop In Lane	1.00		0.03	1.00		0.18	0.41		1.00	0.98		1.00
Lane Grp Cap(c), veh/h	112	886	927	25	800	812	183	0	438	133	0	438
V/C Ratio(X)	0.89	0.34	0.34	1.44	0.72	0.72	0.21	0.00	0.08	0.32	0.00	0.21
Avail Cap(c_a), veh/h	176	886	927	205	800	812	280	0	534	215	0	534
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.89	0.89	0.89	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	0.0	29.7	17.4	17.4	17.5	0.0	15.9	29.3	0.0	16.5
Incr Delay (d2), s/veh	18.3	1.0	1.0	213.7	4.9	4.8	0.2	0.0	0.0	0.5	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	2.2	0.3	0.3	1.9	9.5	9.6	0.5	0.0	0.4	0.7	0.0	1.2
LnGrp Delay(d),s/veh	44.3	1.0	1.0	243.5	22.3	22.2	17.7	0.0	15.9	29.9	0.0	16.6
LnGrp LOS	D	A	A	F	C	C	B		B	C		B
Approach Vol, veh/h		707			1194			72			134	
Approach Delay, s/veh		7.1			28.9			16.9			20.9	
Approach LOS		A			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.8	31.0		21.2	4.9	33.9		21.2
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	6.5	20.5		21.0	7.5	20.5		21.0
Max Q Clear Time (g_c+I1), s	5.3	19.5		18.7	2.9	2.0		18.8
Green Ext Time (p_c), s	0.0	0.4		0.0	0.0	1.1		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	20.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	505	0	0	931	40	0	0	50	140	0	160
Future Volume (vph)	90	505	0	0	931	40	0	0	50	140	0	160
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0				4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			0.99				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1752	3505			3477				1596	1752		1543
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1752	3505			3477				1596	1752		1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	98	549	0	0	1012	43	0	0	54	152	0	174
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	24	0	0	47
Lane Group Flow (vph)	98	549	0	0	1052	0	0	0	30	152	0	127
Confl. Peds. (#/hr)						10						10
Confl. Bikes (#/hr)			6			5						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA				Perm	Prot		Perm
Protected Phases	1	6			2					4		
Permitted Phases									2			6
Actuated Green, G (s)	6.8	43.7			33.4				33.4	8.8		43.7
Effective Green, g (s)	6.3	43.7			33.4				33.4	8.3		43.7
Actuated g/C Ratio	0.10	0.73			0.56				0.56	0.14		0.73
Clearance Time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Vehicle Extension (s)	2.0	1.5			1.5				1.5	1.0		1.5
Lane Grp Cap (vph)	183	2552			1935				888	242		1123
v/s Ratio Prot	c0.06	0.16			c0.30					c0.09		
v/s Ratio Perm									0.02			0.08
v/c Ratio	0.54	0.22			0.54				0.03	0.63		0.11
Uniform Delay, d1	25.5	2.6			8.5				6.0	24.4		2.4
Progression Factor	1.08	1.19			1.00				1.00	1.00		1.00
Incremental Delay, d2	1.5	0.2			1.1				0.1	3.6		0.2
Delay (s)	28.9	3.3			9.6				6.1	28.0		2.6
Level of Service	C	A			A				A	C		A
Approach Delay (s)		7.2			9.6			6.1			14.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	9	63	49	7	59
Future Vol, veh/h	41	9	63	49	7	59
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	43	9	66	52	7	62

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	171	95	0	0	121	0
Stage 1	95	-	-	-	-	-
Stage 2	76	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	821	964	-	-	1473	-
Stage 1	931	-	-	-	-	-
Stage 2	950	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	814	961	-	-	1469	-
Mov Cap-2 Maneuver	814	-	-	-	-	-
Stage 1	928	-	-	-	-	-
Stage 2	945	-	-	-	-	-

Approach	WB		NB		SB	
HCM Control Delay, s	9.6		0		0.8	
HCM LOS	A					

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	837	1469	-
HCM Lane V/C Ratio	-	-	0.063	0.005	-
HCM Control Delay (s)	-	-	9.6	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	0	112	5	1	109
Future Vol, veh/h	9	0	112	5	1	109
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	10	0	122	5	1	118

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	245	125	0	0	127	0
Stage 1	125	-	-	-	-	-
Stage 2	120	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	748	931	-	-	1472	-
Stage 1	906	-	-	-	-	-
Stage 2	910	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	747	931	-	-	1472	-
Mov Cap-2 Maneuver	747	-	-	-	-	-
Stage 1	906	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.9	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	747	1472	-
HCM Lane V/C Ratio	-	-	0.013	0.001	-
HCM Control Delay (s)	-	-	9.9	7.4	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	1153	903	1	3	30
Future Vol, veh/h	27	1153	903	1	3	30
Conflicting Peds, #/hr	7	0	0	7	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	85	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	31	1325	1038	1	3	34

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1046	0	-	0	1771	527
Stage 1	-	-	-	-	1046	-
Stage 2	-	-	-	-	725	-
Critical Hdwy	4.14	-	-	-	6.84	6.94
Critical Hdwy Stg 1	-	-	-	-	5.84	-
Critical Hdwy Stg 2	-	-	-	-	5.84	-
Follow-up Hdwy	2.22	-	-	-	3.52	3.32
Pot Cap-1 Maneuver	661	-	-	-	74	496
Stage 1	-	-	-	-	299	-
Stage 2	-	-	-	-	440	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	657	-	-	-	70	493
Mov Cap-2 Maneuver	-	-	-	-	187	-
Stage 1	-	-	-	-	283	-
Stage 2	-	-	-	-	437	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	14
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	657	-	-	-	187	493
HCM Lane V/C Ratio	0.047	-	-	-	0.018	0.07
HCM Control Delay (s)	10.8	-	-	-	24.6	12.9
HCM Lane LOS	B	-	-	-	C	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.1	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	55	1028	65	18	732	19	28	12	15	54	4	106
Future Volume (veh/h)	55	1028	65	18	732	19	28	12	15	54	4	106
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.99		0.99	0.99		0.99
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	63	1182	75	21	841	22	32	14	17	62	5	122
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	2472	157	13	2469	65	146	76	93	200	13	157
Arrive On Green	0.08	1.00	1.00	0.00	0.23	0.23	0.10	0.10	0.11	0.10	0.10	0.10
Sat Flow, veh/h	1774	3376	214	1774	3521	92	1252	763	927	1071	126	1569
Grp Volume(v), veh/h	63	619	638	21	423	440	32	0	31	67	0	122
Grp Sat Flow(s),veh/h/ln	1774	1770	1820	1774	1770	1844	1252	0	1690	1197	0	1569
Q Serve(g_s), s	2.6	0.0	0.0	0.6	14.9	14.9	1.9	0.0	1.3	3.3	0.0	5.7
Cycle Q Clear(g_c), s	2.6	0.0	0.0	0.6	14.9	14.9	6.4	0.0	1.3	4.5	0.0	5.7
Prop In Lane	1.00		0.12	1.00		0.05	1.00		0.55	0.93		1.00
Lane Grp Cap(c), veh/h	69	1296	1333	13	1241	1293	146	0	169	212	0	157
V/C Ratio(X)	0.92	0.48	0.48	1.58	0.34	0.34	0.22	0.00	0.18	0.32	0.00	0.78
Avail Cap(c_a), veh/h	118	1296	1333	118	1241	1293	329	0	417	416	0	387
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.5	0.0	0.0	37.4	14.4	14.4	35.5	0.0	30.8	32.8	0.0	32.9
Incr Delay (d2), s/veh	24.9	1.3	1.2	286.3	0.7	0.7	0.3	0.0	0.2	0.3	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.5	0.5	1.3	7.6	7.9	0.7	0.0	0.6	1.3	0.0	2.6
LnGrp Delay(d),s/veh	59.4	1.3	1.2	332.3	15.1	15.1	35.7	0.0	31.0	33.1	0.0	36.0
LnGrp LOS	E	A	A	F	B	B	D		C	C		D
Approach Vol, veh/h		1320			884			63			189	
Approach Delay, s/veh		4.0			22.6			33.4			35.0	
Approach LOS		A			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	58.9		11.5	6.9	56.6		11.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	39.5		19.0	5.5	39.5		19.0
Max Q Clear Time (g_c+I1), s	2.6	2.0		8.4	4.6	16.9		7.7
Green Ext Time (p_c), s	0.0	2.9		0.0	0.0	1.7		0.2

Intersection Summary			
HCM 2010 Ctrl Delay			13.9
HCM 2010 LOS			B

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	15	1114	766	2	9	23
Future Vol, veh/h	15	1114	766	2	9	23
Conflicting Peds, #/hr	0	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	17	1295	891	2	10	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	903	0	-	0	1584	457
Stage 1	-	-	-	-	902	-
Stage 2	-	-	-	-	682	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	755	-	-	-	100	553
Stage 1	-	-	-	-	359	-
Stage 2	-	-	-	-	466	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	748	-	-	-	96	548
Mov Cap-2 Maneuver	-	-	-	-	223	-
Stage 1	-	-	-	-	347	-
Stage 2	-	-	-	-	461	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	15.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	748	-	-	-	389
HCM Lane V/C Ratio	0.023	-	-	-	0.096
HCM Control Delay (s)	9.9	-	-	-	15.2
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	1115	760	4	6	6
Future Vol, veh/h	3	1115	760	4	6	6
Conflicting Peds, #/hr	13	0	0	13	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	4	1312	894	5	7	7

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	912	0	-	0	1574	463
Stage 1	-	-	-	-	910	-
Stage 2	-	-	-	-	664	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	749	-	-	-	102	548
Stage 1	-	-	-	-	355	-
Stage 2	-	-	-	-	476	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	740	-	-	-	99	541
Mov Cap-2 Maneuver	-	-	-	-	227	-
Stage 1	-	-	-	-	349	-
Stage 2	-	-	-	-	470	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	16.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	740	-	-	-	320
HCM Lane V/C Ratio	0.005	-	-	-	0.044
HCM Control Delay (s)	9.9	-	-	-	16.8
HCM Lane LOS	A	-	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.1					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	1	0	116	278	0
Future Vol, veh/h	1	1	0	116	278	0
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	1	1	0	120	287	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	413	293	-	0	-	0
Stage 1	293	-	-	-	-	-
Stage 2	120	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	-	-
Pot Cap-1 Maneuver	597	749	0	-	-	-
Stage 1	759	-	0	-	-	-
Stage 2	908	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	590	745	-	-	-	-
Mov Cap-2 Maneuver	590	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	903	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	659	-	-
HCM Lane V/C Ratio	-	0.003	-	-
HCM Control Delay (s)	-	10.5	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0	-	-

Intersection						
Int Delay, s/veh	2.2					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	3	58	41	101	232	0
Future Vol, veh/h	3	58	41	101	232	0
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	3	59	42	103	237	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	431	244	244	0	-	0
Stage 1	244	-	-	-	-	-
Stage 2	187	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	583	797	1328	-	-	-
Stage 1	799	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	556	792	1319	-	-	-
Mov Cap-2 Maneuver	556	-	-	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	841	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	2.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1319	-	776	-	-
HCM Lane V/C Ratio	0.032	-	0.08	-	-
HCM Control Delay (s)	7.8	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	3.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	110	2	81	102	5
Future Vol, veh/h	11	110	2	81	102	5
Conflicting Peds, #/hr	0	0	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	12	116	2	85	107	5

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	207	118	120	0	-	0
Stage 1	118	-	-	-	-	-
Stage 2	89	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	784	937	1474	-	-	-
Stage 1	910	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	771	930	1463	-	-	-
Mov Cap-2 Maneuver	771	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	930	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.6	0.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1463	-	913	-	-
HCM Lane V/C Ratio	0.001	-	0.14	-	-
HCM Control Delay (s)	7.5	0	9.6	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↰	↑↑	↱	↰	↑↱			↰	↱		↱	
Traffic Volume (veh/h)	12	717	414	329	535	2	171	5	656	0	0	10
Future Volume (veh/h)	12	717	414	329	535	2	171	5	656	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	0	1863	1900
Adj Flow Rate, veh/h	12	747	0	343	557	2	178	5	683	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	2	1027	460	370	1810	6	555	14	880	0	0	538
Arrive On Green	0.00	0.29	0.00	0.21	0.50	0.50	0.34	0.34	0.34	0.00	0.00	0.35
Sat Flow, veh/h	1774	3539	1583	1774	3616	13	1350	42	1583	0	0	1579
Grp Volume(v), veh/h	12	747	0	343	273	286	183	0	683	0	0	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1860	1392	0	1583	0	0	1579
Q Serve(g_s), s	0.1	14.2	0.0	14.2	6.8	6.8	7.4	0.0	25.2	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.1	14.2	0.0	14.2	6.8	6.8	7.7	0.0	25.2	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.01	0.97		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	2	1027	460	370	886	931	569	0	880	0	0	538
V/C Ratio(X)	5.06	0.73	0.00	0.93	0.31	0.31	0.32	0.00	0.78	0.00	0.00	0.02
Avail Cap(c_a), veh/h	237	1419	635	711	886	931	569	0	880	0	0	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	37.4	23.9	0.0	29.0	11.0	11.0	18.9	0.0	13.0	0.0	0.0	16.2
Incr Delay (d2), s/veh	1901.2	1.6	0.0	4.3	0.3	0.3	0.3	0.0	4.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	7.2	0.0	7.4	3.4	3.6	2.9	0.0	11.9	0.0	0.0	0.1
LnGrp Delay(d),s/veh	1947.6	25.5	0.0	33.4	11.3	11.3	19.2	0.0	17.4	0.0	0.0	16.2
LnGrp LOS	F	C		C	B	B	B		B			B
Approach Vol, veh/h		759			902			866			10	
Approach Delay, s/veh		55.9			19.7			17.8			16.2	
Approach LOS		E			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	19.6	25.7		29.5	3.9	41.5		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	16.2	16.2		2.3	2.1	8.8		27.2
Green Ext Time (p_c), s	0.4	5.5		0.0	0.0	4.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	29.8
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	945	402	1	888	15	390	22	45	193	0	175
Future Volume (veh/h)	42	945	402	1	888	15	390	22	45	193	0	175
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1710	1676	1676	1676	1676	1676	1710
Adj Flow Rate, veh/h	45	1005	0	1	945	16	431	0	0	205	0	186
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	1897	849	1	1767	30	486	0	217	234	0	209
Arrive On Green	0.04	0.60	0.00	0.00	1.00	1.00	0.15	0.00	0.00	0.15	0.00	0.15
Sat Flow, veh/h	1597	3185	1425	1597	3203	54	3193	0	1425	1597	0	1425
Grp Volume(v), veh/h	45	1005	0	1	470	491	431	0	0	205	0	186
Grp Sat Flow(s),veh/h/ln	1597	1593	1425	1597	1593	1665	1597	0	1425	1597	0	1425
Q Serve(g_s), s	4.2	28.0	0.0	0.1	0.0	0.0	19.8	0.0	0.0	18.9	0.0	19.2
Cycle Q Clear(g_c), s	4.2	28.0	0.0	0.1	0.0	0.0	19.8	0.0	0.0	18.9	0.0	19.2
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	1897	849	1	878	918	486	0	217	234	0	209
V/C Ratio(X)	0.65	0.53	0.00	0.94	0.53	0.53	0.89	0.00	0.00	0.88	0.00	0.89
Avail Cap(c_a), veh/h	103	1897	849	39	878	918	941	0	420	279	0	249
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.7	17.9	0.0	75.0	0.0	0.0	62.3	0.0	0.0	62.7	0.0	63.0
Incr Delay (d2), s/veh	3.9	1.1	0.0	226.2	2.3	2.2	2.2	0.0	0.0	20.5	0.0	25.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	12.6	0.0	0.1	0.6	0.6	8.9	0.0	0.0	9.6	0.0	9.0
LnGrp Delay(d),s/veh	74.5	19.0	0.0	301.2	2.3	2.2	64.6	0.0	0.0	83.2	0.0	88.0
LnGrp LOS	E	B		F	A	A	E			F		F
Approach Vol, veh/h		1050			962			431			391	
Approach Delay, s/veh		21.4			2.6			64.6			85.5	
Approach LOS		C			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	3.9	93.3		26.0	10.5	86.7		26.8
Change Period (Y+Rc), s	3.7	5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	4.0	52.6		* 26	10.0	52.6		44.0
Max Q Clear Time (g_c+I1), s	2.1	30.0		21.2	6.2	2.0		21.8
Green Ext Time (p_c), s	0.0	7.4		0.5	0.0	11.4		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	30.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1043	18	29	624	39	14	16	28	136	7	122
Future Volume (veh/h)	60	1043	18	29	624	39	14	16	28	136	7	122
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1881	1900	1881	1881
Adj Flow Rate, veh/h	69	1199	21	33	717	45	16	18	32	156	8	140
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	77	1988	35	24	1783	112	71	56	433	94	3	433
Arrive On Green	0.01	0.18	0.18	0.00	0.17	0.17	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1792	3592	63	1792	3407	214	0	206	1583	0	9	1583
Grp Volume(v), veh/h	69	596	624	33	376	386	34	0	32	164	0	140
Grp Sat Flow(s),veh/h/ln	1792	1787	1868	1792	1787	1834	206	0	1583	9	0	1583
Q Serve(g_s), s	2.9	23.0	23.0	1.0	14.0	14.0	0.0	0.0	1.1	0.0	0.0	5.3
Cycle Q Clear(g_c), s	2.9	23.0	23.0	1.0	14.0	14.0	20.5	0.0	1.1	20.5	0.0	5.3
Prop In Lane	1.00		0.03	1.00		0.12	0.47		1.00	0.95		1.00
Lane Grp Cap(c), veh/h	77	989	1034	24	935	960	127	0	433	96	0	433
V/C Ratio(X)	0.89	0.60	0.60	1.39	0.40	0.40	0.27	0.00	0.07	1.70	0.00	0.32
Avail Cap(c_a), veh/h	239	989	1034	167	935	960	127	0	433	96	0	433
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.96	0.96	0.96	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.8	23.1	23.1	37.3	20.6	20.6	22.4	0.0	20.2	37.0	0.0	21.7
Incr Delay (d2), s/veh	12.1	2.7	2.6	195.8	1.2	1.2	0.4	0.0	0.0	357.1	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	12.1	12.7	1.8	7.3	7.5	0.5	0.0	0.5	11.5	0.0	2.3
LnGrp Delay(d),s/veh	48.9	25.8	25.7	233.6	21.8	21.8	22.8	0.0	20.2	394.0	0.0	21.9
LnGrp LOS	D	C	C	F	C	C	C		C	F		C
Approach Vol, veh/h		1289			795			66			304	
Approach Delay, s/veh		27.0			30.6			21.6			222.6	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.2	43.3		24.5	5.0	45.5		24.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	10.5	32.5		21.0	7.5	32.5		21.0
Max Q Clear Time (g_c+I1), s	4.9	16.0		22.5	3.0	25.0		22.5
Green Ext Time (p_c), s	0.0	1.6		0.0	0.0	2.0		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	52.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	150	988	0	0	616	80	0	0	120	50	0	100
Future Volume (vph)	150	988	0	0	616	80	0	0	120	50	0	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			0.99				1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			0.98				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1752	3505			3423				1596	1752		1544
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1752	3505			3423				1596	1752		1544
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	163	1074	0	0	670	87	0	0	130	54	0	109
RTOR Reduction (vph)	0	0	0	0	9	0	0	0	48	0	0	20
Lane Group Flow (vph)	163	1074	0	0	748	0	0	0	82	54	0	89
Confl. Peds. (#/hr)						10						10
Confl. Bikes (#/hr)						5						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA				Perm	Prot		Perm
Protected Phases	1	6			2					4		
Permitted Phases									2			6
Actuated Green, G (s)	10.6	61.4			47.3				47.3	6.1		61.4
Effective Green, g (s)	10.6	61.4			47.3				47.3	6.1		61.4
Actuated g/C Ratio	0.14	0.82			0.63				0.63	0.08		0.82
Clearance Time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Vehicle Extension (s)	2.0	1.5			1.5				1.5	1.0		1.5
Lane Grp Cap (vph)	247	2869			2158				1006	142		1264
v/s Ratio Prot	c0.09	c0.31			0.22					c0.03		
v/s Ratio Perm									0.05			0.06
v/c Ratio	0.66	0.37			0.35				0.08	0.38		0.07
Uniform Delay, d1	30.5	1.8			6.5				5.4	32.7		1.3
Progression Factor	0.85	2.50			1.00				1.00	1.00		1.00
Incremental Delay, d2	4.2	0.3			0.4				0.2	0.6		0.1
Delay (s)	30.0	4.8			7.0				5.6	33.3		1.4
Level of Service	C	A			A				A	C		A
Approach Delay (s)		8.1			7.0			5.6			12.0	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	10	80	40	10	50
Future Vol, veh/h	20	10	80	40	10	50
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	13	101	51	13	63

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	221	132	0	0	157	0
Stage 1	132	-	-	-	-	-
Stage 2	89	-	-	-	-	-
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	767	917	-	-	1423	-
Stage 1	894	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	755	913	-	-	1416	-
Mov Cap-2 Maneuver	755	-	-	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	925	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	1.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	801	1416	-
HCM Lane V/C Ratio	-	-	0.047	0.009	-
HCM Control Delay (s)	-	-	9.7	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection						
Int Delay, s/veh	1.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	0	130	30	10	60
Future Vol, veh/h	20	0	130	30	10	60
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	0	157	36	12	72

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	277	181	0	0	199	0
Stage 1	181	-	-	-	-	-
Stage 2	96	-	-	-	-	-
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	713	862	-	-	1373	-
Stage 1	850	-	-	-	-	-
Stage 2	928	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	702	857	-	-	1365	-
Mov Cap-2 Maneuver	702	-	-	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	920	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	702	1365	-
HCM Lane V/C Ratio	-	-	0.034	0.009	-
HCM Control Delay (s)	-	-	10.3	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection												
Int Delay, s/veh	0.6											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	900	20	10	1180	10	0	0	10	0	0	30
Future Vol, veh/h	50	900	20	10	1180	10	0	0	10	0	0	30
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	60	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	2	4
Mvmt Flow	55	989	22	11	1297	11	0	0	11	0	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1315	0	0	1011	0	0	-	-	506	-	-	661
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	4.18	-	-	-	-	6.98	-	-	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	2.24	-	-	-	-	3.34	-	-	3.34
Pot Cap-1 Maneuver	511	-	-	669	-	-	0	0	506	0	0	400
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	508	-	-	669	-	-	-	-	506	-	-	397
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	12.3	14.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	506	508	-	-	669	-	-	397
HCM Lane V/C Ratio	0.022	0.108	-	-	0.016	-	-	0.083
HCM Control Delay (s)	12.3	12.9	-	-	10.5	-	-	14.9
HCM Lane LOS	B	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.1	0.4	-	-	0.1	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	740	80	10	1110	40	5	20	20	20	0	30
Future Volume (veh/h)	60	740	80	10	1110	40	5	20	20	20	0	30
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	0.98		0.97	0.97		0.96
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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1900	1845	1845
Adj Flow Rate, veh/h	65	796	86	11	1194	43	5	22	22	22	0	32
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	2384	258	3	2448	88	132	43	43	154	0	78
Arrive On Green	0.05	1.00	1.00	0.00	1.00	1.00	0.05	0.05	0.06	0.05	0.00	0.05
Sat Flow, veh/h	1757	3186	344	1757	3447	124	1327	831	831	656	0	1504
Grp Volume(v), veh/h	65	438	444	11	607	630	5	0	44	22	0	32
Grp Sat Flow(s),veh/h/ln	1757	1752	1778	1757	1752	1819	1327	0	1663	656	0	1504
Q Serve(g_s), s	2.2	0.1	0.1	0.1	0.0	0.0	0.2	0.0	1.5	1.0	0.0	1.2
Cycle Q Clear(g_c), s	2.2	0.1	0.1	0.1	0.0	0.0	2.8	0.0	1.5	2.5	0.0	1.2
Prop In Lane	1.00		0.19	1.00		0.07	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	67	1311	1330	3	1244	1292	132	0	86	154	0	78
V/C Ratio(X)	0.97	0.33	0.33	3.76	0.49	0.49	0.04	0.00	0.51	0.14	0.00	0.41
Avail Cap(c_a), veh/h	146	1311	1330	146	1244	1292	473	0	513	489	0	464
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	28.4	0.0	0.0	30.0	0.0	0.0	29.6	0.0	27.6	28.9	0.0	27.6
Incr Delay (d2), s/veh	24.4	0.7	0.7	1304.2	1.4	1.3	0.0	0.0	1.7	0.2	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	52.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.3	0.3	1.1	0.5	0.5	0.1	0.0	0.7	0.4	0.0	0.5
LnGrp Delay(d),s/veh	52.9	0.7	0.7	1386.4	1.4	1.3	29.6	0.0	29.3	29.1	0.0	28.9
LnGrp LOS	D	A	A	F	A	A	C		C	C		C
Approach Vol, veh/h		947			1248			49			54	
Approach Delay, s/veh		4.3			13.6			29.4			29.0	
Approach LOS		A			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.0	48.9		7.1	6.3	46.6		7.1				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	5.5	24.5		19.0	5.5	24.5		19.0				
Max Q Clear Time (g_c+I1), s	2.1	2.1		4.8	4.2	2.0		4.5				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	2.8		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			10.4									
HCM 2010 LOS			B									

Intersection						
Int Delay, s/veh	0.7					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	760	1180	10	20	20
Future Vol, veh/h	30	760	1180	10	20	20
Conflicting Peds, #/hr	9	0	0	9	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	32	817	1269	11	22	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1289	0	-	0	1757	649
Stage 1	-	-	-	-	1284	-
Stage 2	-	-	-	-	473	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	528	-	-	-	75	410
Stage 1	-	-	-	-	222	-
Stage 2	-	-	-	-	590	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	523	-	-	-	69	406
Mov Cap-2 Maneuver	-	-	-	-	162	-
Stage 1	-	-	-	-	207	-
Stage 2	-	-	-	-	585	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	24
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	523	-	-	-	232
HCM Lane V/C Ratio	0.062	-	-	-	0.185
HCM Control Delay (s)	12.3	-	-	-	24
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	760	1170	20	10	10
Future Vol, veh/h	10	760	1170	20	10	10
Conflicting Peds, #/hr	10	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	11	809	1245	21	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1276	0	-	0	1693	643
Stage 1	-	-	-	-	1266	-
Stage 2	-	-	-	-	427	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	535	-	-	-	83	414
Stage 1	-	-	-	-	227	-
Stage 2	-	-	-	-	623	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	530	-	-	-	80	410
Mov Cap-2 Maneuver	-	-	-	-	174	-
Stage 1	-	-	-	-	220	-
Stage 2	-	-	-	-	617	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	21.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	530	-	-	-	244
HCM Lane V/C Ratio	0.02	-	-	-	0.087
HCM Control Delay (s)	11.9	-	-	-	21.2
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.7					
Movement	**EBL**	**EBR**	**NBL**	**NBT**	**SBT**	**SBR**
Lane Configurations						
Traffic Vol, veh/h	10	10	6	230	110	10
Future Vol, veh/h	10	10	6	230	110	10
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	11	11	7	253	121	11
Major/Minor	**Minor2**		**Major1**		**Major2**	
Conflicting Flow All	401	134	139	0	-	0
Stage 1	134	-	-	-	-	-
Stage 2	267	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	607	918	1451	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	780	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	595	912	1441	-	-	-
Mov Cap-2 Maneuver	595	-	-	-	-	-
Stage 1	883	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Approach	**EB**		**NB**		**SB**	
HCM Control Delay, s	10.2		0.2		0	
HCM LOS	B					
Minor Lane/Major Mvmt		**NBL**	**NBT**	**EBLn1**	**SBT**	**SBR**
Capacity (veh/h)		1441	-	720	-	-
HCM Lane V/C Ratio		0.005	-	0.031	-	-
HCM Control Delay (s)		7.5	-	10.2	-	-
HCM Lane LOS		A	-	B	-	-
HCM 95th %tile Q(veh)		0	-	0.1	-	-

Intersection						
Int Delay, s/veh	1.6					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	63	160	110	10
Future Vol, veh/h	0	10	63	160	110	10
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	69	176	121	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	447	133	138	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	314	-	-	-	-	-
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	569	916	1446	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	741	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	533	911	1438	-	-	-
Mov Cap-2 Maneuver	533	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	737	-	-	-	-	-

Approach	EB		NB		SB	
HCM Control Delay, s	9		2.2		0	
HCM LOS	A					

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1438	-	911	-	-
HCM Lane V/C Ratio	0.048	-	0.012	-	-
HCM Control Delay (s)	7.6	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0	-	-

Intersection						
Int Delay, s/veh	3.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	30	82	80	80	10
Future Vol, veh/h	10	30	82	80	80	10
Conflicting Peds, #/hr	0	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	100	100	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	35	82	80	94	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	362	118	124	0	-	0
Stage 1	118	-	-	-	-	-
Stage 2	244	-	-	-	-	-
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	637	934	1463	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	797	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	578	918	1438	-	-	-
Mov Cap-2 Maneuver	578	-	-	-	-	-
Stage 1	838	-	-	-	-	-
Stage 2	783	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	3.9	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1438	-	800	-	-
HCM Lane V/C Ratio	0.057	-	0.059	-	-
HCM Control Delay (s)	7.7	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	650	10	40	1110	120	15	20	40	40	10	80
Future Volume (veh/h)	110	650	10	40	1110	120	15	20	40	40	10	80
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	115	677	10	42	1156	125	16	21	42	42	10	83
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	131	1789	26	30	1427	154	91	87	432	120	17	432
Arrive On Green	0.15	1.00	1.00	0.02	0.45	0.45	0.28	0.28	0.28	0.28	0.28	0.28
Sat Flow, veh/h	1757	3534	52	1757	3183	343	19	313	1563	43	63	1563
Grp Volume(v), veh/h	115	336	351	42	635	646	37	0	42	52	0	83
Grp Sat Flow(s),veh/h/ln	1757	1752	1834	1757	1752	1774	332	0	1563	106	0	1563
Q Serve(g_s), s	3.8	0.0	0.0	1.0	18.8	18.9	0.3	0.0	1.2	0.6	0.0	2.4
Cycle Q Clear(g_c), s	3.8	0.0	0.0	1.0	18.8	18.9	16.5	0.0	1.2	16.6	0.0	2.4
Prop In Lane	1.00		0.03	1.00		0.19	0.43		1.00	0.81		1.00
Lane Grp Cap(c), veh/h	131	887	928	30	786	795	178	0	432	138	0	432
V/C Ratio(X)	0.87	0.38	0.38	1.39	0.81	0.81	0.21	0.00	0.10	0.38	0.00	0.19
Avail Cap(c_a), veh/h	176	887	928	205	786	795	279	0	534	228	0	534
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.85	0.85	0.85	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	0.0	29.5	14.3	14.3	17.6	0.0	16.1	25.3	0.0	16.6
Incr Delay (d2), s/veh	24.3	1.2	1.2	189.8	7.5	7.6	0.2	0.0	0.0	0.6	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	2.7	0.3	0.3	2.1	10.6	10.8	0.5	0.0	0.5	0.9	0.0	1.1
LnGrp Delay(d),s/veh	49.6	1.2	1.2	219.2	21.9	21.9	17.8	0.0	16.2	25.9	0.0	16.7
LnGrp LOS	D	A	A	F	C	C	B		B	C		B
Approach Vol, veh/h		802			1323			79			135	
Approach Delay, s/veh		8.1			28.2			16.9			20.2	
Approach LOS		A			C			B			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.5	30.5		21.1	5.0	33.9		21.1
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	6.5	20.5		21.0	7.5	20.5		21.0
Max Q Clear Time (g_c+I1), s	5.8	20.9		18.5	3.0	2.0		18.6
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	1.3		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	20.5
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	850	540	10	1150	30	367	60	50	80	0	110
Future Volume (veh/h)	120	850	540	10	1150	30	367	60	50	80	0	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	126	895	0	11	1211	32	431	0	0	84	0	116
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	148	1165	521	499	1902	50	507	0	226	162	0	145
Arrive On Green	0.08	0.33	0.00	0.57	1.00	1.00	0.14	0.00	0.00	0.09	0.00	0.09
Sat Flow, veh/h	1757	3505	1568	1757	3485	92	3514	0	1568	1757	0	1568
Grp Volume(v), veh/h	126	895	0	11	609	634	431	0	0	84	0	116
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1824	1757	0	1568	1757	0	1568
Q Serve(g_s), s	8.5	27.5	0.0	0.3	0.0	0.0	14.4	0.0	0.0	5.5	0.0	8.7
Cycle Q Clear(g_c), s	8.5	27.5	0.0	0.3	0.0	0.0	14.4	0.0	0.0	5.5	0.0	8.7
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	1165	521	499	957	996	507	0	226	162	0	145
V/C Ratio(X)	0.85	0.77	0.00	0.02	0.64	0.64	0.85	0.00	0.00	0.52	0.00	0.80
Avail Cap(c_a), veh/h	230	1165	521	499	957	996	1001	0	447	208	0	186
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.2	35.9	0.0	18.6	0.0	0.0	50.1	0.0	0.0	51.9	0.0	53.5
Incr Delay (d2), s/veh	10.3	4.9	0.0	0.0	3.2	3.1	1.6	0.0	0.0	1.0	0.0	13.6
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	4.6	14.1	0.0	0.2	0.9	0.9	7.1	0.0	0.0	2.7	0.0	4.3
LnGrp Delay(d),s/veh	64.5	40.8	0.0	18.6	3.2	3.1	51.6	0.0	0.0	52.9	0.0	67.1
LnGrp LOS	E	D		B	A	A	D			D		E
Approach Vol, veh/h		1021			1254			431			200	
Approach Delay, s/veh		43.7			3.3			51.6			61.1	
Approach LOS		D			A			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.7	43.9		15.1	14.1	69.5		21.3
Change Period (Y+Rc), s	5.3	* 5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	12.0	* 39		* 14	16.0	38.6		34.0
Max Q Clear Time (g_c+I1), s	2.3	29.5		10.7	10.5	2.0		16.4
Green Ext Time (p_c), s	0.0	4.0		0.2	0.1	15.4		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	28.6
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	630	380	250	670	10	252	10	950	0	0	10
Future Volume (veh/h)	0	630	380	250	670	10	252	10	950	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.99		1.00	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	0	1845	1900
Adj Flow Rate, veh/h	0	649	0	258	691	10	260	10	979	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	3	963	431	286	1758	25	611	19	866	0	0	594
Arrive On Green	0.00	0.27	0.00	0.16	0.50	0.50	0.38	0.38	0.38	0.00	0.00	0.39
Sat Flow, veh/h	1757	3505	1568	1757	3534	51	1321	51	1568	0	0	1553
Grp Volume(v), veh/h	0	649	0	258	343	358	270	0	979	0	0	10
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1833	1372	0	1568	0	0	1553
Q Serve(g_s), s	0.0	11.0	0.0	9.6	8.1	8.1	10.0	0.0	25.5	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.0	11.0	0.0	9.6	8.1	8.1	10.3	0.0	25.5	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.03	0.96		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	3	963	431	286	872	912	631	0	866	0	0	594
V/C Ratio(X)	0.00	0.67	0.00	0.90	0.39	0.39	0.43	0.00	1.13	0.00	0.00	0.02
Avail Cap(c_a), veh/h	264	1577	706	791	872	912	631	0	866	0	0	594
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.5	0.0	27.4	10.5	10.5	16.0	0.0	14.9	0.0	0.0	12.6
Incr Delay (d2), s/veh	0.0	1.2	0.0	4.3	0.4	0.4	0.5	0.0	72.9	0.0	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	0.0	5.5	0.0	5.0	4.0	4.2	3.9	0.0	33.2	0.0	0.0	0.1
LnGrp Delay(d),s/veh	0.0	22.7	0.0	31.7	10.9	10.9	16.5	0.0	87.8	0.0	0.0	12.6
LnGrp LOS		C		C	B	B	B		F			B
Approach Vol, veh/h		649			959			1249			10	
Approach Delay, s/veh		22.7			16.5			72.4			12.6	
Approach LOS		C			B			E			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	14.8	22.3		29.5	0.0	37.2		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	11.6	13.0		2.3	0.0	10.1		27.5
Green Ext Time (p_c), s	0.3	5.3		0.0	0.0	5.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	42.2
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	570	0	0	1030	40	0	0	50	140	0	170
Future Volume (vph)	100	570	0	0	1030	40	0	0	50	140	0	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			0.99				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1752	3505			3479				1596	1752		1543
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1752	3505			3479				1596	1752		1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	620	0	0	1120	43	0	0	54	152	0	185
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	24	0	0	50
Lane Group Flow (vph)	109	620	0	0	1160	0	0	0	30	152	0	135
Confl. Peds. (#/hr)						10						10
Confl. Bikes (#/hr)			6			5						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA				Perm	Prot		Perm
Protected Phases	1	6			2					4		
Permitted Phases									2			6
Actuated Green, G (s)	7.2	43.7			33.0				33.0	8.8		43.7
Effective Green, g (s)	7.2	43.7			33.0				33.0	8.8		43.7
Actuated g/C Ratio	0.12	0.73			0.55				0.55	0.15		0.73
Clearance Time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Vehicle Extension (s)	2.0	1.5			1.5				1.5	1.0		1.5
Lane Grp Cap (vph)	210	2552			1913				877	256		1123
v/s Ratio Prot	c0.06	0.18			c0.33					c0.09		
v/s Ratio Perm									0.02			0.09
v/c Ratio	0.52	0.24			0.61				0.03	0.59		0.12
Uniform Delay, d1	24.8	2.7			9.1				6.2	23.9		2.4
Progression Factor	1.06	1.36			1.00				1.00	1.00		1.00
Incremental Delay, d2	0.9	0.2			1.4				0.1	2.5		0.2
Delay (s)	27.0	3.9			10.6				6.3	26.4		2.6
Level of Service	C	A			B				A	C		A
Approach Delay (s)		7.3			10.6			6.3			13.4	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	53.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection						
Int Delay, s/veh	2.3					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	10	70	50	10	60
Future Vol, veh/h	40	10	70	50	10	60
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	42	11	74	53	11	63

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	189	104	0	0	130	0
Stage 1	104	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	802	953	-	-	1462	-
Stage 1	923	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	793	950	-	-	1458	-
Mov Cap-2 Maneuver	793	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	933	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	820	1458	-
HCM Lane V/C Ratio	-	-	0.064	0.007	-
HCM Control Delay (s)	-	-	9.7	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection						
Int Delay, s/veh	0.7					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	0	110	10	10	110
Future Vol, veh/h	10	0	110	10	10	110
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	120	11	11	120

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	268	126	0	0	131	0
Stage 1	126	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	726	930	-	-	1467	-
Stage 1	905	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	720	930	-	-	1467	-
Mov Cap-2 Maneuver	720	-	-	-	-	-
Stage 1	905	-	-	-	-	-
Stage 2	883	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	720	1467	-
HCM Lane V/C Ratio	-	-	0.015	0.007	-
HCM Control Delay (s)	-	-	10.1	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	1260	20	20	980	10	0	0	20	0	0	30
Future Vol, veh/h	30	1260	20	20	980	10	0	0	20	0	0	30
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	60	-	-	-	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	1448	23	23	1126	11	0	0	23	0	0	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1144	0	0	1471	0	0	-	-	736	1977	-	576
Stage 1	-	-	-	-	-	-	-	-	-	1185	-	-
Stage 2	-	-	-	-	-	-	-	-	-	792	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	7.54	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.54	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.54	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	3.52	-	3.32
Pot Cap-1 Maneuver	606	-	-	454	-	-	0	0	361	37	0	460
Stage 1	-	-	-	-	-	-	0	0	-	201	0	-
Stage 2	-	-	-	-	-	-	0	0	-	349	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	602	-	-	454	-	-	-	-	361	32	-	457
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	32	-	-
Stage 1	-	-	-	-	-	-	-	-	-	188	-	-
Stage 2	-	-	-	-	-	-	-	-	-	308	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.3	15.6	13.5
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	361	602	-	-	454	-	-	-	457
HCM Lane V/C Ratio	0.064	0.057	-	-	0.051	-	-	-	0.075
HCM Control Delay (s)	15.6	11.3	-	-	13.4	-	-	0	13.5
HCM Lane LOS	C	B	-	-	B	-	-	A	B
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.2	-	-	-	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1150	70	20	820	20	30	20	20	50	10	90
Future Volume (veh/h)	50	1150	70	20	820	20	30	20	20	50	10	90
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.99		0.99	0.99		0.99
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	57	1322	80	23	943	23	34	23	23	57	11	103
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	2496	151	15	2509	61	133	81	81	170	25	148
Arrive On Green	0.07	1.00	1.00	0.01	0.48	0.48	0.09	0.09	0.10	0.09	0.09	0.09
Sat Flow, veh/h	1774	3387	205	1774	3528	86	1267	852	852	867	268	1568
Grp Volume(v), veh/h	57	689	713	23	473	493	34	0	46	68	0	103
Grp Sat Flow(s),veh/h/ln	1774	1770	1822	1774	1770	1845	1267	0	1703	1136	0	1568
Q Serve(g_s), s	2.4	0.0	0.0	0.6	12.8	12.8	2.0	0.0	1.9	3.0	0.0	4.8
Cycle Q Clear(g_c), s	2.4	0.0	0.0	0.6	12.8	12.8	6.9	0.0	1.9	4.9	0.0	4.8
Prop In Lane	1.00		0.11	1.00		0.05	1.00		0.50	0.84		1.00
Lane Grp Cap(c), veh/h	61	1304	1343	15	1259	1312	133	0	161	196	0	148
V/C Ratio(X)	0.94	0.53	0.53	1.51	0.38	0.38	0.25	0.00	0.29	0.35	0.00	0.69
Avail Cap(c_a), veh/h	118	1304	1343	118	1259	1312	326	0	420	410	0	387
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.9	0.0	0.0	37.3	9.0	9.0	36.3	0.0	31.5	33.4	0.0	32.9
Incr Delay (d2), s/veh	21.2	1.5	1.5	256.6	0.9	0.8	0.4	0.0	0.4	0.4	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.6	0.6	1.4	6.6	6.8	0.7	0.0	0.9	1.4	0.0	2.1
LnGrp Delay(d),s/veh	56.1	1.5	1.5	300.0	9.9	9.8	36.7	0.0	31.8	33.8	0.0	35.1
LnGrp LOS	E	A	A	F	A	A	D		C	C		D
Approach Vol, veh/h		1459			989			80			171	
Approach Delay, s/veh		3.7			16.6			33.9			34.6	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	59.3		11.1	6.6	57.3		11.1
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	39.5		19.0	5.5	39.5		19.0
Max Q Clear Time (g_c+I1), s	2.6	2.0		8.9	4.4	14.8		6.9
Green Ext Time (p_c), s	0.0	3.5		0.1	0.0	2.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	11.3
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	1220	840	10	10	30
Future Vol, veh/h	20	1220	840	10	10	30
Conflicting Peds, #/hr	0	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	23	1419	977	12	12	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	999	0	-	0	1749	505
Stage 1	-	-	-	-	993	-
Stage 2	-	-	-	-	756	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	695	-	-	-	78	515
Stage 1	-	-	-	-	322	-
Stage 2	-	-	-	-	427	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	688	-	-	-	74	510
Mov Cap-2 Maneuver	-	-	-	-	195	-
Stage 1	-	-	-	-	308	-
Stage 2	-	-	-	-	423	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	16.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	688	-	-	-	363
HCM Lane V/C Ratio	0.034	-	-	-	0.128
HCM Control Delay (s)	10.4	-	-	-	16.4
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.2					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	1220	830	10	10	10
Future Vol, veh/h	10	1220	830	10	10	10
Conflicting Peds, #/hr	13	0	0	13	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	12	1435	976	12	12	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1001	0	-	0	1737	507
Stage 1	-	-	-	-	995	-
Stage 2	-	-	-	-	742	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	693	-	-	-	79	513
Stage 1	-	-	-	-	321	-
Stage 2	-	-	-	-	434	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	684	-	-	-	76	507
Mov Cap-2 Maneuver	-	-	-	-	198	-
Stage 1	-	-	-	-	311	-
Stage 2	-	-	-	-	429	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	18.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	684	-	-	-	285
HCM Lane V/C Ratio	0.017	-	-	-	0.083
HCM Control Delay (s)	10.4	-	-	-	18.8
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	10	0	110	260	0
Future Vol, veh/h	10	10	0	110	260	0
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	10	10	0	113	268	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	387	274	-	0	-	0
Stage 1	274	-	-	-	-	-
Stage 2	113	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	-	-
Pot Cap-1 Maneuver	618	767	0	-	-	-
Stage 1	774	-	0	-	-	-
Stage 2	914	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	611	763	-	-	-	-
Mov Cap-2 Maneuver	611	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	679	-	-
HCM Lane V/C Ratio	-	0.03	-	-
HCM Control Delay (s)	-	10.5	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	30	10	100	240	0
Future Vol, veh/h	10	30	10	100	240	0
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	10	31	10	102	245	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	374	252	252	0	-	0
Stage 1	252	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	629	789	1319	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	906	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	615	784	1310	-	-	-
Mov Cap-2 Maneuver	615	-	-	-	-	-
Stage 1	780	-	-	-	-	-
Stage 2	900	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1310	-	734	-	-
HCM Lane V/C Ratio	0.008	-	0.056	-	-
HCM Control Delay (s)	7.8	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	120	30	80	110	10
Future Vol, veh/h	20	120	30	80	110	10
Conflicting Peds, #/hr	0	0	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	21	126	32	84	116	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	278	130	135	0	-	0
Stage 1	130	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	714	922	1456	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	882	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	686	915	1445	-	-	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	875	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	2.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1445	-	873	-	-
HCM Lane V/C Ratio	0.022	-	0.169	-	-
HCM Control Delay (s)	7.5	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1160	20	30	710	40	20	20	30	140	10	120
Future Volume (veh/h)	60	1160	20	30	710	40	20	20	30	140	10	120
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1881	1900	1881	1881
Adj Flow Rate, veh/h	69	1333	23	34	816	46	23	23	34	161	11	138
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	77	1986	34	25	1796	101	72	50	433	93	3	433
Arrive On Green	0.01	0.18	0.18	0.00	0.17	0.17	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1792	3593	62	1792	3432	193	0	183	1583	0	13	1583
Grp Volume(v), veh/h	69	663	693	34	425	437	46	0	34	172	0	138
Grp Sat Flow(s),veh/h/ln	1792	1787	1868	1792	1787	1838	183	0	1583	13	0	1583
Q Serve(g_s), s	2.9	25.9	25.9	1.1	16.0	16.0	0.0	0.0	1.2	0.0	0.0	5.2
Cycle Q Clear(g_c), s	2.9	25.9	25.9	1.1	16.0	16.0	20.5	0.0	1.2	20.5	0.0	5.2
Prop In Lane	1.00		0.03	1.00		0.11	0.50		1.00	0.94		1.00
Lane Grp Cap(c), veh/h	77	988	1032	25	935	962	122	0	433	96	0	433
V/C Ratio(X)	0.89	0.67	0.67	1.35	0.45	0.45	0.38	0.00	0.08	1.79	0.00	0.32
Avail Cap(c_a), veh/h	239	988	1032	167	935	962	122	0	433	96	0	433
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.8	24.3	24.3	37.3	21.4	21.4	22.6	0.0	20.2	36.8	0.0	21.7
Incr Delay (d2), s/veh	12.1	3.6	3.5	176.9	1.5	1.5	0.7	0.0	0.0	391.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	13.8	14.4	1.8	8.3	8.5	0.7	0.0	0.5	12.5	0.0	2.3
LnGrp Delay(d),s/veh	48.9	27.9	27.8	215.1	22.9	22.9	23.3	0.0	20.3	428.3	0.0	21.8
LnGrp LOS	D	C	C	F	C	C	C		C	F		C
Approach Vol, veh/h		1425			896			80			310	
Approach Delay, s/veh		28.9			30.2			22.0			247.4	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.2	43.3		24.5	5.1	45.4		24.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	10.5	32.5		21.0	7.5	32.5		21.0
Max Q Clear Time (g_c+I1), s	4.9	18.0		22.5	3.1	27.9		22.5
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	1.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	54.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1050	410	10	960	20	410	30	50	200	0	180
Future Volume (veh/h)	40	1050	410	10	960	20	410	30	50	200	0	180
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1710	1676	1676	1676	1676	1676	1710
Adj Flow Rate, veh/h	43	1117	0	11	1021	21	459	0	0	213	0	186
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	1833	820	12	1725	35	514	0	230	238	0	212
Arrive On Green	0.04	0.58	0.00	0.02	1.00	1.00	0.16	0.00	0.00	0.15	0.00	0.15
Sat Flow, veh/h	1597	3185	1425	1597	3189	66	3193	0	1425	1597	0	1425
Grp Volume(v), veh/h	43	1117	0	11	510	532	459	0	0	213	0	186
Grp Sat Flow(s),veh/h/ln	1597	1593	1425	1597	1593	1662	1597	0	1425	1597	0	1425
Q Serve(g_s), s	4.0	34.4	0.0	1.0	0.0	0.0	21.1	0.0	0.0	19.6	0.0	19.2
Cycle Q Clear(g_c), s	4.0	34.4	0.0	1.0	0.0	0.0	21.1	0.0	0.0	19.6	0.0	19.2
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	1833	820	12	861	899	514	0	230	238	0	212
V/C Ratio(X)	0.63	0.61	0.00	0.88	0.59	0.59	0.89	0.00	0.00	0.90	0.00	0.88
Avail Cap(c_a), veh/h	103	1833	820	39	861	899	941	0	420	279	0	249
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.7	20.8	0.0	73.8	0.0	0.0	61.6	0.0	0.0	62.7	0.0	62.6
Incr Delay (d2), s/veh	3.6	1.5	0.0	46.4	3.0	2.9	2.2	0.0	0.0	24.1	0.0	22.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	15.4	0.0	0.6	0.7	0.7	9.5	0.0	0.0	10.3	0.0	8.9
LnGrp Delay(d),s/veh	74.3	22.3	0.0	120.2	3.0	2.9	63.9	0.0	0.0	86.8	0.0	85.3
LnGrp LOS	E	C		F	A	A	E			F		F
Approach Vol, veh/h		1160			1053			459			399	
Approach Delay, s/veh		24.3			4.1			63.9			86.1	
Approach LOS		C			A			E			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	90.3		26.4	10.4	85.1		28.2				
Change Period (Y+Rc), s	3.7	5.3		* 4.2	3.7	5.3		4.2				
Max Green Setting (Gmax), s	4.0	52.6		* 26	10.0	52.6		44.0				
Max Q Clear Time (g_c+I1), s	3.0	36.4		21.6	6.0	2.0		23.1				
Green Ext Time (p_c), s	0.0	7.2		0.5	0.0	12.9		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			31.3									
HCM 2010 LOS			C									
Notes												

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	800	420	330	590	10	190	10	720	0	0	10
Future Volume (veh/h)	15	800	420	330	590	10	190	10	720	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	0	1863	1900
Adj Flow Rate, veh/h	16	833	0	344	615	10	198	10	740	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	4	1093	489	370	1835	30	526	24	860	0	0	518
Arrive On Green	0.00	0.31	0.00	0.21	0.52	0.52	0.33	0.33	0.33	0.00	0.00	0.33
Sat Flow, veh/h	1774	3539	1583	1774	3561	58	1327	74	1583	0	0	1579
Grp Volume(v), veh/h	16	833	0	344	305	320	208	0	740	0	0	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1850	1402	0	1583	0	0	1579
Q Serve(g_s), s	0.2	16.5	0.0	14.8	7.9	7.9	8.9	0.0	25.5	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.2	16.5	0.0	14.8	7.9	7.9	9.2	0.0	25.5	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.03	0.95		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	4	1093	489	370	912	953	550	0	860	0	0	518
V/C Ratio(X)	4.17	0.76	0.00	0.93	0.33	0.34	0.38	0.00	0.86	0.00	0.00	0.02
Avail Cap(c_a), veh/h	228	1366	611	685	912	953	550	0	860	0	0	518
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	38.8	24.3	0.0	30.2	11.0	11.0	20.7	0.0	15.2	0.0	0.0	17.5
Incr Delay (d2), s/veh	1472.8	2.4	0.0	4.7	0.3	0.3	0.4	0.0	8.8	0.0	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	1.7	8.5	0.0	7.7	3.9	4.1	3.6	0.0	15.6	0.0	0.0	0.1
LnGrp Delay(d),s/veh	1511.6	26.7	0.0	34.9	11.3	11.3	21.2	0.0	24.0	0.0	0.0	17.5
LnGrp LOS	F	C		C	B	B	C		C			B
Approach Vol, veh/h		849			969			948			10	
Approach Delay, s/veh		54.6			19.7			23.4			17.5	
Approach LOS		D			B			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.2	28.0		29.5	4.2	44.0		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	16.8	18.5		2.3	2.2	9.9		27.5
Green Ext Time (p_c), s	0.4	5.5		0.0	0.0	5.1		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			31.6
HCM 2010 LOS			C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	1100	0	0	690	80	0	0	120	50	0	110
Future Volume (vph)	160	1100	0	0	690	80	0	0	120	50	0	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			0.99				1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			0.98				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1752	3505			3431				1596	1752		1544
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1752	3505			3431				1596	1752		1544
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	1196	0	0	750	87	0	0	130	54	0	120
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	49	0	0	22
Lane Group Flow (vph)	174	1196	0	0	829	0	0	0	81	54	0	98
Confl. Peds. (#/hr)						10						10
Confl. Bikes (#/hr)						5						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA				Perm	Prot		Perm
Protected Phases	1	6			2					4		
Permitted Phases									2			6
Actuated Green, G (s)	11.1	61.4			46.8				46.8	6.1		61.4
Effective Green, g (s)	11.1	61.4			46.8				46.8	6.1		61.4
Actuated g/C Ratio	0.15	0.82			0.62				0.62	0.08		0.82
Clearance Time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Vehicle Extension (s)	2.0	1.5			1.5				1.5	1.0		1.5
Lane Grp Cap (vph)	259	2869			2140				995	142		1264
v/s Ratio Prot	c0.10	c0.34			0.24					c0.03		
v/s Ratio Perm									0.05			0.06
v/c Ratio	0.67	0.42			0.39				0.08	0.38		0.08
Uniform Delay, d1	30.2	1.9			7.0				5.6	32.7		1.3
Progression Factor	0.82	2.41			1.00				1.00	1.00		1.00
Incremental Delay, d2	4.5	0.4			0.5				0.2	0.6		0.1
Delay (s)	29.3	4.9			7.5				5.7	33.3		1.4
Level of Service	C	A			A				A	C		A
Approach Delay (s)		8.0			7.5			5.7			11.3	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	52.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection						
Int Delay, s/veh	1.8					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	10	80	45	10	50
Future Vol, veh/h	23	10	80	45	10	50
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	13	101	57	13	63

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	224	135	0	0	163	0
Stage 1	135	-	-	-	-	-
Stage 2	89	-	-	-	-	-
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	764	914	-	-	1416	-
Stage 1	891	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	753	910	-	-	1409	-
Mov Cap-2 Maneuver	753	-	-	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	925	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	1.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	795	1409	-
HCM Lane V/C Ratio	-	-	0.053	0.009	-
HCM Control Delay (s)	-	-	9.8	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	0	135	30	10	63
Future Vol, veh/h	20	0	135	30	10	63
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	0	163	36	12	76

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	287	187	0	0	205	0
Stage 1	187	-	-	-	-	-
Stage 2	100	-	-	-	-	-
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	703	855	-	-	1366	-
Stage 1	845	-	-	-	-	-
Stage 2	924	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	692	850	-	-	1358	-
Mov Cap-2 Maneuver	692	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	692	1358	-
HCM Lane V/C Ratio	-	-	0.035	0.009	-
HCM Control Delay (s)	-	-	10.4	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	54	926	20	10	1198	10	0	0	10	0	0	32
Future Vol, veh/h	54	926	20	10	1198	10	0	0	10	0	0	32
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	60	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	2	4
Mvmt Flow	59	1018	22	11	1316	11	0	0	11	0	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1334	0	0	1040	0	0	-	-	520	-	-	671
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	4.18	-	-	-	-	6.98	-	-	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	2.24	-	-	-	-	3.34	-	-	3.34
Pot Cap-1 Maneuver	503	-	-	653	-	-	0	0	496	0	0	394
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	500	-	-	653	-	-	-	-	496	-	-	391
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	12.4	15.1
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	496	500	-	-	653	-	-	391
HCM Lane V/C Ratio	0.022	0.119	-	-	0.017	-	-	0.09
HCM Control Delay (s)	12.4	13.2	-	-	10.6	-	-	15.1
HCM Lane LOS	B	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.1	0.4	-	-	0.1	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	751	80	10	1119	67	5	21	20	21	0	39
Future Volume (veh/h)	92	751	80	10	1119	67	5	21	20	21	0	39
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	0.98		0.97	0.97		0.96
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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1900	1845	1845
Adj Flow Rate, veh/h	99	808	86	11	1203	72	5	23	22	23	0	42
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	111	2370	252	3	2279	136	138	49	47	161	0	87
Arrive On Green	0.13	1.00	1.00	0.00	1.00	1.00	0.06	0.06	0.07	0.06	0.00	0.06
Sat Flow, veh/h	1757	3192	340	1757	3355	201	1317	853	816	712	0	1510
Grp Volume(v), veh/h	99	444	450	11	628	647	5	0	45	23	0	42
Grp Sat Flow(s),veh/h/ln	1757	1752	1779	1757	1752	1803	1317	0	1669	712	0	1510
Q Serve(g_s), s	3.3	0.0	0.0	0.1	0.0	0.0	0.2	0.0	1.6	1.0	0.0	1.6
Cycle Q Clear(g_c), s	3.3	0.0	0.0	0.1	0.0	0.0	2.8	0.0	1.6	2.6	0.0	1.6
Prop In Lane	1.00		0.19	1.00		0.11	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	111	1301	1321	3	1190	1225	138	0	96	161	0	87
V/C Ratio(X)	0.89	0.34	0.34	3.76	0.53	0.53	0.04	0.00	0.47	0.14	0.00	0.49
Avail Cap(c_a), veh/h	146	1301	1321	146	1190	1225	469	0	515	489	0	466
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	0.0	30.0	0.0	0.0	29.3	0.0	27.3	28.7	0.0	27.4
Incr Delay (d2), s/veh	31.9	0.7	0.7	1304.2	1.7	1.6	0.0	0.0	1.3	0.1	0.0	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	52.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.3	0.3	1.1	0.6	0.6	0.1	0.0	0.8	0.4	0.0	0.7
LnGrp Delay(d),s/veh	57.9	0.7	0.7	1386.4	1.7	1.6	29.3	0.0	28.6	28.8	0.0	29.0
LnGrp LOS	E	A	A	F	A	A	C		C	C		C
Approach Vol, veh/h		993			1286			50			65	
Approach Delay, s/veh		6.4			13.5			28.7			28.9	
Approach LOS		A			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.0	48.6		7.4	7.8	44.8		7.4				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	5.5	24.5		19.0	5.5	24.5		19.0				
Max Q Clear Time (g_c+I1), s	2.1	2.0		4.8	5.3	2.0		4.6				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	2.9		0.0				
Intersection Summary												
HCM 2010 Ctrl Delay			11.3									
HCM 2010 LOS			B									

Intersection						
Int Delay, s/veh	0.7					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	755	1216	10	20	20
Future Vol, veh/h	30	755	1216	10	20	20
Conflicting Peds, #/hr	9	0	0	9	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	32	812	1308	11	22	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1328	0	-	0	1793	669
Stage 1	-	-	-	-	1323	-
Stage 2	-	-	-	-	470	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	510	-	-	-	71	398
Stage 1	-	-	-	-	211	-
Stage 2	-	-	-	-	592	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	506	-	-	-	65	395
Mov Cap-2 Maneuver	-	-	-	-	155	-
Stage 1	-	-	-	-	196	-
Stage 2	-	-	-	-	587	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	25
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	506	-	-	-	223
HCM Lane V/C Ratio	0.064	-	-	-	0.193
HCM Control Delay (s)	12.6	-	-	-	25
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	0.7

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	755	1206	20	10	10
Future Vol, veh/h	10	755	1206	20	10	10
Conflicting Peds, #/hr	10	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	11	803	1283	21	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1314	0	-	0	1728	662
Stage 1	-	-	-	-	1304	-
Stage 2	-	-	-	-	424	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	517	-	-	-	79	402
Stage 1	-	-	-	-	216	-
Stage 2	-	-	-	-	625	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	512	-	-	-	76	398
Mov Cap-2 Maneuver	-	-	-	-	167	-
Stage 1	-	-	-	-	209	-
Stage 2	-	-	-	-	619	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	21.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	512	-	-	-	235
HCM Lane V/C Ratio	0.021	-	-	-	0.091
HCM Control Delay (s)	12.2	-	-	-	21.8
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	10	6	253	125	10
Future Vol, veh/h	10	10	6	253	125	10
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	11	11	7	278	137	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	442	150	155	0	-	0
Stage 1	150	-	-	-	-	-
Stage 2	292	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	575	899	1431	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	760	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	564	893	1421	-	-	-
Mov Cap-2 Maneuver	564	-	-	-	-	-
Stage 1	869	-	-	-	-	-
Stage 2	755	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	0.2	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1421	-	691	-	-
HCM Lane V/C Ratio	0.005	-	0.032	-	-
HCM Control Delay (s)	7.5	-	10.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.4					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	35	79	162	111	8
Future Vol, veh/h	1	35	79	162	111	8
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	38	87	178	122	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	485	133	137	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	352	-	-	-	-	-
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	541	916	1447	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	712	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	499	911	1439	-	-	-
Mov Cap-2 Maneuver	499	-	-	-	-	-
Stage 1	828	-	-	-	-	-
Stage 2	708	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	2.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1439	-	891	-	-
HCM Lane V/C Ratio	0.06	-	0.044	-	-
HCM Control Delay (s)	7.7	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.6					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	18	52	81	80	10
Future Vol, veh/h	9	18	52	81	80	10
Conflicting Peds, #/hr	0	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	100	100	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	21	52	81	94	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	303	118	124	0	-	0
Stage 1	118	-	-	-	-	-
Stage 2	185	-	-	-	-	-
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	689	934	1463	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	847	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	641	918	1438	-	-	-
Mov Cap-2 Maneuver	641	-	-	-	-	-
Stage 1	858	-	-	-	-	-
Stage 2	833	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1438	-	802	-	-
HCM Lane V/C Ratio	0.036	-	0.04	-	-
HCM Control Delay (s)	7.6	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	640	380	257	676	10	252	10	968	0	0	10
Future Volume (veh/h)	0	640	380	257	676	10	252	10	968	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.99		1.00	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	0	1845	1900
Adj Flow Rate, veh/h	0	660	0	265	697	10	260	10	998	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	3	972	435	293	1779	26	604	19	866	0	0	587
Arrive On Green	0.00	0.28	0.00	0.17	0.50	0.50	0.38	0.38	0.38	0.00	0.00	0.39
Sat Flow, veh/h	1757	3505	1568	1757	3535	51	1320	51	1568	0	0	1553
Grp Volume(v), veh/h	0	660	0	265	345	362	270	0	998	0	0	10
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1833	1371	0	1568	0	0	1553
Q Serve(g_s), s	0.0	11.3	0.0	10.0	8.2	8.2	10.2	0.0	25.5	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.0	11.3	0.0	10.0	8.2	8.2	10.5	0.0	25.5	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.03	0.96		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	3	972	435	293	882	922	623	0	866	0	0	587
V/C Ratio(X)	0.00	0.68	0.00	0.91	0.39	0.39	0.43	0.00	1.15	0.00	0.00	0.02
Avail Cap(c_a), veh/h	261	1559	698	782	882	922	623	0	866	0	0	587
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.7	0.0	27.6	10.4	10.4	16.4	0.0	15.1	0.0	0.0	13.0
Incr Delay (d2), s/veh	0.0	1.2	0.0	4.3	0.4	0.4	0.5	0.0	81.8	0.0	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	0.0	5.6	0.0	5.2	4.0	4.2	4.0	0.0	35.6	0.0	0.0	0.1
LnGrp Delay(d),s/veh	0.0	22.9	0.0	31.8	10.8	10.8	16.9	0.0	96.9	0.0	0.0	13.0
LnGrp LOS		C		C	B	B	B		F			B
Approach Vol, veh/h		660			972			1268			10	
Approach Delay, s/veh		22.9			16.5			79.9			13.0	
Approach LOS		C			B			E			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.2	22.7		29.5	0.0	37.9		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	12.0	13.3		2.3	0.0	10.2		27.5
Green Ext Time (p_c), s	0.3	5.4		0.0	0.0	5.8		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			45.6
HCM 2010 LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	875	540	10	1170	30	370	59	55	80	0	113
Future Volume (veh/h)	123	875	540	10	1170	30	370	59	55	80	0	113
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	129	921	0	11	1232	32	433	0	0	84	0	119
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	151	1165	521	495	1889	49	509	0	227	165	0	148
Arrive On Green	0.09	0.33	0.00	0.56	1.00	1.00	0.14	0.00	0.00	0.09	0.00	0.09
Sat Flow, veh/h	1757	3505	1568	1757	3487	91	3514	0	1568	1757	0	1568
Grp Volume(v), veh/h	129	921	0	11	619	645	433	0	0	84	0	119
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1825	1757	0	1568	1757	0	1568
Q Serve(g_s), s	8.7	28.6	0.0	0.3	0.0	0.0	14.4	0.0	0.0	5.5	0.0	8.9
Cycle Q Clear(g_c), s	8.7	28.6	0.0	0.3	0.0	0.0	14.4	0.0	0.0	5.5	0.0	8.9
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	151	1165	521	495	949	989	509	0	227	165	0	148
V/C Ratio(X)	0.85	0.79	0.00	0.02	0.65	0.65	0.85	0.00	0.00	0.51	0.00	0.81
Avail Cap(c_a), veh/h	230	1165	521	495	949	989	1001	0	447	208	0	186
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.1	36.3	0.0	18.9	0.0	0.0	50.0	0.0	0.0	51.7	0.0	53.4
Incr Delay (d2), s/veh	11.5	5.5	0.0	0.0	3.5	3.3	1.6	0.0	0.0	0.9	0.0	14.8
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	4.7	14.7	0.0	0.2	0.9	0.9	7.1	0.0	0.0	2.7	0.0	4.5
LnGrp Delay(d),s/veh	65.6	41.8	0.0	18.9	3.5	3.3	51.6	0.0	0.0	52.6	0.0	68.2
LnGrp LOS	E	D		B	A	A	D			D		E
Approach Vol, veh/h		1050			1275			433			203	
Approach Delay, s/veh		44.7			3.5			51.6			61.7	
Approach LOS		D			A			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.4	43.9		15.3	14.3	69.0		21.4
Change Period (Y+Rc), s	5.3	* 5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	12.0	* 39		* 14	16.0	38.6		34.0
Max Q Clear Time (g_c+I1), s	12.3	30.6		10.9	10.7	2.0		16.4
Green Ext Time (p_c), s	0.0	3.8		0.2	0.1	15.8		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	29.2
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	651	10	40	1131	110	15	25	40	44	10	91
Future Volume (veh/h)	104	651	10	40	1131	110	15	25	40	44	10	91
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	108	678	10	42	1178	115	16	26	42	46	10	95
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	123	1704	25	30	1382	135	88	107	470	122	16	470
Arrive On Green	0.14	0.96	0.96	0.02	0.43	0.43	0.30	0.30	0.30	0.30	0.30	0.30
Sat Flow, veh/h	1757	3534	52	1757	3219	314	17	356	1563	42	54	1563
Grp Volume(v), veh/h	108	336	352	42	640	653	42	0	42	56	0	95
Grp Sat Flow(s),veh/h/ln	1757	1752	1834	1757	1752	1780	373	0	1563	95	0	1563
Q Serve(g_s), s	3.6	0.7	0.7	1.0	19.7	19.8	0.4	0.0	1.2	0.7	0.0	2.7
Cycle Q Clear(g_c), s	3.6	0.7	0.7	1.0	19.7	19.8	17.9	0.0	1.2	18.0	0.0	2.7
Prop In Lane	1.00		0.03	1.00		0.18	0.38		1.00	0.82		1.00
Lane Grp Cap(c), veh/h	123	845	884	30	752	764	195	0	470	138	0	470
V/C Ratio(X)	0.88	0.40	0.40	1.39	0.85	0.85	0.22	0.00	0.09	0.41	0.00	0.20
Avail Cap(c_a), veh/h	176	845	884	205	752	764	259	0	534	195	0	534
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.84	0.84	0.84	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.6	0.6	0.6	29.5	15.4	15.4	16.8	0.0	15.1	25.7	0.0	15.6
Incr Delay (d2), s/veh	22.0	1.4	1.3	189.6	10.0	10.1	0.2	0.0	0.0	0.7	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	2.5	0.5	0.5	2.1	11.5	11.7	0.5	0.0	0.5	0.9	0.0	1.2
LnGrp Delay(d),s/veh	47.6	2.0	1.9	219.1	25.4	25.5	17.0	0.0	15.1	26.4	0.0	15.7
LnGrp LOS	D	A	A	F	C	C	B		B	C		B
Approach Vol, veh/h		796			1335			84			151	
Approach Delay, s/veh		8.1			31.5			16.0			19.7	
Approach LOS		A			C			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	29.3		22.5	5.0	32.4		22.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	6.5	20.5		21.0	7.5	20.5		21.0
Max Q Clear Time (g_c+I1), s	5.6	21.8		19.9	3.0	2.7		20.0
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	1.3		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		22.4
HCM 2010 LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	578	0	0	1050	40	0	0	50	140	0	170
Future Volume (vph)	100	578	0	0	1050	40	0	0	50	140	0	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0				4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			0.99				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1752	3505			3480				1596	1752		1543
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1752	3505			3480				1596	1752		1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	628	0	0	1141	43	0	0	54	152	0	185
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	24	0	0	50
Lane Group Flow (vph)	109	628	0	0	1181	0	0	0	30	152	0	135
Confl. Peds. (#/hr)						10						10
Confl. Bikes (#/hr)			6			5						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA				Perm	Prot		Perm
Protected Phases	1	6			2					4		
Permitted Phases									2			6
Actuated Green, G (s)	7.2	43.7			33.0				33.0	8.8		43.7
Effective Green, g (s)	6.7	43.7			33.0				33.0	8.3		43.7
Actuated g/C Ratio	0.11	0.73			0.55				0.55	0.14		0.73
Clearance Time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Vehicle Extension (s)	2.0	1.5			1.5				1.5	1.0		1.5
Lane Grp Cap (vph)	195	2552			1914				877	242		1123
v/s Ratio Prot	c0.06	0.18			c0.34					c0.09		
v/s Ratio Perm									0.02			0.09
v/c Ratio	0.56	0.25			0.62				0.03	0.63		0.12
Uniform Delay, d1	25.3	2.7			9.2				6.2	24.4		2.4
Progression Factor	1.04	1.37			1.00				1.00	1.00		1.00
Incremental Delay, d2	1.9	0.2			1.5				0.1	3.6		0.2
Delay (s)	28.3	3.9			10.7				6.3	28.0		2.6
Level of Service	C	A			B				A	C		A
Approach Delay (s)		7.5			10.7			6.3			14.1	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.61		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	10	70	53	10	60
Future Vol, veh/h	44	10	70	53	10	60
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	46	11	74	56	11	63

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	190	105	0	0	133	0
Stage 1	105	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	801	952	-	-	1458	-
Stage 1	922	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	792	949	-	-	1454	-
Mov Cap-2 Maneuver	792	-	-	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	933	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	817	1454	-
HCM Lane V/C Ratio	-	-	0.07	0.007	-
HCM Control Delay (s)	-	-	9.7	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection						
Int Delay, s/veh	0.7					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	0	113	10	10	114
Future Vol, veh/h	10	0	113	10	10	114
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	123	11	11	124

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	275	129	0	0	134	0
Stage 1	129	-	-	-	-	-
Stage 2	146	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	719	926	-	-	1463	-
Stage 1	902	-	-	-	-	-
Stage 2	886	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	713	926	-	-	1463	-
Mov Cap-2 Maneuver	713	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	879	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	713	1463	-
HCM Lane V/C Ratio	-	-	0.015	0.007	-
HCM Control Delay (s)	-	-	10.1	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	1275	20	20	1005	10	0	0	20	0	0	33
Future Vol, veh/h	32	1275	20	20	1005	10	0	0	20	0	0	33
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	60	-	-	-	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	1466	23	23	1155	11	0	0	23	0	0	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1173	0	0	1489	0	0	-	-	745	2021	-	590
Stage 1	-	-	-	-	-	-	-	-	-	1214	-	-
Stage 2	-	-	-	-	-	-	-	-	-	807	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	7.54	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.54	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.54	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	3.52	-	3.32
Pot Cap-1 Maneuver	591	-	-	447	-	-	0	0	357	34	0	451
Stage 1	-	-	-	-	-	-	0	0	-	193	0	-
Stage 2	-	-	-	-	-	-	0	0	-	341	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	587	-	-	447	-	-	-	-	357	29	-	448
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	29	-	-
Stage 1	-	-	-	-	-	-	-	-	-	180	-	-
Stage 2	-	-	-	-	-	-	-	-	-	299	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.3	15.8	13.8
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	357	587	-	-	447	-	-	-	448
HCM Lane V/C Ratio	0.064	0.063	-	-	0.051	-	-	-	0.085
HCM Control Delay (s)	15.8	11.5	-	-	13.5	-	-	0	13.8
HCM Lane LOS	C	B	-	-	B	-	-	A	B
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.2	-	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	1156	70	20	832	22	30	21	20	62	10	111
Future Volume (veh/h)	59	1156	70	20	832	22	30	21	20	62	10	111
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.99	0.99		0.99
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	68	1329	80	23	956	25	34	24	23	71	11	128
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	2462	148	15	2440	64	131	91	88	186	23	165
Arrive On Green	0.08	1.00	1.00	0.00	0.23	0.23	0.10	0.10	0.11	0.10	0.10	0.10
Sat Flow, veh/h	1774	3389	204	1774	3521	92	1239	872	835	917	215	1570
Grp Volume(v), veh/h	68	693	716	23	480	501	34	0	47	82	0	128
Grp Sat Flow(s),veh/h/ln	1774	1770	1823	1774	1770	1844	1239	0	1707	1133	0	1570
Q Serve(g_s), s	2.8	0.0	0.0	0.6	17.3	17.3	2.1	0.0	1.9	3.9	0.0	6.0
Cycle Q Clear(g_c), s	2.8	0.0	0.0	0.6	17.3	17.3	7.8	0.0	1.9	5.8	0.0	6.0
Prop In Lane	1.00		0.11	1.00		0.05	1.00		0.49	0.87		1.00
Lane Grp Cap(c), veh/h	75	1286	1324	15	1226	1277	131	0	179	208	0	165
V/C Ratio(X)	0.91	0.54	0.54	1.51	0.39	0.39	0.26	0.00	0.26	0.39	0.00	0.78
Avail Cap(c_a), veh/h	118	1286	1324	118	1226	1277	306	0	421	406	0	387
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.2	0.0	0.0	37.4	15.5	15.5	36.4	0.0	30.8	33.2	0.0	32.7
Incr Delay (d2), s/veh	29.5	1.6	1.6	256.6	0.9	0.9	0.4	0.0	0.3	0.4	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.6	0.6	1.4	8.8	9.2	0.7	0.0	0.9	1.7	0.0	2.7
LnGrp Delay(d),s/veh	63.7	1.6	1.6	300.1	16.5	16.4	36.8	0.0	31.1	33.7	0.0	35.7
LnGrp LOS	E	A	A	F	B	B	D		C	C		D
Approach Vol, veh/h		1477			1004			81			210	
Approach Delay, s/veh		4.5			23.0			33.5			34.9	
Approach LOS		A			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	58.5		11.9	7.2	56.0		11.9
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	39.5		19.0	5.5	39.5		19.0
Max Q Clear Time (g_c+I1), s	2.6	2.0		9.8	4.8	19.3		8.0
Green Ext Time (p_c), s	0.0	3.5		0.1	0.0	2.0		0.2

Intersection Summary			
HCM 2010 Ctrl Delay			14.3
HCM 2010 LOS			B

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	1238	854	10	10	30
Future Vol, veh/h	20	1238	854	10	10	30
Conflicting Peds, #/hr	0	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	23	1440	993	12	12	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1015	0	-	0	1775	513
Stage 1	-	-	-	-	1009	-
Stage 2	-	-	-	-	766	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	685	-	-	-	75	509
Stage 1	-	-	-	-	315	-
Stage 2	-	-	-	-	422	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	678	-	-	-	71	504
Mov Cap-2 Maneuver	-	-	-	-	191	-
Stage 1	-	-	-	-	301	-
Stage 2	-	-	-	-	418	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	16.6
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	678	-	-	-	358
HCM Lane V/C Ratio	0.034	-	-	-	0.13
HCM Control Delay (s)	10.5	-	-	-	16.6
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	1238	844	10	10	10
Future Vol, veh/h	10	1238	844	10	10	10
Conflicting Peds, #/hr	13	0	0	13	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	12	1456	993	12	12	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1018	0	-	0	1764	516
Stage 1	-	-	-	-	1012	-
Stage 2	-	-	-	-	752	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	683	-	-	-	76	507
Stage 1	-	-	-	-	314	-
Stage 2	-	-	-	-	429	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	675	-	-	-	73	501
Mov Cap-2 Maneuver	-	-	-	-	194	-
Stage 1	-	-	-	-	305	-
Stage 2	-	-	-	-	424	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	19
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	675	-	-	-	280
HCM Lane V/C Ratio	0.017	-	-	-	0.084
HCM Control Delay (s)	10.4	-	-	-	19
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	10	0	124	279	0
Future Vol, veh/h	10	10	0	124	279	0
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	10	10	0	128	288	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	422	294	-	0	-	0
Stage 1	294	-	-	-	-	-
Stage 2	128	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	-	-
Pot Cap-1 Maneuver	590	748	0	-	-	-
Stage 1	759	-	0	-	-	-
Stage 2	900	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	583	744	-	-	-	-
Mov Cap-2 Maneuver	583	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	895	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	654	-	-
HCM Lane V/C Ratio	-	0.032	-	-
HCM Control Delay (s)	-	10.7	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	59	50	101	241	0
Future Vol, veh/h	7	59	50	101	241	0
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	7	60	51	103	246	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	458	253	253	0	-	0
Stage 1	253	-	-	-	-	-
Stage 2	205	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	563	788	1318	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	832	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	533	783	1309	-	-	-
Mov Cap-2 Maneuver	533	-	-	-	-	-
Stage 1	753	-	-	-	-	-
Stage 2	826	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	2.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1309	-	746	-	-
HCM Lane V/C Ratio	0.039	-	0.09	-	-
HCM Control Delay (s)	7.9	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	110	4	81	110	10
Future Vol, veh/h	19	110	4	81	110	10
Conflicting Peds, #/hr	0	0	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	20	116	4	85	116	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	223	130	135	0	-	0
Stage 1	130	-	-	-	-	-
Stage 2	93	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	767	922	1456	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	933	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	752	915	1445	-	-	-
Mov Cap-2 Maneuver	752	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	926	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1445	-	887	-	-
HCM Lane V/C Ratio	0.003	-	0.153	-	-
HCM Control Delay (s)	7.5	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	806	420	340	598	10	190	10	731	0	0	10
Future Volume (veh/h)	15	806	420	340	598	10	190	10	731	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	0	1863	1900
Adj Flow Rate, veh/h	16	840	0	354	623	10	198	10	761	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	4	1093	489	380	1855	30	520	24	863	0	0	512
Arrive On Green	0.00	0.31	0.00	0.21	0.52	0.52	0.32	0.32	0.32	0.00	0.00	0.33
Sat Flow, veh/h	1774	3539	1583	1774	3562	57	1327	74	1583	0	0	1579
Grp Volume(v), veh/h	16	840	0	354	309	324	208	0	761	0	0	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1850	1400	0	1583	0	0	1579
Q Serve(g_s), s	0.2	16.9	0.0	15.4	8.0	8.0	9.1	0.0	25.5	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.2	16.9	0.0	15.4	8.0	8.0	9.4	0.0	25.5	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.03	0.95		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	4	1093	489	380	922	963	544	0	863	0	0	512
V/C Ratio(X)	3.95	0.77	0.00	0.93	0.34	0.34	0.38	0.00	0.88	0.00	0.00	0.02
Avail Cap(c_a), veh/h	226	1350	604	677	922	963	544	0	863	0	0	512
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	39.2	24.6	0.0	30.3	10.9	10.9	21.2	0.0	15.7	0.0	0.0	17.9
Incr Delay (d2), s/veh	1371.5	2.5	0.0	6.5	0.3	0.3	0.4	0.0	10.6	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	8.7	0.0	8.2	3.9	4.1	3.6	0.0	16.9	0.0	0.0	0.1
LnGrp Delay(d),s/veh	1410.7	27.2	0.0	36.9	11.2	11.2	21.7	0.0	26.3	0.0	0.0	17.9
LnGrp LOS	F	C		D	B	B	C		C			B
Approach Vol, veh/h		856			987			969			10	
Approach Delay, s/veh		53.0			20.4			25.3			17.9	
Approach LOS		D			C			C			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.8	28.3		29.5	4.2	45.0		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	17.4	18.9		2.3	2.2	10.0		27.5
Green Ext Time (p_c), s	0.4	5.4		0.0	0.0	5.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	32.0
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	1065	410	10	988	20	410	31	52	200	0	184
Future Volume (veh/h)	42	1065	410	10	988	20	410	31	52	200	0	184
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1710	1676	1676	1676	1676	1676	1710
Adj Flow Rate, veh/h	45	1133	0	11	1051	21	460	0	0	213	0	196
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	1819	814	12	1710	34	515	0	230	244	0	218
Arrive On Green	0.04	0.57	0.00	0.02	1.00	1.00	0.16	0.00	0.00	0.15	0.00	0.15
Sat Flow, veh/h	1597	3185	1425	1597	3191	64	3193	0	1425	1597	0	1425
Grp Volume(v), veh/h	45	1133	0	11	524	548	460	0	0	213	0	196
Grp Sat Flow(s),veh/h/ln	1597	1593	1425	1597	1593	1662	1597	0	1425	1597	0	1425
Q Serve(g_s), s	4.2	35.5	0.0	1.0	0.0	0.0	21.2	0.0	0.0	19.6	0.0	20.3
Cycle Q Clear(g_c), s	4.2	35.5	0.0	1.0	0.0	0.0	21.2	0.0	0.0	19.6	0.0	20.3
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	1819	814	12	853	891	515	0	230	244	0	218
V/C Ratio(X)	0.65	0.62	0.00	0.88	0.61	0.61	0.89	0.00	0.00	0.87	0.00	0.90
Avail Cap(c_a), veh/h	103	1819	814	39	853	891	941	0	420	279	0	249
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.7	21.4	0.0	73.8	0.0	0.0	61.6	0.0	0.0	62.1	0.0	62.5
Incr Delay (d2), s/veh	3.9	1.6	0.0	46.4	3.3	3.2	2.2	0.0	0.0	20.9	0.0	27.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	16.0	0.0	0.6	0.8	0.8	9.5	0.0	0.0	10.1	0.0	9.7
LnGrp Delay(d),s/veh	74.5	23.0	0.0	120.2	3.3	3.2	63.8	0.0	0.0	83.0	0.0	90.3
LnGrp LOS	E	C		F	A	A	E			F		F
Approach Vol, veh/h		1178			1083			460			409	
Approach Delay, s/veh		25.0			4.4			63.8			86.5	
Approach LOS		C			A			E			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	89.7		26.9	10.5	84.4		28.2				
Change Period (Y+Rc), s	3.7	5.3		* 4.2	3.7	5.3		4.2				
Max Green Setting (Gmax), s	4.0	52.6		* 26	10.0	52.6		44.0				
Max Q Clear Time (g_c+I1), s	3.0	37.5		22.3	6.2	2.0		23.2				
Green Ext Time (p_c), s	0.0	7.0		0.5	0.0	13.5		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			31.6									
HCM 2010 LOS			C									
Notes												

User approved volume balancing among the lanes for turning movement.

* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	1171	21	30	711	45	20	23	30	137	9	125
Future Volume (veh/h)	66	1171	21	30	711	45	20	23	30	137	9	125
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1881	1900	1881	1881
Adj Flow Rate, veh/h	76	1346	24	34	817	52	23	26	34	157	10	144
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	87	1984	35	25	1764	112	71	57	433	93	3	433
Arrive On Green	0.02	0.18	0.18	0.00	0.17	0.17	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1792	3591	64	1792	3404	217	0	207	1583	0	12	1583
Grp Volume(v), veh/h	76	670	700	34	429	440	49	0	34	167	0	144
Grp Sat Flow(s),veh/h/ln	1792	1787	1867	1792	1787	1833	207	0	1583	12	0	1583
Q Serve(g_s), s	3.2	26.2	26.3	1.1	16.2	16.2	0.0	0.0	1.2	0.0	0.0	5.5
Cycle Q Clear(g_c), s	3.2	26.2	26.3	1.1	16.2	16.2	20.5	0.0	1.2	20.5	0.0	5.5
Prop In Lane	1.00		0.03	1.00		0.12	0.47		1.00	0.94		1.00
Lane Grp Cap(c), veh/h	87	988	1032	25	926	950	127	0	433	96	0	433
V/C Ratio(X)	0.87	0.68	0.68	1.35	0.46	0.46	0.39	0.00	0.08	1.73	0.00	0.33
Avail Cap(c_a), veh/h	239	988	1032	167	926	950	127	0	433	96	0	433
HCM Platoon Ratio	0.33	0.33	0.33	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.95	0.95	0.95	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.7	24.4	24.4	37.3	21.7	21.7	22.5	0.0	20.2	36.8	0.0	21.8
Incr Delay (d2), s/veh	9.9	3.7	3.6	176.9	1.6	1.5	0.7	0.0	0.0	369.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	14.0	14.6	1.8	8.4	8.7	0.8	0.0	0.5	11.9	0.0	2.4
LnGrp Delay(d),s/veh	46.6	28.2	28.0	215.0	23.3	23.2	23.3	0.0	20.3	406.5	0.0	21.9
LnGrp LOS	D	C	C	F	C	C	C		C	F		C
Approach Vol, veh/h		1446			903			83			311	
Approach Delay, s/veh		29.1			30.5			22.0			228.4	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.6	42.9		24.5	5.1	45.4		24.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	10.5	32.5		21.0	7.5	32.5		21.0
Max Q Clear Time (g_c+I1), s	5.2	18.2		22.5	3.1	28.3		22.5
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	1.6		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	51.9
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	1108	0	0	696	80	0	0	120	50	0	110
Future Volume (vph)	160	1108	0	0	696	80	0	0	120	50	0	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0				4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			0.99				1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			0.98				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1752	3505			3432				1596	1752		1544
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1752	3505			3432				1596	1752		1544
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	1204	0	0	757	87	0	0	130	54	0	120
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	49	0	0	22
Lane Group Flow (vph)	174	1204	0	0	836	0	0	0	81	54	0	98
Confl. Peds. (#/hr)						10						10
Confl. Bikes (#/hr)						5						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA				Perm	Prot		Perm
Protected Phases	1	6			2					4		
Permitted Phases									2			6
Actuated Green, G (s)	11.2	61.4			46.7				46.7	6.1		61.4
Effective Green, g (s)	10.7	61.4			46.7				46.7	5.6		61.4
Actuated g/C Ratio	0.14	0.82			0.62				0.62	0.07		0.82
Clearance Time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Vehicle Extension (s)	2.0	1.5			1.5				1.5	1.0		1.5
Lane Grp Cap (vph)	249	2869			2136				993	130		1264
v/s Ratio Prot	c0.10	c0.34			0.24					c0.03		
v/s Ratio Perm									0.05			0.06
v/c Ratio	0.70	0.42			0.39				0.08	0.42		0.08
Uniform Delay, d1	30.6	1.9			7.1				5.6	33.1		1.3
Progression Factor	0.82	2.43			1.00				1.00	1.00		1.00
Incremental Delay, d2	5.7	0.4			0.5				0.2	0.8		0.1
Delay (s)	30.7	4.9			7.6				5.8	33.9		1.4
Level of Service	C	A			A				A	C		A
Approach Delay (s)		8.2			7.6			5.8			11.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	52.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Intersection						
Int Delay, s/veh	1.8					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	10	80	40	10	50
Future Vol, veh/h	20	10	80	40	10	50
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	13	101	51	13	63

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	221	132	0	0	157	0
Stage 1	132	-	-	-	-	-
Stage 2	89	-	-	-	-	-
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	767	917	-	-	1423	-
Stage 1	894	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	755	913	-	-	1416	-
Mov Cap-2 Maneuver	755	-	-	-	-	-
Stage 1	890	-	-	-	-	-
Stage 2	925	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	1.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	801	1416	-
HCM Lane V/C Ratio	-	-	0.047	0.009	-
HCM Control Delay (s)	-	-	9.7	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection						
Int Delay, s/veh	1.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	0	130	30	10	60
Future Vol, veh/h	20	0	130	30	10	60
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	0	157	36	12	72

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	277	181	0	0	199	0
Stage 1	181	-	-	-	-	-
Stage 2	96	-	-	-	-	-
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	713	862	-	-	1373	-
Stage 1	850	-	-	-	-	-
Stage 2	928	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	702	857	-	-	1365	-
Mov Cap-2 Maneuver	702	-	-	-	-	-
Stage 1	845	-	-	-	-	-
Stage 2	920	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.3	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	702	1365	-
HCM Lane V/C Ratio	-	-	0.034	0.009	-
HCM Control Delay (s)	-	-	10.3	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	50	1030	20	10	1350	10	0	0	10	0	0	30
Future Vol, veh/h	50	1030	20	10	1350	10	0	0	10	0	0	30
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	60	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	2	4
Mvmt Flow	55	1132	22	11	1484	11	0	0	11	0	0	33

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1502	0	0	1154	0	0	-	-	577	-	-	755
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	4.18	-	-	-	-	6.98	-	-	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	2.24	-	-	-	-	3.34	-	-	3.34
Pot Cap-1 Maneuver	432	-	-	590	-	-	0	0	455	0	0	347
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	429	-	-	590	-	-	-	-	455	-	-	345
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	13.1	16.5
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	455	429	-	-	590	-	-	345
HCM Lane V/C Ratio	0.024	0.128	-	-	0.019	-	-	0.096
HCM Control Delay (s)	13.1	14.6	-	-	11.2	-	-	16.5
HCM Lane LOS	B	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.1	0.4	-	-	0.1	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	850	80	10	1270	40	10	20	20	20	0	30
Future Volume (veh/h)	60	850	80	10	1270	40	10	20	20	20	0	30
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	0.98		0.97	0.97		0.96
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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1900	1845	1845
Adj Flow Rate, veh/h	65	914	86	11	1366	43	11	22	22	22	0	32
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	67	2403	226	3	2443	77	139	47	47	161	0	86
Arrive On Green	0.08	1.00	1.00	0.00	1.00	1.00	0.06	0.06	0.07	0.06	0.00	0.06
Sat Flow, veh/h	1757	3234	304	1757	3466	109	1328	833	833	720	0	1510
Grp Volume(v), veh/h	65	495	505	11	690	719	11	0	44	22	0	32
Grp Sat Flow(s),veh/h/ln	1757	1752	1786	1757	1752	1822	1328	0	1665	720	0	1510
Q Serve(g_s), s	2.2	0.0	0.0	0.1	0.0	0.0	0.5	0.0	1.5	1.0	0.0	1.2
Cycle Q Clear(g_c), s	2.2	0.0	0.0	0.1	0.0	0.0	3.0	0.0	1.5	2.5	0.0	1.2
Prop In Lane	1.00		0.17	1.00		0.06	1.00		0.50	1.00		1.00
Lane Grp Cap(c), veh/h	67	1302	1327	3	1236	1285	139	0	95	161	0	86
V/C Ratio(X)	0.97	0.38	0.38	3.76	0.56	0.56	0.08	0.00	0.47	0.14	0.00	0.37
Avail Cap(c_a), veh/h	146	1302	1327	146	1236	1285	474	0	513	490	0	466
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.7	0.0	0.0	30.0	0.0	0.0	29.4	0.0	27.3	28.6	0.0	27.3
Incr Delay (d2), s/veh	24.5	0.8	0.8	1304.2	1.8	1.8	0.1	0.0	1.3	0.1	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	52.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.3	0.3	1.1	0.6	0.6	0.2	0.0	0.7	0.4	0.0	0.5
LnGrp Delay(d),s/veh	52.2	0.8	0.8	1386.4	1.8	1.8	29.5	0.0	28.6	28.8	0.0	28.3
LnGrp LOS	D	A	A	F	A	A	C		C	C		C
Approach Vol, veh/h		1065			1420			55			54	
Approach Delay, s/veh		4.0			12.5			28.8			28.5	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.0	48.6		7.4	6.3	46.3		7.4
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	24.5		19.0	5.5	24.5		19.0
Max Q Clear Time (g_c+I1), s	2.1	2.0		5.0	4.2	2.0		4.5
Green Ext Time (p_c), s	0.0	2.1		0.1	0.0	3.4		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			9.7
HCM 2010 LOS			A

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	870	1350	10	20	20
Future Vol, veh/h	30	870	1350	10	20	20
Conflicting Peds, #/hr	9	0	0	9	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	32	935	1452	11	22	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1472	0	-	0	1999	741
Stage 1	-	-	-	-	1467	-
Stage 2	-	-	-	-	532	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	449	-	-	-	52	356
Stage 1	-	-	-	-	177	-
Stage 2	-	-	-	-	551	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	445	-	-	-	47	353
Mov Cap-2 Maneuver	-	-	-	-	129	-
Stage 1	-	-	-	-	163	-
Stage 2	-	-	-	-	546	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	29.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	445	-	-	-	189
HCM Lane V/C Ratio	0.072	-	-	-	0.228
HCM Control Delay (s)	13.7	-	-	-	29.6
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	0.8

Intersection						
Int Delay, s/veh	0.3					

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	870	1350	20	10	10
Future Vol, veh/h	10	870	1350	20	10	10
Conflicting Peds, #/hr	10	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	11	926	1436	21	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1467	0	-	0	1942	739
Stage 1	-	-	-	-	1457	-
Stage 2	-	-	-	-	485	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	451	-	-	-	56	358
Stage 1	-	-	-	-	179	-
Stage 2	-	-	-	-	582	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	447	-	-	-	54	355
Mov Cap-2 Maneuver	-	-	-	-	138	-
Stage 1	-	-	-	-	173	-
Stage 2	-	-	-	-	576	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	25.2
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	447	-	-	-	199
HCM Lane V/C Ratio	0.024	-	-	-	0.107
HCM Control Delay (s)	13.2	-	-	-	25.2
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	10	10	230	110	10
Future Vol, veh/h	10	10	10	230	110	10
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	11	11	11	253	121	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	409	134	139	0	-	0
Stage 1	134	-	-	-	-	-
Stage 2	275	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	601	918	1451	-	-	-
Stage 1	895	-	-	-	-	-
Stage 2	774	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	587	912	1441	-	-	-
Mov Cap-2 Maneuver	587	-	-	-	-	-
Stage 1	881	-	-	-	-	-
Stage 2	769	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1441	-	714	-	-
HCM Lane V/C Ratio	0.008	-	0.031	-	-
HCM Control Delay (s)	7.5	-	10.2	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	1.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	10	70	160	110	10
Future Vol, veh/h	0	10	70	160	110	10
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	11	77	176	121	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	463	133	138	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	330	-	-	-	-	-
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	557	916	1446	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	728	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	518	911	1438	-	-	-
Mov Cap-2 Maneuver	518	-	-	-	-	-
Stage 1	835	-	-	-	-	-
Stage 2	724	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9	2.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1438	-	911	-	-
HCM Lane V/C Ratio	0.053	-	0.012	-	-
HCM Control Delay (s)	7.6	0	9	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0	-	-

Intersection						
Int Delay, s/veh	3.6					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	30	90	80	80	10
Future Vol, veh/h	10	30	90	80	80	10
Conflicting Peds, #/hr	0	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	100	100	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	35	90	80	94	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	378	118	124	0	-	0
Stage 1	118	-	-	-	-	-
Stage 2	260	-	-	-	-	-
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	624	934	1463	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	783	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	563	918	1438	-	-	-
Mov Cap-2 Maneuver	563	-	-	-	-	-
Stage 1	834	-	-	-	-	-
Stage 2	770	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	4.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1438	-	793	-	-
HCM Lane V/C Ratio	0.063	-	0.059	-	-
HCM Control Delay (s)	7.7	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	110	740	10	40	1270	120	20	20	40	40	10	80
Future Volume (veh/h)	110	740	10	40	1270	120	20	20	40	40	10	80
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	115	771	10	42	1323	125	21	21	42	42	10	83
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	131	1745	23	30	1405	132	96	68	453	120	17	453
Arrive On Green	0.15	0.99	0.99	0.02	0.44	0.44	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	1757	3542	46	1757	3230	304	21	233	1563	39	60	1563
Grp Volume(v), veh/h	115	381	400	42	715	733	42	0	42	52	0	83
Grp Sat Flow(s),veh/h/ln	1757	1752	1835	1757	1752	1782	254	0	1563	98	0	1563
Q Serve(g_s), s	3.8	0.3	0.3	1.0	23.4	23.7	0.4	0.0	1.2	0.6	0.0	2.4
Cycle Q Clear(g_c), s	3.8	0.3	0.3	1.0	23.4	23.7	17.3	0.0	1.2	17.4	0.0	2.4
Prop In Lane	1.00		0.03	1.00		0.17	0.50		1.00	0.81		1.00
Lane Grp Cap(c), veh/h	131	863	904	30	762	775	164	0	453	137	0	453
V/C Ratio(X)	0.87	0.44	0.44	1.39	0.94	0.95	0.26	0.00	0.09	0.38	0.00	0.18
Avail Cap(c_a), veh/h	176	863	904	205	762	775	242	0	534	209	0	534
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.2	0.2	0.2	29.5	16.2	16.3	17.4	0.0	15.5	25.1	0.0	16.0
Incr Delay (d2), s/veh	24.3	1.6	1.6	188.8	17.2	18.1	0.3	0.0	0.0	0.6	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	2.7	0.5	0.5	2.1	14.8	15.3	0.5	0.0	0.5	0.9	0.0	1.0
LnGrp Delay(d),s/veh	49.6	1.9	1.8	218.2	33.4	34.4	17.7	0.0	15.6	25.7	0.0	16.0
LnGrp LOS	D	A	A	F	C	C	B		B	C		B
Approach Vol, veh/h		896			1490			84			135	
Approach Delay, s/veh		8.0			39.1			16.6			19.8	
Approach LOS		A			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.5	29.6		21.9	5.0	33.1		21.9
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	6.5	20.5		21.0	7.5	20.5		21.0
Max Q Clear Time (g_c+I1), s	5.8	25.7		19.3	3.0	2.3		19.4
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	1.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	26.7
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	120	970	540	10	1320	30	370	60	50	80	0	110
Future Volume (veh/h)	120	970	540	10	1320	30	370	60	50	80	0	110
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	126	1021	0	11	1389	32	434	0	0	84	0	116
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	148	1165	521	498	1907	44	510	0	228	162	0	145
Arrive On Green	0.08	0.33	0.00	0.57	1.00	1.00	0.15	0.00	0.00	0.09	0.00	0.09
Sat Flow, veh/h	1757	3505	1568	1757	3499	81	3514	0	1568	1757	0	1568
Grp Volume(v), veh/h	126	1021	0	11	695	726	434	0	0	84	0	116
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1827	1757	0	1568	1757	0	1568
Q Serve(g_s), s	8.5	32.9	0.0	0.3	0.0	0.0	14.5	0.0	0.0	5.5	0.0	8.7
Cycle Q Clear(g_c), s	8.5	32.9	0.0	0.3	0.0	0.0	14.5	0.0	0.0	5.5	0.0	8.7
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	148	1165	521	498	955	996	510	0	228	162	0	145
V/C Ratio(X)	0.85	0.88	0.00	0.02	0.73	0.73	0.85	0.00	0.00	0.52	0.00	0.80
Avail Cap(c_a), veh/h	230	1165	521	498	955	996	1001	0	447	208	0	186
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.2	37.7	0.0	18.7	0.0	0.0	50.0	0.0	0.0	51.9	0.0	53.5
Incr Delay (d2), s/veh	10.3	9.4	0.0	0.0	4.8	4.7	1.6	0.0	0.0	1.0	0.0	13.6
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	4.6	17.4	0.0	0.2	1.3	1.3	7.1	0.0	0.0	2.7	0.0	4.3
LnGrp Delay(d),s/veh	64.5	47.1	0.0	18.7	4.8	4.7	51.6	0.0	0.0	52.9	0.0	67.1
LnGrp LOS	E	D		B	A	A	D			D		E
Approach Vol, veh/h		1147			1432			434			200	
Approach Delay, s/veh		49.0			4.9			51.6			61.1	
Approach LOS		D			A			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.6	43.9		15.1	14.1	69.4		21.4
Change Period (Y+Rc), s	5.3	* 5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	12.0	* 39		* 14	16.0	38.6		34.0
Max Q Clear Time (g_c+I1), s	2.3	34.9		10.7	10.5	2.0		16.5
Green Ext Time (p_c), s	0.0	2.2		0.2	0.1	18.8		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		30.4
HCM 2010 LOS		C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	730	380	250	770	10	290	10	1090	0	0	10
Future Volume (veh/h)	0	730	380	250	770	10	290	10	1090	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.99		1.00	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	0	1845	1900
Adj Flow Rate, veh/h	0	753	0	258	794	10	299	10	1124	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	3	1058	474	285	1846	23	584	16	837	0	0	566
Arrive On Green	0.00	0.30	0.00	0.16	0.52	0.52	0.36	0.36	0.36	0.00	0.00	0.37
Sat Flow, veh/h	1757	3505	1568	1757	3542	45	1324	44	1568	0	0	1553
Grp Volume(v), veh/h	0	753	0	258	393	411	309	0	1124	0	0	10
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1835	1368	0	1568	0	0	1553
Q Serve(g_s), s	0.0	13.4	0.0	10.1	9.7	9.7	12.9	0.0	25.5	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.0	13.4	0.0	10.1	9.7	9.7	13.2	0.0	25.5	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.02	0.97		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	3	1058	474	285	913	956	600	0	837	0	0	566
V/C Ratio(X)	0.00	0.71	0.00	0.91	0.43	0.43	0.52	0.00	1.34	0.00	0.00	0.02
Avail Cap(c_a), veh/h	251	1503	672	753	913	956	600	0	837	0	0	566
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.7	0.0	28.8	10.3	10.3	18.4	0.0	16.3	0.0	0.0	14.1
Incr Delay (d2), s/veh	0.0	1.3	0.0	4.4	0.5	0.4	0.8	0.0	162.5	0.0	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	0.0	6.7	0.0	5.2	4.7	4.9	5.0	0.0	53.7	0.0	0.0	0.1
LnGrp Delay(d),s/veh	0.0	23.0	0.0	33.2	10.8	10.8	19.2	0.0	178.8	0.0	0.0	14.1
LnGrp LOS		C		C	B	B	B		F			B
Approach Vol, veh/h		753			1062			1433			10	
Approach Delay, s/veh		23.0			16.2			144.4			14.1	
Approach LOS		C			B			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.3	25.1		29.5	0.0	40.5		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	12.1	15.4		2.3	0.0	11.7		27.5
Green Ext Time (p_c), s	0.3	5.8		0.0	0.0	6.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	74.2
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	650	0	0	1180	40	0	0	50	140	0	170
Future Volume (vph)	100	650	0	0	1180	40	0	0	50	140	0	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			1.00				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1752	3505			3482				1596	1752		1543
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1752	3505			3482				1596	1752		1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	707	0	0	1283	43	0	0	54	152	0	185
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	24	0	0	50
Lane Group Flow (vph)	109	707	0	0	1323	0	0	0	30	152	0	135
Confl. Peds. (#/hr)						10						10
Confl. Bikes (#/hr)			6			5						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA				Perm	Prot		Perm
Protected Phases	1	6			2					4		
Permitted Phases									2			6
Actuated Green, G (s)	7.2	43.7			33.0				33.0	8.8		43.7
Effective Green, g (s)	7.2	43.7			33.0				33.0	8.8		43.7
Actuated g/C Ratio	0.12	0.73			0.55				0.55	0.15		0.73
Clearance Time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Vehicle Extension (s)	2.0	1.5			1.5				1.5	1.0		1.5
Lane Grp Cap (vph)	210	2552			1915				877	256		1123
v/s Ratio Prot	c0.06	0.20			c0.38					c0.09		
v/s Ratio Perm									0.02			0.09
v/c Ratio	0.52	0.28			0.69				0.03	0.59		0.12
Uniform Delay, d1	24.8	2.8			9.8				6.2	23.9		2.4
Progression Factor	1.03	1.48			1.00				1.00	1.00		1.00
Incremental Delay, d2	0.9	0.3			2.1				0.1	2.5		0.2
Delay (s)	26.4	4.4			11.9				6.3	26.4		2.6
Level of Service	C	A			B				A	C		A
Approach Delay (s)		7.3			11.9			6.3			13.4	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	10	70	50	10	60
Future Vol, veh/h	40	10	70	50	10	60
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	42	11	74	53	11	63

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	189	104	0	0	130	0
Stage 1	104	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	802	953	-	-	1462	-
Stage 1	923	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	793	950	-	-	1458	-
Mov Cap-2 Maneuver	793	-	-	-	-	-
Stage 1	920	-	-	-	-	-
Stage 2	933	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	820	1458	-
HCM Lane V/C Ratio	-	-	0.064	0.007	-
HCM Control Delay (s)	-	-	9.7	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection						
Int Delay, s/veh	0.7					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	0	110	10	10	110
Future Vol, veh/h	10	0	110	10	10	110
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	120	11	11	120

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	268	126	0	0	131	0
Stage 1	126	-	-	-	-	-
Stage 2	142	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	726	930	-	-	1467	-
Stage 1	905	-	-	-	-	-
Stage 2	890	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	720	930	-	-	1467	-
Mov Cap-2 Maneuver	720	-	-	-	-	-
Stage 1	905	-	-	-	-	-
Stage 2	883	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	720	1467	-
HCM Lane V/C Ratio	-	-	0.015	0.007	-
HCM Control Delay (s)	-	-	10.1	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	30	1450	20	20	1120	10	0	0	20	0	0	30
Future Vol, veh/h	30	1450	20	20	1120	10	0	0	20	0	0	30
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	60	-	-	-	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	34	1667	23	23	1287	11	0	0	23	0	0	34

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1305	0	0	1690	0	0	-	-	845	2248	-	656
Stage 1	-	-	-	-	-	-	-	-	-	1346	-	-
Stage 2	-	-	-	-	-	-	-	-	-	902	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	7.54	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.54	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.54	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	3.52	-	3.32
Pot Cap-1 Maneuver	526	-	-	374	-	-	0	0	306	23	0	408
Stage 1	-	-	-	-	-	-	0	0	-	159	0	-
Stage 2	-	-	-	-	-	-	0	0	-	299	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	522	-	-	374	-	-	-	-	306	19	-	405
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	19	-	-
Stage 1	-	-	-	-	-	-	-	-	-	148	-	-
Stage 2	-	-	-	-	-	-	-	-	-	259	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.3	17.7	14.7
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	306	522	-	-	374	-	-	-	405
HCM Lane V/C Ratio	0.075	0.066	-	-	0.061	-	-	-	0.085
HCM Control Delay (s)	17.7	12.4	-	-	15.3	-	-	0	14.7
HCM Lane LOS	C	B	-	-	C	-	-	A	B
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.2	-	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1320	70	20	930	20	30	20	20	50	10	90
Future Volume (veh/h)	50	1320	70	20	930	20	30	20	20	50	10	90
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	0.99		0.99	0.99		0.99
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	57	1517	80	23	1069	23	34	23	23	57	11	103
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	61	2518	132	15	2518	54	133	81	81	170	25	148
Arrive On Green	0.07	1.00	1.00	0.01	0.48	0.48	0.09	0.09	0.10	0.09	0.09	0.09
Sat Flow, veh/h	1774	3417	179	1774	3540	76	1267	852	852	867	268	1568
Grp Volume(v), veh/h	57	783	814	23	534	558	34	0	46	68	0	103
Grp Sat Flow(s),veh/h/ln	1774	1770	1827	1774	1770	1847	1267	0	1703	1136	0	1568
Q Serve(g_s), s	2.4	0.0	0.0	0.6	14.9	14.9	2.0	0.0	1.9	3.0	0.0	4.8
Cycle Q Clear(g_c), s	2.4	0.0	0.0	0.6	14.9	14.9	6.9	0.0	1.9	4.9	0.0	4.8
Prop In Lane	1.00		0.10	1.00		0.04	1.00		0.50	0.84		1.00
Lane Grp Cap(c), veh/h	61	1304	1346	15	1259	1314	133	0	161	196	0	148
V/C Ratio(X)	0.94	0.60	0.60	1.51	0.42	0.42	0.25	0.00	0.29	0.35	0.00	0.69
Avail Cap(c_a), veh/h	118	1304	1346	118	1259	1314	326	0	420	410	0	387
HCM Platoon Ratio	2.00	2.00	2.00	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.9	0.0	0.0	37.3	9.6	9.6	36.3	0.0	31.5	33.4	0.0	32.9
Incr Delay (d2), s/veh	21.2	2.0	2.0	256.6	1.1	1.0	0.4	0.0	0.4	0.4	0.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	0.7	0.8	1.4	7.6	7.9	0.7	0.0	0.9	1.4	0.0	2.1
LnGrp Delay(d),s/veh	56.1	2.0	2.0	300.0	10.6	10.6	36.7	0.0	31.8	33.8	0.0	35.1
LnGrp LOS	E	A	A	F	B	B	D		C	C		D
Approach Vol, veh/h		1654			1115			80			171	
Approach Delay, s/veh		3.9			16.6			33.9			34.6	
Approach LOS		A			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	59.3		11.1	6.6	57.3		11.1				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	5.5	39.5		19.0	5.5	39.5		19.0				
Max Q Clear Time (g_c+I1), s	2.6	2.0		8.9	4.4	16.9		6.9				
Green Ext Time (p_c), s	0.0	4.3		0.1	0.0	2.4		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			11.1									
HCM 2010 LOS			B									

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	1400	960	10	10	30
Future Vol, veh/h	20	1400	960	10	10	30
Conflicting Peds, #/hr	0	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	23	1628	1116	12	12	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1138	0	-	0	1992	574
Stage 1	-	-	-	-	1132	-
Stage 2	-	-	-	-	860	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	615	-	-	-	53	464
Stage 1	-	-	-	-	272	-
Stage 2	-	-	-	-	377	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	609	-	-	-	50	460
Mov Cap-2 Maneuver	-	-	-	-	161	-
Stage 1	-	-	-	-	259	-
Stage 2	-	-	-	-	373	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	18.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	609	-	-	-	314
HCM Lane V/C Ratio	0.038	-	-	-	0.148
HCM Control Delay (s)	11.1	-	-	-	18.4
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	1400	950	10	10	10
Future Vol, veh/h	10	1400	950	10	10	10
Conflicting Peds, #/hr	13	0	0	13	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	12	1647	1118	12	12	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1143	0	-	0	1985	578
Stage 1	-	-	-	-	1137	-
Stage 2	-	-	-	-	848	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	613	-	-	-	54	462
Stage 1	-	-	-	-	270	-
Stage 2	-	-	-	-	383	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	605	-	-	-	52	456
Mov Cap-2 Maneuver	-	-	-	-	164	-
Stage 1	-	-	-	-	261	-
Stage 2	-	-	-	-	378	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	21.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	605	-	-	-	241
HCM Lane V/C Ratio	0.019	-	-	-	0.098
HCM Control Delay (s)	11.1	-	-	-	21.5
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	10	0	110	260	0
Future Vol, veh/h	10	10	0	110	260	0
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	10	10	0	113	268	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	387	274	-	0	-	0
Stage 1	274	-	-	-	-	-
Stage 2	113	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	-	-
Pot Cap-1 Maneuver	618	767	0	-	-	-
Stage 1	774	-	0	-	-	-
Stage 2	914	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	611	763	-	-	-	-
Mov Cap-2 Maneuver	611	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	909	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.5	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	679	-	-
HCM Lane V/C Ratio	-	0.03	-	-
HCM Control Delay (s)	-	10.5	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection						
Int Delay, s/veh	1.2					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	30	10	100	240	0
Future Vol, veh/h	10	30	10	100	240	0
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	10	31	10	102	245	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	374	252	252	0	-	0
Stage 1	252	-	-	-	-	-
Stage 2	122	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	629	789	1319	-	-	-
Stage 1	792	-	-	-	-	-
Stage 2	906	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	615	784	1310	-	-	-
Mov Cap-2 Maneuver	615	-	-	-	-	-
Stage 1	780	-	-	-	-	-
Stage 2	900	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.2	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1310	-	734	-	-
HCM Lane V/C Ratio	0.008	-	0.056	-	-
HCM Control Delay (s)	7.8	0	10.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection						
Int Delay, s/veh	4.4					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	20	120	30	80	110	10
Future Vol, veh/h	20	120	30	80	110	10
Conflicting Peds, #/hr	0	0	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	21	126	32	84	116	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	278	130	135	0	-	0
Stage 1	130	-	-	-	-	-
Stage 2	148	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	714	922	1456	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	882	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	686	915	1445	-	-	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	870	-	-	-	-	-
Stage 2	875	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	2.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1445	-	873	-	-
HCM Lane V/C Ratio	0.022	-	0.169	-	-
HCM Control Delay (s)	7.5	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1330	20	30	810	40	20	20	30	140	10	120
Future Volume (veh/h)	60	1330	20	30	810	40	20	20	30	140	10	120
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1881	1900	1881	1881
Adj Flow Rate, veh/h	69	1529	23	34	931	46	23	23	34	161	11	138
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	77	1991	30	25	1811	89	72	50	433	93	3	433
Arrive On Green	0.03	0.37	0.37	0.00	0.17	0.17	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1792	3603	54	1792	3459	171	0	183	1583	0	13	1583
Grp Volume(v), veh/h	69	758	794	34	481	496	46	0	34	172	0	138
Grp Sat Flow(s),veh/h/ln	1792	1787	1870	1792	1787	1843	183	0	1583	13	0	1583
Q Serve(g_s), s	2.9	28.0	28.1	1.1	18.3	18.3	0.0	0.0	1.2	0.0	0.0	5.2
Cycle Q Clear(g_c), s	2.9	28.0	28.1	1.1	18.3	18.3	20.5	0.0	1.2	20.5	0.0	5.2
Prop In Lane	1.00		0.03	1.00		0.09	0.50		1.00	0.94		1.00
Lane Grp Cap(c), veh/h	77	988	1033	25	935	965	122	0	433	96	0	433
V/C Ratio(X)	0.89	0.77	0.77	1.35	0.51	0.51	0.38	0.00	0.08	1.79	0.00	0.32
Avail Cap(c_a), veh/h	239	988	1033	167	935	965	122	0	433	96	0	433
HCM Platoon Ratio	0.67	0.67	0.67	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.2	19.4	19.4	37.3	22.4	22.4	22.6	0.0	20.2	36.8	0.0	21.7
Incr Delay (d2), s/veh	12.2	5.7	5.5	176.5	1.9	1.8	0.7	0.0	0.0	391.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	15.4	16.1	1.8	9.6	9.9	0.7	0.0	0.5	12.5	0.0	2.3
LnGrp Delay(d),s/veh	48.5	25.1	24.9	214.7	24.2	24.2	23.3	0.0	20.3	428.3	0.0	21.8
LnGrp LOS	D	C	C	F	C	C	C		C	F		C
Approach Vol, veh/h		1621			1011			80			310	
Approach Delay, s/veh		26.0			30.6			22.0			247.4	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.2	43.3		24.5	5.1	45.4		24.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	10.5	32.5		21.0	7.5	32.5		21.0
Max Q Clear Time (g_c+I1), s	4.9	20.3		22.5	3.1	30.1		22.5
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	1.2		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	50.1
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	40	1200	410	10	1100	20	410	30	50	200	0	180
Future Volume (veh/h)	40	1200	410	10	1100	20	410	30	50	200	0	180
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1710	1676	1676	1676	1676	1676	1710
Adj Flow Rate, veh/h	43	1277	0	11	1170	21	459	0	0	213	0	191
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	68	1831	819	12	1728	31	514	0	230	239	0	213
Arrive On Green	0.04	0.57	0.00	0.02	1.00	1.00	0.16	0.00	0.00	0.15	0.00	0.15
Sat Flow, veh/h	1597	3185	1425	1597	3199	57	3193	0	1425	1597	0	1425
Grp Volume(v), veh/h	43	1277	0	11	582	609	459	0	0	213	0	191
Grp Sat Flow(s),veh/h/ln	1597	1593	1425	1597	1593	1664	1597	0	1425	1597	0	1425
Q Serve(g_s), s	4.0	42.7	0.0	1.0	0.0	0.0	21.1	0.0	0.0	19.6	0.0	19.7
Cycle Q Clear(g_c), s	4.0	42.7	0.0	1.0	0.0	0.0	21.1	0.0	0.0	19.6	0.0	19.7
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	68	1831	819	12	860	899	514	0	230	239	0	213
V/C Ratio(X)	0.63	0.70	0.00	0.88	0.68	0.68	0.89	0.00	0.00	0.89	0.00	0.90
Avail Cap(c_a), veh/h	103	1831	819	39	860	899	941	0	420	279	0	249
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.7	22.6	0.0	73.8	0.0	0.0	61.6	0.0	0.0	62.6	0.0	62.7
Incr Delay (d2), s/veh	3.6	2.2	0.0	46.4	4.3	4.1	2.2	0.0	0.0	23.5	0.0	26.4
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	1.8	19.2	0.0	0.6	1.0	1.0	9.5	0.0	0.0	10.3	0.0	9.4
LnGrp Delay(d),s/veh	74.3	24.9	0.0	120.2	4.3	4.1	63.9	0.0	0.0	86.1	0.0	89.2
LnGrp LOS	E	C		F	A	A	E			F		F
Approach Vol, veh/h		1320			1202			459			404	
Approach Delay, s/veh		26.5			5.2			63.9			87.6	
Approach LOS		C			A			E			F	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.2	90.2		26.5	10.4	85.0		28.2				
Change Period (Y+Rc), s	3.7	5.3		* 4.2	3.7	5.3		4.2				
Max Green Setting (Gmax), s	4.0	52.6		* 26	10.0	52.6		44.0				
Max Q Clear Time (g_c+I1), s	3.0	44.7		21.7	6.0	2.0		23.1				
Green Ext Time (p_c), s	0.0	5.0		0.5	0.0	16.1		0.8				
Intersection Summary												
HCM 2010 Ctrl Delay			31.3									
HCM 2010 LOS			C									
Notes												

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	910	420	330	680	10	220	10	830	0	0	10
Future Volume (veh/h)	20	910	420	330	680	10	220	10	830	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	0	1863	1900
Adj Flow Rate, veh/h	21	948	0	344	708	10	229	10	865	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	11	1164	521	369	1895	27	507	18	838	0	0	497
Arrive On Green	0.01	0.33	0.00	0.21	0.53	0.53	0.31	0.31	0.31	0.00	0.00	0.32
Sat Flow, veh/h	1774	3539	1583	1774	3571	50	1332	58	1583	0	0	1579
Grp Volume(v), veh/h	21	948	0	344	351	367	239	0	865	0	0	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1851	1391	0	1583	0	0	1579
Q Serve(g_s), s	0.5	19.9	0.0	15.4	9.4	9.4	11.4	0.0	25.5	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.5	19.9	0.0	15.4	9.4	9.4	11.7	0.0	25.5	0.0	0.0	0.4
Prop In Lane	1.00		1.00	1.00		0.03	0.96		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	11	1164	521	369	939	983	525	0	838	0	0	497
V/C Ratio(X)	1.89	0.81	0.00	0.93	0.37	0.37	0.46	0.00	1.03	0.00	0.00	0.02
Avail Cap(c_a), veh/h	219	1311	586	657	939	983	525	0	838	0	0	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	40.2	24.9	0.0	31.5	11.1	11.1	23.2	0.0	19.1	0.0	0.0	19.0
Incr Delay (d2), s/veh	428.4	4.0	0.0	6.8	0.4	0.3	0.6	0.0	39.8	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	10.3	0.0	8.2	4.7	4.9	4.5	0.0	27.7	0.0	0.0	0.2
LnGrp Delay(d),s/veh	469.3	28.9	0.0	38.3	11.5	11.5	23.8	0.0	58.8	0.0	0.0	19.0
LnGrp LOS	F	C		D	B	B	C		F			B
Approach Vol, veh/h		969			1062			1104			10	
Approach Delay, s/veh		38.4			20.1			51.2			19.0	
Approach LOS		D			C			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.9	30.6		29.5	4.5	47.0		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	17.4	21.9		2.4	2.5	11.4		27.5
Green Ext Time (p_c), s	0.4	4.8		0.0	0.0	5.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.7
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	1260	0	0	790	80	0	0	120	50	0	110
Future Volume (vph)	160	1260	0	0	790	80	0	0	120	50	0	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			0.99				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1752	3505			3439				1596	1752		1544
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1752	3505			3439				1596	1752		1544
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	1370	0	0	859	87	0	0	130	54	0	120
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	49	0	0	22
Lane Group Flow (vph)	174	1370	0	0	939	0	0	0	81	54	0	98
Confl. Peds. (#/hr)						10						10
Confl. Bikes (#/hr)						5						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA				Perm	Prot		Perm
Protected Phases	1	6			2					4		
Permitted Phases									2			6
Actuated Green, G (s)	11.1	61.4			46.8				46.8	6.1		61.4
Effective Green, g (s)	11.1	61.4			46.8				46.8	6.1		61.4
Actuated g/C Ratio	0.15	0.82			0.62				0.62	0.08		0.82
Clearance Time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Vehicle Extension (s)	2.0	1.5			1.5				1.5	1.0		1.5
Lane Grp Cap (vph)	259	2869			2145				995	142		1264
v/s Ratio Prot	c0.10	c0.39			0.27					c0.03		
v/s Ratio Perm									0.05			0.06
v/c Ratio	0.67	0.48			0.44				0.08	0.38		0.08
Uniform Delay, d1	30.2	2.0			7.3				5.6	32.7		1.3
Progression Factor	0.79	2.46			1.00				1.00	1.00		1.00
Incremental Delay, d2	4.1	0.4			0.7				0.2	0.6		0.1
Delay (s)	28.0	5.4			7.9				5.7	33.3		1.4
Level of Service	C	A			A				A	C		A
Approach Delay (s)		8.0			7.9			5.7			11.3	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	11.0
Intersection Capacity Utilization	56.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	1.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	10	80	45	10	50
Future Vol, veh/h	23	10	80	45	10	50
Conflicting Peds, #/hr	0	0	0	5	5	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	13	101	57	13	63

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	224	135	0	0	163	0
Stage 1	135	-	-	-	-	-
Stage 2	89	-	-	-	-	-
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	764	914	-	-	1416	-
Stage 1	891	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	753	910	-	-	1409	-
Mov Cap-2 Maneuver	753	-	-	-	-	-
Stage 1	887	-	-	-	-	-
Stage 2	925	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	1.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	795	1409	-
HCM Lane V/C Ratio	-	-	0.053	0.009	-
HCM Control Delay (s)	-	-	9.8	7.6	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection						
Int Delay, s/veh	1.1					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	0	135	30	10	63
Future Vol, veh/h	20	0	135	30	10	63
Conflicting Peds, #/hr	0	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	83	83	83	83	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	24	0	163	36	12	76

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	287	187	0	0	205	0
Stage 1	187	-	-	-	-	-
Stage 2	100	-	-	-	-	-
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	703	855	-	-	1366	-
Stage 1	845	-	-	-	-	-
Stage 2	924	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	692	850	-	-	1358	-
Mov Cap-2 Maneuver	692	-	-	-	-	-
Stage 1	840	-	-	-	-	-
Stage 2	916	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.4	0	1.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	692	1358	-
HCM Lane V/C Ratio	-	-	0.035	0.009	-
HCM Control Delay (s)	-	-	10.4	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	54	1056	20	10	1368	10	0	0	10	0	0	32
Future Vol, veh/h	54	1056	20	10	1368	10	0	0	10	0	0	32
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	60	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	2	4
Mvmt Flow	59	1160	22	11	1503	11	0	0	11	0	0	35

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1521	0	0	1182	0	0	-	-	591	-	-	764
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	4.18	-	-	-	-	6.98	-	-	6.98
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	2.24	-	-	-	-	3.34	-	-	3.34
Pot Cap-1 Maneuver	425	-	-	575	-	-	0	0	445	0	0	342
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	422	-	-	575	-	-	-	-	445	-	-	340
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	13.3	16.8
HCM LOS			B	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	445	422	-	-	575	-	-	340
HCM Lane V/C Ratio	0.025	0.141	-	-	0.019	-	-	0.103
HCM Control Delay (s)	13.3	14.9	-	-	11.4	-	-	16.8
HCM Lane LOS	B	B	-	-	B	-	-	C
HCM 95th %tile Q(veh)	0.1	0.5	-	-	0.1	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	861	80	10	1279	67	10	21	20	21	0	39
Future Volume (veh/h)	92	861	80	10	1279	67	10	21	20	21	0	39
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.97	0.98		0.97	0.97		0.96
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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1845	1845	1900	1900	1845	1845
Adj Flow Rate, veh/h	99	926	86	11	1375	72	11	23	22	23	0	42
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	111	2402	223	3	2296	120	139	50	47	162	0	88
Arrive On Green	0.13	1.00	1.00	0.00	1.00	1.00	0.06	0.06	0.07	0.06	0.00	0.06
Sat Flow, veh/h	1757	3238	301	1757	3384	177	1317	853	816	721	0	1511
Grp Volume(v), veh/h	99	501	511	11	710	737	11	0	45	23	0	42
Grp Sat Flow(s),veh/h/ln	1757	1752	1786	1757	1752	1808	1317	0	1669	721	0	1511
Q Serve(g_s), s	3.3	0.0	0.0	0.1	0.0	0.0	0.5	0.0	1.6	1.0	0.0	1.6
Cycle Q Clear(g_c), s	3.3	0.0	0.0	0.1	0.0	0.0	3.1	0.0	1.6	2.6	0.0	1.6
Prop In Lane	1.00		0.17	1.00		0.10	1.00		0.49	1.00		1.00
Lane Grp Cap(c), veh/h	111	1300	1325	3	1189	1227	139	0	97	162	0	88
V/C Ratio(X)	0.89	0.39	0.39	3.76	0.60	0.60	0.08	0.00	0.46	0.14	0.00	0.48
Avail Cap(c_a), veh/h	146	1300	1325	146	1189	1227	469	0	515	489	0	466
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.0	0.0	0.0	30.0	0.0	0.0	29.4	0.0	27.2	28.6	0.0	27.4
Incr Delay (d2), s/veh	31.9	0.9	0.8	1304.2	2.2	2.2	0.1	0.0	1.3	0.1	0.0	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	52.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.3	0.3	1.1	0.7	0.7	0.2	0.0	0.8	0.4	0.0	0.7
LnGrp Delay(d),s/veh	57.9	0.9	0.8	1386.4	2.2	2.2	29.5	0.0	28.5	28.8	0.0	28.9
LnGrp LOS	E	A	A	F	A	A	C		C	C		C
Approach Vol, veh/h		1111			1458			56			65	
Approach Delay, s/veh		5.9			12.6			28.7			28.8	
Approach LOS		A			B			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.0	48.5		7.5	7.8	44.7		7.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	24.5		19.0	5.5	24.5		19.0
Max Q Clear Time (g_c+I1), s	2.1	2.0		5.1	5.3	2.0		4.6
Green Ext Time (p_c), s	0.0	2.2		0.1	0.0	3.5		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		10.6
HCM 2010 LOS		B

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	30	865	1386	10	20	20
Future Vol, veh/h	30	865	1386	10	20	20
Conflicting Peds, #/hr	9	0	0	9	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	32	930	1490	11	22	22

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1510	0	-	0	2034	760
Stage 1	-	-	-	-	1505	-
Stage 2	-	-	-	-	529	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	434	-	-	-	49	346
Stage 1	-	-	-	-	168	-
Stage 2	-	-	-	-	553	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	430	-	-	-	45	343
Mov Cap-2 Maneuver	-	-	-	-	123	-
Stage 1	-	-	-	-	154	-
Stage 2	-	-	-	-	548	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	31
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	430	-	-	-	181
HCM Lane V/C Ratio	0.075	-	-	-	0.238
HCM Control Delay (s)	14.1	-	-	-	31
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	0.9

Intersection	
Int Delay, s/veh	0.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	865	1386	20	10	10
Future Vol, veh/h	10	865	1386	20	10	10
Conflicting Peds, #/hr	10	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	3	3	3	3	3	3
Mvmt Flow	11	920	1474	21	11	11

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1505	0	-	0	1977	758
Stage 1	-	-	-	-	1495	-
Stage 2	-	-	-	-	482	-
Critical Hdwy	4.16	-	-	-	6.86	6.96
Critical Hdwy Stg 1	-	-	-	-	5.86	-
Critical Hdwy Stg 2	-	-	-	-	5.86	-
Follow-up Hdwy	2.23	-	-	-	3.53	3.33
Pot Cap-1 Maneuver	436	-	-	-	53	347
Stage 1	-	-	-	-	171	-
Stage 2	-	-	-	-	584	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	432	-	-	-	51	344
Mov Cap-2 Maneuver	-	-	-	-	132	-
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	578	-

Approach	EB		WB		SB
HCM Control Delay, s	0.2		0		26.2
HCM LOS					D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	432	-	-	-	191
HCM Lane V/C Ratio	0.025	-	-	-	0.111
HCM Control Delay (s)	13.5	-	-	-	26.2
HCM Lane LOS	B	-	-	-	D
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

Intersection						
Int Delay, s/veh	0.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	10	10	253	125	10
Future Vol, veh/h	10	10	10	253	125	10
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	11	11	11	278	137	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	450	150	155	0	-	0
Stage 1	150	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	569	899	1431	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	754	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	556	893	1421	-	-	-
Mov Cap-2 Maneuver	556	-	-	-	-	-
Stage 1	866	-	-	-	-	-
Stage 2	749	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.4	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1421	-	685	-	-
HCM Lane V/C Ratio	0.008	-	0.032	-	-
HCM Control Delay (s)	7.6	-	10.4	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	1	35	86	162	111	8
Future Vol, veh/h	1	35	86	162	111	8
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	38	95	178	122	9

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	501	133	137	0	-	0
Stage 1	133	-	-	-	-	-
Stage 2	368	-	-	-	-	-
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	530	916	1447	-	-	-
Stage 1	893	-	-	-	-	-
Stage 2	700	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	485	911	1439	-	-	-
Mov Cap-2 Maneuver	485	-	-	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	696	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	2.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1439	-	889	-	-
HCM Lane V/C Ratio	0.066	-	0.044	-	-
HCM Control Delay (s)	7.7	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.2	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.7					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	18	60	81	80	10
Future Vol, veh/h	9	18	60	81	80	10
Conflicting Peds, #/hr	0	0	18	0	0	18
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	85	85	100	100	85	85
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	21	60	81	94	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	319	118	124	0	-	0
Stage 1	118	-	-	-	-	-
Stage 2	201	-	-	-	-	-
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	674	934	1463	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	833	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	623	918	1438	-	-	-
Mov Cap-2 Maneuver	623	-	-	-	-	-
Stage 1	853	-	-	-	-	-
Stage 2	819	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	3.2	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1438	-	793	-	-
HCM Lane V/C Ratio	0.042	-	0.04	-	-
HCM Control Delay (s)	7.6	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	740	380	257	776	10	290	10	1108	0	0	10
Future Volume (veh/h)	0	740	380	257	776	10	290	10	1108	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.99		1.00	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	0	1845	1900
Adj Flow Rate, veh/h	0	763	0	265	800	10	299	10	1142	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	2	1064	476	292	1864	23	577	16	837	0	0	560
Arrive On Green	0.00	0.30	0.00	0.17	0.53	0.53	0.36	0.36	0.36	0.00	0.00	0.37
Sat Flow, veh/h	1757	3505	1568	1757	3543	44	1324	44	1568	0	0	1553
Grp Volume(v), veh/h	0	763	0	265	396	414	309	0	1142	0	0	10
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1835	1368	0	1568	0	0	1553
Q Serve(g_s), s	0.0	13.7	0.0	10.5	9.8	9.8	13.1	0.0	25.5	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.0	13.7	0.0	10.5	9.8	9.8	13.4	0.0	25.5	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.02	0.97		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	2	1064	476	292	922	966	593	0	837	0	0	560
V/C Ratio(X)	0.00	0.72	0.00	0.91	0.43	0.43	0.52	0.00	1.36	0.00	0.00	0.02
Avail Cap(c_a), veh/h	248	1487	665	745	922	966	593	0	837	0	0	560
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.9	0.0	29.0	10.2	10.2	18.9	0.0	16.5	0.0	0.0	14.4
Incr Delay (d2), s/veh	0.0	1.4	0.0	4.4	0.5	0.4	0.8	0.0	171.7	0.0	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	0.0	6.8	0.0	5.4	4.7	4.9	5.1	0.0	56.0	0.0	0.0	0.1
LnGrp Delay(d),s/veh	0.0	23.3	0.0	33.4	10.7	10.7	19.7	0.0	188.2	0.0	0.0	14.4
LnGrp LOS		C		C	B	B	B		F			B
Approach Vol, veh/h		763			1075			1451			10	
Approach Delay, s/veh		23.3			16.3			152.3			14.4	
Approach LOS		C			B			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.7	25.5		29.5	0.0	41.2		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	12.5	15.7		2.3	0.0	11.8		27.5
Green Ext Time (p_c), s	0.3	5.8		0.0	0.0	6.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	77.7
HCM 2010 LOS	E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	123	995	540	10	1340	30	373	59	55	80	0	113
Future Volume (veh/h)	123	995	540	10	1340	30	373	59	55	80	0	113
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1845	1845	1845	1845	1845	1900
Adj Flow Rate, veh/h	129	1047	0	11	1411	32	437	0	0	84	0	119
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	151	1165	521	493	1892	43	513	0	229	165	0	148
Arrive On Green	0.09	0.33	0.00	0.56	1.00	1.00	0.15	0.00	0.00	0.09	0.00	0.09
Sat Flow, veh/h	1757	3505	1568	1757	3500	79	3514	0	1568	1757	0	1568
Grp Volume(v), veh/h	129	1047	0	11	706	737	437	0	0	84	0	119
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1827	1757	0	1568	1757	0	1568
Q Serve(g_s), s	8.7	34.1	0.0	0.3	0.0	0.0	14.6	0.0	0.0	5.5	0.0	8.9
Cycle Q Clear(g_c), s	8.7	34.1	0.0	0.3	0.0	0.0	14.6	0.0	0.0	5.5	0.0	8.9
Prop In Lane	1.00		1.00	1.00		0.04	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	151	1165	521	493	947	988	513	0	229	165	0	148
V/C Ratio(X)	0.85	0.90	0.00	0.02	0.74	0.75	0.85	0.00	0.00	0.51	0.00	0.81
Avail Cap(c_a), veh/h	230	1165	521	493	947	988	1001	0	447	208	0	186
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	54.1	38.1	0.0	19.0	0.0	0.0	50.0	0.0	0.0	51.7	0.0	53.4
Incr Delay (d2), s/veh	11.5	11.0	0.0	0.0	5.3	5.1	1.6	0.0	0.0	0.9	0.0	14.8
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	4.7	18.2	0.0	0.2	1.4	1.4	7.2	0.0	0.0	2.7	0.0	4.5
LnGrp Delay(d),s/veh	65.6	49.1	0.0	19.0	5.3	5.1	51.5	0.0	0.0	52.6	0.0	68.2
LnGrp LOS	E	D		B	A	A	D			D		E
Approach Vol, veh/h		1176			1454			437			203	
Approach Delay, s/veh		50.9			5.3			51.5			61.7	
Approach LOS		D			A			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.3	43.9		15.3	14.3	68.9		21.5
Change Period (Y+Rc), s	5.3	* 5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	12.0	* 39		* 14	16.0	38.6		34.0
Max Q Clear Time (g_c+I1), s	12.3	36.1		10.9	10.7	2.0		16.6
Green Ext Time (p_c), s	0.0	1.6		0.2	0.1	19.2		0.8

Intersection Summary	
HCM 2010 Ctrl Delay	31.4
HCM 2010 LOS	C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	104	741	10	40	1291	110	20	25	40	44	10	91
Future Volume (veh/h)	104	741	10	40	1291	110	20	25	40	44	10	91
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	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
Adj Sat Flow, veh/h/ln	1845	1845	1900	1845	1845	1900	1900	1845	1845	1900	1845	1845
Adj Flow Rate, veh/h	108	772	10	42	1345	115	21	26	42	46	10	95
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	3	3	3
Cap, veh/h	123	1657	21	30	1354	115	93	84	493	121	16	493
Arrive On Green	0.14	0.94	0.94	0.02	0.41	0.41	0.32	0.32	0.32	0.32	0.32	0.32
Sat Flow, veh/h	1757	3542	46	1757	3262	278	20	265	1563	38	51	1563
Grp Volume(v), veh/h	108	382	400	42	720	740	47	0	42	56	0	95
Grp Sat Flow(s),veh/h/ln	1757	1752	1835	1757	1752	1787	285	0	1563	89	0	1563
Q Serve(g_s), s	3.6	1.5	1.5	1.0	24.5	24.8	0.5	0.0	1.1	0.6	0.0	2.7
Cycle Q Clear(g_c), s	3.6	1.5	1.5	1.0	24.5	24.8	18.9	0.0	1.1	18.9	0.0	2.7
Prop In Lane	1.00		0.02	1.00		0.16	0.45		1.00	0.82		1.00
Lane Grp Cap(c), veh/h	123	820	858	30	727	742	177	0	493	137	0	493
V/C Ratio(X)	0.88	0.47	0.47	1.39	0.99	1.00	0.27	0.00	0.09	0.41	0.00	0.19
Avail Cap(c_a), veh/h	176	820	858	205	727	742	217	0	534	174	0	534
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.78	0.78	0.78	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.6	1.1	1.1	29.5	17.4	17.5	16.6	0.0	14.5	25.5	0.0	15.0
Incr Delay (d2), s/veh	22.0	1.9	1.8	188.7	27.1	28.6	0.3	0.0	0.0	0.7	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	2.5	0.8	0.9	2.1	17.3	18.0	0.6	0.0	0.5	0.9	0.0	1.1
LnGrp Delay(d),s/veh	47.6	3.0	2.9	218.2	44.5	46.1	16.9	0.0	14.5	26.2	0.0	15.1
LnGrp LOS	D	A	A	F	D	D	B		B	C		B
Approach Vol, veh/h		890			1502			89			151	
Approach Delay, s/veh		8.4			50.2			15.8			19.2	
Approach LOS		A			D			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	8.2	28.4		23.4	5.0	31.5		23.4
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	6.5	20.5		21.0	7.5	20.5		21.0
Max Q Clear Time (g_c+I1), s	5.6	26.8		20.9	3.0	3.5		20.9
Green Ext Time (p_c), s	0.0	0.0		0.0	0.0	1.5		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	33.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	655	0	0	1191	40	0	0	50	140	0	170
Future Volume (vph)	100	655	0	0	1191	40	0	0	50	140	0	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0				4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			1.00				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1752	3505			3483				1596	1752		1543
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1752	3505			3483				1596	1752		1543
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	109	712	0	0	1295	43	0	0	54	152	0	185
RTOR Reduction (vph)	0	0	0	0	3	0	0	0	24	0	0	50
Lane Group Flow (vph)	109	712	0	0	1335	0	0	0	30	152	0	135
Confl. Peds. (#/hr)						10						10
Confl. Bikes (#/hr)			6			5						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA				Perm	Prot		Perm
Protected Phases	1	6			2					4		
Permitted Phases									2			6
Actuated Green, G (s)	7.2	43.7			33.0				33.0	8.8		43.7
Effective Green, g (s)	6.7	43.7			33.0				33.0	8.3		43.7
Actuated g/C Ratio	0.11	0.73			0.55				0.55	0.14		0.73
Clearance Time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Vehicle Extension (s)	2.0	1.5			1.5				1.5	1.0		1.5
Lane Grp Cap (vph)	195	2552			1915				877	242		1123
v/s Ratio Prot	c0.06	0.20			c0.38					c0.09		
v/s Ratio Perm									0.02			0.09
v/c Ratio	0.56	0.28			0.70				0.03	0.63		0.12
Uniform Delay, d1	25.3	2.8			9.9				6.2	24.4		2.4
Progression Factor	1.02	1.50			1.00				1.00	1.00		1.00
Incremental Delay, d2	1.9	0.3			2.1				0.1	3.6		0.2
Delay (s)	27.6	4.4			12.0				6.3	28.0		2.6
Level of Service	C	A			B				A	C		A
Approach Delay (s)		7.5			12.0			6.3			14.1	
Approach LOS		A			B			A			B	

Intersection Summary			
HCM 2000 Control Delay	10.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	57.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Intersection						
Int Delay, s/veh	2.4					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	44	10	70	53	10	60
Future Vol, veh/h	44	10	70	53	10	60
Conflicting Peds, #/hr	0	0	0	3	3	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	46	11	74	56	11	63

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	190	105	0	0	133	0
Stage 1	105	-	-	-	-	-
Stage 2	85	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	801	952	-	-	1458	-
Stage 1	922	-	-	-	-	-
Stage 2	941	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	792	949	-	-	1454	-
Mov Cap-2 Maneuver	792	-	-	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	933	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	1.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	817	1454	-
HCM Lane V/C Ratio	-	-	0.07	0.007	-
HCM Control Delay (s)	-	-	9.7	7.5	0
HCM Lane LOS	-	-	A	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection						
Int Delay, s/veh	0.7					

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	0	113	10	10	114
Future Vol, veh/h	10	0	113	10	10	114
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	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	11	0	123	11	11	124

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	275	129	0	0	134	0
Stage 1	129	-	-	-	-	-
Stage 2	146	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	719	926	-	-	1463	-
Stage 1	902	-	-	-	-	-
Stage 2	886	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	713	926	-	-	1463	-
Mov Cap-2 Maneuver	713	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	879	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	713	1463	-
HCM Lane V/C Ratio	-	-	0.015	0.007	-
HCM Control Delay (s)	-	-	10.1	7.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0	0	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	32	1465	20	20	1145	10	0	0	20	0	0	33
Future Vol, veh/h	32	1465	20	20	1145	10	0	0	20	0	0	33
Conflicting Peds, #/hr	7	0	0	0	0	7	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	60	-	-	-	-	0	0	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	87	87	87	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	37	1684	23	23	1316	11	0	0	23	0	0	38

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1334	0	0	1707	0	0	-	-	854	2291	-	671
Stage 1	-	-	-	-	-	-	-	-	-	1375	-	-
Stage 2	-	-	-	-	-	-	-	-	-	916	-	-
Critical Hdwy	4.14	-	-	4.14	-	-	-	-	6.94	7.54	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	6.54	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	6.54	-	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	-	-	3.32	3.52	-	3.32
Pot Cap-1 Maneuver	513	-	-	368	-	-	0	0	302	21	0	399
Stage 1	-	-	-	-	-	-	0	0	-	153	0	-
Stage 2	-	-	-	-	-	-	0	0	-	293	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	510	-	-	368	-	-	-	-	302	17	-	396
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	17	-	-
Stage 1	-	-	-	-	-	-	-	-	-	141	-	-
Stage 2	-	-	-	-	-	-	-	-	-	251	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.3	17.9	15.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	302	510	-	-	368	-	-	-	396
HCM Lane V/C Ratio	0.076	0.072	-	-	0.062	-	-	-	0.096
HCM Control Delay (s)	17.9	12.6	-	-	15.4	-	-	0	15.1
HCM Lane LOS	C	B	-	-	C	-	-	A	C
HCM 95th %tile Q(veh)	0.2	0.2	-	-	0.2	-	-	-	0.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	1326	70	20	942	22	30	21	20	62	10	111
Future Volume (veh/h)	59	1326	70	20	942	22	30	21	20	62	10	111
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.97	1.00		0.99	0.99		0.99
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
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1900	1863	1863
Adj Flow Rate, veh/h	68	1524	80	23	1083	25	34	24	23	71	11	128
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	75	2484	130	15	2448	57	131	91	88	186	23	165
Arrive On Green	0.08	1.00	1.00	0.00	0.23	0.23	0.10	0.10	0.11	0.10	0.10	0.10
Sat Flow, veh/h	1774	3418	179	1774	3534	82	1239	872	835	917	215	1570
Grp Volume(v), veh/h	68	786	818	23	542	566	34	0	47	82	0	128
Grp Sat Flow(s),veh/h/ln	1774	1770	1827	1774	1770	1846	1239	0	1707	1133	0	1570
Q Serve(g_s), s	2.8	0.0	0.0	0.6	19.7	19.7	2.1	0.0	1.9	3.9	0.0	6.0
Cycle Q Clear(g_c), s	2.8	0.0	0.0	0.6	19.7	19.7	7.8	0.0	1.9	5.8	0.0	6.0
Prop In Lane	1.00		0.10	1.00		0.04	1.00		0.49	0.87		1.00
Lane Grp Cap(c), veh/h	75	1286	1328	15	1226	1279	131	0	179	208	0	165
V/C Ratio(X)	0.91	0.61	0.62	1.51	0.44	0.44	0.26	0.00	0.26	0.39	0.00	0.78
Avail Cap(c_a), veh/h	118	1286	1328	118	1226	1279	306	0	421	406	0	387
HCM Platoon Ratio	2.00	2.00	2.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.2	0.0	0.0	37.4	16.5	16.5	36.4	0.0	30.8	33.2	0.0	32.7
Incr Delay (d2), s/veh	29.5	2.2	2.1	256.6	1.2	1.1	0.4	0.0	0.3	0.4	0.0	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	6.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.0	0.8	0.8	1.4	10.1	10.5	0.7	0.0	0.9	1.7	0.0	2.7
LnGrp Delay(d),s/veh	63.7	2.2	2.1	300.1	17.6	17.6	36.8	0.0	31.1	33.7	0.0	35.7
LnGrp LOS	E	A	A	F	B	B	D		C	C		D
Approach Vol, veh/h		1672			1131			81			210	
Approach Delay, s/veh		4.7			23.4			33.5			34.9	
Approach LOS		A			C			C			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	58.5		11.9	7.2	56.0		11.9
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.5	39.5		19.0	5.5	39.5		19.0
Max Q Clear Time (g_c+I1), s	2.6	2.0		9.8	4.8	21.7		8.0
Green Ext Time (p_c), s	0.0	4.3		0.1	0.0	2.3		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	14.3
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	20	1418	974	10	10	30
Future Vol, veh/h	20	1418	974	10	10	30
Conflicting Peds, #/hr	0	0	0	10	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	23	1649	1133	12	12	35

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1155	0	-	0	2020	583
Stage 1	-	-	-	-	1149	-
Stage 2	-	-	-	-	871	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	606	-	-	-	51	458
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	372	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	600	-	-	-	48	454
Mov Cap-2 Maneuver	-	-	-	-	158	-
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	368	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	18.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	600	-	-	-	309
HCM Lane V/C Ratio	0.039	-	-	-	0.151
HCM Control Delay (s)	11.2	-	-	-	18.7
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	10	1418	964	10	10	10
Future Vol, veh/h	10	1418	964	10	10	10
Conflicting Peds, #/hr	13	0	0	13	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	1	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	85	85	85	85	85	85
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	12	1668	1134	12	12	12

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1159	0	-	0	2011	586
Stage 1	-	-	-	-	1153	-
Stage 2	-	-	-	-	858	-
Critical Hdwy	4.12	-	-	-	6.82	6.92
Critical Hdwy Stg 1	-	-	-	-	5.82	-
Critical Hdwy Stg 2	-	-	-	-	5.82	-
Follow-up Hdwy	2.21	-	-	-	3.51	3.31
Pot Cap-1 Maneuver	604	-	-	-	52	456
Stage 1	-	-	-	-	265	-
Stage 2	-	-	-	-	378	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	597	-	-	-	50	450
Mov Cap-2 Maneuver	-	-	-	-	161	-
Stage 1	-	-	-	-	257	-
Stage 2	-	-	-	-	373	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	21.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	597	-	-	-	237
HCM Lane V/C Ratio	0.02	-	-	-	0.099
HCM Control Delay (s)	11.2	-	-	-	21.9
HCM Lane LOS	B	-	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	0.3

Intersection						
Int Delay, s/veh	0.5					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	10	0	124	279	0
Future Vol, veh/h	10	10	0	124	279	0
Conflicting Peds, #/hr	0	0	6	0	0	6
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	97	97	97	97	97	97
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	10	10	0	128	288	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	422	294	-	0	-	0
Stage 1	294	-	-	-	-	-
Stage 2	128	-	-	-	-	-
Critical Hdwy	6.41	6.21	-	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	-	-	-	-
Pot Cap-1 Maneuver	590	748	0	-	-	-
Stage 1	759	-	0	-	-	-
Stage 2	900	-	0	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	583	744	-	-	-	-
Mov Cap-2 Maneuver	583	-	-	-	-	-
Stage 1	754	-	-	-	-	-
Stage 2	895	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.7	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	-	654	-	-
HCM Lane V/C Ratio	-	0.032	-	-
HCM Control Delay (s)	-	10.7	-	-
HCM Lane LOS	-	B	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-

Intersection						
Int Delay, s/veh	2.3					

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	59	50	101	241	0
Future Vol, veh/h	7	59	50	101	241	0
Conflicting Peds, #/hr	0	0	7	0	0	7
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	7	60	51	103	246	0

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	458	253	253	0	-	0
Stage 1	253	-	-	-	-	-
Stage 2	205	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	563	788	1318	-	-	-
Stage 1	791	-	-	-	-	-
Stage 2	832	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	533	783	1309	-	-	-
Mov Cap-2 Maneuver	533	-	-	-	-	-
Stage 1	753	-	-	-	-	-
Stage 2	826	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	2.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1309	-	746	-	-
HCM Lane V/C Ratio	0.039	-	0.09	-	-
HCM Control Delay (s)	7.9	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.3	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	110	4	81	110	10
Future Vol, veh/h	19	110	4	81	110	10
Conflicting Peds, #/hr	0	0	8	0	0	8
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	1	1	1	1	1	1
Mvmt Flow	20	116	4	85	116	11

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	223	130	135	0	-	0
Stage 1	130	-	-	-	-	-
Stage 2	93	-	-	-	-	-
Critical Hdwy	6.41	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.41	-	-	-	-	-
Critical Hdwy Stg 2	5.41	-	-	-	-	-
Follow-up Hdwy	3.509	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	767	922	1456	-	-	-
Stage 1	898	-	-	-	-	-
Stage 2	933	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	752	915	1445	-	-	-
Mov Cap-2 Maneuver	752	-	-	-	-	-
Stage 1	888	-	-	-	-	-
Stage 2	926	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.8	0.4	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1445	-	887	-	-
HCM Lane V/C Ratio	0.003	-	0.153	-	-
HCM Control Delay (s)	7.5	0	9.8	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.5	-	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	916	420	340	688	10	220	10	841	0	0	10
Future Volume (veh/h)	20	916	420	340	688	10	220	10	841	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	0	1863	1900
Adj Flow Rate, veh/h	21	954	0	354	717	10	229	10	876	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	11	1162	520	379	1913	27	501	18	841	0	0	492
Arrive On Green	0.01	0.33	0.00	0.21	0.54	0.54	0.31	0.31	0.31	0.00	0.00	0.32
Sat Flow, veh/h	1774	3539	1583	1774	3571	50	1332	58	1583	0	0	1579
Grp Volume(v), veh/h	21	954	0	354	355	372	239	0	876	0	0	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1852	1390	0	1583	0	0	1579
Q Serve(g_s), s	0.5	20.3	0.0	16.0	9.5	9.6	11.6	0.0	25.5	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.5	20.3	0.0	16.0	9.5	9.6	11.9	0.0	25.5	0.0	0.0	0.4
Prop In Lane	1.00		1.00	1.00		0.03	0.96		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	11	1162	520	379	948	992	519	0	841	0	0	492
V/C Ratio(X)	1.87	0.82	0.00	0.93	0.37	0.37	0.46	0.00	1.04	0.00	0.00	0.02
Avail Cap(c_a), veh/h	217	1297	580	650	948	992	519	0	841	0	0	492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	40.7	25.3	0.0	31.6	11.0	11.0	23.7	0.0	19.2	0.0	0.0	19.4
Incr Delay (d2), s/veh	416.6	4.3	0.0	8.5	0.4	0.3	0.6	0.0	42.4	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	10.5	0.0	8.8	4.7	4.9	4.6	0.0	28.7	0.0	0.0	0.2
LnGrp Delay(d),s/veh	458.1	29.6	0.0	40.1	11.4	11.4	24.3	0.0	61.6	0.0	0.0	19.4
LnGrp LOS	F	C		D	B	B	C		F			B
Approach Vol, veh/h		975			1081			1115			10	
Approach Delay, s/veh		38.8			20.8			53.6			19.4	
Approach LOS		D			C			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	21.5	30.9		29.5	4.5	47.8		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	18.0	22.3		2.4	2.5	11.6		27.5
Green Ext Time (p_c), s	0.4	4.6		0.0	0.0	5.8		0.0

Intersection Summary		
HCM 2010 Ctrl Delay		37.8
HCM 2010 LOS		D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	1215	410	10	1128	20	410	31	52	200	0	184
Future Volume (veh/h)	42	1215	410	10	1128	20	410	31	52	200	0	184
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1676	1676	1676	1676	1676	1710	1676	1676	1676	1676	1676	1710
Adj Flow Rate, veh/h	45	1293	0	11	1200	21	460	0	0	213	0	196
Adj No. of Lanes	1	2	1	1	2	0	2	0	1	1	1	0
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	69	1819	814	12	1715	30	515	0	230	244	0	218
Arrive On Green	0.04	0.57	0.00	0.02	1.00	1.00	0.16	0.00	0.00	0.15	0.00	0.15
Sat Flow, veh/h	1597	3185	1425	1597	3201	56	3193	0	1425	1597	0	1425
Grp Volume(v), veh/h	45	1293	0	11	597	624	460	0	0	213	0	196
Grp Sat Flow(s),veh/h/ln	1597	1593	1425	1597	1593	1664	1597	0	1425	1597	0	1425
Q Serve(g_s), s	4.2	43.9	0.0	1.0	0.0	0.0	21.2	0.0	0.0	19.6	0.0	20.3
Cycle Q Clear(g_c), s	4.2	43.9	0.0	1.0	0.0	0.0	21.2	0.0	0.0	19.6	0.0	20.3
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	69	1819	814	12	853	892	515	0	230	244	0	218
V/C Ratio(X)	0.65	0.71	0.00	0.88	0.70	0.70	0.89	0.00	0.00	0.87	0.00	0.90
Avail Cap(c_a), veh/h	103	1819	814	39	853	892	941	0	420	279	0	249
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.7	23.2	0.0	73.8	0.0	0.0	61.6	0.0	0.0	62.1	0.0	62.5
Incr Delay (d2), s/veh	3.9	2.4	0.0	46.4	4.7	4.6	2.2	0.0	0.0	20.9	0.0	27.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	19.8	0.0	0.6	1.1	1.1	9.5	0.0	0.0	10.1	0.0	9.7
LnGrp Delay(d),s/veh	74.5	25.6	0.0	120.2	4.7	4.6	63.8	0.0	0.0	83.0	0.0	90.3
LnGrp LOS	E	C		F	A	A	E			F		F
Approach Vol, veh/h		1338			1232			460			409	
Approach Delay, s/veh		27.2			5.7			63.8			86.5	
Approach LOS		C			A			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.2	89.7		26.9	10.5	84.4		28.2
Change Period (Y+Rc), s	3.7	5.3		* 4.2	3.7	5.3		4.2
Max Green Setting (Gmax), s	4.0	52.6		* 26	10.0	52.6		44.0
Max Q Clear Time (g_c+I1), s	3.0	45.9		22.3	6.2	2.0		23.2
Green Ext Time (p_c), s	0.0	4.4		0.5	0.0	16.7		0.8

Intersection Summary		
HCM 2010 Ctrl Delay		31.5
HCM 2010 LOS		C

Notes

User approved volume balancing among the lanes for turning movement.
* HCM 2010 computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	66	1341	21	30	811	45	20	23	30	137	9	125
Future Volume (veh/h)	66	1341	21	30	811	45	20	23	30	137	9	125
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1900	1881	1881	1900	1881	1881
Adj Flow Rate, veh/h	76	1541	24	34	932	52	23	26	34	157	10	144
Adj No. of Lanes	1	2	0	1	2	0	0	1	1	0	1	1
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	87	1990	31	25	1780	99	71	57	433	93	3	433
Arrive On Green	0.03	0.37	0.37	0.00	0.17	0.17	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	1792	3600	56	1792	3434	192	0	207	1583	0	12	1583
Grp Volume(v), veh/h	76	764	801	34	485	499	49	0	34	167	0	144
Grp Sat Flow(s),veh/h/ln	1792	1787	1869	1792	1787	1839	207	0	1583	12	0	1583
Q Serve(g_s), s	3.2	28.3	28.4	1.1	18.5	18.5	0.0	0.0	1.2	0.0	0.0	5.5
Cycle Q Clear(g_c), s	3.2	28.3	28.4	1.1	18.5	18.5	20.5	0.0	1.2	20.5	0.0	5.5
Prop In Lane	1.00		0.03	1.00		0.10	0.47		1.00	0.94		1.00
Lane Grp Cap(c), veh/h	87	988	1033	25	926	953	127	0	433	96	0	433
V/C Ratio(X)	0.88	0.77	0.78	1.35	0.52	0.52	0.39	0.00	0.08	1.73	0.00	0.33
Avail Cap(c_a), veh/h	239	988	1033	167	926	953	127	0	433	96	0	433
HCM Platoon Ratio	0.67	0.67	0.67	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	36.1	19.5	19.5	37.3	22.7	22.7	22.5	0.0	20.2	36.8	0.0	21.8
Incr Delay (d2), s/veh	10.0	5.9	5.7	176.5	2.0	1.9	0.7	0.0	0.0	369.6	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	15.5	16.2	1.8	9.7	10.0	0.8	0.0	0.5	11.9	0.0	2.4
LnGrp Delay(d),s/veh	46.1	25.4	25.2	214.6	24.6	24.6	23.3	0.0	20.3	406.5	0.0	21.9
LnGrp LOS	D	C	C	F	C	C	C		C	F		C
Approach Vol, veh/h		1641			1018			83			311	
Approach Delay, s/veh		26.2			30.9			22.0			228.4	
Approach LOS		C			C			C			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	7.6	42.9		24.5	5.1	45.4		24.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	10.5	32.5		21.0	7.5	32.5		21.0
Max Q Clear Time (g_c+I1), s	5.2	20.5		22.5	3.1	30.4		22.5
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	1.1		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	48.3
HCM 2010 LOS	D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	160	1268	0	0	796	80	0	0	120	50	0	110
Future Volume (vph)	160	1268	0	0	796	80	0	0	120	50	0	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	4.0			4.0				4.0	4.0		4.0
Lane Util. Factor	1.00	0.95			0.95				1.00	1.00		1.00
Frpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		0.98
Flpb, ped/bikes	1.00	1.00			1.00				1.00	1.00		1.00
Frt	1.00	1.00			0.99				0.86	1.00		0.85
Flt Protected	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (prot)	1752	3505			3440				1596	1752		1544
Flt Permitted	0.95	1.00			1.00				1.00	0.95		1.00
Satd. Flow (perm)	1752	3505			3440				1596	1752		1544
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	174	1378	0	0	865	87	0	0	130	54	0	120
RTOR Reduction (vph)	0	0	0	0	7	0	0	0	49	0	0	22
Lane Group Flow (vph)	174	1378	0	0	945	0	0	0	81	54	0	98
Confl. Peds. (#/hr)						10						10
Confl. Bikes (#/hr)						5						
Heavy Vehicles (%)	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Turn Type	Prot	NA			NA				Perm	Prot		Perm
Protected Phases	1	6			2					4		
Permitted Phases									2			6
Actuated Green, G (s)	11.2	61.4			46.7				46.7	6.1		61.4
Effective Green, g (s)	10.7	61.4			46.7				46.7	5.6		61.4
Actuated g/C Ratio	0.14	0.82			0.62				0.62	0.07		0.82
Clearance Time (s)	3.5	4.0			4.0				4.0	3.5		4.0
Vehicle Extension (s)	2.0	1.5			1.5				1.5	1.0		1.5
Lane Grp Cap (vph)	249	2869			2141				993	130		1264
v/s Ratio Prot	c0.10	c0.39			0.27					c0.03		
v/s Ratio Perm									0.05			0.06
v/c Ratio	0.70	0.48			0.44				0.08	0.42		0.08
Uniform Delay, d1	30.6	2.0			7.4				5.6	33.1		1.3
Progression Factor	0.80	2.47			1.00				1.00	1.00		1.00
Incremental Delay, d2	5.2	0.4			0.7				0.2	0.8		0.1
Delay (s)	29.7	5.5			8.0				5.8	33.9		1.4
Level of Service	C	A			A				A	C		A
Approach Delay (s)		8.2			8.0			5.8			11.5	
Approach LOS		A			A			A			B	

Intersection Summary			
HCM 2000 Control Delay	8.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	75.0	Sum of lost time (s)	12.0
Intersection Capacity Utilization	56.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	740	380	257	776	10	290	10	1108	0	0	10
Future Volume (veh/h)	0	740	380	257	776	10	290	10	1108	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.99		1.00	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	0	1845	1900
Adj Flow Rate, veh/h	0	763	0	265	800	10	299	10	1142	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	2	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	2	1066	477	292	1868	23	576	16	1469	0	0	558
Arrive On Green	0.00	0.30	0.00	0.17	0.53	0.53	0.36	0.36	0.36	0.00	0.00	0.37
Sat Flow, veh/h	1757	3505	1568	1757	3543	44	1323	44	2760	0	0	1553
Grp Volume(v), veh/h	0	763	0	265	396	414	309	0	1142	0	0	10
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1835	1368	0	1380	0	0	1553
Q Serve(g_s), s	0.0	13.6	0.0	10.4	9.7	9.7	13.1	0.0	23.2	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.0	13.6	0.0	10.4	9.7	9.7	13.3	0.0	23.2	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.02	0.97		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	2	1066	477	292	924	967	592	0	1469	0	0	558
V/C Ratio(X)	0.00	0.72	0.00	0.91	0.43	0.43	0.52	0.00	0.78	0.00	0.00	0.02
Avail Cap(c_a), veh/h	250	1494	668	749	924	967	596	0	1478	0	0	558
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.8	0.0	28.8	10.2	10.2	18.8	0.0	13.1	0.0	0.0	14.4
Incr Delay (d2), s/veh	0.0	1.4	0.0	4.4	0.4	0.4	0.8	0.0	2.7	0.0	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	0.0	6.8	0.0	5.4	4.7	4.9	5.1	0.0	9.3	0.0	0.0	0.1
LnGrp Delay(d),s/veh	0.0	23.1	0.0	33.2	10.6	10.6	19.7	0.0	15.8	0.0	0.0	14.4
LnGrp LOS		C		C	B	B	B		B			B
Approach Vol, veh/h		763			1075			1451			10	
Approach Delay, s/veh		23.1			16.2			16.6			14.4	
Approach LOS		C			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.7	25.4		29.3	0.0	41.1		29.3
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	12.4	15.6		2.3	0.0	11.7		25.2
Green Ext Time (p_c), s	0.3	5.8		0.0	0.0	6.6		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	916	420	340	688	10	220	10	841	0	0	10
Future Volume (veh/h)	20	916	420	340	688	10	220	10	841	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	0	1863	1900
Adj Flow Rate, veh/h	21	954	0	354	717	10	229	10	876	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	2	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	10	1207	540	381	1965	27	473	17	1414	0	0	451
Arrive On Green	0.01	0.34	0.00	0.21	0.55	0.55	0.29	0.29	0.29	0.00	0.00	0.29
Sat Flow, veh/h	1774	3539	1583	1774	3571	50	1329	58	2787	0	0	1578
Grp Volume(v), veh/h	21	954	0	354	355	372	239	0	876	0	0	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1852	1387	0	1393	0	0	1578
Q Serve(g_s), s	0.4	18.4	0.0	14.8	8.6	8.6	11.1	0.0	17.1	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.4	18.4	0.0	14.8	8.6	8.6	11.5	0.0	17.1	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.03	0.96		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	10	1207	540	381	974	1019	490	0	1414	0	0	451
V/C Ratio(X)	2.09	0.79	0.00	0.93	0.36	0.36	0.49	0.00	0.62	0.00	0.00	0.02
Avail Cap(c_a), veh/h	234	1400	626	702	974	1019	561	0	1554	0	0	451
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	37.7	22.5	0.0	29.2	9.6	9.6	23.6	0.0	13.4	0.0	0.0	19.3
Incr Delay (d2), s/veh	515.7	3.0	0.0	4.8	0.3	0.3	0.8	0.0	0.7	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	9.5	0.0	7.8	4.2	4.4	4.4	0.0	6.6	0.0	0.0	0.2
LnGrp Delay(d),s/veh	553.6	25.6	0.0	34.0	9.9	9.9	24.3	0.0	14.1	0.0	0.0	19.3
LnGrp LOS	F	C		C	A	A	C		B			B
Approach Vol, veh/h		975			1081			1115			10	
Approach Delay, s/veh		37.0			17.8			16.3			19.3	
Approach LOS		D			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.3	29.9		25.7	4.4	45.7		25.7
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	16.8	20.4		2.3	2.4	10.6		19.1
Green Ext Time (p_c), s	0.5	5.4		0.0	0.0	5.9		3.0

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	731	380	251	770	10	290	10	1091	0	0	10
Future Volume (veh/h)	0	731	380	251	770	10	290	10	1091	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	0.99		1.00	1.00		0.99
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
Adj Sat Flow, veh/h/ln	1845	1845	1845	1845	1845	1900	1900	1845	1845	0	1845	1900
Adj Flow Rate, veh/h	0	754	0	259	794	10	299	10	1125	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	3	3	3	3	3	3	3	3	3	0	3	3
Cap, veh/h	3	1059	474	286	1849	23	583	16	837	0	0	565
Arrive On Green	0.00	0.30	0.00	0.16	0.52	0.52	0.36	0.36	0.36	0.00	0.00	0.37
Sat Flow, veh/h	1757	3505	1568	1757	3542	45	1324	44	1568	0	0	1553
Grp Volume(v), veh/h	0	754	0	259	393	411	309	0	1125	0	0	10
Grp Sat Flow(s),veh/h/ln	1757	1752	1568	1757	1752	1835	1368	0	1568	0	0	1553
Q Serve(g_s), s	0.0	13.4	0.0	10.1	9.7	9.7	12.9	0.0	25.5	0.0	0.0	0.3
Cycle Q Clear(g_c), s	0.0	13.4	0.0	10.1	9.7	9.7	13.2	0.0	25.5	0.0	0.0	0.3
Prop In Lane	1.00		1.00	1.00		0.02	0.97		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	3	1059	474	286	915	957	599	0	837	0	0	565
V/C Ratio(X)	0.00	0.71	0.00	0.91	0.43	0.43	0.52	0.00	1.34	0.00	0.00	0.02
Avail Cap(c_a), veh/h	251	1501	671	752	915	957	599	0	837	0	0	565
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)	0.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	0.0	21.7	0.0	28.8	10.3	10.3	18.5	0.0	16.3	0.0	0.0	14.1
Incr Delay (d2), s/veh	0.0	1.3	0.0	4.4	0.5	0.4	0.8	0.0	162.9	0.0	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	0.0	6.7	0.0	5.2	4.7	4.9	5.0	0.0	53.8	0.0	0.0	0.1
LnGrp Delay(d),s/veh	0.0	23.0	0.0	33.2	10.8	10.8	19.3	0.0	179.2	0.0	0.0	14.1
LnGrp LOS		C		C	B	B	B		F			B
Approach Vol, veh/h		754			1063			1434			10	
Approach Delay, s/veh		23.0			16.2			144.8			14.1	
Approach LOS		C			B			F			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	15.4	25.2		29.5	0.0	40.6		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	12.1	15.4		2.3	0.0	11.7		27.5
Green Ext Time (p_c), s	0.3	5.8		0.0	0.0	6.5		0.0

Intersection Summary			
HCM 2010 Ctrl Delay			74.3
HCM 2010 LOS			E

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	910	420	331	681	10	220	10	831	0	0	10
Future Volume (veh/h)	20	910	420	331	681	10	220	10	831	0	0	10
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1900	1900	1863	1863	0	1863	1900
Adj Flow Rate, veh/h	21	948	0	345	709	10	229	10	866	0	0	10
Adj No. of Lanes	1	2	1	1	2	0	0	1	1	0	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	0	2	2
Cap, veh/h	11	1164	521	370	1896	27	506	18	838	0	0	497
Arrive On Green	0.01	0.33	0.00	0.21	0.53	0.53	0.31	0.31	0.31	0.00	0.00	0.32
Sat Flow, veh/h	1774	3539	1583	1774	3571	50	1332	58	1583	0	0	1579
Grp Volume(v), veh/h	21	948	0	345	351	368	239	0	866	0	0	10
Grp Sat Flow(s),veh/h/ln	1774	1770	1583	1774	1770	1851	1391	0	1583	0	0	1579
Q Serve(g_s), s	0.5	19.9	0.0	15.5	9.4	9.4	11.4	0.0	25.5	0.0	0.0	0.4
Cycle Q Clear(g_c), s	0.5	19.9	0.0	15.5	9.4	9.4	11.8	0.0	25.5	0.0	0.0	0.4
Prop In Lane	1.00		1.00	1.00		0.03	0.96		1.00	0.00		1.00
Lane Grp Cap(c), veh/h	11	1164	521	370	940	983	524	0	838	0	0	497
V/C Ratio(X)	1.89	0.81	0.00	0.93	0.37	0.37	0.46	0.00	1.03	0.00	0.00	0.02
Avail Cap(c_a), veh/h	219	1310	586	657	940	983	524	0	838	0	0	497
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	40.3	24.9	0.0	31.5	11.1	11.1	23.2	0.0	19.1	0.0	0.0	19.0
Incr Delay (d2), s/veh	427.4	4.0	0.0	6.9	0.4	0.3	0.6	0.0	39.9	0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.6	10.4	0.0	8.3	4.7	4.9	4.5	0.0	27.7	0.0	0.0	0.2
LnGrp Delay(d),s/veh	468.4	29.0	0.0	38.4	11.5	11.5	23.8	0.0	59.0	0.0	0.0	19.0
LnGrp LOS	F	C		D	B	B	C		F			B
Approach Vol, veh/h		969			1064			1105			10	
Approach Delay, s/veh		38.5			20.2			51.4			19.0	
Approach LOS		D			C			D			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	20.9	30.6		29.5	4.5	47.1		29.5
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	31.0	30.0		19.0	11.0	30.0		26.0
Max Q Clear Time (g_c+I1), s	17.5	21.9		2.4	2.5	11.4		27.5
Green Ext Time (p_c), s	0.4	4.7		0.0	0.0	5.8		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	36.8
HCM 2010 LOS	D

Appendix D:
Dominican Hospital Employment Growth Estimates

Data provided by Dominican Hospital Project Team May 4, 2020.

Existing						
	# of rooms	Min. Staffing Ratio per room	Support Staff per unit	Subtotal	**Planned utilization**	
Opearting Rooms	8	6	3	51	75%	
Preoperative Care Unit	7	1/4	1	3		
Post Anesthesia Care Unit	10	1/2	1	6		
Patient Rooms						
ICU Unit	n/c					
NICU Unit	n/c					
Maternal Child Health Unit	n/c					
Acute Rehab	n/c					
Med Surg / TELE						
TCU(North East)	36	1/4	3	12		
M/S (North West)	26	1/5	3	9		
M/S (West)	30	1/5	3	9		
			Approximate Staffing Total	90		
Proposed						
	# of rooms	Staffing Ratio per room		Total		
Operating Rooms	10	6	4	64		
Preoperative Care Unit	18	1/4	2	7		
Post Anesthesia Care Unit	18	1/2	2	11		
Patient Rooms						
ICU Unit	n/c					
NICU Unit	n/c					
Maternal Child Health Unit	n/c					
Acute Rehab	n/c					
Med Surg / TELE					75%	
TCU(North East)	16	1/4	3	7		Assumed Tele ratio
M/S (North East)	19	1/5	3	7		
M/S (North West)	14	1/5	3	6		
M/S (West)	17	1/5	3	7		
New Tower M/S L2	30	1/5	3	9		
New Tower M/S L3	30	1/4	3	11		Assumed Tele ratio
			Approximate Staffing Total	129		
			Potential Staffing Increase	39		
Patient Volume Assumptions	**Planning Start Date**	**Planning Forecast Date**	**% of change**	**Planned utilization**	**% of cases during Primary Shift**	**Typical Planned Shift Hours per OR**
	2017	**2030**				
Inpatient Surgery	2679	3326	24%			
Outpatient Surgery	1699	2489	46%			
Total Surgical cases	4378	5815	33%	75%	80%	40
Family @ bedside assumption	# of beds	Family Members per bedside	% of increase			
Existing	222	1.5		333		
Future State	222	1.5	10%	366.3		
			Potential visitor Increase	33.3		

Appendix E:
CVS Pharmacy – Santa Cruz
Transportation Impact Analysis

CVS Pharmacy – Santa Cruz Transportation Impact Analysis

Prepared For:

BOOS DEVELOPMENT WEST, LLC

Prepared By:

Kimley-Horn

May 2019

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EXECUTIVE SUMMARY

This report presents the results of the Transportation Impact Analysis (TIA) for the proposed Santa Cruz CVS (Project) located in Santa Cruz County, California (County).

PROJECT DESCRIPTION

The Project proposes to construct a new CVS located south of the intersection of Soquel Drive and Hospital Drive. Project site land uses includes one multifamily residential unit and a furniture store.

The Project is anticipated to be open to customers seven days a week from 8:00 AM to 12:00 AM. It will include 13,111 square feet of gross floor area and drive-through pharmacy window. The pharmacy drive through window will be open from 8:00am to 12:00am Monday through Sunday. Additionally, the CVS could include a minute clinic that would provide flu shots and similar services. The Project will accommodate on-site parking for bicycles and passenger vehicles and will construct one driveway along Soquel Drive and one driveway along Commercial Way.

The Project will be accessed via a full access driveway on Soquel Drive with exceptions that left-turn out movement from the main CVS driveway will be restricted throughout the day and the left-turn out movement from the Hospital driveway will be restricted during the AM and PM peak periods.

ANALYSIS METHODOLOGY

Impacts associated with the Project were evaluated for the weekday AM and PM peak one-hour periods, consistent with accepted County and Caltrans guidelines and criteria. Typically, peak periods extend over more than just the one hour analyzed, but this analysis presents the busiest one hour during each AM and PM peak period. Peak road network traffic in the study area was observed between 7:00am-9:00am in the AM and between 4:00pm-6:00pm in the PM. The TIA analysis was conducted for the one hour AM and one hour PM peaks for the following analysis scenarios:

- **Scenario 1: Existing (2018) Conditions**
  Based upon current traffic counts collected in March 2018 and existing roadway geometry and traffic control.
- **Scenario 2: Existing (2018) Plus Project Conditions**
  Based upon existing traffic volumes, existing roadway geometry, and traffic control and traffic generated by the Project.
- **Scenario 3: Near Term (2020) Conditions**
  Based upon future year traffic forecasts estimated for developments anticipated to occur at the time the Project is constructed in approximately the year 2020. These forecasts were determined by applying a historic average annual percent growth rate for two years after 2018, using Santa Cruz County Regional Transportation Commission (SCCRTC) ADT data.
- **Scenario 4: Near Term (2020) Plus Project Conditions**
  Based upon Project traffic added to the Near Term (2020) Conditions.
- **Scenario 5: Cumulative (2035) Conditions**
  Based upon future traffic forecasted for developments anticipated to occur through 2035. These forecasts were calculated by applying an average annual percent growth rate from year 2018 through year 2035, utilizing historic growth rates on Soquel Drive.
- **Scenario 6: Cumulative (2035) Plus Project Conditions**
  Based upon Project traffic added to the Cumulative year traffic volumes and 2035 Conditions.

STUDY INTERSECTIONS

Seven study intersections were analyzed based on the anticipated Project trip assignment and knowledge of the study area, as well as consultation with Santa Cruz County (SCC) and Caltrans staff. The following intersections were evaluated in this study:

1. Soquel Drive & Soquel Avenue
2. Soquel Drive & Paul Sweet Road / Commercial Way
3. Soquel Drive & Hospital Drive / Project Driveway #1
4. Soquel Drive & Hospital Drive / Commercial Crossing
5. Soquel Drive & Mission Drive
6. Soquel Drive & Thurber Lane
7. Highway 1 NB On-Off Ramps / Commercial Way & Project Driveway #2

TRIP GENERATION ESTIMATES

The Project is anticipated to generate approximately 50 gross AM peak hour trips, 135 gross PM peak hour trips, and 1,432 gross average daily trips on weekdays, based on Institute of Transportation Engineers (ITE) Trip Generation 10th Edition data and methodologies. Gross Project trips are reduced by 66 PM peak hour trips to account for pass-by trips, based ITE data and methodologies. ITE does not provide pass-by guidelines for AM peak hours, therefore, no pass-by reductions are applied to the AM peak trip generation estimates. Consistent with standard Santa Cruz County traffic engineering practices, the Project receives a trip credit for replacing the existing uses on the Project site, namely; 2,400 square feet of mini-warehousing, 1 apartment dwelling unit, and a 10,550-square foot furniture store resulting in a trip credit of 5 in the AM peak hour, 7 in the PM peak hour, and 80 average daily trips. **Therefore, the traffic analysis is based on the Project generating a net of 45 AM peak hour trips, 62 PM peak hour trips, and 1,286 daily trips.**

VEHICLE MILES TRAVELED (VMT) EVALUATION

The VMT analysis considered how the introduction of this store, its location, and the nature of services that it would provide, would affect customers' destination choices given existing travel patterns. Based on the results of this assessment, it was determined that the proposed CVS store would result in a net VMT reduction. Accordingly, it was determined that the proposed CVS store would not result in a significant transportation impact with respect to SB 743 VMT evaluation methodologies.

IMPACTS AND MITIGATION MEASURES

The Project will trigger impacts at study intersections identified below. Additionally, the Caltrans District 5 DEIR for highway 1 improvements identifies the construction of auxiliary lanes between Soquel and 41st and upgrades to the Soquel Drive interchange together with the construction of an HOV lane in the median. Construction of the auxiliary lanes is currently in the design phase. Improving the interchange is a long-term improvement.

Soquel Drive & Paul Sweet Road / Commercial Way (Intersection #2)

Soquel Drive & Paul Sweet Road / Commercial Way is a Caltrans District 5 intersection. The study intersection operates at unacceptable LOS during AM and PM peak hours during Cumulative and Cumulative plus Project study scenarios. As part of the planned Highway 1 / Soquel Drive & Soquel Avenue interchange improvements, Caltrans plans to construct the following improvements at this study intersection:

- Convert one westbound left turn lane to westbound through lane.
- Add one westbound shared through and right turn bay.
- Add one northbound left turn lane.
- Add one eastbound right turn bay

A detailed layout of this intersection is attached in **Appendix**.

Implementation of these improvements will result in LOS D during AM and PM peak hours for this intersection under Cumulative plus Project conditions. However, these improvements are currently unfunded and are not included in the County Capital Improvement Program (CIP). Caltrans does not have a fee program in place for collecting fair share impact fees and the planned interchange improvements are not under Santa Cruz County jurisdiction.

Soquel Drive & Mission Drive (Intersection #5)

Soquel Drive & Mission Drive is a Santa Cruz County intersection. The intersection will operate at an unacceptable LOS E during the PM peak during Cumulative and Cumulative plus Project conditions and addition of Project traffic will cause the critical movement volume to capacity ratio to increase by more than 1% (1.48%). Therefore, this intersection would be impacted by the Project. This impact would be mitigated by implementing split phasing signal operation on the northbound and southbound approaches. **The Project's proportional fair share payment for this impact is approximately 1.9%.** The engineering cost estimate for this improvement is $81,000 (included in the **Appendix).** Therefore, the Project's fair share cost would be approximately **$1,570.**

Highway 1 NB On-Off Ramp / Commercial Way & Project Driveway #2 (Intersection #7)

This is a Caltrans District 5 intersection. The study intersection operates at unacceptable LOS during AM and PM peak hours in Cumulative and Cumulative plus Project study scenarios. As part of the planned Highway 1 / Soquel Drive & Soquel Avenue interchange improvements, Caltrans plans to construct the improvements identified at intersection #2 above, as well as ramp realignment and a cul-de-sac at the Project driveway.

Implementation of these improvements would improve intersection operations to LOS A during AM and PM peak hours. However, these improvements are currently unfunded and are therefore not included in the County Capital Improvement Project (CIP). The Cumulative impact is thus significant and unavoidable until the improvement is constructed.

Traffic Improvement Area Fees

The Project is required to pay a Transportation Improvement Area (TIA) fee to Santa Cruz County based on daily net new trips generated. The Santa Cruz County Fee Schedule uses a daily trip rate of 24 trips per 1,000 square feet for the existing furniture store and proposed pharmacy land use categories. Additionally, the fee schedule uses a daily rate of 5 trips per 1,000 square feet for the existing warehouse land use category. The existing apartment land use is credited based on units, not daily trips. Daily rates identified in the County fee program and referenced in this section are used in the fee calculations only. Consistent with County policies, ITE trip generation data and methodologies are used in this study's impact and mitigation analysis.

Based on the *County of Santa Cruz Department of Public Works – Service & Capital Improvement Fees schedule, revised December 12, 2017*, a **total fee credit of $151,920** is estimated for the existing warehouse, apartment, and furniture land uses that will be demolished prior to construction of the proposed pharmacy. This includes Soquel Transportation Improvement fees ($75,960) and Soquel Roadside Improvement fees ($75,960). **The Project will be responsible to pay a total of $36,880** ($188,800 gross impact fee minus $151,920 fee credit = $36,880) in County improvement fees. These fees include Soquel Transportation Improvement fees ($18,440) and Soquel Roadside Improvement fees ($18,440). These TIA fees are subject to change and are payable at the time the building permit is issued.

Through payment of the TIA fees and fair share payments identified above, the Project would mitigate all incremental Cumulative impacts.

Conclusion

Based on the above mitigation measures, the Project will be required to pay a total of $36,880 in traffic impact fees. Implementation of these mitigation measures will reduce all Project-related impacts to less than significant.

1. INTRODUCTION

This TIA presents the findings of the traffic analysis for the proposed construction of a new Santa Cruz CVS (the Project), which will be located south of the intersection of Soquel Drive and Hospital Drive, in unincorporated Santa Cruz County. The site currently contains one multifamily residential unit and a furniture store. The Project is anticipated to be open to customers seven days a week from 8:00 AM to 12:00 AM. It will include 13,111 square feet of gross floor area and pharmacy drive-through. The pharmacy drive through window hours of operations are anticipated to be from 8:00am to 12:00am Monday through Sunday. Additionally, the CVS could include a minute clinic that would provide flu shots and similar services. The Project will accommodate on-site parking for 13 bicycles and 50 passenger vehicles (including 4 ADA spaces) and will construct one driveway along Soquel Drive and one driveway along Commercial Way.

Figure 1 shows the location of the Project site, study intersections, and the surrounding study area. **Figure 2** illustrates the Project site plan.

Based upon discussions with California Department of Transportation (Caltrans) Traffic Operation Staff at a meeting on January 4, 2018, it is anticipated that the existing Commercial Way connection to the Highway 1 northbound on and off ramp will be realigned once the interchange is improved. The new alignment will convert Commercial Way just west of the Project driveway into a cul-de-sac. The southern Project driveway onto Commercial way will then operate as a right-in, left-out only. This traffic analysis assumes these improvements will be constructed as part of the cumulative traffic modeling scenarios. This study complies with traffic impact analysis guidelines and criteria set forth by Santa Cruz County, the California Department of Transportation, and CEQA.

ANALYSIS METHODOLOGY

DEVELOPMENT CONDITIONS

This transportation impact analysis was based on the following development conditions:

- **Scenario 1: Existing (2018) Conditions**
  Based upon current traffic counts collected in March 2018 and existing roadway geometry and traffic control.
- **Scenario 2: Existing (2018) Plus Project Conditions**
  Based upon existing traffic volumes, existing roadway geometry, and traffic control and traffic generated by the Project.
- **Scenario 3: Near Term (2020) Conditions**
  Based upon future year traffic forecasts estimated for developments anticipated to occur at the time the Project is constructed in approximately the year 2020. These forecasts were determined by applying a historic average annual percent growth rate for two years after 2018, using Santa Cruz County Regional Transportation Commission (SCCRTC) ADT data.
- **Scenario 4: Near Term (2020) Plus Project Conditions**
  Based upon Project traffic added to the Near Term (2020) Conditions.
- **Scenario 5: Cumulative (2035) Conditions**
  Based upon future traffic forecasted for developments anticipated to occur through 2035. These forecasts were calculated by applying an average annual percent growth rate from year 2018 through year 2035, utilizing historic growth rates on Soquel Drive.
- **Scenario 6: Cumulative (2035) Plus Project Conditions**
  Based upon Project traffic added to the Cumulative year traffic volumes and 2035 Conditions.

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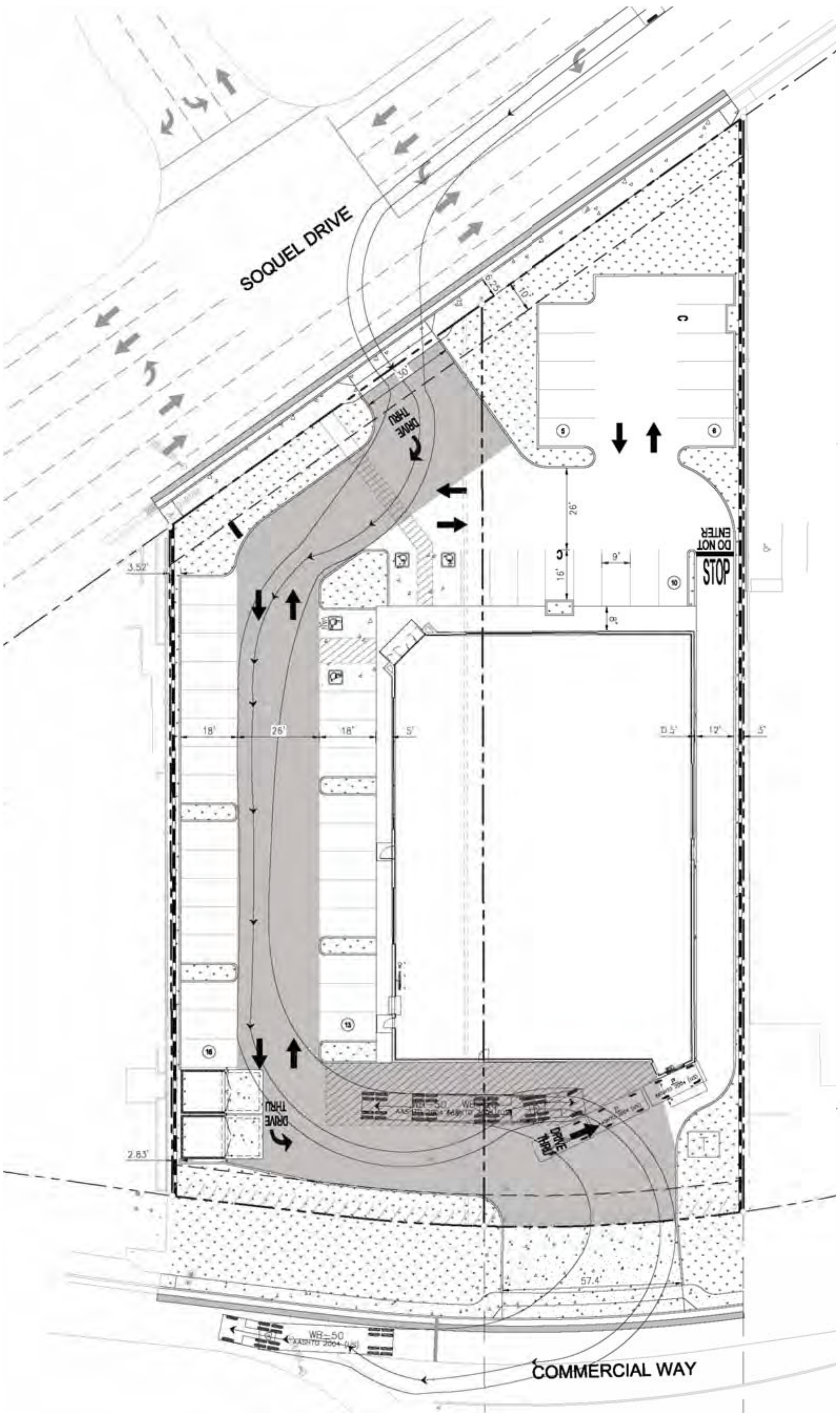
Santa Cruz CVS

Figure 1

Project Location and Study Intersections



LEGEND

- PROPERTY BOUNDARY
- CENTERLINE
- HEAVY DUTY CONCRETE
- LANDSCAPE
- CONCRETE SIDEWALK
- HEAVY DUTY ASPHALT
- RETAINING WALL
- NEW TRANSFORMER
- NEW SIGN
- EXISTING TREE

SITE DATA	
APN	025-071-20 025-071-05
SITE AREA	1.19 AC
PARCEL AREA	51,904 S.F.
EXISTING BUILDING AREA	13,750 S.F.
PROPOSED BUILDING AREA	13,111 S.F.
PROPOSED BUILDING HEIGHT	28'-10"
PROPOSED LANDSCAPE AREA	10,494 S.F.
F.A.R.	25%
OPEN SPACE	20%

PARKING DATA

	REQUIRED	PROVIDED
STANDARD SPACES	46	46
ADA SPACES	2	4
TOTAL	48	50
PARKING RATIO	1 SPACE/300 S.F.	1 SPACE/300 S.F.

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Figure 2

Project Site Plan

OPERATING CONDITIONS AND CRITERIA FOR INTERSECTIONS

Analysis of potential impacts at roadway intersections is based on the concept of Level of Service (LOS). The LOS of an intersection is a qualitative measure used to describe operational conditions. LOS ranges from A (best), which represents minimal delay, to F (worst), which represents heavy delay and a facility that is operating at or near its functional capacity. Levels of Service for this study were determined using methods defined in the *Highway Capacity Manual (HCM)* and *Synchro 9* traffic analysis software.

HCM methodologies include procedures for analyzing side-street stop-controlled (SSSC), all-way stop-controlled (AWSC), and signalized intersections. The SSSC procedure defines LOS as a function of average control delay for each minor street approach movement. Conversely, the AWSC and signalized intersection procedures define LOS as a function of average control delay for the overall intersection. **Table 1** relates the operational characteristics associated with each LOS category for signalized and unsignalized intersections.

Table 1 – Intersection Level of Service Definitions

Level of Service	Description	Signalized (Avg. control delay per vehicle sec/veh.)	Unsignalized (Avg. control delay per vehicle sec/veh.)
A	Free flow with no delays. Users are virtually unaffected by others in the traffic stream	Less than 10	less than 10
B	Stable traffic. Traffic flows smoothly with few delays.	less than or equal to 10 to 20	less than or equal to 10 to 15
C	Stable flow but the operation of individual users becomes affected by other vehicles. Modest delays.	less than or equal to 20 to 35	less than or equal to 15 to 25
D	Approaching unstable flow. Operation of individual users becomes significantly affected by other vehicles. Delays may be more than one cycle during peak hours.	less than or equal to 35 to 55	less than or equal to 25 to 35
E	Unstable flow with operating conditions at or near the capacity level. Long delays and vehicle queuing.	less than or equal to 55 to 80	less than or equal to 35 to 50
F	Forced or breakdown flow that causes reduced capacity. Stop and go traffic conditions. Excessive long delays and vehicle queuing.	greater than or equal to 80	greater than or equal to 50
Sources: Transportation Research Board, *Highway Capacity Manual 6*, National Research Council.			

Project impacts are determined by comparing conditions without the proposed Project to those with the proposed Project. Significant impacts for intersections are created when traffic from the proposed Project causes the LOS to fall below the maintaining agency's LOS threshold or causes deficient intersections to deteriorate further per the criteria indicated below.

Santa Cruz County (SCC)

Consistent with the significant impact criteria documented in the Santa Cruz County General Plan, the County considers LOS C as the objective, but accepts LOS D as the minimum acceptable at both signalized and unsignalized study intersections where costs, right-of-way requirements, or environmental impacts of maintaining LOS under this policy are excessive, capacity enhancement may be considered infeasible. Therefore, the following conditions would result in a significant impact at a County intersection:

1. If the intersection operates at an acceptable LOS (i.e. LOS A, B, C, or D) without the Project during the weekday peak hour and degrades to an unacceptable LOS (i.e. LOS E or F) with the Project during the weekday peak hour.
2. If the intersection operates at an unacceptable LOS (i.e. LOS E or F) without the Project during the weekday peak hour, and the volume/capacity (v/c) ratio of the sum of all critical movements at the intersection increases by 1% or more.

California Department of Transportation (Caltrans)

Caltrans has identified the level of service objective LOS D as the acceptable service level for the Highway 1 & Soquel Avenue/Drive signalized intersections. Intersection impacts are defined to occur when the addition of Project traffic:

1. Causes operations to deteriorate from an acceptable level (LOS D) to an unacceptable level (LOS E or worse).
2. Causes the existing measure of effectiveness (average delay) to deteriorate at a State-operated intersection operating at LOS E or worse.

Under some circumstances, Caltrans will work with the maintaining agency to determine an acceptable LOS standard on a case-by-case basis when the study roadway facility is constrained.

STUDY INTERSECTIONS

The Project will generate new vehicular trips that will increase traffic volumes on the nearby street network. To assess changes in traffic conditions, the following intersections listed by jurisdiction, were selected in consultation with Santa Cruz County staff for evaluation:

1. Soquel Drive & Soquel Avenue (Signal Controlled) - SCC
2. Soquel Drive & Paul Sweet Road / Commercial Way (Signal Controlled) - Caltrans
3. Soquel Drive & Hospital Drive / Project Driveway (Side-Street Stop Controlled) - SCC
4. Soquel Drive & Hospital Drive / Commercial Crossing (Signal Controlled) - SCC
5. Soquel Drive & Mission Drive (Signal Controlled) - SCC
6. Soquel Drive & Thurber Lane (Signal Controlled) - SCC
7. Highway 1 NB On-Off Ramps / Commercial Way & Project Driveway #2 (Side-Street Stop Controlled) - Caltrans

**SCC = Maintained by Santa Cruz County*

***Caltrans = Maintained by California Department of Transportation*

These study intersections are illustrated in **Figure 1**.

REPORT ORGANIZATION

This transportation impact analysis includes the following chapters:

Chapter 2 describes the existing transportation system in the Project vicinity as well as current operating conditions at study intersections.

Chapter 3 discusses the Project's trip generation characteristics as well as methodologies used to estimate trip credits and net Project traffic added to Project roadways. Transportation improvements proposed by the Project are also presented.

Chapter 4 describes Existing Plus Project Conditions and analysis.

Chapter 5 discusses Near Term Conditions with and without the Project.

Chapter 6 discusses Cumulative Conditions with and without the Project.

Chapter 7 describes the Highway 1 cumulative evaluation, Highway Corridor Investment Program, and future funding of improvements.

Chapter 8 presents the Project's potential effects on pedestrian, bicycle, and transit mobility.

Chapter 9 discusses on-site vehicle and bicycle parking, site access points and circulation.

Chapter 10 presents the Transportation Impact Area fees and Project responsibilities based on net new daily trips.

A technical appendix is also attached containing traffic count data, traffic growth rate calculations, future Highway 1 improvement details, and intersection level of service analysis output sheets.

2. EXISTING CONDITIONS

EXISTING ROADWAY NETWORK

Below is a description of the principal roadways within the study area:

Highway 1 is a four-lane divided freeway in the Project vicinity and extends along the California coast connecting major cities including San Francisco, Santa Cruz, Monterey, San Louis Obispo, and Los Angeles to coastal communities. In the Project vicinity, Highway 1 is a major commuter and tourist route and has a posted speed limit of 65 miles per hour.

Soquel Avenue / Drive is an east-west arterial roadway that begins as Soquel Avenue from Downtown Santa Cruz to the east and continues as Soquel Drive to Aptos in the west, providing access to Highway 1 and connecting residential, retail and commercial land uses in the City of Santa Cruz, Santa Cruz County, Soquel, and Aptos. Soquel Drive is known as Soquel Avenue west of Highway 1. In the Project vicinity, Soquel Drive has a 35 mile per hour posted speed limit, is a four-lane, undivided arterial and has a two-way left-turn lane between Thurber Lane and Paul Sweet Road. Soquel Drive is a four-lane, divided arterial with a raised median from Paul Sweet Road to Soquel Avenue. Soquel Drive is a four-lane, undivided arterial with two-way left-turn lanes east of Paul Sweet Road and Highway 1 northbound on ramps.

Thurber Lane is a north-south collector roadway that begins at Soquel Drive in the City of Santa Cruz and ends just north of Cabrillo Avenue, providing access to residential land uses. Thurber Lane is a two-lane undivided roadway with a 30 mile per hour posted speed limit south of Winkle Avenue and with a 25 mile per hour posted speed limit north of Winkle Avenue.

Commercial Way is an east-west collector roadway that extends from Soquel Drive / Soquel Avenue to Thurber Lane in Santa Cruz County. The roadway connects to the Highway 1 northbound on / off ramp with westbound stop control and is a two-lane undivided roadway with a 30 mile per hour assumed speed limit.

EXISTING STUDY INTERSECTIONS

Soquel Drive & Soquel Avenue is a four-legged, signal-controlled intersection with a marked crosswalk on the west leg. Westbound and eastbound left turn phasing are protected. Northbound and southbound approaches are split phase. The southbound leg is a private driveway serving local businesses.

Soquel Drive & Paul Sweet Road – Commercial Way is a four-legged, signal control with marked crosswalks on the north, east, and south leg. Westbound and eastbound left turn phasing are protected. Northbound and southbound approaches are split phase.

Soquel Drive & Hospital Drive / Project Driveway #1 is a three-legged, side-street stop controlled (SSSC) intersection with a marked crosswalk on the north leg. The north leg provides access to a private driveway serving the Dominican Hospital. The future project driveway is proposed on the southern leg of the intersection.

Soquel Drive & Hospital Drive / Commercial Crossing is a four-legged, signal-controlled intersection with marked crosswalks on all four legs. Westbound and eastbound left turn phasing are protected. Northbound and southbound left turn phasing is permissive.

Soquel Drive & Mission Drive is a four-legged, signal-controlled intersection with marked crosswalks on all four legs. Westbound and eastbound left turn phasing are protected. Northbound and southbound left turn phasing is permissive.

Soquel Drive & Thurber Lane is a three-legged, signal-controlled intersection with marked crosswalks on the north and west leg. The westbound left turn phasing is protected.

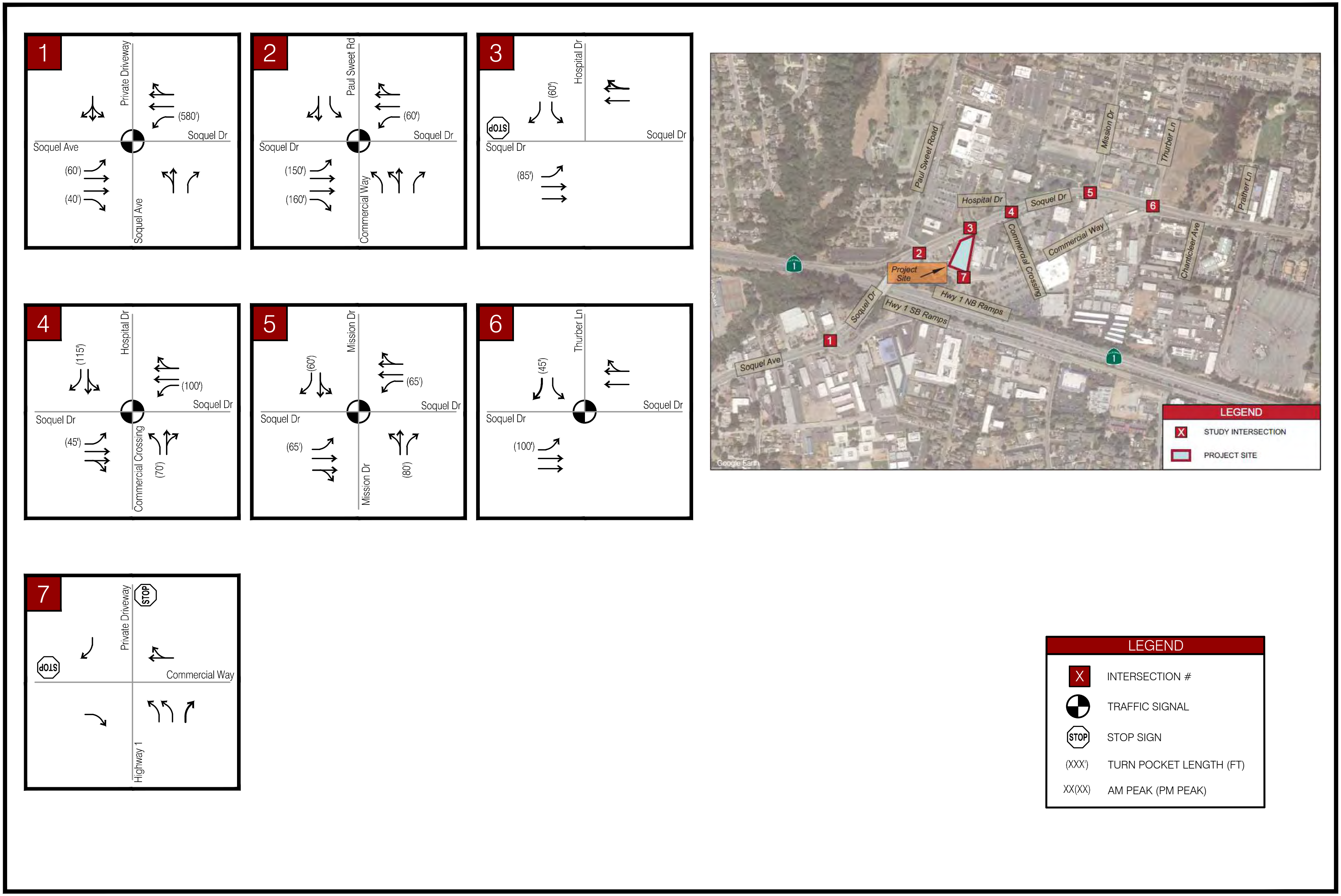
Highway 1 NB On - Off-Ramps / Commercial Way & Project Driveway #2 is a three-legged, side-street stop controlled (SSSC) intersection with no marked crosswalks.

A site visit was conducted while traffic count data was collected to observe operations. Existing lane geometries and traffic control for the study intersections are illustrated in **Figure 3**.

EXISTING PEAK-HOUR TURNING MOVEMENT VOLUMES

Weekday intersection turning movement volumes for the seven existing study intersections, not including the future Project driveways, were collected on March 6th, 2018. These counts included vehicles, bicycles, and pedestrians. Volumes for intersections were collected during the AM and PM peak periods of 7:00-9:00 AM and 4:00-6:00 PM, respectively. These traffic counts were collected when local schools were in session and the weather was fair. Peak hour volumes at each intersection's respective peak were conservatively used in this analysis, therefore, some volume imbalances were observed between study intersections. Where imbalances occurred, volumes were conservatively increased above what was counted and shown in the traffic count data sheets. Existing peak hour turning movement volumes are shown in **Figure 4.** Field observations were conducted when traffic count data was collected and queues were measured in the field.

The highest one-hour morning (AM) and one hour afternoon/evening (PM) peaks were selected for analysis, consistent with County and State guidelines. U-turns are analyzed (and illustrated in all figures) as left-turns since 6 HCM methodologies do not provide analyze U-turns. Intersection volume data sheets for all traffic counts are provided in the **Appendix**.



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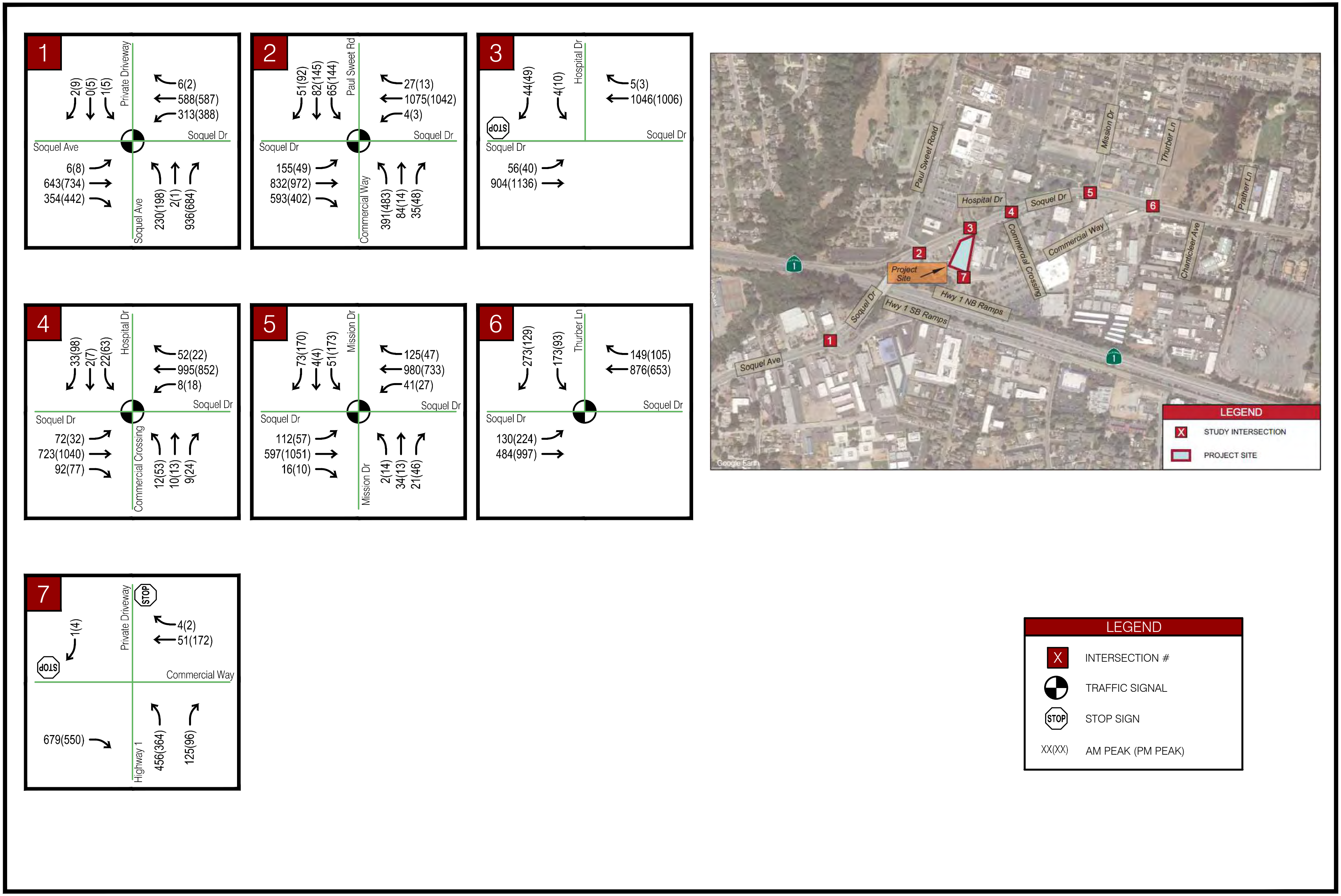
Santa Cruz CVS Pharmacy

Figure 3

Existing Lane Geometry and Traffic Control



Santa Cruz CVS Pharmacy

Figure 4

Existing Peak Hour Turning Movement Volumes

EXISTING TRANSIT FACILITIES

The Santa Cruz Metropolitan Transit District (SCMTD) provides transit services throughout Santa Cruz County and between the Cities of Santa Cruz, Capitola, Watsonville, and Scotts Valley. The Monterey-Salinas Transit (MST) provides transit services throughout Monterey County, between the Cities of San Jose and Santa Cruz and between the Cities of Templeton and Big Sur. The Project lies in the service area for METRO Routes 71 and 91X and for MST Route 78. Descriptions of the three routes as well as the nearest stop locations relative to the Project site are described below:

- The ***Santa Cruz / Watsonville Route (Route 71)*** serves south Santa Cruz County and provides public transit to the Cities of Santa Cruz, Capitola and Watsonville. It operates along Soquel Drive in the Project vicinity. Stops near the Project Site are located near the Soquel Park and Ride lot (less than ¼ mile west of the Project Site), in front of the Dominican Hospital (less than ¼ mile east of the Project Site), and near the Santa Cruz Medical Clinic (less than ¼ mile east of the Project Site).
- The ***Presidio-Santa Cruz Express (Route 78)*** serves Monterey County as well as nearby cities including the City of Santa Cruz. It operates along Soquel Drive in the Project vicinity. A stop near the Project site is located in front of the Dominican Hospital (less than ¼ mile east of the Project Site).
- The ***Commuter Express Santa Cruz / Watsonville Route (Route 91X)*** serves south Santa Cruz County and provides express public transit to the Cities of Santa Cruz, Capitola and Watsonville. It operates along Soquel Drive in the Project vicinity. A stop near the Project site is in front of the Dominican Hospital (less than ¼ mile east of the Project Site).

As illustrated above, multiple bus stops serving commuter routes are located within ¼ of a mile of the Project site.

EXISTING PEDESTRIAN AND BICYCLE FACILITIES

PEDESTRIANS

In the immediate Project vicinity and within walking distance (¼ mile), sidewalks currently exist on both sides of Soquel Drive. The Project proposes to construct ADA compliant sidewalk along the Soquel Drive Project frontage.

BICYCLES

Existing Class I, II, and III bikeway facilities (within ½ mile of the Project) are discussed below:

Class I facilities are paved bicycle paths that are physically separated from the vehicular travel lane. No Class I facilities currently exist in the Project vicinity.

Class II facilities, which are striped bike lanes along the street, exist along both sides of Soquel Drive, along both sides of Commercial Way from west of Commercial Crossing to Mission Drive, and along both sides of Mission Drive from Commercial Way to Soquel Drive. The bike facilities along Soquel Drive are approximately five feet wide (based on google earth aerial measurements) and connect to Soquel Drive & Dominican Hospital and Soquel Drive & Paul Sweet Road SCMTD transit stops.

Class III bicycle facilities are bike routes denoted by signs that are shared with vehicles along the roadway. No Class III bicycle facilities currently exist in the Project vicinity.

EXISTING LEVEL OF SERVICE AT STUDY INTERSECTIONS

Traffic operations were evaluated at the study intersections based existing conditions lane geometry, traffic control, and peak hour traffic volumes.

All study intersections operate at an acceptable LOS under existing conditions.

Results of the analysis are presented in **Table 2** and Synchro output sheets are provided in the **Appendix**.

Table 2 – Existing Conditions Intersection Level of Service

#	Intersection	Maintaining Agency	Control Type	Existing Conditions					
				AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS
1	Soquel Dr & Soquel Ave	SCC	Signal	Overall	25.5	C	Overall	32.6	C
2	Soquel Dr & Paul Sweet Rd / Commercial Way	Caltrans	Signal	Overall	31.4	C	Overall	28.0	C
3	Soquel Dr & Hospital Dr / Project Dwy #1	SCC	SSSC	Overall	0.7	A	Overall	0.6	A
	Worst Approach			SB	15.3	C	SB	15.7	C
4	Soquel Dr & Hospital Dr / Commercial Crossing	SCC	Signal	Overall	3.4	A	Overall	5.7	A
5	Soquel Dr & Mission Dr	SCC	Signal	Overall	7.2	A	Overall	43.2	D
6	Soquel Dr & Thurber Ln	SCC	Signal	Overall	15.0	B	Overall	9.8	A
7	Highway 1 NB On-Off Ramp / Commercial Way & Project Dwy #2	Caltrans	SSSC	Overall	4.1	A	Overall	3.9	A
	Worst Approach			SB	12.3	B	SB	9.1	A

Notes:

1. Analysis performed using HCM 6 methodologies.

2. Delay indicated in seconds/vehicle.

3. SCC LOS standard is D. Caltrans LOS standard is D.

4. Intersections that operate below maintaining agency's LOS standard are highlighted and shown in ***bold.***

5. HCM and Synchro methodology is unable to estimate delays for Study Intersection #7 due to non-standard traffic control. A SimTraffic microsimulation analysis was conducted instead, to determine average vehicle delay estimates.

Source: Kimley Horn and Associates, 2018.

3. PROPOSED PROJECT

PROJECT TRANSPORTATION IMPROVEMENTS

PROJECT SITE ACCESS AND PARKING

As part of the Project, new sidewalk, curb, and gutter frontage improvements will be constructed along Soquel Drive and Commercial Way. The Project proposes to construct one driveway onto Soquel Drive at the northwest corner of the site (Study Intersection #2) and one driveway onto Commercial Way at the south end of the site (Study Intersection #7). Both Project driveways will be side-street stop controlled (SSSC). Left-turn out of the Project driveway onto Soquel Drive will be restricted throughout the day, while left-turn out of the Hospital driveway onto Soquel Drive will be restricted during the AM and PM peak periods only (and 7:00am to 9:00am and 3:00pm to 6:00pm, respectively).

The Project will provide 50 vehicle parking stalls on-site (including 4 Americans with Disabilities Act (ADA) spaces) and 13 bicycle rack spaces. Vehicular parking will be allocated as follows:

- Employee, Customer, Etc. Spaces (50 total):
  - 46 – Employee / Customer Spaces
  - 4 – ADA Spaces

Project frontage improvements will be constructed consistent with ADA requirements. The Project site plan is illustrated shown in **Figure 2**.

SOQUEL DRIVE / PROJECT DRIVEWAY #1 (INTERSECTION #3)

The driveway that currently exists and provides access to the existing Decor Furniture store will be demolished and a new Project driveway will be constructed and aligned with the existing Dominican Hospital stop controlled driveway on Soquel Drive (Intersection #2) to create a four-leg intersection. The Project driveway will be stop-controlled and will restrict left-turns out of the driveway throughout the day. Westbound left-turns and eastbound right-turns will be permitted for motorists entering the Project site throughout the day. It is anticipated that the north driveway, that currently provides ingress and egress to Dominican Hospital users will continue to be stop-controlled and will restrict left-turns out from 7:00am to 9:00am and 3:00pm to 6:00pm once the CVS Project is constructed. This would result in acceptable levels of service during the AM and PM peak hours.

Westbound left-turn striping improvements along Soquel Drive at the Project Driveway will be constructed by the Project.

HIGHWAY 1 NB ON-OFF RAMP / COMMERCIAL WAY & PROJECT DRIVEWAY #2 (INTERSECTION #7)

The driveway that currently exists and is stop controlled, provides access to the existing mini-warehouse. The existing driveway will be demolished and a new Project driveway will be constructed on Highway 1 Northbound On-Off Ramps / Commercial Way (Intersection #7). Only right-turns in and right-turns out of this Project driveway will be permitted during Existing and Near Term Conditions. It is anticipated that the planned Caltrans ramp improvements, which will convert Commercial Way into a cul-de-sac and will no longer connect to the Highway 1 Ramp, will be constructed by future year 2035. It is expected that the Project driveway during Cumulative Conditions will be stop-controlled, will continue to have access to Commercial Way, and that right-turns in and left-turns out of the driveway will be permitted.

Concepts of the proposed intersection improvements, Project driveways, and Commercial Way cul-de-sac are shown in the **Appendix**.

TRIP GENERATION ESTIMATES

Trip generation was developed for this project using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition. Pharmacy with Drive-Through Window (Land Use #881) average trip rates were used to determine project trips for the proposed 13,111-square foot pharmacy. The existing site currently has the following land uses:

- 2,400-square feet of warehouse storage (ITE Land Use 151)
- One (1) apartment unit (ITE Land Use 220)
- A 10,550-square foot furniture store (ITE Land Use 890)

The Project is anticipated to generate 1,432 gross daily trips, 50 gross AM Peak hour trips (27 IN / 23 OUT), and 135 gross PM Peak hour trips (68 IN / 67 OUT). The existing storage space, apartment unit, and furniture store generates 80 daily trips, 5 AM Peak hour trips (3 IN / 2 OUT), and 7 PM Peak hour trips (3 IN / 4 OUT). The existing land uses will be demolished with the construction of the Project; therefore, the existing trips are assumed as a trip credit.

Pass-by trip credits for the Project were calculated using ITE methodologies and data (Institute of Transportation Engineers Handbook, 3rd Edition, 2017), as well as knowledge of the area and the proposed development. ITE does not provide data for AM peak hour pass-by trips or daily pass-by trips and the proposed development isn't anticipated to generate a high number of pass-by trips during the AM Peak hour, therefore, pass-by trips are conservatively estimated at 0% for the AM Peak hour period and daily pass-by trips are conservatively assumed to be equivalent to the PM peak hour pass-by trips. ITE indicates a 49% pass-by trip proportion during the PM Peak hour for Land Use 881 (Pharmacy with Drive-Through Window). The Dominican Hospital is located directly north of the proposed CVS Pharmacy and it is anticipated that hospital trips will be linked with trips to the proposed CVS. Additionally, Soquel Drive/Avenue is a busy roadway connecting City and County residents to work and retail land uses; therefore, it is anticipated that a high number of pass-by trips will be generated by the proposed development, as represented by the 49% pass-by trip proportion. Diverted link trips are expected to be relatively low and no reductions are assumed as a conservative estimate.

Assuming the credit for existing uses and pass-by trips, **the net new trip generation for the proposed Project is 1,286 daily trips, 45 AM Peak hour trips (24 IN / 21 OUT), and 62 PM Peak hour trips (32 IN / 30 OUT)**. **Table 3** below shows the results of the trip generation analysis.

The CVS could include a minute clinic that would provide flu shots and similar services that can be provided by pharmacists and staff. This service is not anticipated to generate additional trips and will be a service provided to the local community. This service is typical of what is provided by most pharmacies.

Table 3 – Project Trip Generation Estimates

Land Use	Size	Units	Daily Trip Rate	Daily Trips	AM Peak Hour Rate	AM Peak Hour Trips (IN/OUT)	PM Peak Hour Rate	PM Peak Hour Trips (IN/OUT)
Existing Conditions[1]								
Mini-Warehousing (LU 151)	2.400	KSF[3]	1.51	4	0.10	1 (1/0)	0.17	1 (0/1)
Apartment (LU 220)	1	DU	7.32	8	0.46	1 (0/1)	0.56	1 (1/0)
Furniture Store (LU 890)	10.550	KSF[3]	6.30	68	0.26	3 (2/1)	0.52	5 (2/3)
Total Existing Trip Credit	**-**	**-**	**-**	**-80**	**-**	**-5 (-3/-2)**	**-**	**-7 (-3/-4)**
Proposed Conditions[1]								
Pharmacy with Drive-Through Window (LU 881)	13.111	KSF[3]	109.16	1,432	3.84	50 (27/23)	10.29	135 (68/67)
Pass-By Reduction[1]								
Retail Pass-By Reduction (PM: 49%)[2]	**-**	**-**	**-**	**-66**	**-**	**0 (0/0)**	**-**	**-66 (-33/-33)**
Net Trip Generation	**-**	**-**	**-**	**1,286**	**-**	**45 (24/21)**	**-**	**62 (32/30)**

Source: *Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition (2017)*

1. Trip generation estimates based on ITE average rates.
2. Pass-by trip reduction based on ITE data. Diverted link trip reductions were conservatively not assumed in this trip generation estimate.
3. KSF = 1,000 Square Feet

TRIP DISTRIBUTION AND ASSIGNMENT

The Project trip distribution was developed based on consultation with Santa Cruz County staff, traffic patterns in the study area, the local travel demand model, and knowledge of the study area.

Due to the existing and proposed land use types, the same trip distribution was used for Project trips and existing use trip credits. Trips are expected to travel to and from the site via Highway 1, with 14% of Project trips traveling on North Highway 1 and 13% of Project trips traveling south on Highway 1. 17% of Project trips are expected travel to and from Soquel Avenue west of the site. 26% of Project trips are expected to travel to and from Soquel Drive east of the site and 10% of trips are expected to travel to and from Soquel Avenue south of the site. Approximately, 5% of Project trips are anticipated to travel to and from Paul Sweet Road, Mission Drive, Thurber Lane, and Chanticleer Avenue. **Figure 5** graphically illustrates the assumed distribution in relation to the Project site and study intersections.

Left-turns out of the Project Driveway #1 (Intersection #3) will be restricted throughout the day and left-turns out of the Hospital driveway will be restricted during the AM and PM peak periods only. All left-turn restrictions will be accomplished using signage. Consequently, motorists that wish to travel west on Soquel Drive during Existing and Near Term Conditions will to either:

- Make a right-turn out of Project Driveway #1 and then make a u-turn at the signal controlled Soquel Drive & Commercial Crossing / Hospital Drive (Intersection #4); or
- Make a right-turn out of Project Driveway #2 onto Highway 1 Northbound On-Off Ramps / Commercial Way.

For Cumulative Conditions, it is anticipated that all motorists that desire to go westbound on Soquel Drive will make a right-turn out of Project Driveway #1 and then make a u-turn at the Soquel Drive & Commercial Crossing / Hospital Drive (Intersection #4).

Figure 6 shows the net Project trip assignment for AM and PM peak hour periods during Existing and Near Term Conditions at study intersections. The Cumulative Conditions trip assignment was refined to account for the future construction of a cul-de-sac on Commercial Way.

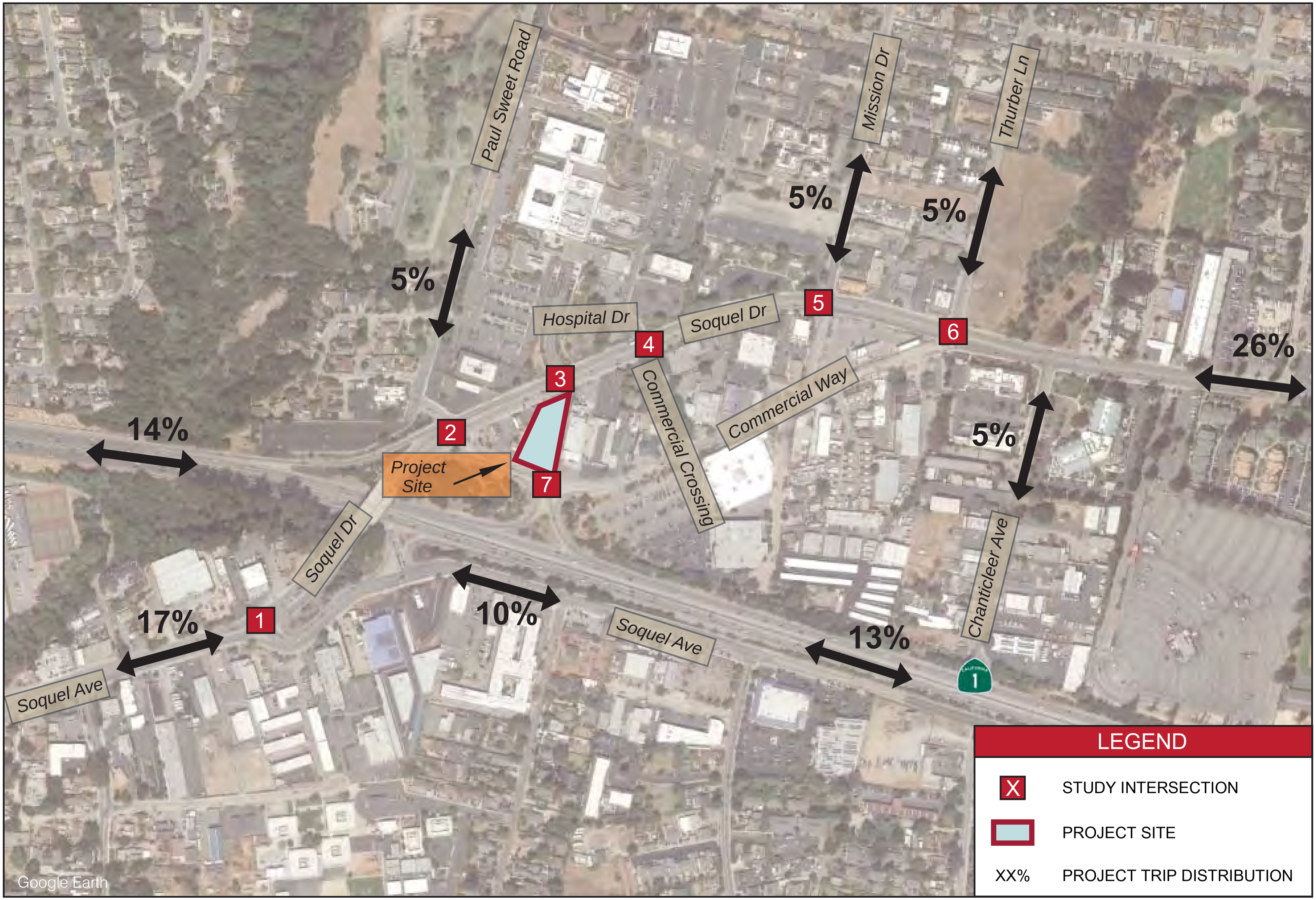


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Figure 1

Study Intersections and Project Trip Distribution

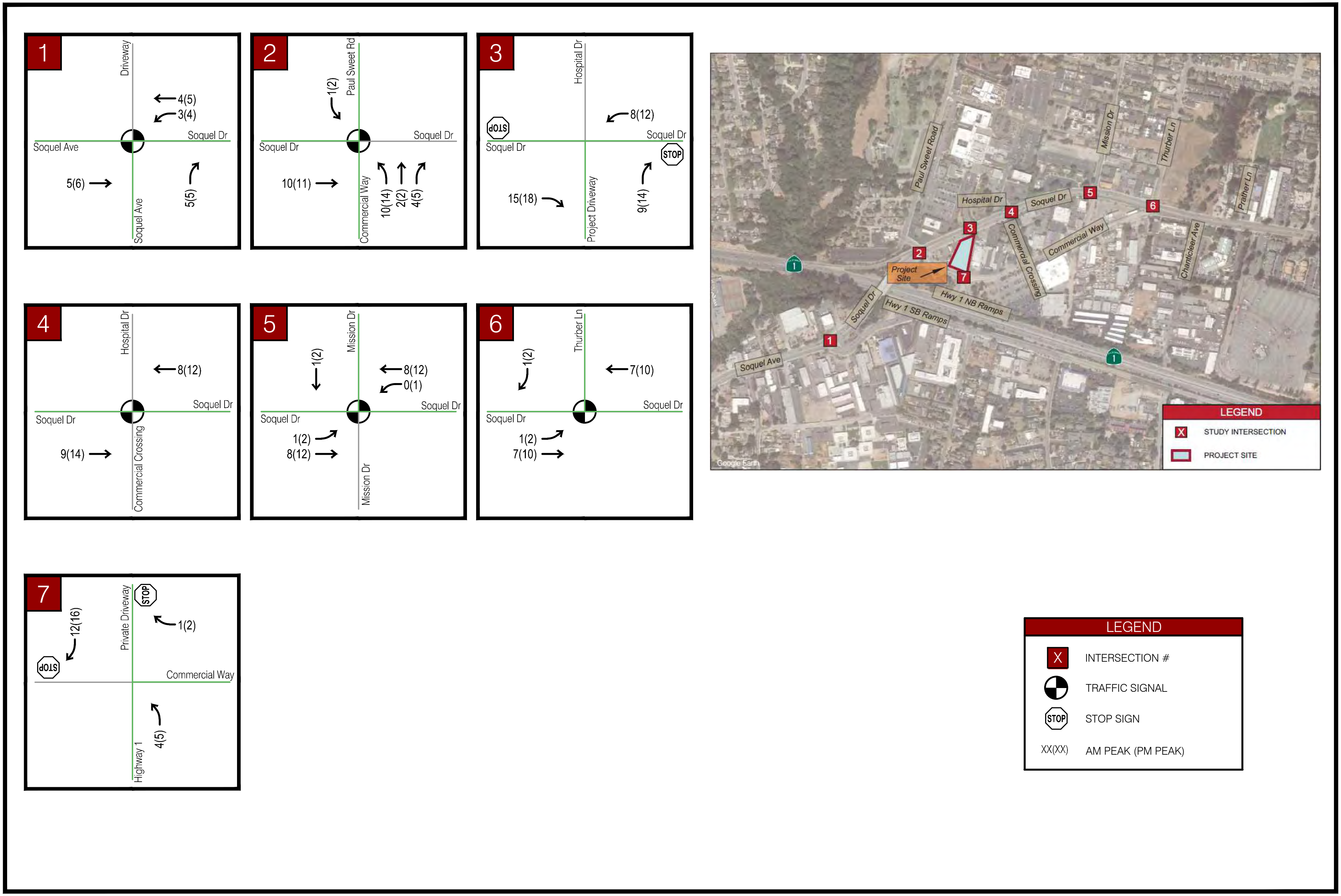

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Figure 6

Project Peak Hour Trip Assignment

4. EXISTING PLUS PROJECT CONDITIONS

Traffic operations were evaluated at the study intersections under Existing plus Project conditions. **Figure 7** shows the Existing Plus Project lane geometry and traffic control and **Figure 8** shows the Existing Plus Project peak hour traffic volumes.

Existing Plus Project analysis results are presented in **Table 4**. As shown in the table, all study intersections will continue to operate at acceptable levels of service.

Synchro output sheets are provided in the **Appendix**.

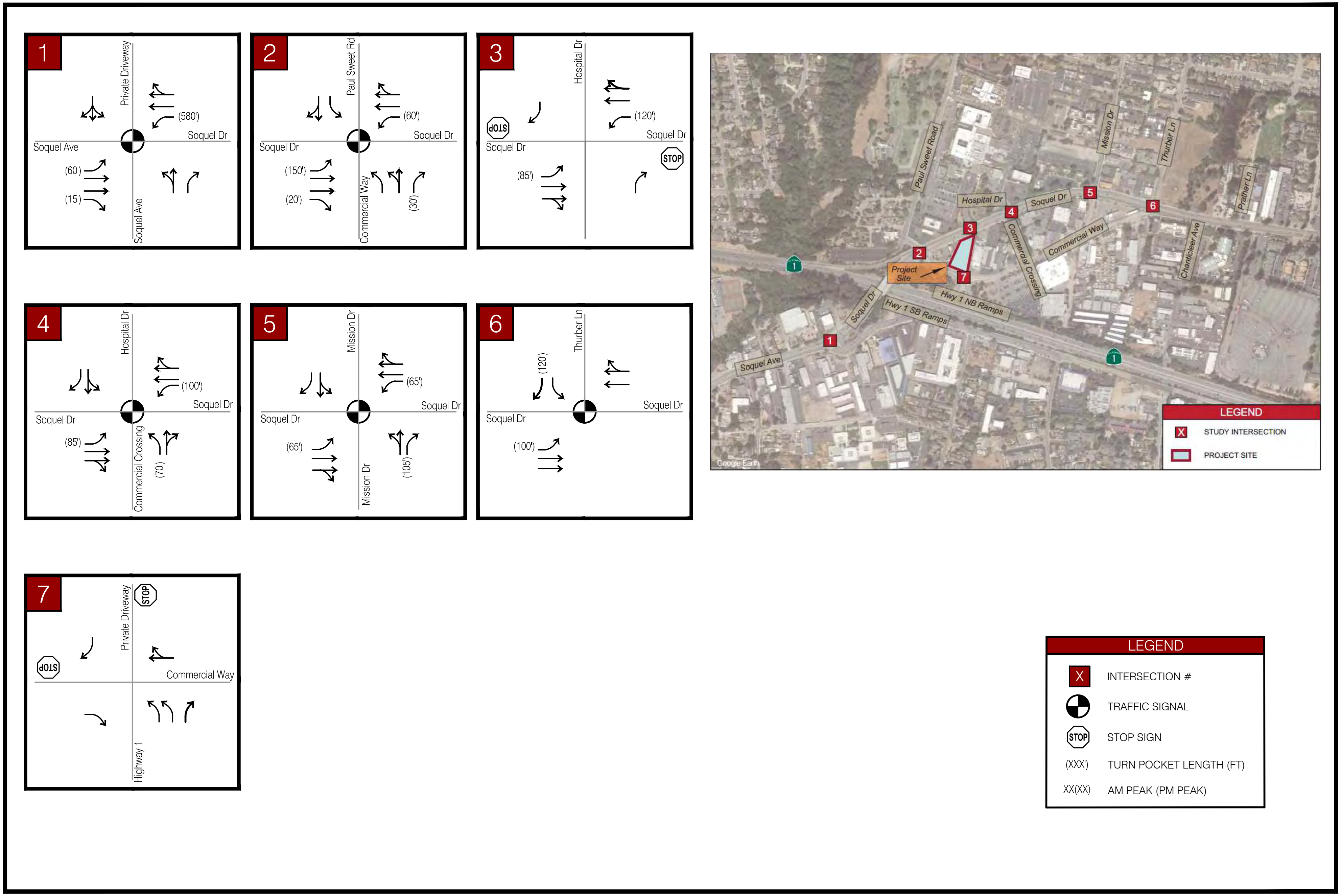

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Figure 7

Existing Plus Project Lane Geometry and Traffic Control

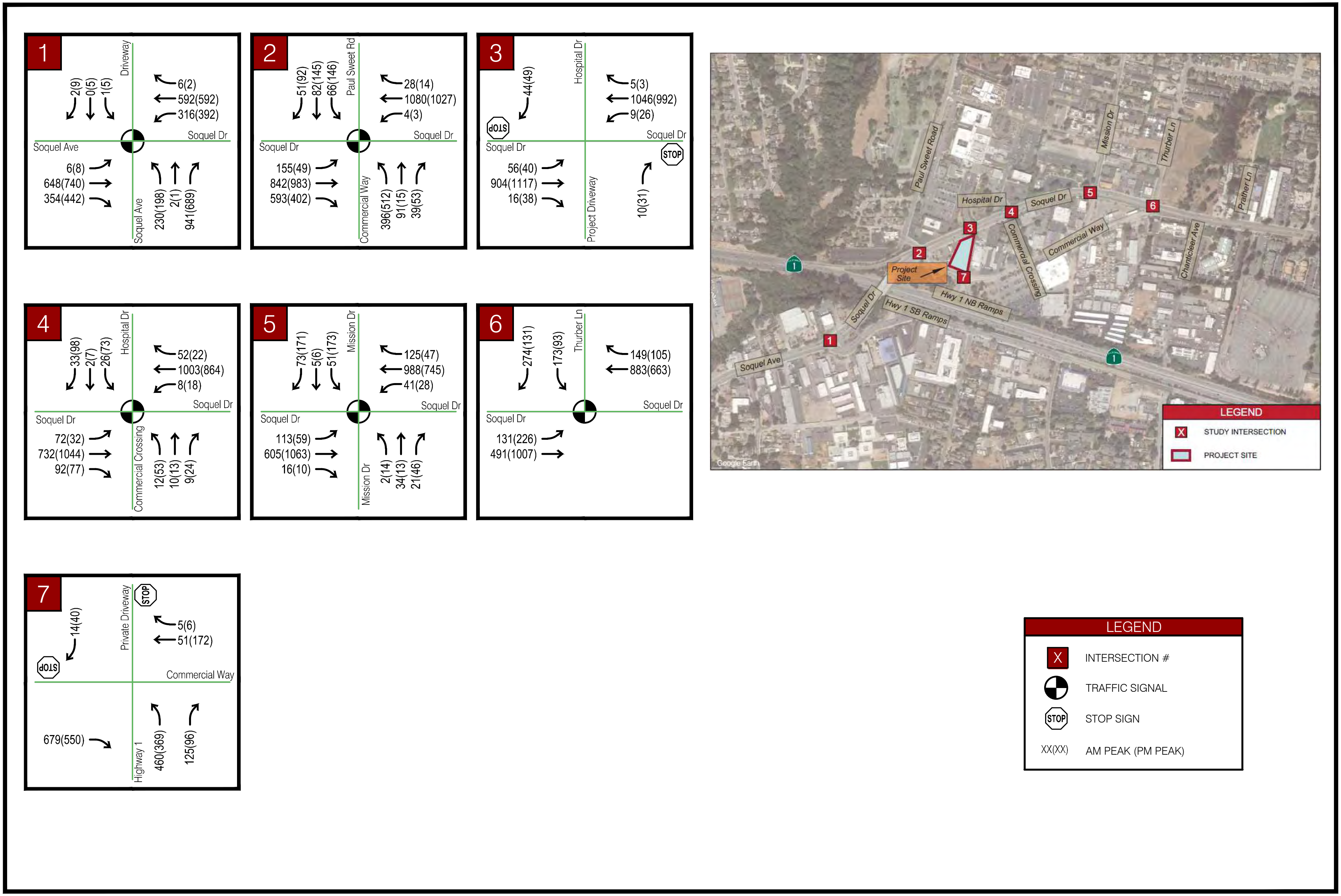

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Figure 8

Existing Plus Project Peak Hour Turning Movement Volumes

Table 4 – Existing Plus Project Conditions Intersection Level of Service

#	Intersection	Maintaining Agency	Control Type	Existing Conditions						Existing Plus Project Conditions					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
1	Soquel Dr & Soquel Ave	SCC	Signal	Overall	25.5	C	Overall	32.6	C	Overall	25.6	C	Overall	32.7	C
2	Soquel Dr & Paul Sweet Rd / Commercial Way	Caltrans	Signal	Overall	31.4	C	Overall	28.0	C	Overall	31.8	C	Overall	28.9	C
3	Soquel Dr & Hospital Dr / Project Dwy #1	SCC	SSSC	Overall	0.7	A	Overall	0.6	A	Overall	0.7	A	Overall	0.8	A
	Worst Approach			SB	15.3	C	SB	15.7	C	SB	14.1	B	NB	14.2	B
4	Soquel Dr & Hospital Dr / Commercial Crossing	SCC	Signal	Overall	3.4	A	Overall	5.7	A	Overall	3.5	A	Overall	5.8	A
5	Soquel Dr & Mission Dr	SCC	Signal	Overall	7.2	A	Overall	43.2	D	Overall	7.2	A	Overall	44.2	D
6	Soquel Dr & Thurber Ln	SCC	Signal	Overall	15.0	B	Overall	9.8	A	Overall	15.0	B	Overall	9.9	A
7	Highway 1 NB On-Off Ramp / Commercial Way & Project Dwy #2	Caltrans	SSSC	Overall	4.1	A	Overall	3.9	A	Overall	4.4	A	Overall	4.4	A
	Worst Approach			SB	12.3	B	SB	9.1	A	SB	16.0	C	SB	11.2	B

Notes:

1. Analysis performed using HCM 6 methodologies.

2. Delay indicated in seconds/vehicle.

3. SCC LOS standard is D. Caltrans LOS standard is D.

4. Intersections that operate below maintaining agency's LOS standard are highlighted and shown in ***bold.***

5. HCM and Synchro methodology is unable to estimate delays for Study Intersection #7 due to non-standard traffic control. A SimTraffic microsimulation analysis was conducted instead, to determine average vehicle delay estimates.

Source: Kimley Horn and Associates, 2018.

5. NEAR TERM CONDITIONS

Traffic operations were evaluated under the following development conditions:

- Near Term (2020) Conditions
- Near Term (2020) plus Project Conditions

NEAR TERM TRANSPORTATION IMPROVEMENTS

Per discussions with the County, and as documented in the County's 2014 Regional Transportation Plan (RTP), there are no near term (on or before future year 2020) programmed network improvements in the Project study area nor are there any intersections expected to be constructed prior to opening the Project that have not already been completed.

Figure 9 illustrates the intersection geometry and traffic control assumed in the Near-Term 2020 analysis, which are the same as Existing Conditions. Also, no future (near term) signalization is planned for any of the study intersections.

NEAR TERM TRAFFIC VOLUMES

NEAR TERM TRAFFIC VOLUME GROWTH RATES

Near Term describes the approximate year and conditions when the Project would open its doors to the public. For purposes of this analysis, Near Term Conditions is assumed to be in the year 2020. Near Term Conditions can be calculated by either identifying the approved, but not yet constructed projects that would add traffic to the road network by 2020 or by estimating traffic growth, based on historical and future projections.

Kimley-Horn coordinated with County staff to determine if there were any development projects near the Project site that are in various stages of planning, approval, or development. No specific projects were identified by County Staff during these communications. Therefore, historical average daily traffic volumes (ADTs), obtained from the Santa Cruz County Regional Transportation Commission (SCCRTC), were used to estimate the growth from potential projects for the Near-Term 2020 conditions as discussed below.

The most recent bi-directional ADTs, with years varying across roadway segments in the County, were compared against historical ADTs of applicable roadways. Year 2020 turning movement volumes were calculated by adding the growth increment to the current year (2018) traffic count to calculate the final adjusted roadway link forecast volume. It was calculated that volumes along Soquel Drive and Soquel Avenue within the Project vicinity would increase by approximately 2.34% per annum. This growth rate is approximately the same as travel demand forecasts in the Santa Cruz Regional Transportation Commission travel demand models. The estimated growth rates were applied to both main and side street movements. Values and calculations to support this growth rate are shown in **Table 5**.

Table 5 – Growth Rate Calculations

Roadway Segment		Most Recent		Oldest AADT		Growth Rate (taken over period of time)	Annual Growth Rate
		Year	AADT	Year	AADT		
Soquel Dr	W/O Mission Dr (Jul. 2015-Nov. 2008)	2011	22,541	2007	20,551	1.097	2.34%

Data Source: Santa Cruz County Regional Transportation Commission, Average Daily Traffic Bi-directional Volumes (2007 – 2011).

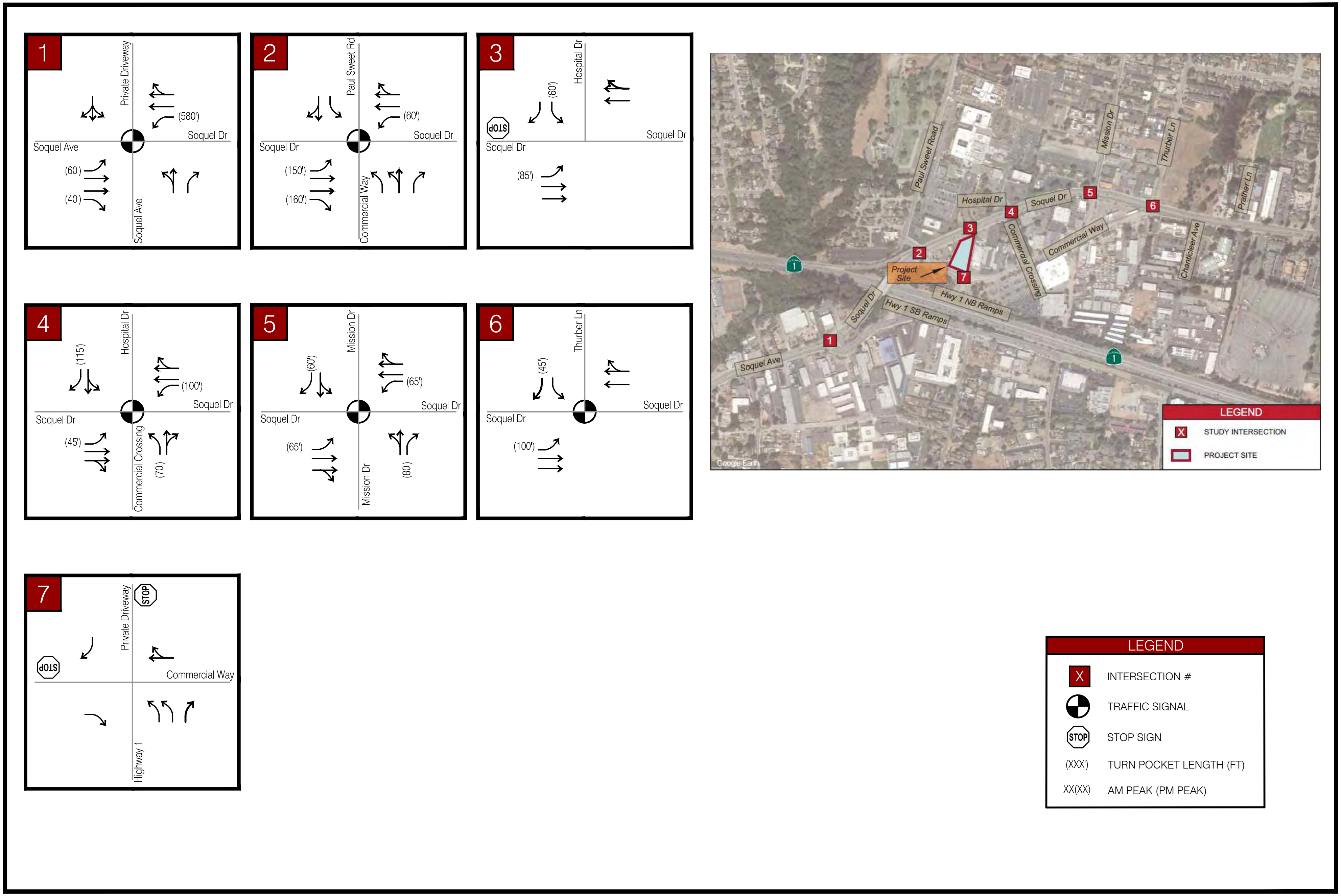

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Figure 9

Near Term Lane Geometry and Traffic Control

NEAR TERM TRAFFIC VOLUME DEVELOPMENT

Near Term (2020) volumes were calculated by using the annual growth rates determined based on historical volume data and were applied to main street and minor street movements of the study roadways. The application of the growth rates to minor street movements assumes that study intersection side-street volumes will grow at the same rate as main street volumes from which the growth rates were derived, which is a conservative estimate. The growth rates were applied to the existing counts in 2018 and grown to 2020 for Near Term analysis scenarios. Peak hour volumes are presented in **Figure 10**.

NEAR TERM INTERSECTION LEVEL OF SERVICE

Near Term (Year 2020) conditions were evaluated at the study intersections based on lane geometry and traffic control illustrated in **Figure 9** and peak hour volumes in

All study intersections would operate at acceptable LOS during near term conditions.

Results of the analysis are presented in **Table 6** and Synchro output sheets are provided in the **Appendix**.

Table 6 – Near Term Conditions Intersection Level of Service

#	Intersection	Maintaining Agency	Control Type	Near Term Conditions					
				AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS
1	Soquel Dr & Soquel Ave	SCC	Signal	Overall	28.3	C	Overall	33.5	C
2	Soquel Dr & Paul Sweet Rd / Commercial Way	Caltrans	Signal	Overall	33.0	C	Overall	28.8	C
3	Soquel Dr & Hospital Dr / Project Dwy #1	SCC	SSSC	Overall	0.7	A	Overall	0.6	A
	Worst Approach			SB	15.9	C	SB	16.3	C
4	Soquel Dr & Hospital Dr / Commercial Crossing	SCC	Signal	Overall	3.5	A	Overall	5.8	A
5	Soquel Dr & Mission Dr	SCC	Signal	Overall	7.4	A	Overall	46.4	D
6	Soquel Dr & Thurber Ln	SCC	Signal	Overall	16.0	B	Overall	10.1	B
7	Highway 1 NB On-Off Ramp / Commercial Way & Project Dwy #2	Caltrans	SSSC	Overall	4.1	A	Overall	4.6	A
	Worst Approach			SB	12.7	D	SB	12.5	B

Notes:

1. Analysis performed using HCM 6 methodologies.

2. Delay indicated in seconds/vehicle.

3. SCC LOS standard is D. Caltrans LOS standard is D.

*4. Intersections that operate below maintaining agency's LOS standard are highlighted and shown in **bold.***

5. HCM and Synchro methodology is unable to estimate delays for Study Intersection #7 due to non-standard traffic control. A SimTraffic microsimulation analysis was conducted instead, to determine average vehicle delay estimates.

Source: Kimley Horn and Associates, 2018.

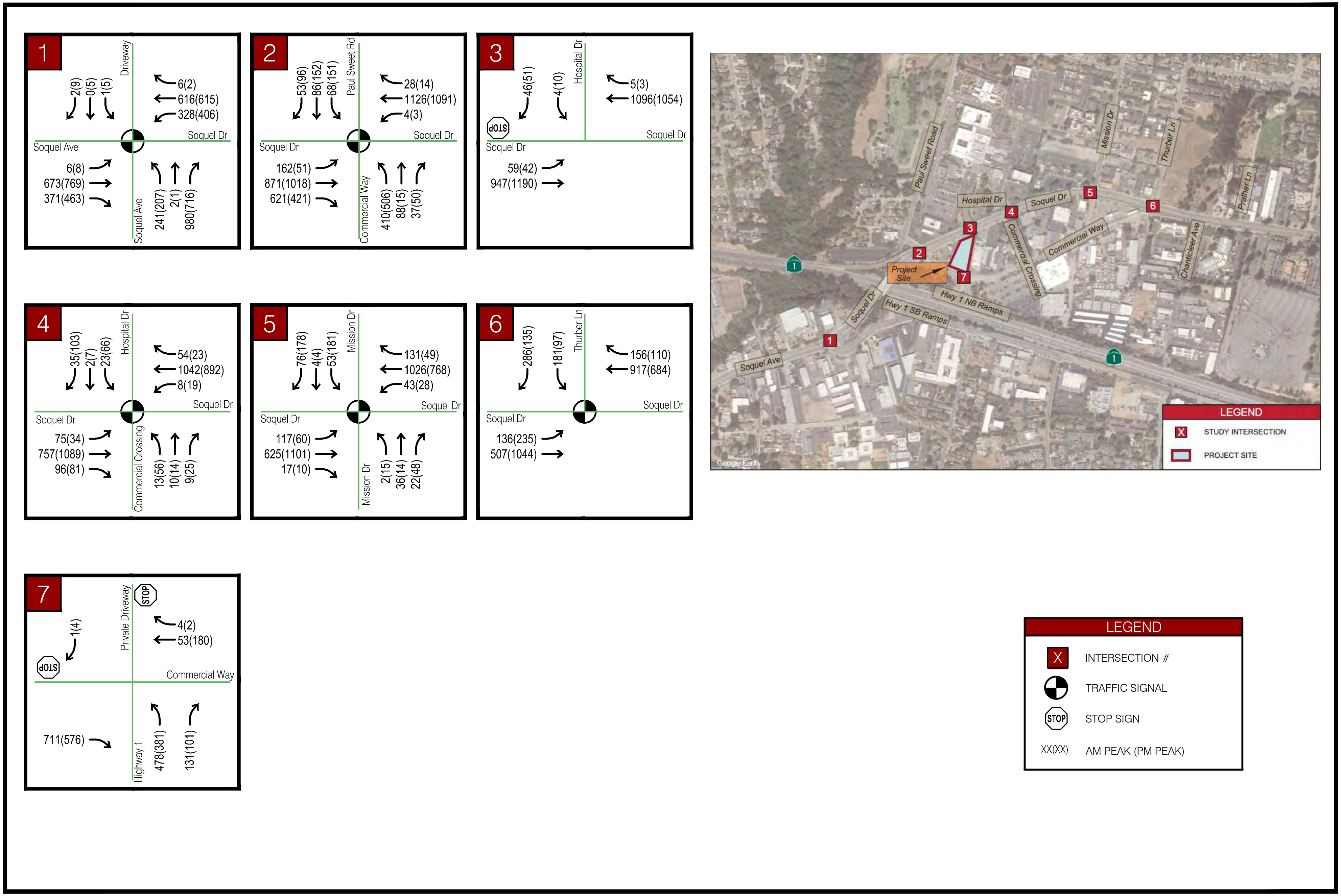

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Figure 10

Near Term Peak Hour Turning Movement Volumes

NEAR TERM PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Traffic operations were evaluated at the study intersections based on Near Term plus Project conditions. Near Term Plus Project lane geometry and traffic control is shown in **Figure 11** and Near Term Plus Project peak hour traffic volumes are shown in **Figure 12**.

Near Term plus Project analysis results are presented in **Table 7**. As shown in the table, all study intersections would continue to operate at acceptable levels of service under Near Term plus Project conditions.

Synchro output sheets are provided in the **Appendix**.

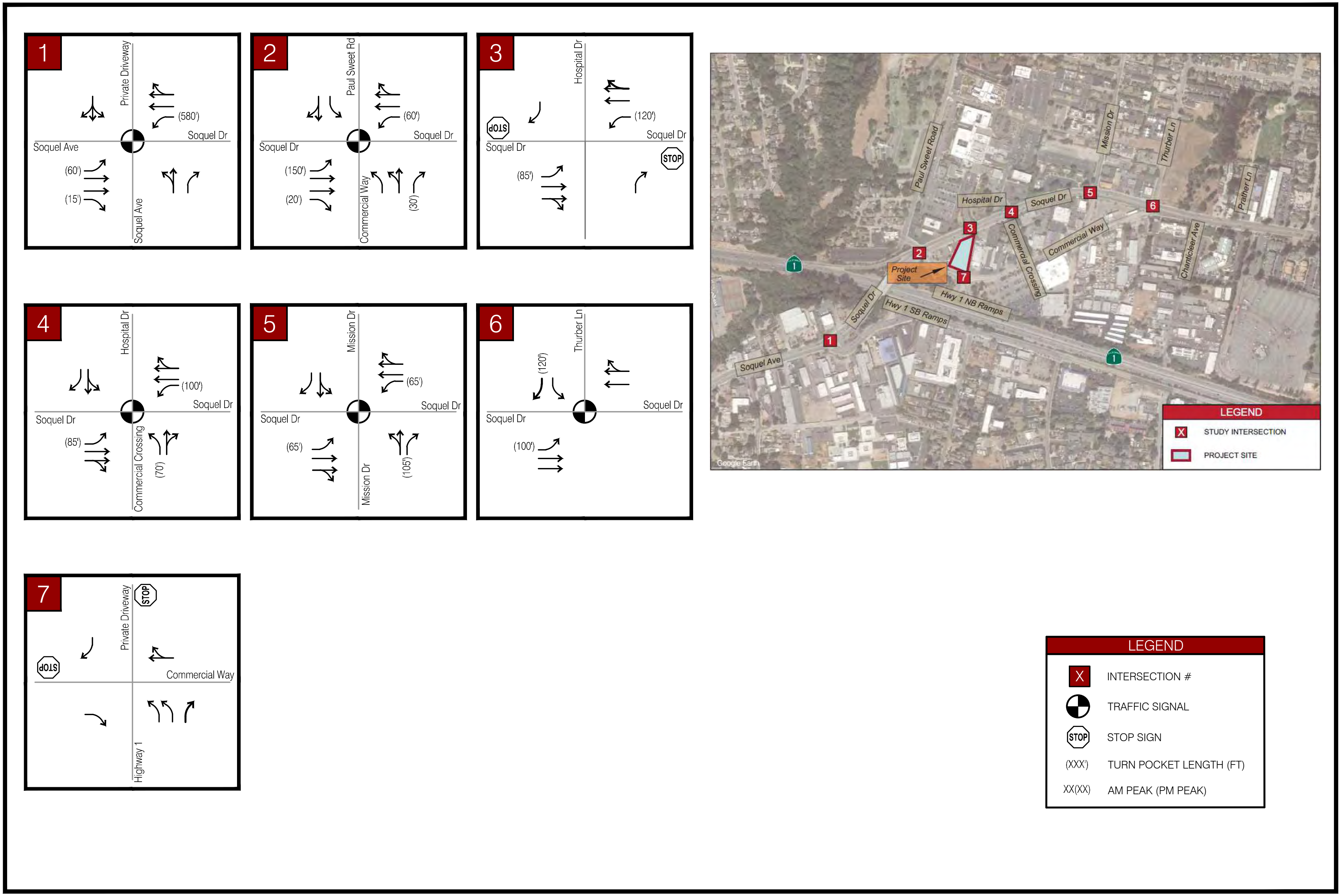

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Figure 11

Near Term Plus Project Lane Geometry and Traffic Control

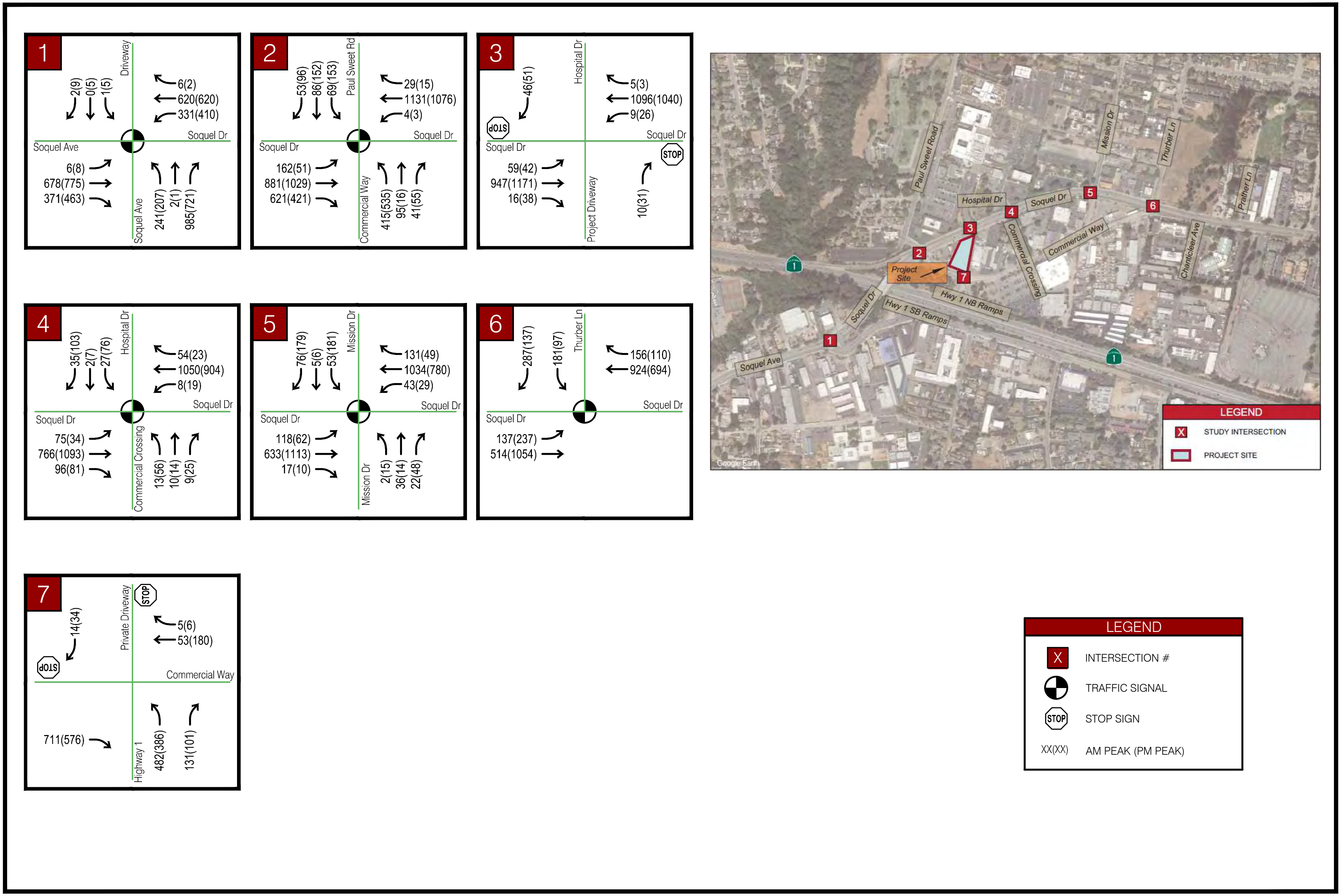

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Figure 12

Near Term Plus Project Peak Hour Turning Movement Volumes

Table 7 – Near Term Plus Project Conditions Intersection Level of Service

#	Intersection	Maintaining Agency	Control Type	Near Term Conditions						Near Term Plus Project Conditions					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
1	Soquel Dr & Soquel Ave	SCC	Signal	Overall	28.3	C	Overall	33.5	C	Overall	28.3	C	Overall	33.6	C
2	Soquel Dr & Paul Sweet Rd / Commercial Way	Caltrans	Signal	Overall	33.0	C	Overall	28.8	C	Overall	33.8	C	Overall	29.9	C
3	Soquel Dr & Hospital Dr / Project Dwy #1	SCC	SSSC	Overall	0.7	A	Overall	0.6	A	Overall	0.7	A	Overall	0.8	A
	Worst Approach			SB	15.9	C	SB	16.3	C	SB	14.6	B	NB	14.6	B
4	Soquel Dr & Hospital Dr / Commercial Crossing	SCC	Signal	Overall	3.5	A	Overall	5.8	A	Overall	3.5	A	Overall	5.9	A
5	Soquel Dr & Mission Dr	SCC	Signal	Overall	7.4	A	Overall	46.4	D	Overall	7.5	A	Overall	47.4	D
6	Soquel Dr & Thurber Ln	SCC	Signal	Overall	16.0	B	Overall	10.1	B	Overall	16.1	B	Overall	10.2	B
7	Highway 1 NB On-Off Ramp / Commercial Way & Project Dwy #2	Caltrans	SSSC	Overall	4.1	A	Overall	4.6	A	Overall	4.8	A	Overall	4.8	A
				SB	12.7	D	SB	12.5	B	Worst Approach	18.6	C	Worst Approach	13.0	B

Notes:

1. Analysis performed using HCM 6 methodologies.

2. Delay indicated in seconds/vehicle.

3. SCC LOS standard is D. Caltrans LOS standard is D.

4. Intersections that operate below maintaining agency's LOS standard are highlighted and shown in ***bold.***

5. HCM and Synchro methodology is unable to estimate delays for Study Intersection #7 due to non-standard traffic control. A SimTraffic microsimulation analysis was conducted instead, to determine average vehicle delay estimates.

Source: Kimley Horn and Associates, 2018.

6. CUMULATIVE CONDITIONS

Traffic operations were evaluated under the following cumulative conditions:

- Cumulative (2035) Conditions
- Cumulative (2035) Plus Project Conditions

Figure 13 illustrates the intersection geometry and traffic control anticipated in Cumulative (2035) conditions, which assumes the realignment of northbound Highway 1 On / Off ramps and closure of Commercial Way (east of southern Project driveway). All other study intersection geometries are anticipated to remain unchanged from Existing and Near Term Conditions.

It is assumed that cycle lengths, offsets, and split signal timings will be updated to account for future traffic volumes on the study corridor prior to 2035. Minor refinements to signal timings in the Cumulative Conditions Synchro models were made accordingly.

Santa Cruz County and Caltrans staff, along with Kimley-Horn determined that future year 2035 would be representative of Cumulative Conditions and analysis was conducted accordingly. Since determination of Cumulative Conditions and capacity analysis for this Project, AMBAG and SCCRTC have released updated models that project volumes to future year 2040.

CUMULATIVE VOLUMES

Year 2035 roadway link volumes were calculated in a similar method to the Near-term 2020 volumes.

ADTs were obtained from the Santa Cruz County Regional Transportation Commission (SCCRTC) and were used to estimate the growth from potential projects for the Cumulative 2035 conditions as discussed below. Volume data used to estimate growth rates can be found in the **Appendix**.

The most recent available bi-directional ADTs, whose years vary across roadway segments in the County, were compared historical ADTs for applicable roadways. Year 2035 turning movement volumes were calculated by adding the growth increment to the existing year (2018) traffic count to calculate the final adjusted forecasted movement volume. Under these methods, it was calculated that volumes in the Project vicinity would increase by 2.34% per annum. The derived growth rates were applied to both main and side street movements on respective corridors. Cumulative peak hour traffic volumes are shown in **Figure 14**.

CUMULATIVE INTERSECTION LEVEL OF SERVICE

The Caltrans District 5 DEIR for Highway 1 improvements identifies the construction of auxiliary lanes between Soquel and 41st and upgrades to the Soquel Drive interchange together with the construction of an HOV lane in the median. Construction of the auxiliary lanes is currently in the design phase. Improving the interchange is a long-term improvement. The full improvements are currently unfunded and are therefore not assumed in the baseline Cumulative Conditions level of service analysis. Based on discussions with Caltrans District 5 staff, this analysis does assume that Commercial Way will be converted to a cul-de-sac at the Highway 1 northbound Off-Ramp.

Traffic operations were evaluated at the study intersections based on Cumulative lane geometry and traffic control as shown in **Figure 13** and Cumulative peak hour traffic volumes as shown in **Figure 14**.

The following intersections will operate at an unacceptable LOS during Cumulative conditions:

- Soquel Drive & Soquel Avenue (Intersection #1) (AM & PM peak hours)
- Soquel Drive & Paul Sweet Road / Commercial Way (Intersection #2) (AM & PM peak hours)
- Soquel Drive & Hospital Drive / Project Dwy #1 (Intersection #3) (PM peak hours)
- Soquel Drive & Mission Drive (Intersection #5) (PM peak hour)
- Soquel Drive & Thurber Lane (Intersection #6) (AM peak hour)
- Highway 1 NB On-Off Ramp / Commercial Way & Project Driveway #2 (Intersection #7) (AM & PM peak hours)

Results of the analysis are presented in **Table 8** and Synchro output sheets are provided in the **Appendix**.

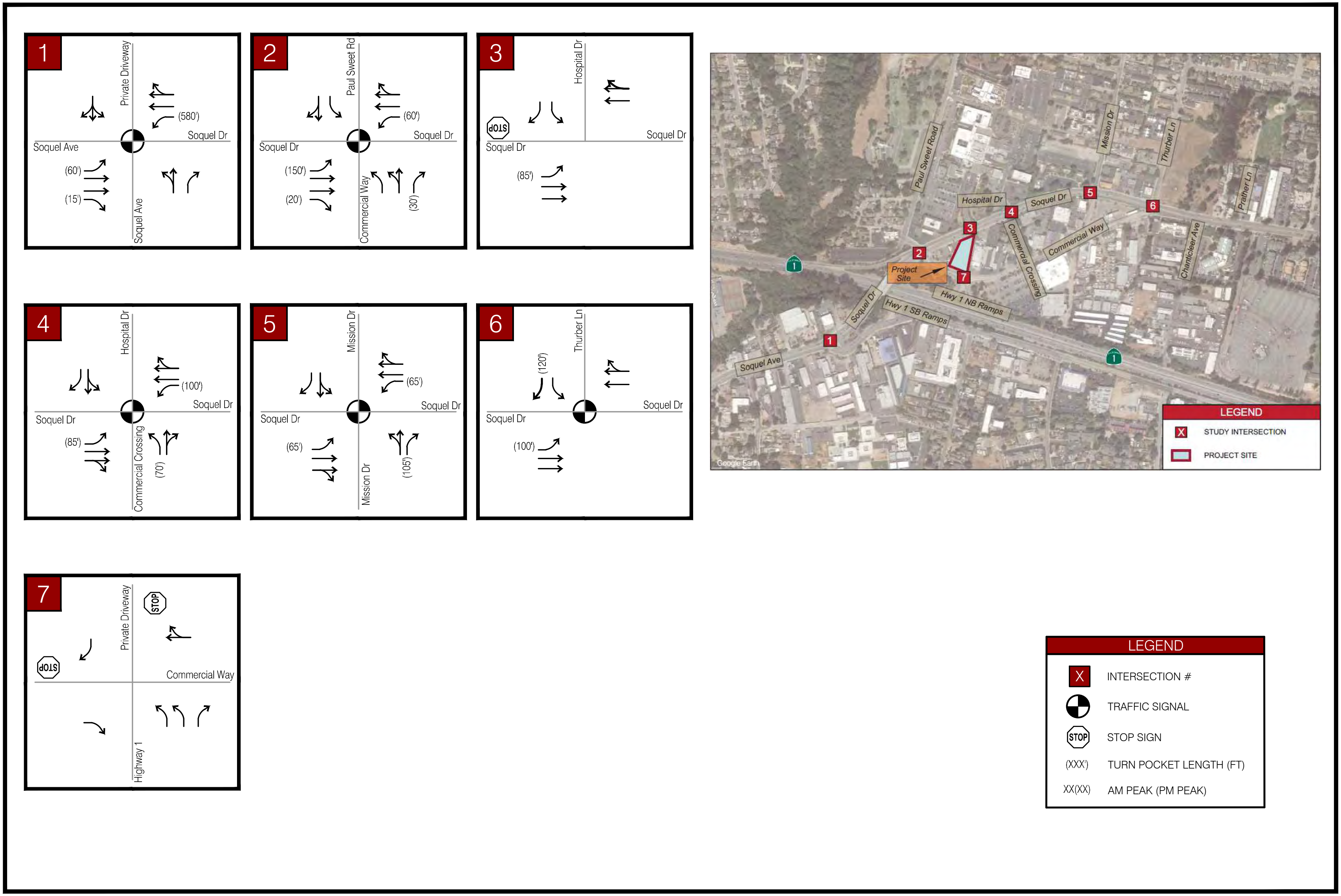

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Figure 13

Cumulative Lane Geometry and Traffic Control

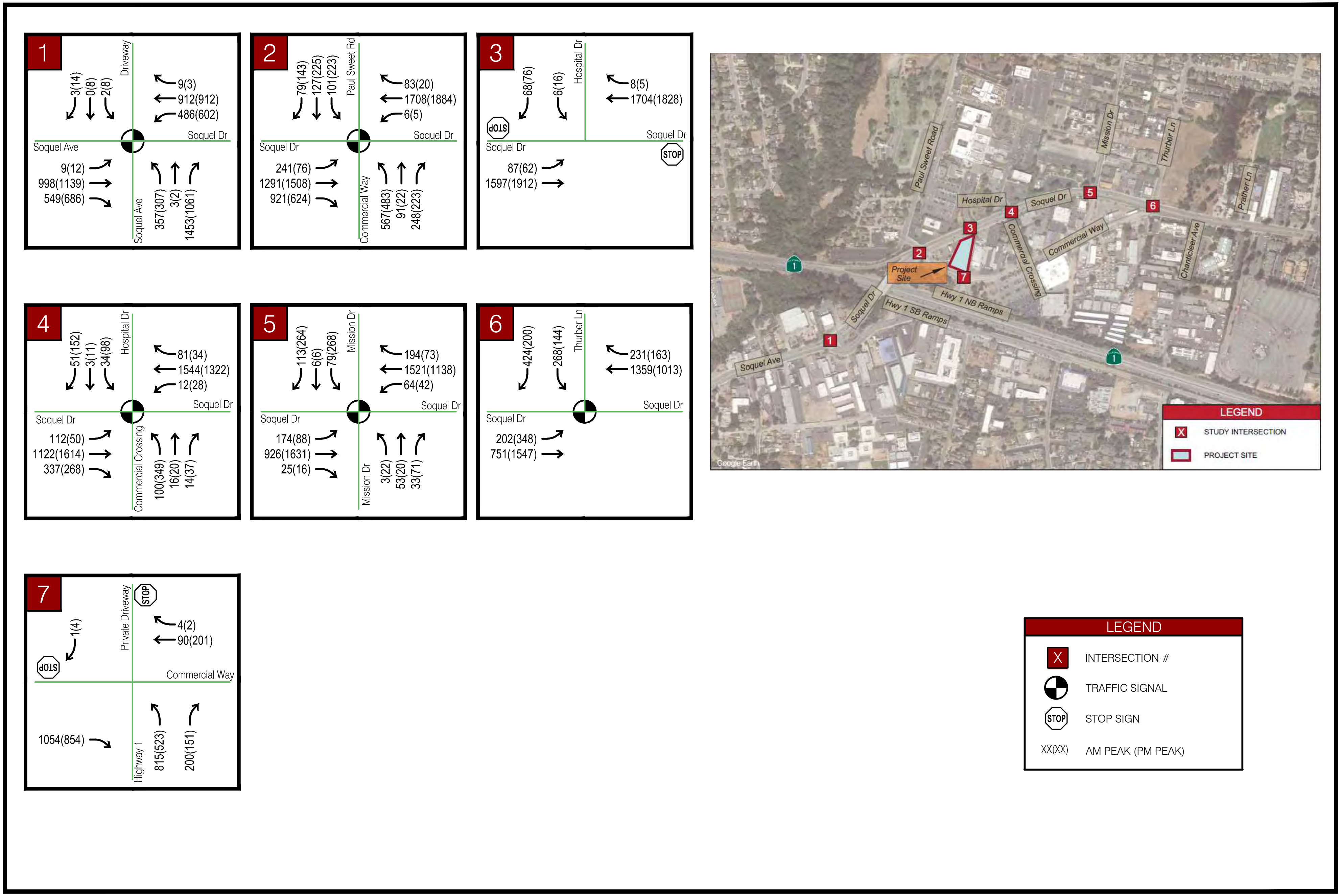

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Figure 14

Cumulative Peak Hour Turning Movement Volumes

Table 8 – Cumulative Conditions Intersection Level of Service

#	Intersection	Maintaining Agency	Control Type	Cumulative Conditions					
				AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS
1	Soquel Dr & Soquel Ave	SCC	Signal	Overall	**64.9**	**E**	Overall	**70.0**	**E**
2	Soquel Dr & Paul Sweet Rd / Commercial Way	Caltrans	Signal	Overall	**126.0**	**F**	Overall	**76.1**	**E**
3	Soquel Dr & Hospital Dr / Project Dwy #1	SCC	SSSC	Overall	1.2	A	Overall	1.3	A
	Worst Approach			SB	31.0	D	SB	**41.8**	**E**
4	Soquel Dr & Hospital Dr / Commercial Crossing	SCC	Signal	Overall	14.1	B	Overall	47.3	D
5	Soquel Dr & Mission Dr	SCC	Signal	Overall	28.8	C	Overall	**78.5**	**E**
6	Soquel Dr & Thurber Ln	SCC	Signal	Overall	**58.3**	**E**	Overall	23.3	C
7	Highway 1 NB On-Off Ramp / Commercial Way & Project Dwy #2	Caltrans	SSSC	Overall	**37.7**	**E**	Overall	26.5	D
	Worst Approach			SB	**913.8**	**F**	SB	**413.7**	**F**

Notes:

1. Analysis performed using HCM 6 methodologies.

2. Delay indicated in seconds/vehicle.

3. SCC LOS standard is D. Caltrans LOS standard is D.

*4. Intersections that operate below maintaining agency's LOS standard are highlighted and shown in **bold**.*

5. HCM and Synchro methodology is unable to estimate delays for Study Intersection #7 due to non-standard traffic control. A SimTraffic microsimulation analysis was conducted instead, to determine average vehicle delay estimates.

Source: Kimley Horn and Associates, 2018.

CUMULATIVE PLUS PROJECT INTERSECTION LEVEL OF SERVICE

Traffic operations were evaluated at the study intersections based on Cumulative Plus Project conditions. Cumulative Plus Project lane geometry and traffic control is shown in **Figure 15** and Cumulative Plus Project peak hour traffic volumes are shown in **Figure 16**.

Cumulative Plus Project analysis results are presented in **Table 9**. The following study intersections would operate at unacceptable levels of service in Cumulative plus Project Conditions:

- Soquel Drive & Soquel Avenue (Intersection #1) (AM & PM peak hours)*

AM Peak				
Condition	**EBLT+WBT**	**WBLT+EBT**	**NBLT+SBT**	**SBLT+NBT**
Cumulative (v/c)	0.964	1.698	1.538	1.538
Cumulative + Project (v/c)	0.965	1.704	1.538	1.538
v/c Change	***0.10%***	***0.35%***	***0.00%***	***0.00%***
PM Peak				
Condition	**EBLT+WBT**	**WBLT+EBT**	**NBLT+SBT**	**SBLT+NBT**
Cumulative (v/c)	1.011	2.080	1.687	1.687
Cumulative + Project (v/c)	1.013	2.092	1.687	1.687
v/c Change	***0.20%***	***0.58%***	***0.00%***	***0.00%***

- Soquel Drive & Paul Sweet Road / Commercial Way (Intersection #2) (AM & PM peak hours)

AM Peak				
Condition	**EBLT+WBT**	**WBLT+EBT**	**NBLT+SBT**	**SBLT+NBT**
Cumulative (v/c)	2.658	1.227	1.936	0.427
Cumulative + Project (v/c)	2.658	1.234	1.955	0.431
v/c Change	***0.00%***	***0.57%***	***0.98%***	***0.94%***
PM Peak				
Condition	**EBLT+WBT**	**WBLT+EBT**	**NBLT+SBT**	**SBLT+NBT**
Cumulative (v/c)	2.000	1.309	2.021	0.685
Cumulative + Project (v/c)	2.012	1.323	2.025	0.691
v/c Change	***0.60%***	***1.07%***	***0.20%***	***0.88%***

- Soquel Drive & Mission Drive (Intersection #5) (PM peak hour)

PM Peak				
Condition	**EBLT+WBT**	**WBLT+EBT**	**NBLT+SBT**	**SBLT+NBT**
Cumulative (v/c)	1.345	1.687	0.957	3.216
Cumulative + Project (v/c)	1.366	1.692	0.957	3.225
v/c Change	***1.56%***	***0.30%***	***0.00%***	***0.28%***

- Soquel Drive & Thurber Lane (Intersection #6) (AM peak hour)**

AM Peak				
Condition	**EBLT+WBT**	**WBLT+EBT**	**NBLT+SBT**	**SBLT+NBT**
Cumulative (v/c)	1.695	0.322	-	0.679
Cumulative + Project (v/c)	1.703	0.325	-	0.679
v/c Change	***0.47%***	***0.93%***	***0.00%***	***0.00%***

- Highway 1 NB On-Off Ramp / Commercial Way & Project Driveway #2 (Intersection #7) (AM & PM peak hours)
    - Intersection #7 geometry is non-standard and critical v/c outputs are not available via Synchro software.

**The volume to capacity (v/c) ratio of all critical lanes for the deficient County intersections (Intersections #1, #2, #5, & #6) were calculated and shown in the table above. Based on the analysis, the change in critical v/c results in a less than 1% increase for intersections #1 & #6. Therefore, these intersections are not significantly impacted by the Project. The critical v/c increases by more than 1% for intersections #2 and #5, therefore, it would be significantly impacted by the Project. Mitigation recommendations are discussed below.*

Addition of Project traffic would contribute to an increase in delay at the Caltrans intersection (Intersection #2). The following improvements would mitigate all potential significant impacts to County and Caltrans study intersections:

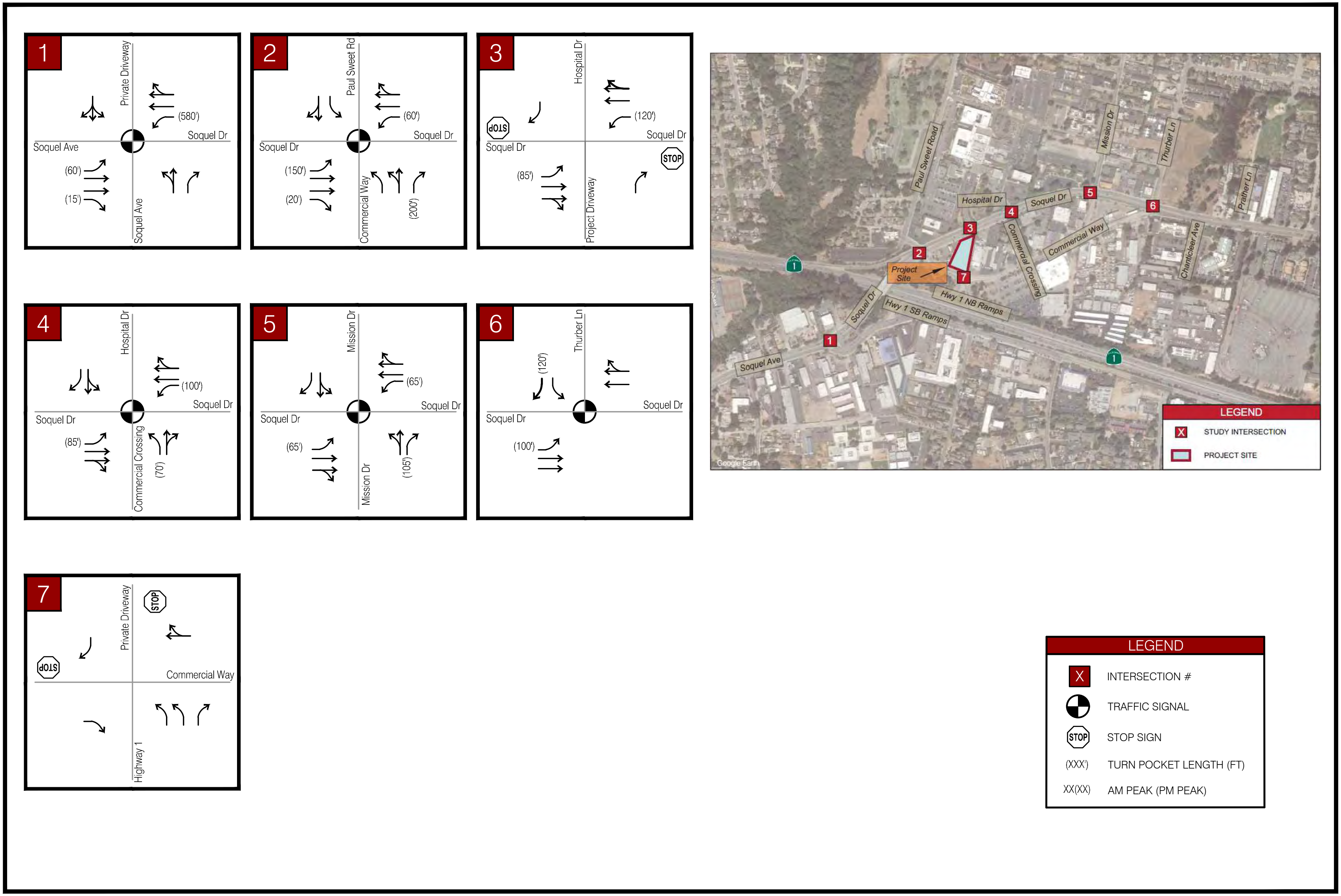
- Intersection #2: Caltrans plans to widen Highway 1/Soquel Drive interchange. The westbound left turn lane will be converted to the through lane. One westbound right turn lane, northbound left turn lane, and an eastbound right turn bay will be installed at this intersection. A detailed layout is shown in **Appendix**. Implementation of these improvements would improve intersection operations to LOS D during AM and PM peak hours. However, these improvements are currently unfunded and are therefore not included in the County Capital Improvement Project (CIP). The Cumulative impact is thus significant and unavoidable until the improvement is constructed.

- Intersection #5: implement northbound and southbound split phasing signal operation and optimize splits.

- Intersection #7: implement interchange improvements identified for Intersection #2, ramp realignment, and cul-de-sac construction. Implementation of these improvements would improve intersection operations to LOS A during AM and PM peak hours. However, these improvements are currently unfunded and are therefore not included in the County Capital Improvement Project (CIP). The Cumulative impact is thus significant and unavoidable until the improvement is constructed.

Mitigated Cumulative Plus Project analysis results are shown in **Table 10**.

Synchro output sheets are provided in the **Appendix**.



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Santa Cruz CVS Pharmacy

Figure 15

Cumulative Plus Project Lane Geometry and Traffic Control

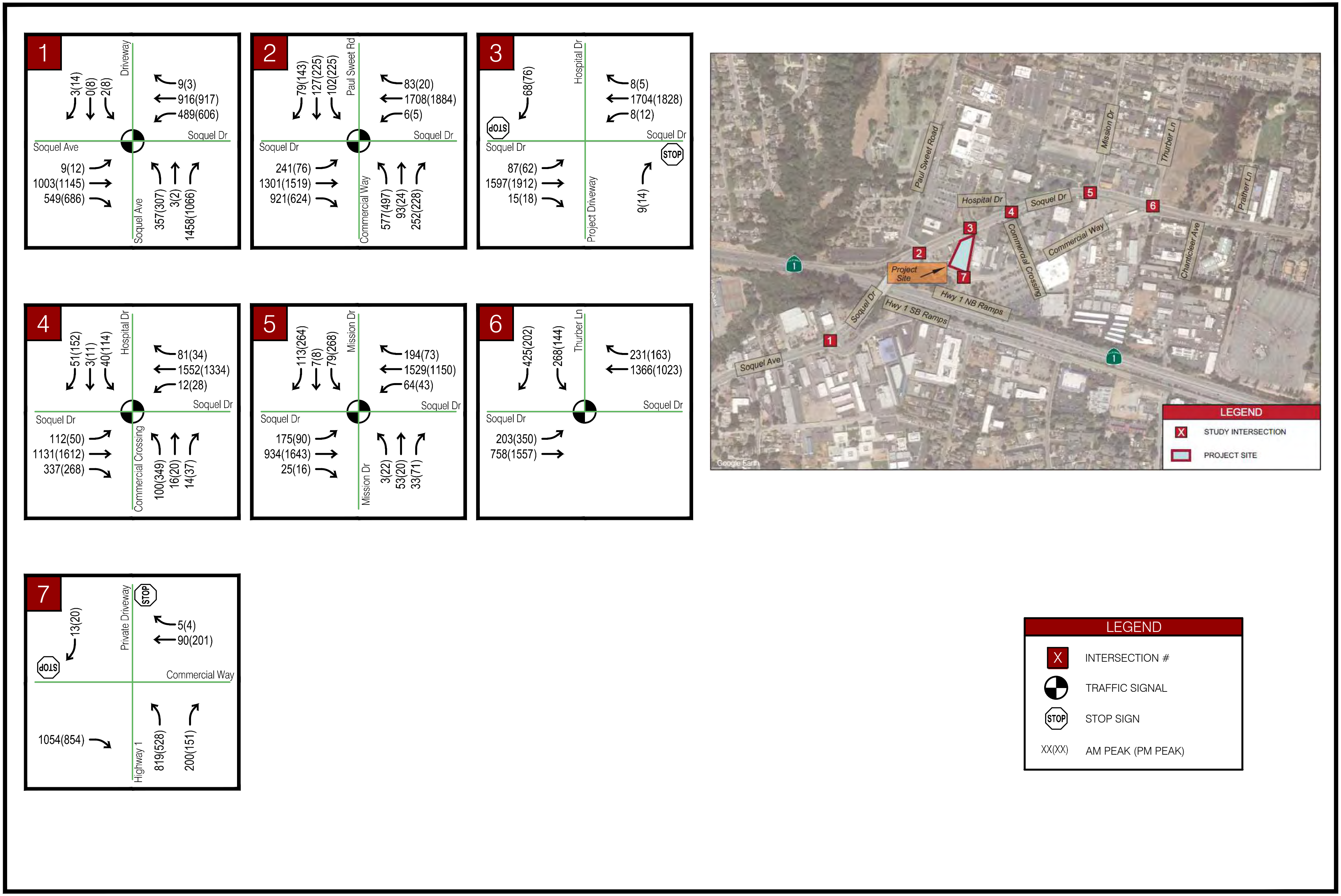

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Figure 16

Cumulative Plus Project Peak Hour Turning Movement Volumes

Table 9 – Cumulative Plus Project Conditions Intersection Level of Service

#	Intersection	Maintaining Agency	Control Type	Cumulative Conditions						Cumulative Plus Project Conditions					
				AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
				Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
1	Soquel Dr & Soquel Ave	SCC	Signal	Overall	**64.9**	**E**	Overall	**70.0**	**E**	Overall	**65.0**	**E**	Overall	**70.7**	**E**
2	Soquel Dr & Paul Sweet Rd / Commercial Way	Caltrans	Signal	Overall	**126.0**	**F**	Overall	**76.1**	**E**	Overall	**126.7**	**F**	Overall	**79.0**	**F**
3	Soquel Dr & Hospital Dr / Project Dwy #1	SCC	SSSC	Overall	1.2	A	Overall	1.3	A	Overall	1.2	A	Overall	1.0	A
	Worst Approach			SB	31.0	D	SB	**41.8**	**E**	SB	25.4	D	SB	27.1	D
4	Soquel Dr & Hospital Dr / Commercial Crossing	SCC	Signal	Overall	14.1	B	Overall	47.3	D	Overall	14.3	B	Overall	50.5	D
5	Soquel Dr & Mission Dr	SCC	Signal	Overall	28.8	C	Overall	**78.5**	**E**	Overall	29.9	C	Overall	**79.5**	**E**
6	Soquel Dr & Thurber Ln	SCC	Signal	Overall	**58.3**	**E**	Overall	23.3	C	Overall	**58.6**	**E**	Overall	24.1	C
7	Highway 1 NB On-Off Ramp / Commercial Way & Project Dwy #2	Caltrans	SSSC	Overall	**37.7**	**E**	Overall	26.5	D	Overall	**47.4**	**E**	Overall	**46.0**	**E**
	Worst Approach			SB	**913.8**	**F**	SB	**413.7**	**F**	SB	**1020.7**	**F**	SB	**920.8**	**F**

Notes:

1. Analysis performed using HCM 6 methodologies.

2. Delay indicated in seconds/vehicle.

3. SCC LOS standard is D. Caltrans LOS standard is D.

4. Intersections that operate below maintaining agency's LOS standard are highlighted and shown in ***bold.***

5. HCM and Synchro methodology is unable to estimate delays for Study Intersection #7 due to non-standard traffic control. A SimTraffic microsimulation analysis was conducted instead, to determine average vehicle delay estimates.

Source: Kimley Horn and Associates, 2018.

Table 10 – Mitigated Cumulative Plus Project Conditions Intersection Level of Service

#	Intersection	Maintaining Agency	Cumulative Plus Project Conditions						Mitigated Cumulative Plus Project Conditions					
			AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
			Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS	Movement	Delay	LOS
2	Soquel Dr & Paul Sweet Rd / Commercial Way[1]	Caltrans	Overall	**126.7**	**F**	Overall	**79.0**	**F**	Overall	49.5	D	Overall	41.3	D
5	Soquel Dr / Mission Drive[1]	SCC	Overall	29.9	C	Overall	**79.5**	**E**	Overall	30.0	C	Overall	38.1	D
7	Highway 1 NB On-Off Ramp / Commercial Way & Project Dwy #2	Caltrans	Overall	**47.4**	**E**	Overall	**46.0**	**E**	Overall	2.3	A	Overall	2.9	A
	Worst Approach		SB	**1020.7**	**F**	SB	**920.8**	**F**	SB	3.3	A	SB	3.5	A

Notes:

1. Analysis performed using HCM 6 methodologies.

2. Delay indicated in seconds/vehicle.

3. SCC level of service (LOS) standard is D. Caltrans LOS standard is D.

4. Intersections that operate below maintaining agency's LOS standard are highlighted and shown in ***bold.***

Source: Kimley Horn and Associates, 2017.

7. HIGHWAY 1

The proposed Project would add trips to Sate Route Highway 1, which is already operating at unacceptable levels of service during both the AM and PM peak hour conditions.

Existing Conditions

Based on morning and evening data from the Caltrans Traffic Operations Report (2012) as described in the Highway 1 Corridor Investment Program DEIR, baseline measures of effectiveness (MOEs) on Highway 1 are as follows:

Table 11 – Highway 1 Baseline Measures of Effectiveness

	Northbound		Southbound	
	Morning	Evening	Morning	Evening
Travel Speeds (mph)	30	39	60	26
Travel Time (minutes/vehicle)	23	15	10	27
Vehicle Hours Traveled	1,274	823	507	1,391
Vehicle Miles Traveled	38,517	32,349	30,348	35,661
Delay (minutes/vehicle)	14	6	0	15

Source: SSCRTC Traffic Operations Report, 2012.

This data shows that Highway 1 traffic volumes in the Project vicinity are directional, with high traffic volumes/delay in the northbound direction during morning hours and high traffic volumes/delay in the southbound direction during evening hours.

CVS PROJECT TRIPS ON HIGHWAY 1

The proposed Project will generate net new trips totaling 45 AM peak hour, 62 PM peak hour, and 1,286 daily trips.

Highway 1 Segment North/West of Soquel Drive

Based on the trip generation and trip distribution, approximately six net new trips will travel on this segment of Highway 1 in the AM peak hour and nine net new trips will travel on this segment of Highway 1 in the PM peak hour.

Highway 1 Segment South/East of Soquel Drive

Based on the trip generation and trip distribution, approximately six net new trips will travel on this segment of Highway 1 in the AM peak hour and eight net new trips will travel on this segment of Highway 1 in the PM peak hour.

Summary

The net new Project trips estimated to travel on Highway 1 segments will be relatively low in comparison to the existing and future capacity as well as the existing and future baseline volumes. Therefore, the Project is not anticipated to have a material or noticeable effect on Highway 1 operations.

HIGHWAY 1 PLANNED IMPROVEMENTS

Currently, Caltrans has no impact fee program in place to help mitigate traffic impacts. However, Santa Cruz County Regional Transportation Commission (RTC), in cooperation with the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA), is managing the Highway 1 Corridor Investment Program. The purpose of the project is to analyze alternative investments to relieve congestion on Highway 1 between San Andreas/Larkin Valley Road and Morrissey Boulevard. The goal of the Highway 1 Corridor Investment Program is to address several different needs in the existing transportation system:

- Bottlenecks along Highway 1 in both the southbound and northbound direction that cause congestion on a regular basis during peak travel periods.
- Travel time delays that are experienced by commuters, commerce, visitors, and emergency vehicles at various times of the day.
- “Cut-through” traffic, or traffic on local streets, that occurs and is increasing because drivers seek to avoid congestion on the highway in search of “short-cuts”.
- Limited opportunities for pedestrians and bicyclists to cross Highway 1 within the project corridor.
- Recognize the limited funding available from state and federal sources and to be prepared to compete for discretionary funding opportunities when it periodically occurs at the state or federal level.

The environmental evaluation of the Corridor Investment Program is referred to as the Highway 1 Tier I/Tier II Draft Environmental Impact Report/Environmental Assessment (DEIR/EA) and meets both state and federal environmental requirements. For purposes of environmental analysis, the project is divided into two components:

▪ Tier I – A long term, program level analysis for the future of the Highway 1 corridor between Santa Cruz and Aptos. The Tier I concept for the corridor would be built over time through a series of smaller incremental projects (referred to as Tier II projects).

▪ Tier II – Project level analysis of a smaller incremental project within the Tier I corridor which would move forward based on available funding. Each of the Tier II projects would have independent utility and benefit to the public and Highway 1 operations.

The Tiered approach to the project represents a significant shift from the initial approach seeking environmental approval to construct the entire project at one time. This shift was necessitated by both the lack of state and federal funding, and the cost estimates of the full project- well beyond what could be generated locally and dedicated to the highway corridor. The current plan allows for a balanced approach to address the range of needs in the county; including local street and road maintenance and repair, school traffic safety projects, bus service and elderly/disabled transportation, pedestrian, and bicycle projects, and preservation of the rail corridor.

Three scenarios are being evaluated as part of the Tier I program level environmental analysis to identify the long-term vision for the Corridor:

- The High Occupancy Vehicle (HOV) Lane Alternative – adds a bus and carpool lane in both the north and south bound direction for the nine-mile corridor; includes auxiliary lanes (connecting on-ramps with the next off-ramps) between most interchanges and metering lights on the on-ramps

- The Transportation System Management (TSM) Alternative – includes auxiliary lanes (connecting on-ramps with the next off-ramps) between most interchanges and metering lights on the on-ramps
- The No Build Alternative

The No Build project alternative forecasts future conditions along the corridor in the event no capacity or significant operational improvements are made to the highway. The No Build baseline condition of the corridor is then compared with the two-project build (the HOV and TSM) alternatives to identify both adverse and beneficial impacts along the Highway 1 Corridor.

The Tier I project scenario chosen as the long-term corridor plan will be implemented as funding allows, through smaller Tier II projects of independent utility and benefit to the public and Highway 1 operations.

The current Tier II project under environmental review includes northbound and southbound auxiliary lanes between 41st Avenue and Soquel Drive and a bike/pedestrian overcrossing of Highway 1 at Chanticleer Avenue. This project is compatible with either Tier I project build alternative (the HOV and TSM project alternatives). Construction of this project could begin as early as Fiscal Year 2020-2021, depending on funding availability. Preliminary design and environmental analysis began on a second Tier II project in Fall 2016 for the construction of a pedestrian/bicycle overcrossing of Highway 1 at Mar Vista Drive in Aptos. This project will have a separate environmental document for public review and comment later in 2017.

Future Tier II projects will be subject to separate project level environmental analysis as part of the project development process and will be consistent with the long term (Tier I) vision chosen for the Highway 1 Corridor.

A more detailed discussion of Highway 1 improvements is included in the **Appendix**.

FUNDING FOR HIGHWAY 1 IMPROVEMENTS

Measure D was a proposed ½ cent local sales tax increase included on the November 2016 ballot in Santa Cruz County. The Measure, which will focus on transportation safety upgrades, roadway repairs, traffic relief, and transit augmentation, was approved by voters via a super majority (over 67% voting "yes").

The improvement plan will provide steady and direct funding to Santa Cruz County and all Cities within the County to improve the transportation network, including Highway 1. Transportation improvements will include improvements of local streets, road maintenance, bicycle and pedestrian projects, transit and paratransit service upgrades, as well as implementation of many other projects and programs. These improvements are voter approved and by default law, and must be implemented.

Measure D funding will provide the following improvements in the Project vicinity:

- $97 million for auxiliary lanes between:
    - Soquel Drive and 41st Avenue
    - Bay Avenue/Porter Street and Park Avenue
    - Park Avenue and State Park Drive

- $7 million for 2 new bicycle and pedestrian bridges over Highway 1
    - In Live Oak at Chanticleer Avenue
    - In Seacliff/Aptos at Mar Vista Drive
- $21 million for ongoing safety and operational service

8. POTENTIAL IMPACTS ON PEDESTRIAN, BICYCLE, AND TRANSIT MOBILITY

The Project was evaluated to determine if it would adversely affect adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks) or generate pedestrian, bicycle, or transit travel demand that would not be accommodated by transit, bicycle, or pedestrian facilities and plans.

PEDESTRIAN MOBILITY

Employees and patrons choosing to walk to the site would not be adversely impacted based on pedestrian mobility, accessibility, or safety at the Project site once frontage improvements are constructed. The Project will provide ADA compliant sidewalk facilities along Soquel Drive and Commercial Way Project frontages. Only a few pedestrian and/or bicycle trips, both in the weekday AM peak period and weekday PM peak period, are anticipated for the Project. Per the current site plan, ADA compliant sidewalks, driveways, and landscaping setbacks, will constructed as shown in **Figure 2**.

Internal pedestrian connections will link the proposed site's entrance with the parking areas, as well as the Soquel Drive frontage.

BICYCLE MOBILITY

Employees and patrons choosing to bike to the site from Soquel Drive would not be adversely impacted based on bicyclist mobility, accessibility, or safety. Only a few pedestrian and/or bicycle trips both in the weekday AM peak period and weekday PM peak period are anticipated for the Project. Existing Class II bicycle facilities along Soquel Drive, including the recently constructed green bike lanes at Paul Sweet Road and Commercial Way / Highway Northbound On-Off Ramps, provides bicycle access to the site.

TRANSIT MOBILITY

Employees and patrons of the development have the option of driving, taking transit, walking, or bicycling. Those that choose to take transit have the option of three transit lines that operate along Soquel Drive with bus stops near the Project site. According to 2011-2012 California Household Travel Survey for Santa Cruz County data, approximately 3% of Santa Cruz County residents use transit to travel to work. This typically represents the highest level of transit ridership during the day, with other periods being lower. If it is conservatively assumed (from the standpoint of transit demand) that 3% percent of the employees and patrons of the development use transit during the peak hours of the day, it represents approximately two new passengers in both the weekday AM peak period and weekday PM peak period, which has negligible adverse impact on transit mobility, accessibility, or safety at any of the study intersections. Bus stops are located within 500 feet from the Project site. Service routes and stops are discussed in detail in the **Existing Transit Facilities** section of this report.

SUMMARY OF POTENTIAL IMPACTS

Figure 2 identifies sidewalks, walkways, bicycle parking, and other amenities that will be constructed in compliance with adopted County standards; thus, the Project's impact on pedestrian, bicycle, and/or transit facilities is less than significant.

9. VEHICLE MILES TRAVELED EVALUATION

This section documents a Vehicle Miles Traveled (VMT) assessment for the proposed 13,100 square-foot CVS retail store. With the passage of SB 743, VMT has become an important indicator for determining if a new development will result in a “significant transportation impact”, as required by the California Environmental Quality Act (CEQA). While SB 743 will not be enforced until July 1, 2020, once enforceable, jurisdictions (lead agencies) will have to adopt VMT-related thresholds of significance and fully implement the requirements of SB 743. It is increasingly becoming a best practice to provide this information prior to the enforcement date to clarify a development’s potential VMT-related impact even if a jurisdiction has yet to set specific VMT significance thresholds.

BACKGROUND

SB 743 is part of a long-standing policy effort by the California legislature to improve California’s sustainability and reduce greenhouse gas emissions through denser infill development, a reduction in single occupancy vehicles, improved mass transit, and other actions. Recognizing that the current environmental analysis techniques are, at times, encouraging development that is inconsistent with this vision, the legislature has taken the extraordinary step to change the basis of environmental analysis for transportation impacts from Level of Service (LOS) to Vehicle Miles Travelled (VMT). VMT is understood to be a good proxy for evaluating air quality and other transportation related impacts that the State is actively trying to mitigate. While the use of VMT to determine significant transportation impacts has only been considered recently, it is by no means a new performance metric and has long been used as the basis for transportation system evaluations, as well as an important metric for evaluating the performance of Travel Demand Models (TDM).

While there are several ways to assess VMT, TDMs are typically considered the gold standard for VMT evaluation. TDMs are used primarily because when compared to other VMT calculation tools, they require fewer assumptions and are far more effective at evaluating land uses that are sensitive to the proximity of other land uses. In addition, TDMs consider other spatial and contextual considerations that other tools do not. Many of the sketch planning tools that are being promoted for use in evaluating VMT either rely heavily on TDM data or have broad assumptions that can result in incorrect findings if the practitioner does not fully understand those assumptions. A good discussion is provided within the most recent release of the VMT Technical Advisory[1] produced by the State’s Office of Planning and Research (OPR) as to the importance of using tools that are sensitive to the aspects described above (adjacent land use interactions, special, and contextual considerations) when determining VMT. It is not to say, however, that TDMs are without their limitations, especially when you are evaluating a relatively small land use change in a regional context. An important, yet easy to overlook aspect of the *Technical Advisory* is that it recognizes that each land use type has a unique contribution to VMT for the region. This point is critical when evaluating the VMT performance of a local serving retail store such as the proposed CVS.

ANALYSIS METHODOLOGY

Page 16 of the *Technical Advisory* specifically addresses some of the key issues surrounding how a local serving retail store, particularly in an urban context, should be evaluated in terms of its VMT impact. As described, the threshold for significance is “a net increase.” This means that if a proposed store produces one additional VMT, it would result in a finding of significance. However, the document further explains that local retail stores in an urban context, as is the case with this CVS location, can be determined to result in an overall VMT reduction by the lead agency. This is consistent with the desire to develop more sustainable communities that have fewer transportation impacts.

Local commercial uses, particularly in urban contexts, primarily serve pre-existing needs (i.e. they do not generate new trips because they meet existing demand). Because of this, local commercial uses can be presumed to reduce trip lengths when a new store is proposed. Essentially, the assumption is that someone will travel to a newly constructed local serving store because of its proximity, rather than the proposed store fulfilling an unmet need (i.e. the person had an existing need that was met by a store located further away and is now traveling to the new store because it is closer to the person's origin location). This results in an existing trip on the roadway network becoming shorter, rather than a new trip being added to the roadway network which results in an impact to the overall transportation system. Conversely, residential and office land uses often drive new trips given that they introduce new participants to the transportation system. However, a CVS store does not truly generate new trips that are added to the transportation system. As such this means that the impact to the transportation system will be reduced by the introduction of a new retail store that is primarily local/regional in its service focus.

The *Technical Advisory* provides for a general threshold of 50,000 square-feet as an indicator as to whether a retail store can be considered local serving or not. As described above, this is an important consideration in terms of a VMT-related significant impact determination. As the proposed CVS store would be 13,100 square-feet, and based upon the typical profile of a CVS store, it is clearly local serving. The *Technical Advisory* also provides that a less than significant finding can be further substantiated by showing the proximity of other similar uses. Although a specific market study is not being provided as part of this memorandum, a map showing the proximity of other similar stores is provided as **Figure 17.** As shown in **Figure 17**, this CVS store will reduce trip lengths by "adding retail opportunities into the urban fabric further improving retail destination proximity"[1]. Accordingly, it is appropriate that the proposed CVS store be presumed, in accordance with the *Technical Advisory*, that it will result in a VMT reduction and support the goals of SB 743.

FINDINGS

This analysis considered how the introduction of this store, its location, and the nature of services that it provides, would affect customers' destination choices given existing travel patterns. Based on the results of this assessment, it was determined that the proposed CVS store would result in a net VMT reduction. Accordingly, it was determined that the proposed CVS store would not result in a significant transportation impact with respect to SB 743 VMT evaluation methodologies.

[1] *Technical Advisory on Evaluating Transportation Impacts in CEQA*. Governor's Office of Planning and Research, State of California. December 2018.

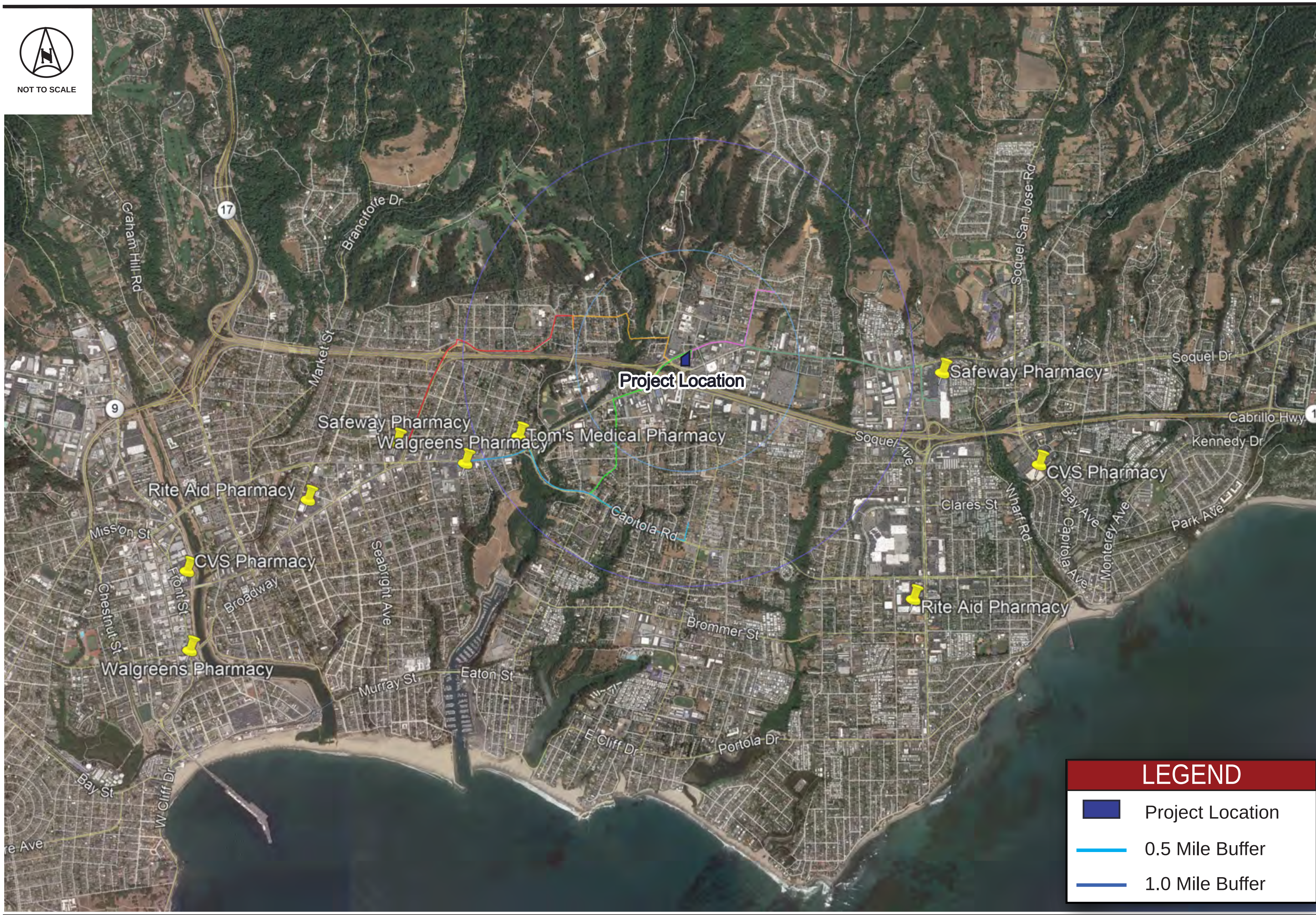

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Figure 17
Proximity of Similar Retail Stores

10. OTHER TRANSPORTATION EVALUATIONS

The following sections discuss proposed site access and circulation, on-site parking supply, Measure D relevance to the Project, and existing/future Highway 1 operations.

ON-SITE PARKING

The Santa Cruz County Municipal Code (13.10.552) requires one vehicle space per 300 square feet of gross building floor area and 1 bicycle space per 1,000 square feet of gross building floor area. Based on the Project's gross building floor area of 13,111 square feet, 44 vehicle parking spaces are required and 13 bicycle parking spaces are required. The County requires a maximum of two ADA spaces for between 26 and 50 total spaces required. This requirement would entail typical "retail" uses for staff and customer parking.

The Project will construct 50 vehicle parking spaces on-site (including 4 ADA stalls) for employees and customers, as well as 13 bicycle rack spaces. The proposed parking supply is summarized as follows:

- Employee, customer, etc. spaces (50 total):
    - 46 – Employee / Customer Spaces
    - 4 – ADA Spaces

The Project's proposed 50 vehicle parking spaces and 13 bicycle parking spaces exceed the County requirement of 48 vehicle parking spaces and is equal to the 13-bicycle parking space requirement. Therefore, the proposed parking supply is sufficient.

SITE ACCESS AND CIRCULATION

On site circulation was evaluated at the Project's two driveways, which will be located on Soquel Drive (Intersection #3) and Commercial Way (Intersection #7).

SOQUEL DRIVE / PROJECT DRIVEWAY #1 (INTERSECTION #3)

The driveway that currently exists and provides access to the existing Decor Furniture store will be demolished and a new Project driveway will be constructed and aligned with the existing Dominican Hospital stop controlled driveway on Soquel Drive (Intersection #2) to create a four-leg intersection. The Project driveway will be stop-controlled and will restrict left-turns out of the driveway through-out the day. Westbound left-turns and eastbound right-turns will be permitted for motorists entering the Project site throughout the day. It is anticipated that the north driveway, that currently provides ingress and egress to Dominican Hospital users will continue to be stop-controlled and will restrict left-turns out from 7:00am to 9:00am and 3:00pm to 6:00pm once the CVS Project is constructed. This would result in acceptable levels of service during the AM and PM peak hours.

Westbound left-turn striping improvements along Soquel Drive at the Project Driveway will be constructed by the Project.

HIGHWAY 1 NB ON-OFF RAMP / COMMERCIAL WAY & PROJECT DRIVEWAY #2 (INTERSECTION #7)

The driveway that currently exists and is stop controlled, provides access to the existing mini-warehouse. The existing driveway will be demolished, and a new Project driveway will be constructed on Highway 1

Northbound On-Off Ramps / Commercial Way (Intersection #7). Only right-turns in and right-turns out of this Project driveway will be permitted during Existing and Near Term Conditions. It is anticipated that the planned Caltrans ramp improvements, which will convert Commercial Way into a cul-de-sac and will no longer connect to the Highway 1 Ramp, will be constructed by future year 2035. It is expected that the Project driveway during Cumulative Conditions will be stop-controlled, will continue to have access to Commercial Way, and that right-turns in and left-turns out of the driveway will be permitted.

Concepts of the proposed intersection improvements, Project driveways, and Commercial Way cul-de-sac are shown in the **Appendix**.

QUEUE ANALYSIS AT HIGHWAY 1 NB ON-OFF RAMP / COMMERCIAL WAY

Queue lengths for the Highway 1 Northbound On-Off Ramp under Existing, Near Term, and Cumulative baseline conditions, as well as all Plus Project scenarios, are shown in **Table 12**. Queue length exceeding available storage lengths are highlighted. The queue length outputs are included in the **Appendix**.

Table 12 – Queue Analysis (Existing, Near Term, and Cumulative Conditions)

Scenarios		Northbound Queue Length (ft)
Existing	AM	355
	PM	360
Existing+ P	AM	366
	PM	383
Near Term	AM	380
	PM	377
Near Term+ P	AM	388
	PM	420
Cumulative	AM	542
	PM	364
Cumulative+ P	AM	553
	PM	377

As shown in the Table, it is not anticipated that queue would not spill back to Highway 1 mainline during Existing, Near Term, Cumulative, or Plus Project Conditions.

11. SUMMARY OF IMPACTS AND MITIGATION MEASURES

Based on the analysis above, the Project will trigger impacts at five study intersections. The following discussion describes the impacts, mitigations, and proportional fair share estimates to mitigate the impacts.

The improvements described below are currently unfunded and therefore are not included in the County Capital Improvement Program (CIP). The proportional fair share is based on the estimated Project AM and PM peak hour trips traveling through the intersection, as a percentage of the total future cumulative growth in traffic (i.e., Existing to Cumulative Plus Project conditions for the combined AM and PM traffic).

Soquel Drive & Paul Sweet Road / Commercial Way (Intersection #2)

Soquel Drive & Paul Sweet Road / Commercial Way is a Caltrans District 5 intersection. The study intersection operates at unacceptable LOS during AM and PM peak hours in all study scenarios. As part of the planned Highway 1 / Soquel Drive & Soquel Avenue interchange improvements, Caltrans plans to construct the following improvements at this study intersection:

- Convert one westbound left turn lane to westbound through lane.
- Add one westbound shared through and right turn bay.
- Add one northbound left turn lane.
- Add one eastbound right turn bay

A detailed layout of this intersection is attached in **Appendix**.

Implementation of these improvements would improve intersection operations to LOS D during AM and PM peak hours. However, these improvements are currently unfunded and are not included in the County Capital Improvement Program (CIP). Caltrans does not have a fee program in place for collecting fair share impact fees and the planned interchange improvements are not under Santa Cruz County jurisdiction. Therefore, until the identified improvements are constructed, this impact would be significant and unavoidable.

Soquel Drive & Mission Drive (Intersection #5)

Soquel Drive & Mission Drive is a Santa Cruz County intersection. The intersection will operate at an unacceptable LOS E during the PM peak during Cumulative and Cumulative plus Project conditions. This impact would be mitigated by implementing split phasing signal operation on the northbound and southbound approaches. **The Project's proportional fair share payment for this impact is approximately 1.9%.** The engineering cost estimate for this improvement is $81,000 (included in the **Appendix).** Therefore, the Project's fair share cost would be approximately **$1,570.**

Highway 1 NB On-Off Ramp / Commercial Way & Project Driveway #2 (Intersection #7)

This is a Caltrans District 5 intersection. The study intersection operates at unacceptable LOS during AM and PM peak hours in Cumulative and Cumulative plus Project study scenarios. As part of the planned Highway 1 / Soquel Drive & Soquel Avenue interchange improvements, Caltrans plans to construct the improvements identified at intersection #2 above, as well as ramp realignment and a cul-de-sac at the Project driveway.

Implementation of these improvements would improve intersection operations to LOS A during AM and PM peak hours. However, these improvements are currently unfunded and are therefore not included in the County Capital Improvement Project (CIP). The Cumulative impact is thus significant and unavoidable until the improvement is constructed.

Traffic Improvement Area Fees

The Project is required to pay a Transportation Improvement Area (TIA) fee to Santa Cruz County based on daily net new trips generated. The Santa Cruz County Fee Schedule uses a daily trip rate of 24 trips per 1,000 square feet for the existing furniture store and proposed pharmacy land use categories. Additionally, the fee schedule uses a daily rate of 5 trips per 1,000 square feet for the existing warehouse land use category. The existing apartment land use is credited based on units, not daily trips. Daily rates identified in the County fee program and referenced in this section are used in the fee calculations only. Consistent with County policies, ITE trip generation data and methodologies are used in this study's impact and mitigation analysis.

Based on the *County of Santa Cruz Department of Public Works – Service & Capital Improvement Fees schedule, revised December 12, 2017*, a **total fee credit of $151,920** is estimated for the existing warehouse, apartment, and furniture land uses that will be demolished prior to construction of the proposed pharmacy. This includes Soquel Transportation Improvement fees ($75,960) and Soquel Roadside Improvement fees ($75,960). **The Project will be responsible to pay a total of $36,880** ($188,800 gross impact fee minus $151,920 fee credit = $36,880) in County improvement fees. These fees include Soquel Transportation Improvement fees ($18,440) and Soquel Roadside Improvement fees ($18,440). These TIA fees are subject to change and are payable at the time the building permit is issued.

Through payment of the TIA fees and fair share payments identified above, the Project would mitigate all incremental Cumulative impacts.

Conclusion

Based on the above mitigation measures, the Project will be required to pay a total of $36,880 in traffic impact fees.

APPENDIX

EXISTING CONDITIONS TRAFFIC COUNTS

EXISTING CONDITIONS SYNCHRO OUTPUT SHEETS

EXISTING PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

NEAR TERM CONDITIONS SYNCHRO OUTPUT SHEETS

NEAR TERM PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

CUMULATIVE CONDITIONS SYNCHRO OUTPUT SHEETS

CUMULATIVE PLUS PROJECT CONDITIONS SYNCHRO OUTPUT SHEETS

MITIGATED CONDITIONS SYNCHRO OUTPUT SHEETS

PROPOSED HIGHWAY 1/SOQUEL DR & SOQUEL AVE LAYOUT

METHODOLOGY, COMMENTS, AND CORRESPONDENCE WITH SCC STAFF

HIGHWAY 1 CORRIDOR INVESTMENT PROGRAM PROJECT ALTERNATIVES

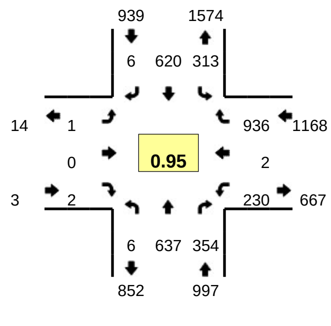
IMPROVEMENT COST ESTIMATES

EXISTING CONDITIONS

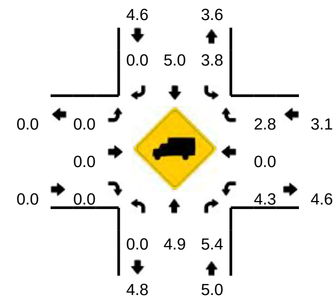
TRAFFIC COUNTS

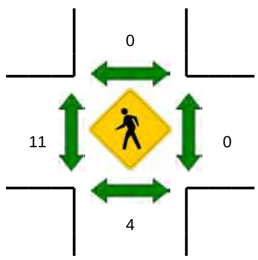
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

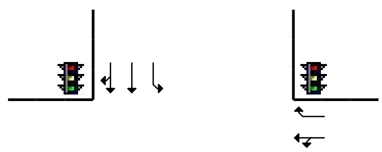
LOCATION: 1. Soquel Dr -- Soquel Ave | **QC JOB #:** 14646701
CITY/STATE: Santa Cruz, CA | **DATE:** Tue, Mar 06 2018

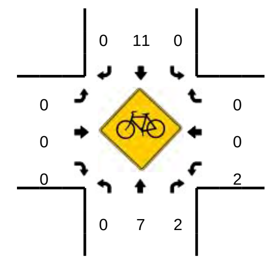


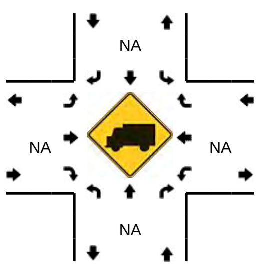
Peak-Hour: 7:40 AM -- 8:40 AM
Peak 15-Min: 7:55 AM -- 8:10 AM

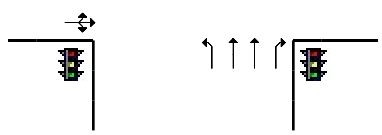


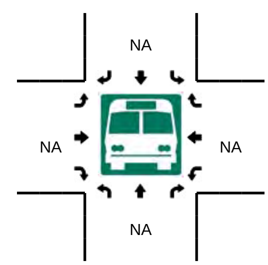












5-Min Count Period Beginning At	1. Soquel Dr (Northbound) Left	Thru	Right	U	1. Soquel Dr (Southbound) Left	Thru	Right	U	Soquel Ave (Eastbound) Left	Thru	Right	U	Soquel Ave (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	0	25	14	0	18	33	0	0	0	0	0	0	9	0	59	0	158	
7:05 AM	0	18	17	0	20	33	0	0	0	0	0	0	10	0	66	0	164	
7:10 AM	0	23	20	0	14	31	0	0	0	0	0	0	10	0	47	0	145	
7:15 AM	0	31	17	0	17	34	0	0	0	0	0	0	12	0	48	0	159	
7:20 AM	0	19	20	0	13	44	0	0	0	0	0	0	10	0	72	0	178	
7:25 AM	0	30	27	0	21	41	0	0	0	0	0	0	7	0	80	0	206	
7:30 AM	0	47	29	0	19	32	0	0	0	0	0	0	10	0	65	0	202	
7:35 AM	0	34	21	0	23	35	0	0	0	0	0	0	16	0	76	0	205	
7:40 AM	0	46	25	0	37	48	0	0	0	0	0	0	13	0	83	0	252	
7:45 AM	0	45	32	0	42	60	0	0	0	0	0	0	14	0	71	0	264	
7:50 AM	0	61	26	0	24	50	0	0	0	0	0	0	17	0	81	0	259	
7:55 AM	2	61	38	0	29	56	0	0	0	0	0	0	22	1	84	0	293	2485
8:00 AM	1	45	25	0	21	57	0	0	0	0	0	0	20	0	84	0	253	2580
8:05 AM	2	68	36	0	23	58	1	0	0	0	1	0	14	0	69	0	272	2688
8:10 AM	0	61	25	0	23	53	0	0	0	0	1	0	21	0	73	0	257	2800
8:15 AM	0	61	28	0	28	39	0	0	1	0	0	0	22	0	72	0	251	2892
8:20 AM	0	64	29	0	22	33	1	0	0	0	0	0	24	0	74	0	247	2961
8:25 AM	1	34	32	0	19	71	3	0	0	0	0	0	22	0	82	0	264	3019
8:30 AM	0	44	33	0	21	53	0	0	0	0	0	0	23	1	80	0	255	3072
8:35 AM	0	47	25	0	24	42	1	0	0	0	0	0	18	0	83	0	240	3107
8:40 AM	1	41	18	0	26	64	0	0	0	0	3	0	16	0	76	0	245	3100
8:45 AM	0	57	35	0	15	50	0	0	0	0	0	0	23	1	77	0	258	3094
8:50 AM	0	49	19	0	20	35	1	0	0	0	0	0	12	1	70	0	207	3042
8:55 AM	2	42	32	0	30	39	0	0	0	0	1	0	20	0	79	0	245	2994

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	20	696	396	0	292	684	4	0	0	0	4	0	224	4	948	0	3272
Heavy Trucks	0	48	28		12	60	0		0	0	0		16	0	32		196
Pedestrians		4				0				8				0			12
Bicycles	0	1	1		0	4	0		0	0	0		0	0	0		6
Railroad																	
Stopped Buses																	

Comments:

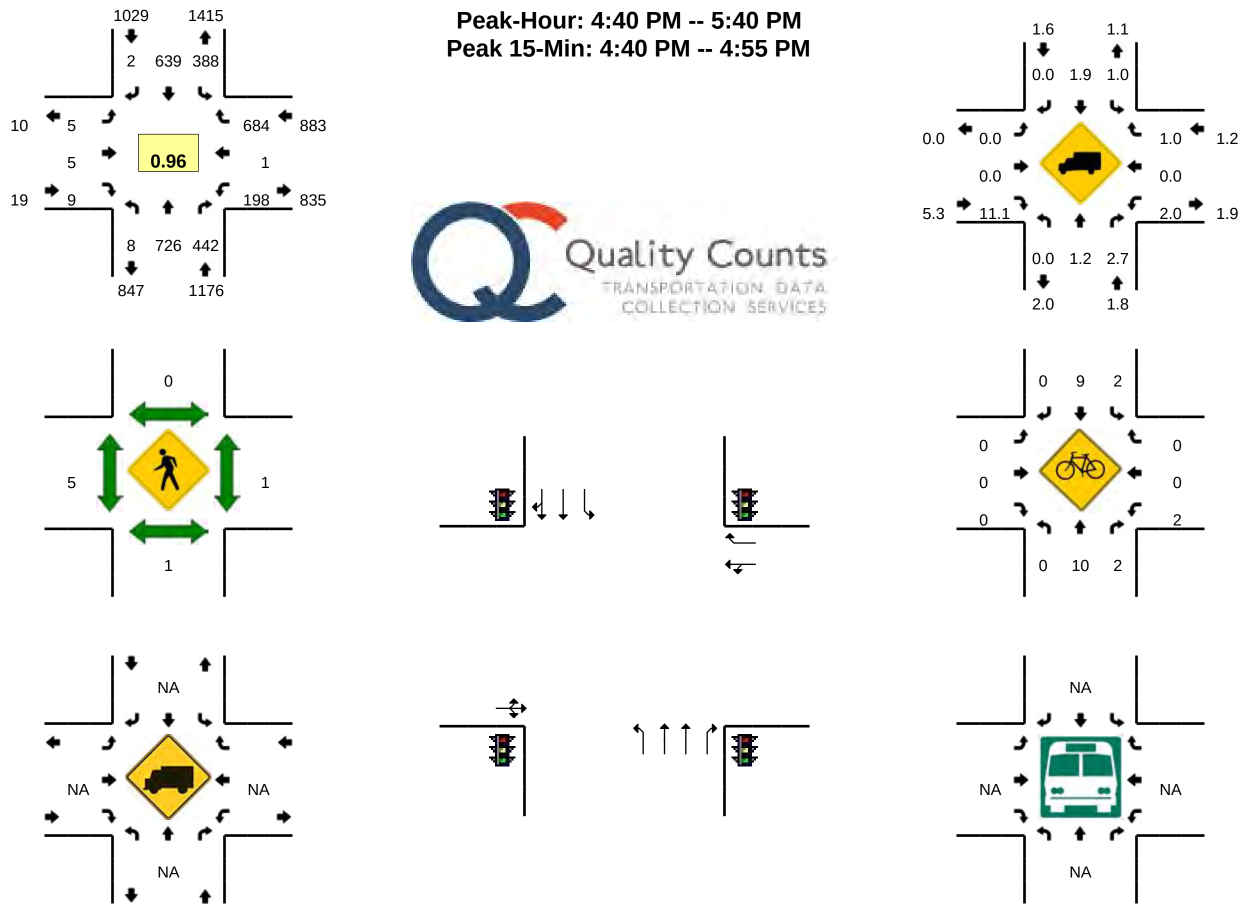
Report generated on 3/15/2018 10:05 AM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: 1. Soquel Dr -- Soquel Ave | **QC JOB #:** 14646702

CITY/STATE: Santa Cruz, CA | **DATE:** Tue, Mar 06 2018

Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 4:40 PM -- 4:55 PM



5-Min Count Period Beginning At	1. Soquel Dr (Northbound) Left	Thru	Right	U	1. Soquel Dr (Southbound) Left	Thru	Right	U	Soquel Ave (Eastbound) Left	Thru	Right	U	Soquel Ave (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:00 PM	1	43	21	0	33	45	0	0	0	0	0	0	19	0	47	0	209	
4:05 PM	1	50	27	0	29	53	2	0	0	0	2	0	26	1	61	0	252	
4:10 PM	0	50	43	0	19	52	1	0	0	2	2	0	16	3	52	0	240	
4:15 PM	0	57	29	1	31	61	0	0	2	1	1	0	12	1	66	0	262	
4:20 PM	0	35	35	0	19	50	0	0	0	0	1	0	22	0	87	0	249	
4:25 PM	0	47	35	0	34	52	1	0	0	1	0	0	17	0	67	0	254	
4:30 PM	1	46	34	0	34	47	0	0	0	0	1	0	20	0	60	0	243	
4:35 PM	2	59	43	0	36	46	3	0	0	0	0	0	19	1	60	0	269	
4:40 PM	0	73	37	1	32	54	0	0	0	1	1	0	16	1	54	0	270	
4:45 PM	2	48	42	0	43	54	0	0	2	0	2	0	20	0	62	0	275	
4:50 PM	0	63	30	0	27	74	0	0	0	0	0	0	13	0	53	0	260	
4:55 PM	0	44	31	0	35	46	0	0	0	3	0	0	17	0	66	0	242	3025
5:00 PM	0	69	32	0	23	43	0	0	1	0	0	0	23	0	47	0	238	3054
5:05 PM	1	49	27	0	28	63	0	0	1	1	1	0	16	0	57	0	244	3046
5:10 PM	1	78	48	0	42	50	0	0	0	0	1	0	16	0	54	0	290	3096
5:15 PM	0	49	42	0	30	59	0	0	1	0	0	0	19	0	68	0	268	3102
5:20 PM	1	53	30	0	36	51	1	0	0	0	3	0	15	0	57	0	247	3100
5:25 PM	0	81	35	0	28	41	1	0	0	0	0	0	17	0	50	0	253	3099
5:30 PM	1	60	46	0	31	51	0	0	0	0	1	0	11	0	49	0	250	3106
5:35 PM	1	59	42	0	33	53	0	0	0	0	0	0	15	0	67	0	270	3107
5:40 PM	1	44	30	0	28	43	1	0	1	0	3	0	20	0	47	0	218	3055
5:45 PM	1	61	39	0	27	45	0	0	0	1	1	0	8	1	57	0	241	3021
5:50 PM	1	51	36	0	25	43	1	0	1	0	2	0	10	0	60	0	230	2991
5:55 PM	0	51	32	0	26	47	0	0	0	0	1	0	16	0	72	0	245	2994

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	8	736	436	4	408	728	0	0	8	4	12	0	196	4	676	0	3220
Heavy Trucks	0	12	16		12	12	0		0	0	4		4	0	16		76
Pedestrians		0				0				0				4			4
Bicycles	0	0	0		0	3	0		0	0	0		0	0	0		3
Railroad																	
Stopped Buses																	

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

Location: 2. Soquel Dr & Paul Sweet Rd/Commercial Way
Date: 3/6/2018
Site Code: 14646703

	Soquel Dr Southbound					Commercial Way Westbound					Soquel Dr Northbound					Hwy 1 WB On-Ramp Northeastbound					Paul Sweet Rd Eastbound				
Start Time	Right	Right to On-Ramp	Thru	Left	U-Turn	Right	Thru	Left to On-Ramp	Left	U-Turn	Right	Thru	Left	Left to On-Ramp	U-Turn						Right to On-Ramp	Right	Thru	Left	U-Turn
7:00 AM	0	18	14	0	0	3	2	8	29	0	26	37	9	0	0	0	0	0	0	0	5	1	0	3	0
7:05 AM	1	25	19	0	0	3	8	2	18	0	28	26	7	0	0	0	0	0	0	0	1	2	0	1	0
7:10 AM	2	20	10	0	0	3	3	7	25	0	42	25	4	0	0	0	0	0	0	0	3	6	0	3	0
7:15 AM	1	28	29	0	0	4	1	5	23	0	43	39	6	0	1	0	0	0	0	0	2	4	0	1	0
7:20 AM	0	26	20	0	0	4	10	8	32	0	30	38	5	0	1	0	0	0	0	0	1	5	0	3	0
7:25 AM	1	37	23	0	0	2	3	5	18	0	47	47	12	0	0	0	0	0	0	0	2	5	0	3	0
7:30 AM	2	25	24	0	0	3	9	4	36	0	44	45	12	0	0	0	0	0	0	0	5	6	0	6	0
7:35 AM	3	39	38	1	0	2	3	4	19	0	49	58	17	1	0	0	0	0	0	0	3	9	0	0	0
7:40 AM	2	63	51	0	0	2	10	3	33	0	50	60	12	0	0	0	0	0	0	0	3	3	0	4	0
7:45 AM	1	41	31	0	0	4	11	8	27	0	58	60	7	0	0	0	0	0	0	0	9	15	0	6	0
7:50 AM	1	49	34	0	0	2	3	4	21	0	48	95	20	0	0	0	0	0	0	0	8	4	0	9	0
7:55 AM	1	54	57	0	0	4	11	5	34	0	62	79	12	0	0	0	0	0	0	0	5	5	0	4	0
8:00 AM	3	48	48	1	0	2	6	4	25	0	42	86	16	0	0	0	0	0	0	0	2	9	0	3	0
8:05 AM	1	45	43	0	0	4	9	3	31	0	43	59	8	0	1	0	0	0	0	0	3	10	0	7	0
8:10 AM	3	44	32	0	0	3	6	4	23	0	45	65	12	0	0	0	0	0	0	0	4	4	0	6	0
8:15 AM	3	41	47	1	0	2	8	5	24	0	55	59	11	0	0	0	0	0	0	0	2	2	0	3	0
8:20 AM	0	31	31	0	0	4	7	3	39	0	47	54	9	0	0	0	0	0	0	0	5	8	0	12	0
8:25 AM	4	40	51	1	0	3	7	9	29	0	44	93	15	0	0	0	0	0	0	0	4	6	0	6	0
8:30 AM	5	59	58	0	0	3	3	4	30	0	50	64	13	1	0	0	0	0	0	0	3	7	0	5	0
8:35 AM	2	44	34	0	0	1	3	4	34	0	41	50	8	0	0	0	0	0	0	0	3	8	0	4	0
8:40 AM	2	52	39	0	0	2	1	2	15	0	42	83	13	0	0	0	0	0	0	0	2	9	0	7	0
8:45 AM	2	27	36	0	0	9	3	6	20	0	42	74	9	1	0	0	0	0	0	0	3	2	0	5	0
8:50 AM	2	52	32	0	0	4	5	6	23	0	53	58	3	1	0	0	0	0	0	0	1	7	0	8	0
8:55 AM	3	59	45	0	0	3	5	2	23	0	40	76	6	0	0	0	0	0	0	0	1	2	0	4	0
Total	**45**	**967**	**846**	**4**	**0**	**76**	**137**	**115**	**631**	**0**	**1071**	**1430**	**246**	**4**	**3**	**0**	**0**	**0**	**0**	**0**	**80**	**139**	**0**	**113**	**0**

Peak Hour: 7:35 AM - 8:35 AM
Peak 15: 7:50 AM - 8:05 AM
PHF: 0.916307

Quality Counts
TRANSPORTATION DATA COLLECTION SERVICES

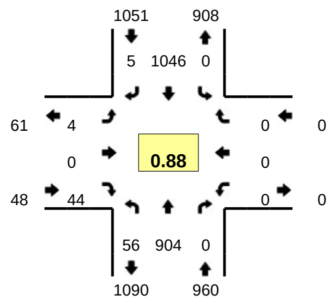
Location: 2. Soquel Dr & Paul Sweet Rd/Commercial Way
Date: 3/6/2018
Site Code: 14646704

	Soquel Dr Southbound					Commercial Way Westbound					Soquel Dr Northbound					Hwy 1 WB On-Ramp Northeastbound					Paul Sweet Rd Eastbound				
Start Time	Right	Right to On-Ramp	Thru	Left	U-Turn	Right	Thru	Left to On-Ramp	Left	U-Turn	Right	Thru	Left	Left to On-Ramp	U-Turn						Right to On-Ramp	Right	Thru	Left	U-Turn
4:00 PM	2	46	48	0	0	7	0	2	18	0	30	73	5	0	1	0	0	0	0	0	10	10	0	14	0
4:05 PM	0	26	36	0	0	8	1	5	37	0	34	52	3	1	0	0	0	0	0	0	6	11	0	10	0
4:10 PM	2	42	48	0	0	2	3	1	21	0	32	83	2	0	0	0	0	0	0	0	6	8	0	14	0
4:15 PM	2	42	40	0	0	3	1	7	26	0	46	81	4	0	0	0	0	0	0	0	8	10	0	17	0
4:20 PM	1	41	33	1	0	8	3	3	34	0	33	82	4	0	1	0	0	0	0	0	8	14	0	12	0
4:25 PM	1	17	36	0	0	2	1	6	39	0	27	68	1	1	0	0	0	0	0	0	10	12	0	18	0
4:30 PM	2	32	37	0	0	5	0	13	36	0	23	76	3	1	1	0	0	0	0	0	8	17	0	13	0
4:35 PM	1	53	38	0	0	4	1	8	24	0	26	111	4	2	1	0	0	0	0	0	5	8	0	16	0
4:40 PM	2	49	51	0	0	4	0	12	23	0	38	73	2	0	0	0	0	0	0	0	5	14	0	16	0
4:45 PM	1	43	43	0	0	4	0	5	52	0	32	72	2	1	1	0	0	0	0	0	4	14	0	16	0
4:50 PM	2	47	40	0	0	6	3	5	33	0	35	87	5	1	1	0	0	0	0	0	12	9	0	5	0
4:55 PM	2	55	47	0	0	9	0	7	27	0	26	75	6	0	0	0	0	0	0	0	14	5	0	13	0
5:00 PM	0	47	50	1	0	1	1	10	21	0	43	64	3	0	0	0	0	0	0	0	8	12	0	13	0
5:05 PM	1	40	37	2	0	4	2	15	41	0	39	68	2	0	1	0	0	0	0	0	12	15	0	8	0
5:10 PM	1	42	47	0	0	4	3	9	28	0	32	95	1	0	1	0	0	0	0	0	15	19	0	12	0
5:15 PM	0	55	38	0	0	2	1	10	28	0	38	85	4	0	0	0	0	0	0	0	3	13	0	13	0
5:20 PM	1	35	38	0	0	4	2	11	39	0	37	69	1	0	0	0	0	0	0	0	4	11	0	11	0
5:25 PM	0	33	45	0	0	1	1	4	22	0	33	97	4	1	0	0	0	0	0	0	2	8	0	8	0
5:30 PM	1	35	29	0	0	4	1	14	38	0	31	64	4	0	0	0	0	0	0	0	3	12	0	20	0
5:35 PM	1	32	41	0	0	3	1	5	33	0	31	44	5	0	0	0	0	0	0	0	4	8	0	15	0
5:40 PM	3	43	36	0	0	2	2	5	31	0	30	70	3	0	1	0	0	0	0	0	3	6	0	13	0
5:45 PM	1	30	35	0	0	3	2	4	31	0	28	84	1	1	0	0	0	0	0	0	8	6	0	11	0
5:50 PM	0	26	28	0	0	7	1	5	22	0	32	65	6	1	0	0	0	0	0	0	2	14	0	10	0
5:55 PM	2	30	41	0	0	2	2	1	22	0	24	105	3	0	0	0	0	0	0	0	2	1	0	8	0
Total	**29**	**941**	**962**	**4**	**0**	**99**	**32**	**167**	**726**	**0**	**780**	**1843**	**78**	**10**	**9**	**0**	**0**	**0**	**0**	**0**	**162**	**257**	**0**	**306**	**0**

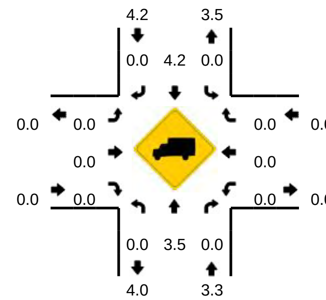
Peak Hour: 4:30 PM - 5:30 PM
Peak 15: 5:05 PM - 5:20 PM
PHF: 0.961343

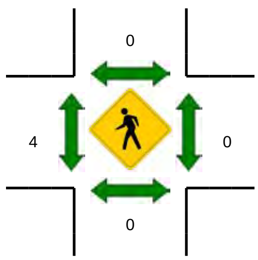
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

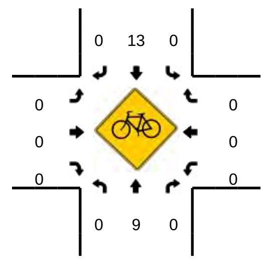
LOCATION: 3. Soquel Dr -- Dominican Hospital/Project Dwy | **QC JOB #:** 14646705
CITY/STATE: Santa Cruz, CA | **DATE:** Tue, Mar 06 2018

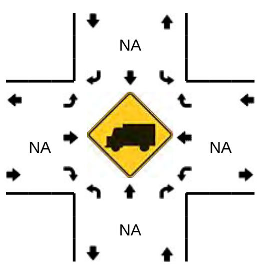


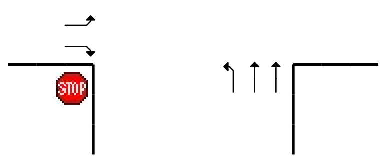
Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 7:50 AM -- 8:05 AM

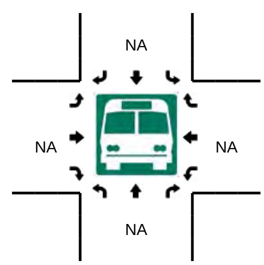












5-Min Count Period Beginning At	3. Soquel Dr (Northbound) Left	Thru	Right	U	3. Soquel Dr (Southbound) Left	Thru	Right	U	Dominican Hospital/Project Dwy (Eastbound) Left	Thru	Right	U	Dominican Hospital/Project Dwy (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	5	41	0	0	0	29	0	0	0	0	3	0	0	0	0	0	78	
7:05 AM	0	29	0	0	0	42	0	0	1	0	3	0	0	0	0	0	75	
7:10 AM	0	33	0	0	0	36	0	0	0	0	1	0	0	0	0	0	70	
7:15 AM	4	40	0	0	0	56	0	0	0	0	0	0	0	0	0	0	100	
7:20 AM	4	44	0	0	0	43	0	0	0	0	1	0	0	0	0	0	92	
7:25 AM	0	48	0	0	0	56	0	0	0	0	3	0	0	0	0	0	107	
7:30 AM	4	49	0	0	0	58	0	0	0	0	2	0	0	0	0	0	113	
7:35 AM	3	63	0	0	0	75	0	0	0	0	5	0	0	0	0	0	146	
7:40 AM	1	68	0	0	0	114	0	0	0	0	7	0	0	0	0	0	190	
7:45 AM	5	64	0	0	0	61	0	0	0	0	8	0	0	0	0	0	138	
7:50 AM	5	90	0	0	0	92	1	0	0	0	12	0	0	0	0	0	200	
7:55 AM	7	87	0	0	0	92	0	0	0	0	5	0	0	0	0	0	191	1500
8:00 AM	5	88	0	0	0	93	0	0	0	0	5	0	0	0	0	0	191	1613
8:05 AM	6	65	0	0	0	84	0	0	1	0	2	0	0	0	0	0	158	1696
8:10 AM	3	68	0	0	0	87	0	0	1	0	3	0	0	0	0	0	162	1788
8:15 AM	7	64	0	0	0	77	0	0	1	0	3	0	0	0	0	0	152	1840
8:20 AM	7	62	0	0	0	89	2	0	0	0	1	0	0	0	0	0	161	1909
8:25 AM	5	84	0	0	0	89	0	0	0	0	3	0	0	0	0	0	181	1983
8:30 AM	1	76	0	0	0	105	0	0	0	0	2	0	0	0	0	0	184	2054
8:35 AM	4	50	0	0	0	84	0	0	1	0	4	0	0	0	0	0	143	2051
8:40 AM	2	90	0	0	0	80	0	0	0	0	2	0	0	0	0	0	174	2035
8:45 AM	4	80	0	0	0	74	2	0	0	0	2	0	0	0	0	0	162	2059
8:50 AM	4	67	0	0	0	85	0	0	0	0	2	0	0	0	0	0	158	2017
8:55 AM	5	79	0	0	0	93	0	0	0	0	3	0	0	0	0	0	180	2006

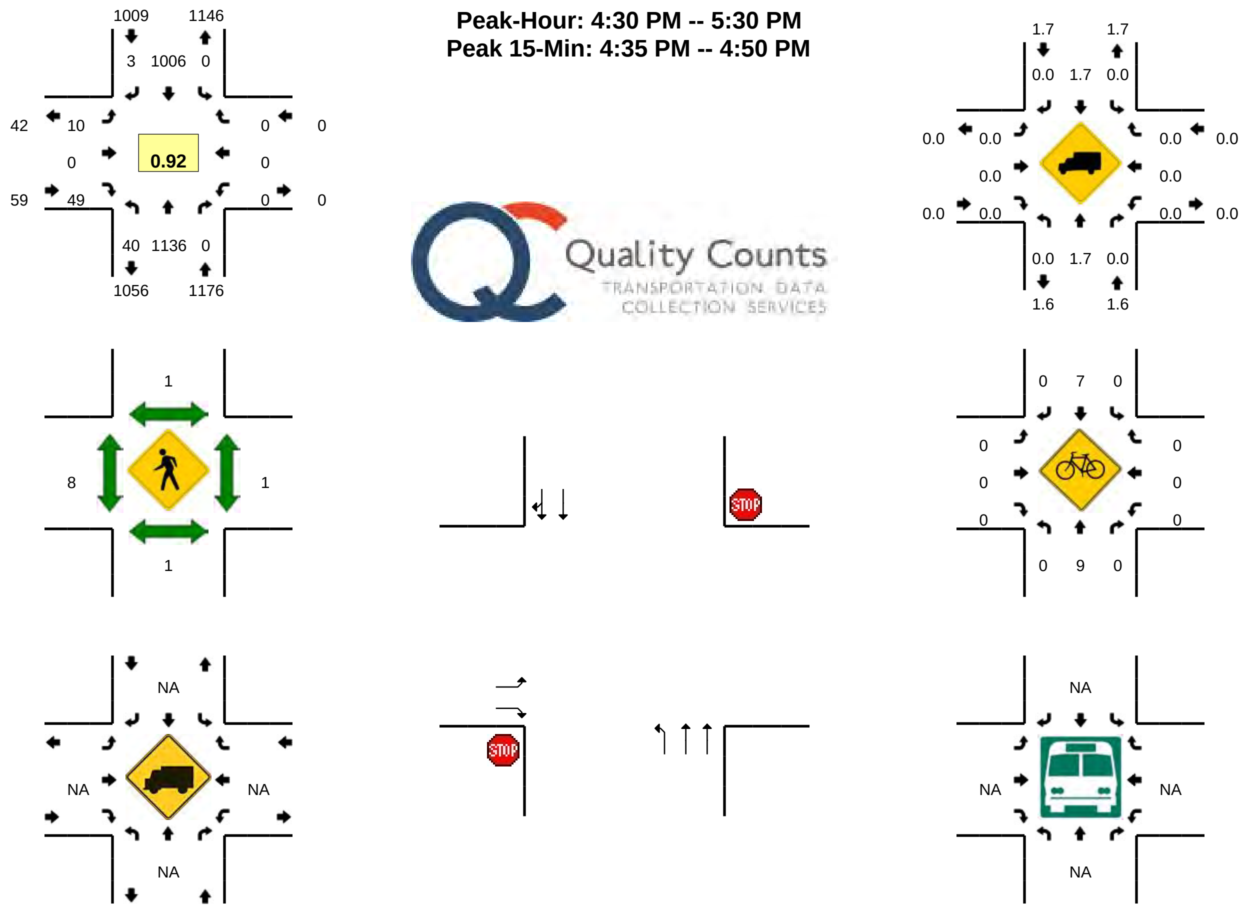
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	68	1060	0	0	0	1108	4	0	0	0	88	0	0	0	0	0	2328
Heavy Trucks	0	28	0		0	72	0		0	0	0		0	0	0		100
Pedestrians		0				0				0				0			0
Bicycles	0	2	0		0	3	0		0	0	0		0	0	0		5
Railroad																	
Stopped Buses																	

Comments:

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: 3. Soquel Dr -- Dominican Hospital/Project Dwy | **QC JOB #:** 14646706
CITY/STATE: Santa Cruz, CA | **DATE:** Tue, Mar 06 2018

Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 4:35 PM -- 4:50 PM



5-Min Count Period Beginning At	3. Soquel Dr (Northbound) Left	Thru	Right	U	3. Soquel Dr (Southbound) Left	Thru	Right	U	Dominican Hospital/Project Dwy (Eastbound) Left	Thru	Right	U	Dominican Hospital/Project Dwy (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:00 PM	6	83	0	0	0	73	0	0	0	0	7	0	0	0	0	0	169	
4:05 PM	1	76	0	0	0	74	0	0	1	0	4	0	0	0	0	0	156	
4:10 PM	2	95	0	0	0	79	0	0	0	0	2	0	0	0	0	0	178	
4:15 PM	1	105	0	0	0	88	0	0	0	0	3	0	0	0	0	0	197	
4:20 PM	4	101	0	1	0	71	0	0	1	0	4	0	0	0	0	0	182	
4:25 PM	3	88	0	0	0	55	1	0	0	0	1	0	0	0	0	0	148	
4:30 PM	0	86	0	0	0	77	0	0	0	0	4	0	0	0	0	0	167	
4:35 PM	2	131	0	0	0	77	0	0	1	0	1	0	0	0	0	0	212	
4:40 PM	1	103	0	0	0	93	1	0	1	0	9	0	0	0	0	0	208	
4:45 PM	1	87	0	0	0	97	0	0	0	0	3	0	0	0	0	0	188	
4:50 PM	7	84	0	0	0	88	0	0	1	0	4	0	0	0	0	0	184	
4:55 PM	8	97	0	0	0	86	0	0	0	0	6	0	0	0	0	0	197	2186
5:00 PM	4	79	0	0	0	89	0	0	1	0	3	0	0	0	0	0	176	2193
5:05 PM	4	76	0	0	0	83	1	0	2	0	3	0	0	0	0	0	169	2206
5:10 PM	2	104	0	0	0	96	0	0	1	0	5	0	0	0	0	0	208	2236
5:15 PM	2	104	0	0	0	80	0	0	1	0	2	0	0	0	0	0	189	2228
5:20 PM	6	74	0	0	0	68	0	0	2	0	7	0	0	0	0	0	157	2203
5:25 PM	2	111	0	1	0	72	1	0	0	0	2	0	0	0	0	0	189	2244
5:30 PM	2	87	0	0	0	62	1	0	1	0	4	0	0	0	0	0	157	2234
5:35 PM	2	94	0	0	0	84	0	0	0	0	4	0	0	0	0	0	184	2206
5:40 PM	3	88	0	0	0	64	1	0	1	0	7	0	0	0	0	0	164	2162
5:45 PM	3	84	0	0	0	61	1	0	0	0	6	0	0	0	0	0	155	2129
5:50 PM	5	89	0	0	0	64	0	0	0	0	4	0	0	0	0	0	162	2107
5:55 PM	8	107	0	0	0	54	0	0	1	0	5	0	0	0	0	0	175	2085

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	16	1284	0	0	0	1068	4	0	8	0	52	0	0	0	0	0	2432
Heavy Trucks	0	28	0		0	8	0		0	0	0		0	0	0		36
Pedestrians		4				0				12				4			20
Bicycles	0	2	0		0	3	0		0	0	0		0	0	0		5
Railroad																	
Stopped Buses																	

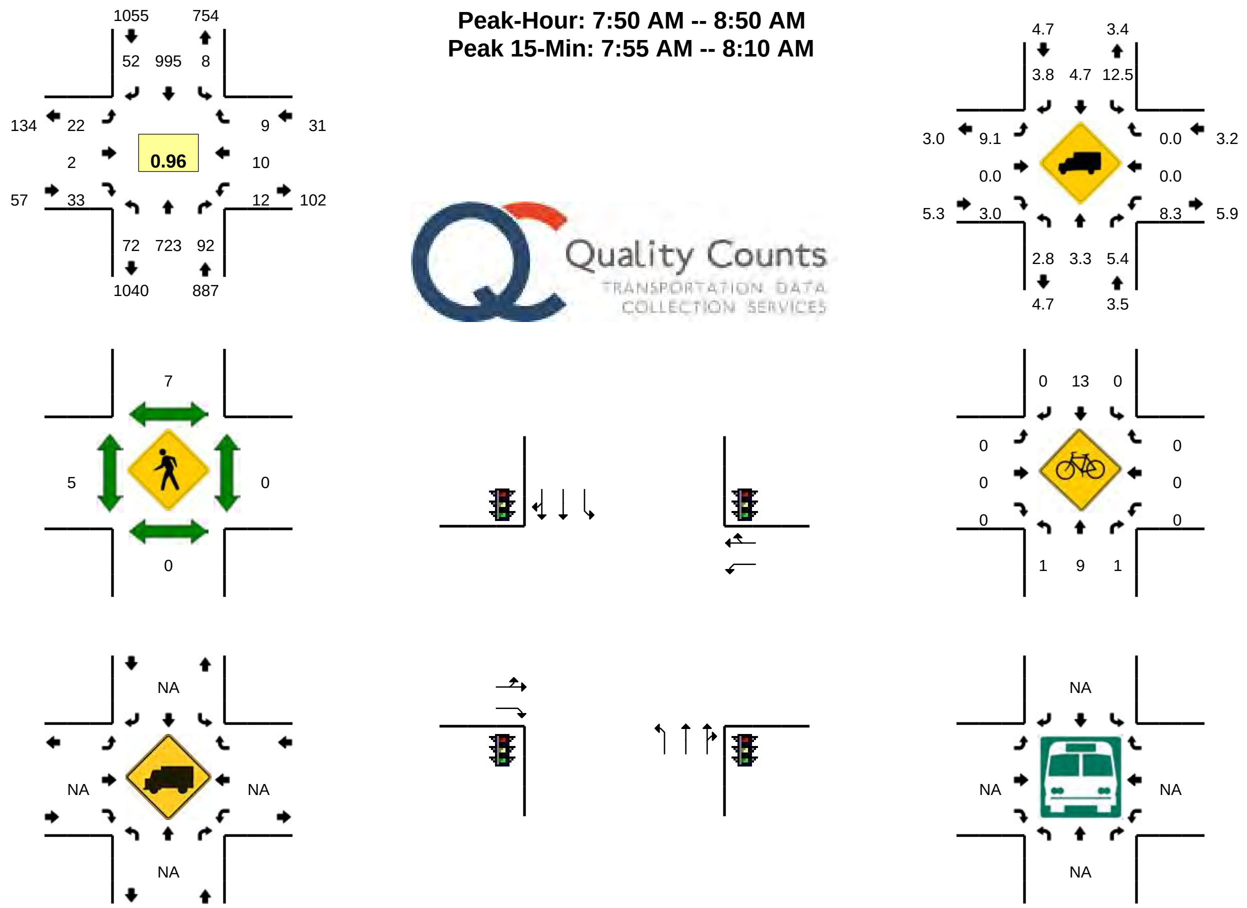
Comments:

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: 4. Soquel Dr -- Dominican Hospital/Commercial Crossing | **QC JOB #:** 14646707

CITY/STATE: Santa Cruz, CA | **DATE:** Tue, Mar 06 2018

Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 7:55 AM -- 8:10 AM



5-Min Count Period Beginning At	4. Soquel Dr (Northbound) Left	Thru	Right	U	4. Soquel Dr (Southbound) Left	Thru	Right	U	Dominican Hospital/Commercial Crossing (Eastbound) Left	Thru	Right	U	Dominican Hospital/Commercial Crossing (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	3	31	4	0	0	27	4	0	0	0	3	0	0	4	0	0	76	
7:05 AM	3	26	6	0	0	36	0	0	0	0	2	0	1	2	0	0	76	
7:10 AM	4	27	5	0	0	35	1	0	1	0	2	0	0	2	1	0	78	
7:15 AM	4	22	3	0	0	47	2	0	1	0	4	0	0	0	0	0	83	
7:20 AM	9	39	3	0	0	44	4	0	0	0	4	0	1	2	0	0	106	
7:25 AM	8	39	2	0	0	51	0	0	0	0	1	0	1	2	0	0	104	
7:30 AM	3	44	3	0	0	58	0	0	0	0	4	0	0	0	0	0	112	
7:35 AM	3	47	7	0	1	70	2	0	1	0	1	0	1	0	0	0	133	
7:40 AM	3	63	5	0	0	105	3	0	7	0	6	0	0	0	2	0	194	
7:45 AM	5	52	10	0	1	64	2	0	1	0	2	0	1	1	2	0	141	
7:50 AM	8	63	8	0	0	100	7	0	2	0	4	0	1	0	0	0	193	
7:55 AM	6	64	9	0	0	80	2	0	2	0	0	0	1	0	0	0	164	1460
8:00 AM	6	66	5	0	0	75	5	0	0	0	3	0	1	4	3	0	168	1552
8:05 AM	10	77	7	0	0	92	2	0	0	1	4	0	0	1	0	0	194	1670
8:10 AM	7	40	6	0	0	73	4	0	3	0	1	0	2	0	1	0	137	1729
8:15 AM	5	58	10	0	0	85	3	0	1	1	3	0	1	2	0	0	169	1815
8:20 AM	6	53	6	0	2	79	4	0	3	0	0	0	0	1	0	0	154	1863
8:25 AM	8	56	7	0	3	100	5	0	0	0	2	0	3	0	0	0	184	1943
8:30 AM	5	57	9	0	0	80	3	0	0	0	5	0	1	1	2	0	163	1994
8:35 AM	7	52	9	0	1	77	6	0	5	0	4	0	0	0	2	0	163	2024
8:40 AM	1	63	13	0	1	85	7	0	4	0	4	0	2	1	1	0	182	2012
8:45 AM	3	74	3	0	1	69	4	0	2	0	3	0	0	0	0	0	159	2030
8:50 AM	5	63	10	0	0	85	10	0	2	0	3	0	2	2	1	0	183	2020
8:55 AM	8	48	8	0	3	90	6	0	1	0	2	0	1	0	0	0	167	2023

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	88	828	84	0	0	988	36	0	8	4	28	0	8	20	12	0	2104
Heavy Trucks	0	20	8		0	48	0		0	0	4		4	0	0		84
Pedestrians		0				4				0				0			4
Bicycles	1	3	1		0	3	0		0	0	0		0	0	0		8
Railroad																	
Stopped Buses																	

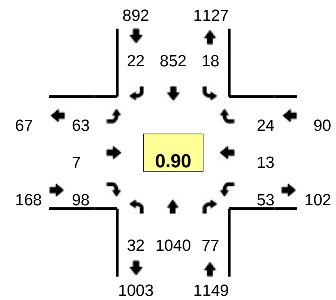
Comments:

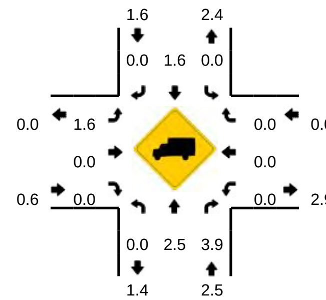
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

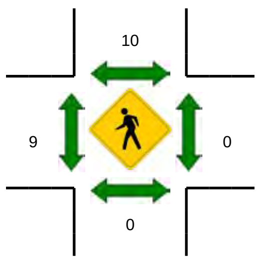
LOCATION: 4. Soquel Dr -- Dominican Hospital/Commercial Crossing | **QC JOB #:** 14646708

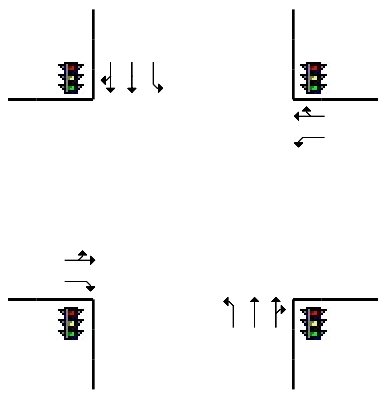
CITY/STATE: Santa Cruz, CA | **DATE:** Tue, Mar 06 2018

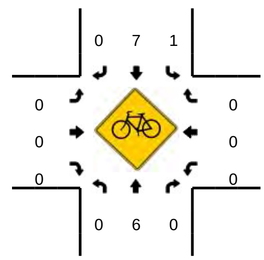
Peak-Hour: 4:15 PM -- 5:15 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

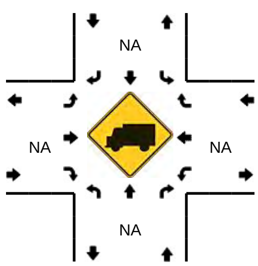


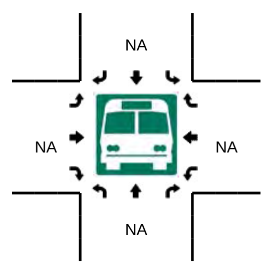












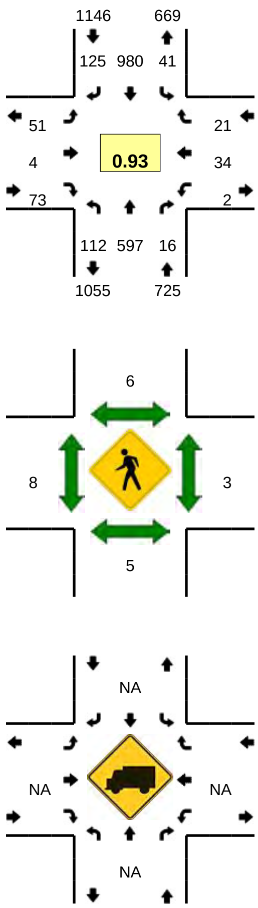
5-Min Count Period Beginning At	4. Soquel Dr (Northbound) Left	Thru	Right	U	4. Soquel Dr (Southbound) Left	Thru	Right	U	Dominican Hospital/Commercial Crossing (Eastbound) Left	Thru	Right	U	Dominican Hospital/Commercial Crossing (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:00 PM	4	60	6	1	1	57	2	0	2	1	10	0	3	3	3	0	153	
4:05 PM	3	82	5	0	1	68	2	0	1	0	5	0	1	3	0	0	171	
4:10 PM	6	58	11	0	2	67	2	0	6	1	5	0	5	1	2	0	166	
4:15 PM	5	88	9	0	0	71	1	0	8	1	9	0	6	0	2	0	200	
4:20 PM	4	93	10	0	0	61	0	0	2	1	9	0	4	3	2	0	189	
4:25 PM	1	93	12	0	1	49	1	0	5	1	8	0	5	0	3	0	179	
4:30 PM	6	69	5	0	3	59	2	0	4	0	4	0	10	0	3	0	165	
4:35 PM	3	101	7	0	1	72	1	0	1	0	8	0	4	1	5	0	204	
4:40 PM	4	107	10	0	1	77	1	0	7	0	6	0	3	0	3	0	219	
4:45 PM	1	96	3	0	3	85	3	0	5	0	15	0	2	2	3	0	218	
4:50 PM	3	73	2	0	3	78	3	0	3	2	8	0	4	2	0	0	181	
4:55 PM	3	78	6	0	2	72	3	0	5	0	7	0	7	0	0	0	183	2228
5:00 PM	0	96	0	0	3	81	6	0	7	1	9	0	0	0	1	0	204	2279
5:05 PM	0	68	7	0	0	69	1	0	9	1	9	0	3	4	2	0	173	2281
5:10 PM	2	78	6	0	1	78	0	0	7	0	6	0	5	1	0	0	184	2299
5:15 PM	1	85	15	0	2	76	2	0	4	1	4	0	2	1	3	0	196	2295
5:20 PM	2	92	3	0	1	70	1	0	3	0	2	0	1	0	0	0	175	2281
5:25 PM	0	85	9	0	3	66	2	0	3	0	2	0	2	1	0	0	173	2275
5:30 PM	0	98	6	0	2	61	1	0	3	1	1	0	3	1	1	0	178	2288
5:35 PM	1	82	3	0	0	81	2	0	3	0	1	0	3	0	0	0	176	2260
5:40 PM	1	74	4	0	2	59	0	0	3	0	3	0	2	1	3	0	152	2193
5:45 PM	0	79	6	0	1	53	4	0	1	0	4	0	3	2	2	0	155	2130
5:50 PM	5	95	6	0	0	58	2	0	3	0	4	0	3	2	3	0	181	2130
5:55 PM	0	88	8	0	1	49	4	0	1	0	2	0	2	0	2	0	157	2104

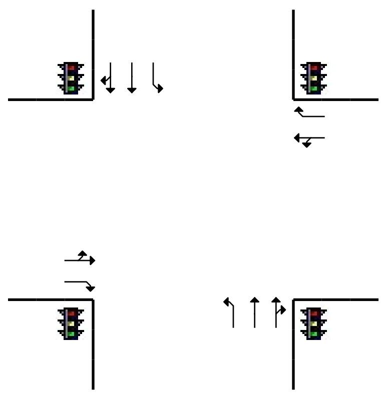
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	32	1216	80	0	20	936	20	0	52	0	116	0	36	12	44	0	2564
Heavy Trucks	0	28	4		0	12	0		4	0	0		0	0	0		48
Pedestrians		0				4				12				0			16
Bicycles	0	2	0		0	3	0		0	0	0		0	0	0		5
Railroad																	
Stopped Buses																	

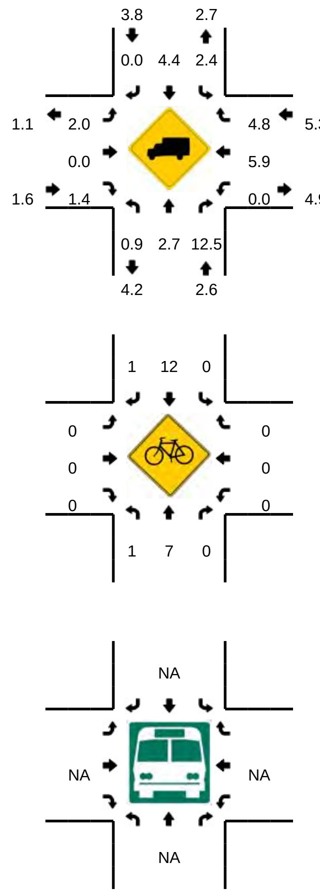
Comments:

LOCATION: 5. Soquel Dr -- Mission Dr | **QC JOB #:** 14646709
CITY/STATE: Santa Cruz, CA | **DATE:** Tue, Mar 06 2018

Peak-Hour: 7:50 AM -- 8:50 AM
Peak 15-Min: 7:50 AM -- 8:05 AM







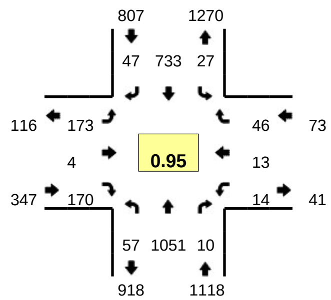
5-Min Count Period Beginning At	5. Soquel Dr (Northbound) Left	Thru	Right	U	5. Soquel Dr (Southbound) Left	Thru	Right	U	Mission Dr (Eastbound) Left	Thru	Right	U	Mission Dr (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	2	28	0	0	2	27	5	0	0	0	2	0	1	7	4	0	78	
7:05 AM	4	23	0	0	1	38	4	0	3	0	4	0	0	4	2	0	83	
7:10 AM	3	16	0	0	3	31	4	0	1	0	4	0	0	1	1	0	64	
7:15 AM	5	25	1	0	2	44	3	0	2	0	6	0	0	4	2	0	94	
7:20 AM	4	26	1	0	2	45	5	0	5	0	3	0	1	4	0	0	96	
7:25 AM	7	27	1	0	4	45	3	0	6	0	4	0	0	2	3	0	102	
7:30 AM	7	40	2	0	1	61	7	0	2	0	4	0	1	2	2	0	129	
7:35 AM	10	35	1	0	5	77	6	0	6	0	9	0	0	5	2	0	156	
7:40 AM	11	54	2	0	3	85	9	0	3	0	9	0	0	0	1	0	177	
7:45 AM	6	44	1	0	1	77	6	0	5	0	2	0	0	3	4	0	149	
7:50 AM	10	66	1	0	5	100	14	0	2	0	9	0	2	0	1	0	210	
7:55 AM	12	47	2	0	3	66	12	0	6	0	7	0	0	3	3	0	161	1499
8:00 AM	11	62	2	0	2	85	12	0	4	0	4	0	0	0	1	0	183	1604
8:05 AM	10	43	3	0	4	84	13	0	4	0	3	0	0	1	4	0	169	1690
8:10 AM	13	38	0	0	5	74	10	0	3	1	5	0	0	7	1	0	157	1783
8:15 AM	4	40	1	0	3	73	12	0	8	0	4	0	0	4	2	0	151	1840
8:20 AM	8	38	3	0	3	85	11	0	3	3	9	0	0	3	3	0	169	1913
8:25 AM	10	48	0	0	3	104	11	0	1	0	5	0	0	2	1	0	185	1996
8:30 AM	13	53	1	0	6	75	10	0	6	0	7	0	0	2	0	0	173	2040
8:35 AM	4	34	0	0	1	84	13	0	6	0	6	0	0	2	3	0	153	2037
8:40 AM	6	62	3	0	2	69	4	0	4	0	6	0	0	5	1	0	162	2022
8:45 AM	11	66	0	0	4	81	3	0	4	0	8	0	0	5	1	0	183	2056
8:50 AM	10	47	2	0	4	79	10	0	6	0	5	0	0	3	1	0	167	2013
8:55 AM	7	35	0	0	2	90	11	0	3	0	9	0	2	1	1	0	161	2013

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	132	700	20	0	40	1004	152	0	48	0	80	0	8	12	20	0	2216
Heavy Trucks	0	8	4		0	56	0		4	0	0		0	0	0		72
Pedestrians		8				12				16				8			44
Bicycles	0	2	0		0	2	0		0	0	0		0	0	0		4
Railroad																	
Stopped Buses																	

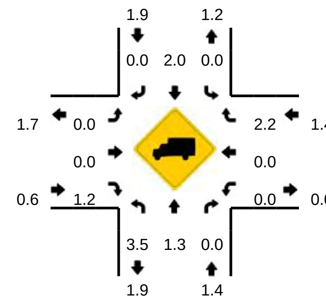
Comments:

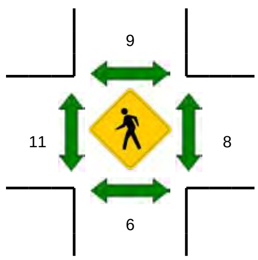
Type of peak hour being reported: Intersection Peak   Method for determining peak hour: Total Entering Volume

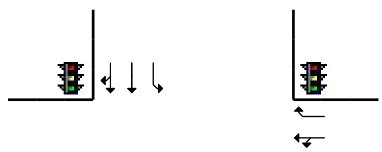
LOCATION: 5. Soquel Dr -- Mission Dr   **QC JOB #:** 14646710
CITY/STATE: Santa Cruz, CA   **DATE:** Tue, Mar 06 2018

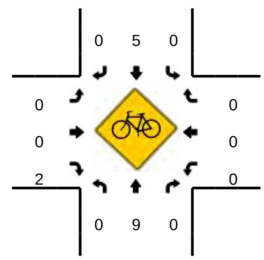


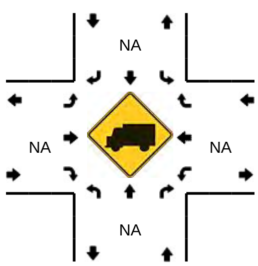
Peak-Hour: 4:35 PM -- 5:35 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

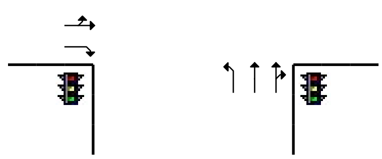


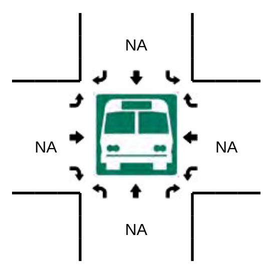












5-Min Count Period Beginning At	5. Soquel Dr (Northbound) Left	Thru	Right	U	5. Soquel Dr (Southbound) Left	Thru	Right	U	Mission Dr (Eastbound) Left	Thru	Right	U	Mission Dr (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:00 PM	2	78	2	0	2	50	4	0	13	0	10	0	1	1	3	0	166	
4:05 PM	5	58	1	0	3	65	2	0	12	1	11	0	0	0	2	0	160	
4:10 PM	3	75	2	0	1	53	6	0	14	1	14	0	0	0	4	0	173	
4:15 PM	6	98	1	0	5	64	6	0	12	0	3	0	0	3	4	0	202	
4:20 PM	6	71	1	0	7	40	1	0	13	1	8	0	1	2	1	0	152	
4:25 PM	4	89	1	0	2	58	3	0	10	0	1	0	0	2	7	0	177	
4:30 PM	4	79	0	0	6	60	4	0	12	3	9	0	1	1	4	0	183	
4:35 PM	4	121	0	0	3	50	4	0	13	0	18	0	3	0	2	0	218	
4:40 PM	2	97	0	0	2	61	2	0	10	0	16	0	1	0	4	0	195	
4:45 PM	3	90	0	0	0	77	5	0	9	0	10	0	2	2	7	0	205	
4:50 PM	7	75	3	1	1	66	4	0	13	1	6	0	0	0	5	0	182	
4:55 PM	6	76	0	0	3	73	2	0	13	0	14	0	2	4	4	0	197	2210
5:00 PM	6	86	1	0	4	58	2	0	22	1	19	0	1	0	3	0	203	2247
5:05 PM	8	73	1	0	4	54	5	0	23	0	14	0	1	0	3	0	186	2273
5:10 PM	2	97	2	0	4	62	1	0	18	0	19	0	0	1	2	0	208	2308
5:15 PM	4	85	1	0	2	67	10	0	20	1	11	0	0	2	5	0	208	2314
5:20 PM	3	69	0	0	2	50	3	0	13	0	18	0	2	3	4	0	167	2329
5:25 PM	8	93	2	0	0	51	5	0	8	0	15	0	2	0	1	0	185	2337
5:30 PM	3	89	0	0	2	64	4	0	11	1	10	0	0	1	6	0	191	2345
5:35 PM	4	92	1	0	1	73	0	0	14	1	3	0	0	1	1	0	191	2318
5:40 PM	4	77	0	0	1	50	5	0	7	0	5	0	1	2	3	0	155	2278
5:45 PM	4	83	0	0	3	53	4	0	6	2	2	0	0	0	3	0	160	2233
5:50 PM	4	75	2	0	1	46	3	0	3	1	4	0	3	1	2	0	145	2196
5:55 PM	5	84	0	0	3	45	3	0	9	0	5	0	0	2	1	0	157	2156

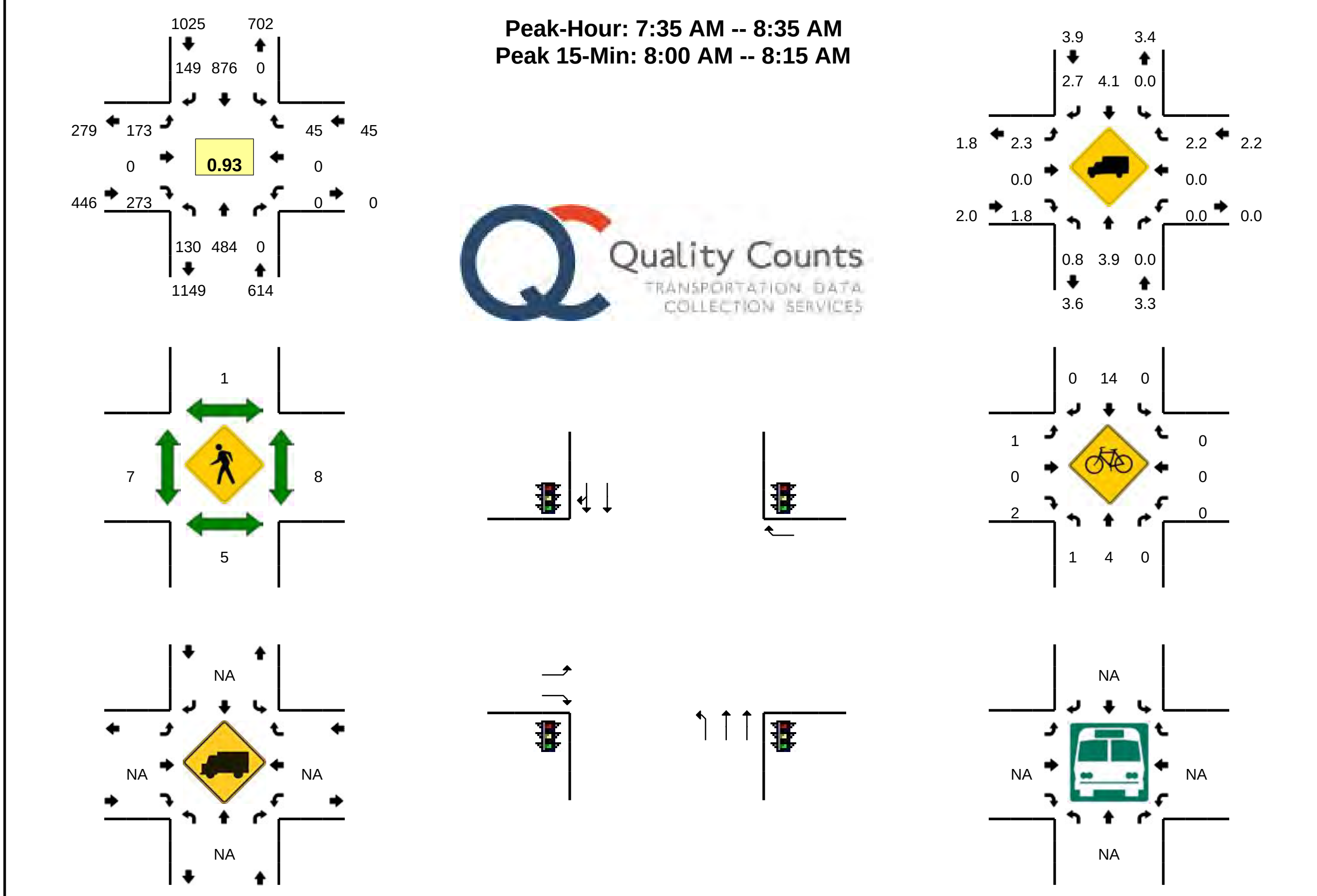
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	36	1232	0	0	20	752	44	0	128	0	176	0	24	8	52	0	2472
Heavy Trucks	0	32	0		0	16	0		0	0	0		0	0	0		48
Pedestrians		4				8				20				8			40
Bicycles	0	2	0		0	4	0		0	0	0		0	0	0		6
Railroad																	
Stopped Buses																	

Comments:

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: 6. Soquel Dr -- Thurber Lane/Commercial Way | **QC JOB #:** 14646711
CITY/STATE: Santa Cruz, CA | **DATE:** Tue, Mar 06 2018

Peak-Hour: 7:35 AM -- 8:35 AM
Peak 15-Min: 8:00 AM -- 8:15 AM



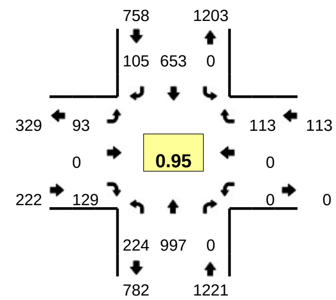
5-Min Count Period Beginning At	6. Soquel Dr (Northbound) Left	Thru	Right	U	6. Soquel Dr (Southbound) Left	Thru	Right	U	Thurber Lane/Commercial Way (Eastbound) Left	Thru	Right	U	Thurber Lane/Commercial Way (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	4	22	0	0	0	25	3	0	6	0	12	0	0	0	7	0	79	
7:05 AM	4	21	0	0	0	27	5	0	4	0	8	0	0	0	1	0	70	
7:10 AM	3	16	0	0	0	31	1	0	6	0	6	0	0	0	1	0	64	
7:15 AM	3	23	0	0	0	43	3	0	9	0	9	0	0	0	3	0	93	
7:20 AM	5	26	0	0	0	41	3	0	6	0	6	0	0	0	2	0	89	
7:25 AM	6	28	0	0	0	41	6	0	9	0	8	0	0	0	3	0	101	
7:30 AM	7	25	0	0	0	56	6	0	11	0	16	0	0	0	0	0	121	
7:35 AM	6	34	0	0	0	79	10	0	15	0	12	0	0	0	7	0	163	
7:40 AM	8	52	0	0	0	69	10	0	18	0	25	0	0	0	1	0	183	
7:45 AM	9	41	0	0	0	65	10	0	11	0	24	0	0	0	4	0	164	
7:50 AM	19	42	0	0	0	82	5	0	13	0	28	0	0	0	2	0	191	
7:55 AM	11	38	0	0	0	68	19	0	12	0	18	0	0	0	4	0	170	1488
8:00 AM	15	39	0	0	0	74	21	0	18	0	21	0	0	0	5	0	193	1602
8:05 AM	24	42	0	0	0	65	15	0	22	0	26	0	0	0	1	0	195	1727
8:10 AM	3	31	0	0	0	74	26	0	22	0	24	0	0	0	5	0	185	1848
8:15 AM	8	40	0	0	0	57	14	0	13	0	33	0	0	0	5	0	170	1925
8:20 AM	9	45	0	0	0	78	5	0	13	0	20	0	0	0	6	0	176	2012
8:25 AM	9	37	0	0	0	94	10	0	11	0	27	0	0	0	4	0	192	2103
8:30 AM	9	43	0	0	0	71	4	0	5	0	15	0	0	0	1	0	148	2130
8:35 AM	6	35	0	0	0	73	3	0	14	0	21	0	0	0	6	0	158	2125
8:40 AM	8	57	0	0	0	64	3	0	12	0	15	0	0	0	3	0	162	2104
8:45 AM	13	46	0	0	0	61	10	0	7	0	18	0	0	0	4	0	159	2099
8:50 AM	13	43	0	0	0	75	3	0	16	0	15	0	0	0	6	0	171	2079
8:55 AM	4	40	0	0	0	94	6	0	5	0	9	0	0	0	6	0	164	2073

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	168	448	0	0	0	852	248	0	248	0	284	0	0	0	44	0	2292
Heavy Trucks	4	12	0		0	20	8		4	0	4		0	0	4		56
Pedestrians		12				0				8				8			28
Bicycles	0	2	0		0	4	0		1	0	0		0	0	0		7
Railroad																	
Stopped Buses																	

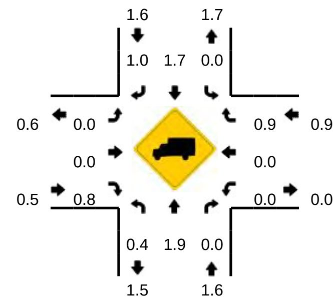
Comments:

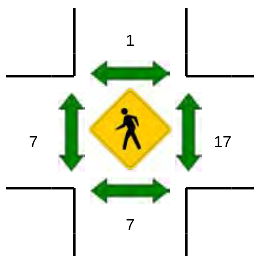
Type of peak hour being reported: Intersection Peak　　Method for determining peak hour: Total Entering Volume

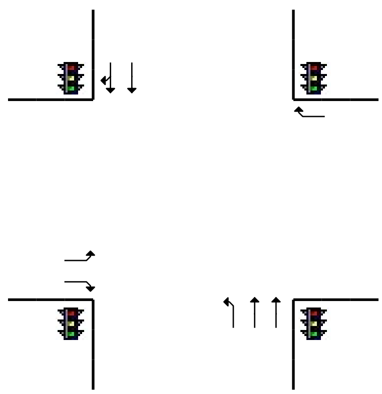
LOCATION: 6. Soquel Dr -- Thurber Lane/Commercial Way　　**QC JOB #:** 14646712
CITY/STATE: Santa Cruz, CA　　**DATE:** Tue, Mar 06 2018

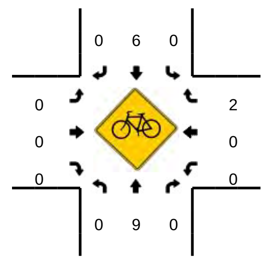


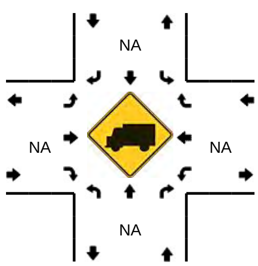
Peak-Hour: 4:25 PM -- 5:25 PM
Peak 15-Min: 4:35 PM -- 4:50 PM

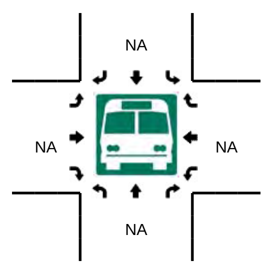












5-Min Count Period Beginning At	6. Soquel Dr (Northbound)				6. Soquel Dr (Southbound)				Thurber Lane/Commercial Way (Eastbound)				Thurber Lane/Commercial Way (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
4:00 PM	8	65	0	0	0	42	9	0	11	0	8	0	0	0	9	0	152	
4:05 PM	19	59	0	0	0	60	14	0	7	0	10	0	0	0	6	0	175	
4:10 PM	15	72	0	0	0	56	8	0	8	0	7	0	0	0	12	0	178	
4:15 PM	16	88	0	0	0	57	12	0	11	0	9	0	0	0	10	0	203	
4:20 PM	16	73	0	0	0	41	10	0	5	0	10	0	0	0	7	0	162	
4:25 PM	25	71	0	0	0	52	8	0	6	0	9	0	0	0	11	0	182	
4:30 PM	16	81	0	0	0	60	12	0	10	0	11	0	0	0	8	0	198	
4:35 PM	21	99	0	0	0	53	13	0	6	0	5	0	0	0	7	0	204	
4:40 PM	19	98	0	0	0	51	8	0	8	0	9	0	0	0	8	0	201	
4:45 PM	26	77	0	0	0	60	11	0	8	0	12	0	0	0	11	0	205	
4:50 PM	17	68	0	0	0	51	4	0	11	0	18	0	0	0	8	0	177	
4:55 PM	11	73	0	0	0	61	8	0	7	0	8	0	0	0	4	0	172	2209
5:00 PM	15	91	0	0	0	58	4	0	5	0	11	0	0	0	16	0	200	2257
5:05 PM	19	76	0	0	0	39	7	0	9	0	16	0	0	0	8	0	174	2256
5:10 PM	23	85	0	0	0	52	8	0	6	0	13	0	0	0	11	0	198	2276
5:15 PM	15	92	0	0	0	62	10	0	9	0	8	0	0	0	9	0	205	2278
5:20 PM	17	86	0	0	0	54	12	0	8	0	9	0	0	0	12	0	198	2314
5:25 PM	23	61	0	0	0	40	7	0	2	0	4	0	0	0	4	0	141	2273
5:30 PM	25	88	0	0	0	59	9	0	8	0	7	0	0	0	9	0	205	2280
5:35 PM	15	86	0	0	0	59	6	0	7	0	13	0	0	0	7	0	193	2269
5:40 PM	13	73	0	0	0	46	7	0	7	0	10	0	0	0	0	0	156	2224
5:45 PM	14	71	0	0	0	43	10	0	4	0	8	0	0	0	10	0	160	2179
5:50 PM	18	66	0	0	0	41	10	0	5	0	17	0	0	0	8	0	165	2167
5:55 PM	11	73	0	0	0	38	5	0	4	0	8	0	0	0	6	0	145	2140

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	264	1096	0	0	0	656	128	0	88	0	104	0	0	0	104	0	2440
Heavy Trucks	0	20	0		0	8	4		0	0	4		0	0	0		36
Pedestrians		16				4				4				24			48
Bicycles	0	2	0		0	3	0		0	0	0		0	0	0		5
Railroad																	
Stopped Buses																	

Comments:

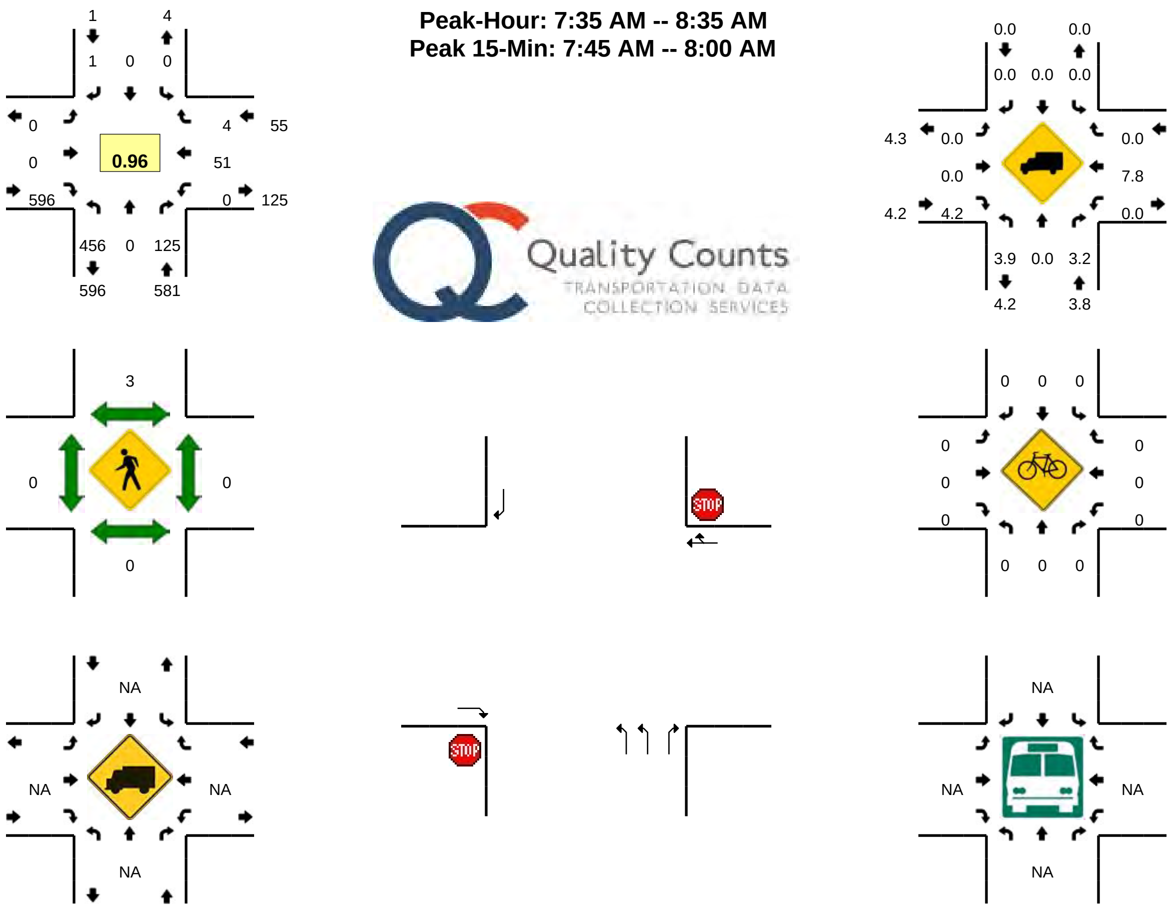
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

LOCATION: 7. Hwy 1 On-Off Ramps -- Commercial Way | **QC JOB #:** 14646713

CITY/STATE: Santa Cruz, CA | **DATE:** Tue, Mar 06 2018

Peak-Hour: 7:35 AM -- 8:35 AM

Peak 15-Min: 7:45 AM -- 8:00 AM



5-Min Count Period Beginning At	7. Hwy 1 On-Off Ramps (Northbound) Left	Thru	Right	U	7. Hwy 1 On-Off Ramps (Southbound) Left	Thru	Right	U	Commercial Way (Eastbound) Left	Thru	Right	U	Commercial Way (Westbound) Left	Thru	Right	U	Total	Hourly Totals
7:00 AM	38	0	23	0	0	0	0	0	0	0	28	0	0	7	0	0	96	
7:05 AM	32	0	11	0	0	0	0	0	0	0	32	0	0	3	1	0	79	
7:10 AM	27	0	4	0	0	0	3	0	0	0	39	0	0	0	0	0	73	
7:15 AM	32	0	14	0	0	0	1	0	0	0	42	0	0	1	1	0	91	
7:20 AM	46	0	8	0	0	0	0	0	0	0	29	0	0	2	0	0	85	
7:25 AM	34	0	10	0	0	0	0	0	0	0	49	0	0	4	0	0	97	
7:30 AM	44	0	11	0	0	0	0	0	0	0	48	0	0	0	0	0	103	
7:35 AM	33	0	18	0	0	0	0	0	0	0	45	0	0	5	0	0	101	
7:40 AM	38	0	5	0	0	0	0	0	0	0	52	0	0	2	0	0	97	
7:45 AM	44	0	12	0	0	0	0	0	0	0	56	0	0	4	0	0	116	
7:50 AM	29	0	4	0	0	0	0	0	0	0	47	0	0	4	0	0	84	
7:55 AM	49	0	11	0	0	0	0	0	0	0	60	0	0	2	0	0	122	1144
8:00 AM	35	0	11	0	0	0	0	0	0	0	43	0	0	5	0	0	94	1142
8:05 AM	39	0	11	0	0	0	0	0	0	0	49	0	0	1	2	0	102	1165
8:10 AM	37	0	11	0	0	0	0	0	0	0	42	0	0	5	0	0	95	1187
8:15 AM	35	0	15	0	0	0	0	0	0	0	55	0	0	4	1	0	110	1206
8:20 AM	41	0	9	0	0	0	1	0	0	0	49	0	0	4	0	0	104	1225
8:25 AM	43	0	8	0	0	0	0	0	0	0	46	0	0	7	0	0	104	1232
8:30 AM	33	0	10	0	0	0	0	0	0	0	52	0	0	8	1	0	104	1233
8:35 AM	28	0	6	0	0	0	0	0	0	0	38	0	0	8	1	0	81	1213
8:40 AM	20	0	11	0	0	0	0	0	0	0	41	0	0	4	0	0	76	1192
8:45 AM	22	0	12	0	0	0	0	0	0	0	46	0	0	7	0	0	87	1163
8:50 AM	25	0	8	0	0	0	0	0	0	0	49	0	0	7	0	0	89	1168
8:55 AM	37	0	5	0	0	0	1	0	0	0	43	0	0	2	0	0	88	1134

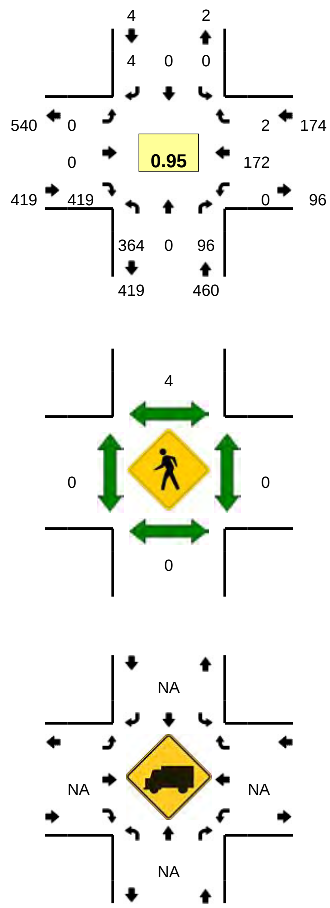
Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	488	0	108	0	0	0	0	0	0	0	652	0	0	40	0	0	1288
Heavy Trucks	8	0	4		0	0	0		0	0	20		0	0	0		32
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

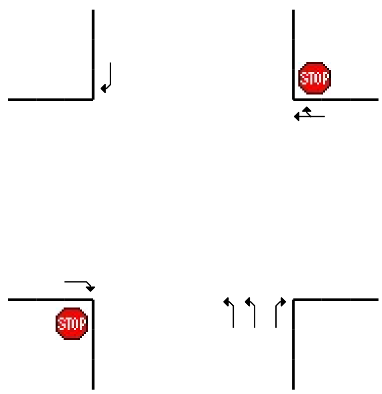
Comments:

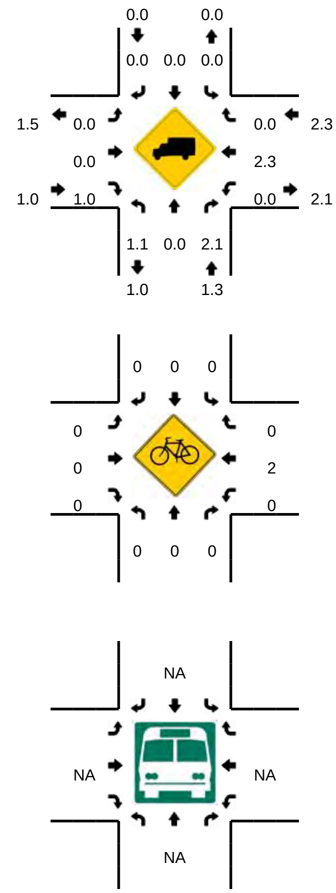
Type of peak hour being reported: Intersection Peak   Method for determining peak hour: Total Entering Volume

LOCATION: 7. Hwy 1 On-Off Ramps -- Commercial Way   **QC JOB #:** 14646714
CITY/STATE: Santa Cruz, CA   **DATE:** Tue, Mar 06 2018

Peak-Hour: 4:40 PM -- 5:40 PM
Peak 15-Min: 5:10 PM -- 5:25 PM







5-Min Count Period Beginning At	7. Hwy 1 On-Off Ramps (Northbound) Left	Thru	Right	U	7. Hwy 1 On-Off Ramps (Southbound) Left	Thru	Right	U	Commercial Way (Eastbound) Left	Thru	Right	U	Commercial Way (Westbound) Left	Thru	Right	U	Total	Hourly Totals
4:00 PM	28	0	15	0	0	0	0	0	0	0	24	0	0	8	0	0	75	
4:05 PM	36	0	10	0	0	0	0	0	0	0	36	0	0	8	0	0	90	
4:10 PM	26	0	8	0	0	0	0	0	0	0	30	0	0	9	0	0	73	
4:15 PM	33	0	12	0	0	0	0	0	0	0	41	0	0	11	0	0	97	
4:20 PM	38	0	7	0	0	0	0	0	0	0	45	0	0	10	0	0	100	
4:25 PM	27	0	10	0	0	0	0	0	0	0	24	0	0	14	0	0	75	
4:30 PM	30	0	10	0	0	0	1	0	0	0	26	0	0	22	0	0	89	
4:35 PM	33	0	9	0	0	0	0	0	0	0	26	0	0	13	0	0	81	
4:40 PM	23	0	12	0	0	0	1	0	0	0	29	0	0	12	0	0	77	
4:45 PM	38	0	10	0	0	0	0	0	0	0	36	0	0	12	0	0	96	
4:50 PM	44	0	9	0	0	0	0	0	0	0	35	0	0	7	0	0	95	
4:55 PM	29	0	6	0	0	0	0	0	0	0	27	0	0	17	0	0	79	1027
5:00 PM	20	0	9	0	0	0	1	0	0	0	39	0	0	13	0	0	82	1034
5:05 PM	30	0	6	0	0	0	0	0	0	0	41	0	0	20	2	0	99	1043
5:10 PM	23	0	3	0	0	0	1	0	0	0	31	0	0	25	0	0	83	1053
5:15 PM	28	0	8	0	0	0	1	0	0	0	41	0	0	15	0	0	93	1049
5:20 PM	36	0	10	0	0	0	0	0	0	0	40	0	0	16	0	0	102	1051
5:25 PM	25	0	4	0	0	0	0	0	0	0	27	0	0	9	0	0	65	1041
5:30 PM	34	0	15	0	0	0	0	0	0	0	32	0	0	13	0	0	94	1046
5:35 PM	34	0	4	0	0	0	0	0	0	0	41	0	0	13	0	0	92	1057
5:40 PM	25	0	7	0	0	0	0	0	0	0	23	0	0	16	0	0	71	1051
5:45 PM	28	0	10	0	0	0	1	0	0	0	34	0	0	6	0	0	79	1034
5:50 PM	27	0	14	0	0	0	0	0	0	0	28	0	0	8	1	0	78	1017
5:55 PM	24	0	9	0	0	0	0	0	0	0	28	0	0	6	0	0	67	1005

Peak 15-Min Flowrates	Northbound Left	Thru	Right	U	Southbound Left	Thru	Right	U	Eastbound Left	Thru	Right	U	Westbound Left	Thru	Right	U	Total
All Vehicles	348	0	84	0	0	0	8	0	0	0	448	0	0	224	0	0	1112
Heavy Trucks	4	0	4		0	0	0		0	0	4		0	8	0		20
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 3/15/2018 10:05 AM   SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

EXISTING CONDITIONS SYNCHRO
OUTPUT SHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	643	354	313	588	6	230	2	936	1	0	2
Future Volume (veh/h)	6	643	354	313	588	6	230	2	936	1	0	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.96
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	1900	1826	1826	1841	1826	1826	1900	1900	1856	1900	1900	1900
Adj Flow Rate, veh/h	6	677	0	329	619	6	242	2	0	1	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	4	5	5	0	0	3	0	0	0
Cap, veh/h	11	1799		351	2508	24	269	2		8	0	16
Arrive On Green	0.01	0.52	0.00	0.40	1.00	1.00	0.15	0.15	0.00	0.02	0.00	0.02
Sat Flow, veh/h	1810	3469	1547	1753	3519	34	1795	15	1572	543	0	1086
Grp Volume(v), veh/h	6	677	0	329	305	320	244	0	0	3	0	0
Grp Sat Flow(s),veh/h/ln	1810	1735	1547	1753	1735	1818	1810	0	1572	1629	0	0
Q Serve(g_s), s	0.4	14.0	0.0	21.6	0.0	0.0	15.9	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.4	14.0	0.0	21.6	0.0	0.0	15.9	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.99		1.00	0.33		0.67
Lane Grp Cap(c), veh/h	11	1799		351	1236	1296	271	0		24	0	0
V/C Ratio(X)	0.55	0.38		0.94	0.25	0.25	0.90	0.00		0.12	0.00	0.00
Avail Cap(c_a), veh/h	60	1799		555	1236	1296	279	0		299	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.5	17.3	0.0	35.2	0.0	0.0	50.1	0.0	0.0	58.3	0.0	0.0
Incr Delay (d2), s/veh	15.0	0.6	0.0	13.1	0.5	0.5	28.4	0.0	0.0	1.6	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	0.2	5.6	0.0	8.5	0.2	0.2	9.4	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.4	17.9	0.0	48.3	0.5	0.5	78.5	0.0	0.0	60.0	0.0	0.0
LnGrp LOS	E	B		D	A	A	E	A		E	A	A
Approach Vol, veh/h		683	A		954			244	A		3	
Approach Delay, s/veh		18.4			17.0			78.5			60.0	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.0	66.2		5.3	3.7	89.5		21.5				
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5				
Max Green Setting (Gmax), s	38.0	27.5		22.0	4.0	61.5		18.5				
Max Q Clear Time (g_c+I1), s	23.6	16.0		2.2	2.4	2.0		17.9				
Green Ext Time (p_c), s	0.4	4.5		0.0	0.0	6.3		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			25.5
HCM 6th LOS			C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	832	593	4	1075	27	391	84	35	65	82	51
Future Volume (veh/h)	155	832	593	4	1075	27	391	84	35	65	82	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.99
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	1856	1841	1900	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	168	904	0	4	1168	29	490	0	0	71	89	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	196	2051		9	1661	41	558	0		180	111	68
Arrive On Green	0.04	0.19	0.00	0.01	0.95	0.95	0.16	0.00	0.00	0.10	0.10	0.10
Sat Flow, veh/h	1781	3526	1560	1810	3483	86	3450	0	1572	1781	1095	676
Grp Volume(v), veh/h	168	904	0	4	586	611	490	0	0	71	0	144
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	1810	1749	1821	1725	0	1572	1781	0	1771
Q Serve(g_s), s	11.3	27.2	0.0	0.3	5.6	5.7	16.7	0.0	0.0	4.5	0.0	9.5
Cycle Q Clear(g_c), s	11.3	27.2	0.0	0.3	5.6	5.7	16.7	0.0	0.0	4.5	0.0	9.5
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	196	2051		9	834	868	558	0		180	0	179
V/C Ratio(X)	0.86	0.44		0.43	0.70	0.70	0.88	0.00		0.39	0.00	0.80
Avail Cap(c_a), veh/h	200	2051		75	834	868	647	0		297	0	295
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.9	31.2	0.0	59.2	1.6	1.6	49.1	0.0	0.0	50.5	0.0	52.8
Incr Delay (d2), s/veh	28.4	0.7	0.0	27.6	4.9	4.7	11.8	0.0	0.0	1.4	0.0	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	13.0	0.0	0.2	1.9	1.9	8.1	0.0	0.0	2.1	0.0	4.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.2	31.9	0.0	86.8	6.5	6.3	60.9	0.0	0.0	51.9	0.0	60.9
LnGrp LOS	F	C		F	A	A	E	A		D	A	E
Approach Vol, veh/h		1072	A		1201			490	A		215	
Approach Delay, s/veh		40.3			6.7			60.9			58.0	
Approach LOS		D			A			E			E	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	5.1	74.3	23.9	17.7	61.7	16.6
Change Period (Y+Rc), s	4.5	4.5	4.5	4.5	4.5	4.5
Max Green Setting (Gmax), s	5.0	54.5	22.5	13.5	46.0	20.0
Max Q Clear Time (g_c+I1), s	12.3	29.2	18.7	13.3	7.7	11.5
Green Ext Time (p_c), s	0.0	7.1	0.7	0.0	10.0	0.6

Intersection Summary	
HCM 6th Ctrl Delay	31.4
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	56	904	1046	5	4	44
Future Vol, veh/h	56	904	1046	5	4	44
Conflicting Peds, #/hr	4	0	0	4	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	85	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	4	4	0	0	0
Mvmt Flow	64	1027	1189	6	5	50

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1199	0	-	0	1838	602
Stage 1	-	-	-	-	1196	-
Stage 2	-	-	-	-	642	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	589	-	-	-	69	448
Stage 1	-	-	-	-	253	-
Stage 2	-	-	-	-	492	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	587	-	-	-	61	446
Mov Cap-2 Maneuver	-	-	-	-	159	-
Stage 1	-	-	-	-	224	-
Stage 2	-	-	-	-	490	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	587	-	-	-	159	446
HCM Lane V/C Ratio	0.108	-	-	-	0.029	0.112
HCM Control Delay (s)	11.9	-	-	-	28.3	14.1
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.1	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	723	92	8	995	52	12	10	9	22	2	33
Future Volume (veh/h)	72	723	92	8	995	52	12	10	9	22	2	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1707	1826	1826	1781	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	75	753	96	8	1036	54	12	10	9	23	2	34
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	13	5	5	8	0	0	0	0	3
Cap, veh/h	95	2292	292	10	2290	119	191	72	65	204	13	121
Arrive On Green	0.07	0.97	0.97	0.01	1.00	1.00	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1767	3134	399	1626	3348	174	1279	909	818	1130	168	1531
Grp Volume(v), veh/h	75	423	426	8	537	553	12	0	19	25	0	34
Grp Sat Flow(s),veh/h/ln	1767	1763	1770	1626	1735	1788	1279	0	1726	1298	0	1531
Q Serve(g_s), s	2.5	0.6	0.6	0.3	0.0	0.0	0.5	0.0	0.6	0.8	0.0	1.3
Cycle Q Clear(g_c), s	2.5	0.6	0.6	0.3	0.0	0.0	1.9	0.0	0.6	1.4	0.0	1.3
Prop In Lane	1.00		0.23	1.00		0.10	1.00		0.47	0.92		1.00
Lane Grp Cap(c), veh/h	95	1289	1295	10	1187	1223	191	0	136	218	0	121
V/C Ratio(X)	0.79	0.33	0.33	0.79	0.45	0.45	0.06	0.00	0.14	0.11	0.00	0.28
Avail Cap(c_a), veh/h	162	1289	1295	87	1187	1223	476	0	521	532	0	462
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.83	0.83	0.83	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.5	0.2	0.2	29.6	0.0	0.0	27.0	0.0	25.7	26.2	0.0	26.0
Incr Delay (d2), s/veh	5.5	0.7	0.7	32.7	1.0	1.0	0.1	0.0	0.2	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.3	0.3	0.2	0.3	0.3	0.2	0.0	0.2	0.3	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.0	0.9	0.9	62.2	1.0	1.0	27.0	0.0	25.9	26.3	0.0	26.5
LnGrp LOS	C	A	A	E	A	A	C	A	C	C	A	C
Approach Vol, veh/h		924			1098			31			59	
Approach Delay, s/veh		3.5			1.5			26.3			26.4	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.9	47.9		8.2	6.7	45.0		8.2				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	3.2	27.7		18.1	5.5	25.4		18.1				
Max Q Clear Time (g_c+I1), s	2.3	2.6		3.4	4.5	2.0		3.9				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	2.4		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			3.4
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	597	16	41	980	125	2	34	21	51	4	73
Future Volume (veh/h)	112	597	16	41	980	125	2	34	21	51	4	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.98	0.99		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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	120	642	17	44	1054	134	2	37	23	55	4	78
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	152	2368	63	54	1930	245	67	196	169	233	13	174
Arrive On Green	0.17	1.00	1.00	0.04	0.83	0.83	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1795	3505	93	1781	3108	395	34	1762	1522	1054	118	1572
Grp Volume(v), veh/h	120	323	336	44	592	596	39	0	23	59	0	78
Grp Sat Flow(s),veh/h/ln	1795	1763	1835	1781	1749	1754	1796	0	1522	1172	0	1572
Q Serve(g_s), s	3.8	0.0	0.0	1.5	6.4	6.5	0.0	0.0	0.8	2.2	0.0	2.8
Cycle Q Clear(g_c), s	3.8	0.0	0.0	1.5	6.4	6.5	1.2	0.0	0.8	3.4	0.0	2.8
Prop In Lane	1.00		0.05	1.00		0.23	0.05		1.00	0.93		1.00
Lane Grp Cap(c), veh/h	152	1191	1240	54	1086	1089	262	0	169	246	0	174
V/C Ratio(X)	0.79	0.27	0.27	0.82	0.55	0.55	0.15	0.00	0.14	0.24	0.00	0.45
Avail Cap(c_a), veh/h	206	1191	1240	169	1086	1089	600	0	459	508	0	474
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	0.97	0.77	0.77	0.77	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	0.0	28.6	2.5	2.5	24.2	0.0	24.1	25.6	0.0	24.9
Incr Delay (d2), s/veh	9.1	0.5	0.5	8.6	1.5	1.5	0.1	0.0	0.1	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.2	0.2	0.7	1.6	1.6	0.5	0.0	0.3	0.8	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.6	0.5	0.5	37.2	4.1	4.1	24.3	0.0	24.2	25.8	0.0	25.6
LnGrp LOS	C	A	A	D	A	A	C	A	C	C	A	C
Approach Vol, veh/h		779			1232			62			137	
Approach Delay, s/veh		5.6			5.2			24.3			25.7	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.3	44.5		10.2	8.6	41.3		10.2
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.7	25.2		18.1	6.9	24.0		18.1
Max Q Clear Time (g_c+I1), s	3.5	2.0		5.4	5.8	8.5		3.2
Green Ext Time (p_c), s	0.0	1.3		0.2	0.0	2.8		0.1

Intersection Summary			
HCM 6th Ctrl Delay			7.2
HCM 6th LOS			A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	130	484	876	149	173	273
Future Volume (veh/h)	130	484	876	149	173	273
Initial Q (Qb), veh	0	0	0	0	0	0
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	1885	1841	1841	1841	1870	1870
Adj Flow Rate, veh/h	140	520	942	160	186	294
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	4	4	4	2	2
Cap, veh/h	175	2308	1498	254	383	341
Arrive On Green	0.20	1.00	0.50	0.50	0.22	0.22
Sat Flow, veh/h	1795	3589	3063	504	1781	1585
Grp Volume(v), veh/h	140	520	554	548	186	294
Grp Sat Flow(s),veh/h/ln	1795	1749	1749	1727	1781	1585
Q Serve(g_s), s	4.5	0.0	13.8	13.8	5.5	10.7
Cycle Q Clear(g_c), s	4.5	0.0	13.8	13.8	5.5	10.7
Prop In Lane	1.00			0.29	1.00	1.00
Lane Grp Cap(c), veh/h	175	2308	881	870	383	341
V/C Ratio(X)	0.80	0.23	0.63	0.63	0.49	0.86
Avail Cap(c_a), veh/h	230	2308	881	870	537	478
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.6	0.0	10.8	10.8	20.6	22.7
Incr Delay (d2), s/veh	10.0	0.2	3.4	3.4	0.4	8.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.1	5.0	5.0	2.2	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.6	0.2	14.2	14.2	21.0	31.2
LnGrp LOS	C	A	B	B	C	C
Approach Vol, veh/h		660	1102		480	
Approach Delay, s/veh		7.3	14.2		27.2	
Approach LOS		A	B		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.4	34.2		16.4		43.6
Change Period (Y+Rc), s	3.5	4.0		3.5		4.0
Max Green Setting (Gmax), s	7.7	23.2		18.1		34.4
Max Q Clear Time (g_c+I1), s	6.5	15.8		12.7		2.0
Green Ext Time (p_c), s	0.0	3.5		0.2		3.0

Intersection Summary			
HCM 6th Ctrl Delay			15.0
HCM 6th LOS			B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	734	442	388	587	2	198	1	684	5	5	9
Future Volume (veh/h)	8	734	442	388	587	2	198	1	684	5	5	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.95
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	1900	1826	1826	1841	1826	1826	1900	1900	1856	1900	1900	1900
Adj Flow Rate, veh/h	8	765	0	404	611	2	206	1	0	5	5	9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	5	5	4	5	5	0	0	3	0	0	0
Cap, veh/h	14	1785		419	2645	9	231	1		11	11	20
Arrive On Green	0.01	0.51	0.00	0.48	1.00	1.00	0.13	0.13	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1810	3469	1547	1753	3546	12	1801	9	1572	445	445	800
Grp Volume(v), veh/h	8	765	0	404	299	314	207	0	0	19	0	0
Grp Sat Flow(s),veh/h/ln	1810	1735	1547	1753	1735	1823	1810	0	1572	1689	0	0
Q Serve(g_s), s	0.7	20.6	0.0	33.5	0.0	0.0	16.9	0.0	0.0	1.7	0.0	0.0
Cycle Q Clear(g_c), s	0.7	20.6	0.0	33.5	0.0	0.0	16.9	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.26		0.47
Lane Grp Cap(c), veh/h	14	1785		419	1294	1360	232	0		43	0	0
V/C Ratio(X)	0.58	0.43		0.96	0.23	0.23	0.89	0.00		0.44	0.00	0.00
Avail Cap(c_a), veh/h	48	1785		479	1294	1360	284	0		248	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	74.2	22.7	0.0	38.5	0.0	0.0	64.4	0.0	0.0	72.1	0.0	0.0
Incr Delay (d2), s/veh	13.8	0.8	0.0	29.3	0.4	0.4	22.4	0.0	0.0	5.3	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	0.4	8.6	0.0	15.1	0.2	0.2	9.3	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.0	23.4	0.0	67.9	0.4	0.4	86.7	0.0	0.0	77.3	0.0	0.0
LnGrp LOS	F	C		E	A	A	F	A		E	A	A
Approach Vol, veh/h		773	A		1017			207	A		19	
Approach Delay, s/veh		24.1			27.2			86.7			77.3	
Approach LOS		C			C			F			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	38.8	81.2		7.3	4.1	115.9		22.7				
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5				
Max Green Setting (Gmax), s	41.0	49.5		22.0	4.0	86.5		23.5				
Max Q Clear Time (g_c+I1), s	35.5	22.6		3.7	2.7	2.0		18.9				
Green Ext Time (p_c), s	0.4	7.9		0.0	0.0	6.2		0.3				

Intersection Summary			
HCM 6th Ctrl Delay			32.6
HCM 6th LOS			C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	972	402	3	1042	13	483	14	48	144	145	92
Future Volume (veh/h)	49	972	402	3	1042	13	483	14	48	144	145	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.99
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	1856	1841	1900	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	51	1012	0	3	1085	14	514	0	0	150	151	96
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	65	1941		7	1829	24	583	0		279	170	108
Arrive On Green	0.05	0.73	0.00	0.01	1.00	1.00	0.17	0.00	0.00	0.16	0.16	0.16
Sat Flow, veh/h	1781	3526	1560	1810	3534	46	3450	0	1572	1781	1083	688
Grp Volume(v), veh/h	51	1012	0	3	537	562	514	0	0	150	0	247
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	1810	1749	1830	1725	0	1572	1781	0	1771
Q Serve(g_s), s	4.2	18.7	0.0	0.2	0.0	0.0	21.8	0.0	0.0	11.6	0.0	20.5
Cycle Q Clear(g_c), s	4.2	18.7	0.0	0.2	0.0	0.0	21.8	0.0	0.0	11.6	0.0	20.5
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	65	1941		7	905	948	583	0		279	0	277
V/C Ratio(X)	0.78	0.52		0.42	0.59	0.59	0.88	0.00		0.54	0.00	0.89
Avail Cap(c_a), veh/h	101	1941		62	905	948	793	0		338	0	337
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.7	11.5	0.0	74.2	0.0	0.0	60.9	0.0	0.0	58.3	0.0	62.0
Incr Delay (d2), s/veh	18.4	1.0	0.0	35.4	2.9	2.7	8.8	0.0	0.0	1.6	0.0	21.4
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	2.3	6.3	0.0	0.2	0.7	0.7	10.4	0.0	0.0	5.4	0.0	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.1	12.5	0.0	109.7	2.9	2.7	69.7	0.0	0.0	59.9	0.0	83.4
LnGrp LOS	F	B		F	A	A	E	A		E	A	F
Approach Vol, veh/h		1063	A		1102			514	A		397	
Approach Delay, s/veh		16.2			3.1			69.7			74.5	
Approach LOS		B			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	87.1		29.8	10.0	82.1		28.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.1	63.9		34.5	8.5	60.5		28.5
Max Q Clear Time (g_c+I1), s	2.2	20.7		23.8	6.2	2.0		22.5
Green Ext Time (p_c), s	0.0	9.4		1.5	0.0	9.1		1.0

Intersection Summary	
HCM 6th Ctrl Delay	28.0
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	1136	1006	3	10	49
Future Vol, veh/h	40	1136	1006	3	10	49
Conflicting Peds, #/hr	4	0	0	4	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	85	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	4	0	0	0
Mvmt Flow	43	1235	1093	3	11	53

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1100	0	-	0	1803	552
Stage 1	-	-	-	-	1099	-
Stage 2	-	-	-	-	704	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	642	-	-	-	72	483
Stage 1	-	-	-	-	285	-
Stage 2	-	-	-	-	457	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	640	-	-	-	67	481
Mov Cap-2 Maneuver	-	-	-	-	176	-
Stage 1	-	-	-	-	265	-
Stage 2	-	-	-	-	455	-

Approach	EB	WB	SB
HCM Control Delay, s	0.4	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	640	-	-	-	176	481
HCM Lane V/C Ratio	0.068	-	-	-	0.062	0.111
HCM Control Delay (s)	11	-	-	-	26.8	13.4
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1040	77	18	852	22	53	13	24	63	7	98
Future Volume (veh/h)	32	1040	77	18	852	22	53	13	24	63	7	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1707	1826	1826	1781	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	36	1156	86	20	947	24	59	14	27	70	8	109
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	13	5	5	8	0	0	0	0	3
Cap, veh/h	44	2272	169	22	2327	59	202	89	172	261	25	240
Arrive On Green	0.05	1.00	1.00	0.03	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1767	3319	247	1626	3454	88	1204	575	1108	1095	162	1551
Grp Volume(v), veh/h	36	613	629	20	476	495	59	0	41	78	0	109
Grp Sat Flow(s),veh/h/ln	1767	1763	1803	1626	1735	1807	1204	0	1683	1257	0	1551
Q Serve(g_s), s	1.5	0.0	0.0	0.9	0.0	0.0	3.5	0.0	1.6	3.5	0.0	4.8
Cycle Q Clear(g_c), s	1.5	0.0	0.0	0.9	0.0	0.0	8.6	0.0	1.6	5.1	0.0	4.8
Prop In Lane	1.00		0.14	1.00		0.05	1.00		0.66	0.90		1.00
Lane Grp Cap(c), veh/h	44	1207	1234	22	1168	1217	202	0	261	286	0	240
V/C Ratio(X)	0.82	0.51	0.51	0.90	0.41	0.41	0.29	0.00	0.16	0.27	0.00	0.45
Avail Cap(c_a), veh/h	153	1207	1234	98	1168	1217	312	0	415	415	0	383
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.5	0.0	0.0	36.4	0.0	0.0	32.8	0.0	27.4	29.4	0.0	28.8
Incr Delay (d2), s/veh	13.2	1.5	1.5	32.2	1.0	0.9	0.3	0.0	0.1	0.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.5	0.5	0.5	0.3	0.3	1.0	0.0	0.6	1.3	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	1.5	1.5	68.6	1.0	0.9	33.1	0.0	27.5	29.6	0.0	29.3
LnGrp LOS	D	A	A	E	A	A	C	A	C	C	A	C
Approach Vol, veh/h		1278			991			100			187	
Approach Delay, s/veh		2.8			2.3			30.8			29.4	
Approach LOS		A			A			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.5	55.4		15.1	5.4	54.5		15.1				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	4.5	41.0		18.5	6.5	39.0		18.5				
Max Q Clear Time (g_c+I1), s	2.9	2.0		7.1	3.5	2.0		10.6				
Green Ext Time (p_c), s	0.0	2.9		0.2	0.0	2.1		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			5.7									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	57	1051	10	27	733	47	14	13	46	173	4	170
Future Volume (veh/h)	57	1051	10	27	733	47	14	13	46	173	4	170
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.99
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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	60	1106	11	28	772	49	15	14	48	182	4	179
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	76	2126	21	33	1901	121	73	45	369	95	0	381
Arrive On Green	0.09	1.00	1.00	0.04	1.00	1.00	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1795	3575	36	1781	3331	211	0	188	1536	0	0	1586
Grp Volume(v), veh/h	60	545	572	28	405	416	29	0	48	186	0	179
Grp Sat Flow(s),veh/h/ln	1795	1763	1848	1781	1749	1794	188	0	1536	0	0	1586
Q Serve(g_s), s	2.5	0.0	0.0	1.2	0.0	0.0	0.0	0.0	1.8	0.0	0.0	7.3
Cycle Q Clear(g_c), s	2.5	0.0	0.0	1.2	0.0	0.0	18.0	0.0	1.8	18.0	0.0	7.3
Prop In Lane	1.00		0.02	1.00		0.12	0.52		1.00	0.98		1.00
Lane Grp Cap(c), veh/h	76	1048	1099	33	998	1024	118	0	369	95	0	381
V/C Ratio(X)	0.79	0.52	0.52	0.84	0.41	0.41	0.25	0.00	0.13	1.96	0.00	0.47
Avail Cap(c_a), veh/h	203	1048	1099	202	998	1024	118	0	369	95	0	381
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	0.91	0.91	0.91	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.0	0.0	0.0	36.0	0.0	0.0	23.7	0.0	22.4	37.5	0.0	24.4
Incr Delay (d2), s/veh	5.7	1.6	1.6	16.7	1.1	1.1	0.4	0.0	0.1	467.1	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.5	0.5	0.6	0.3	0.3	0.4	0.0	0.6	14.0	0.0	2.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.7	1.6	1.6	52.7	1.1	1.1	24.1	0.0	22.4	504.6	0.0	24.8
LnGrp LOS	D	A	A	D	A	A	C	A	C	F	A	C
Approach Vol, veh/h		1177			849			177			365	
Approach Delay, s/veh		3.5			2.8			23.1			269.3	
Approach LOS		A			A			C			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.9	48.6		21.5	6.7	46.8		21.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	8.5	37.5		18.0	8.5	37.5		18.0
Max Q Clear Time (g_c+I1), s	3.2	2.0		20.0	4.5	2.0		20.0
Green Ext Time (p_c), s	0.0	2.5		0.0	0.0	1.9		0.0

Intersection Summary	
HCM 6th Ctrl Delay	43.2
HCM 6th LOS	D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	224	997	653	105	93	129
Future Volume (veh/h)	224	997	653	105	93	129
Initial Q (Qb), veh	0	0	0	0	0	0
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	1885	1841	1841	1841	1870	1870
Adj Flow Rate, veh/h	236	1049	687	111	98	136
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	4	4	4	2	2
Cap, veh/h	273	2761	1770	286	197	175
Arrive On Green	0.30	1.00	0.59	0.59	0.11	0.11
Sat Flow, veh/h	1795	3589	3090	484	1781	1585
Grp Volume(v), veh/h	236	1049	400	398	98	136
Grp Sat Flow(s),veh/h/ln	1795	1749	1749	1733	1781	1585
Q Serve(g_s), s	9.3	0.0	9.1	9.1	3.9	6.3
Cycle Q Clear(g_c), s	9.3	0.0	9.1	9.1	3.9	6.3
Prop In Lane	1.00			0.28	1.00	1.00
Lane Grp Cap(c), veh/h	273	2761	1033	1023	197	175
V/C Ratio(X)	0.86	0.38	0.39	0.39	0.50	0.78
Avail Cap(c_a), veh/h	443	2761	1033	1023	439	391
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	0.0	8.2	8.2	31.4	32.4
Incr Delay (d2), s/veh	4.8	0.4	1.1	1.1	0.7	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.1	3.1	3.1	1.7	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.1	0.4	9.3	9.3	32.1	35.2
LnGrp LOS	C	A	A	A	C	D
Approach Vol, veh/h		1285	798		234	
Approach Delay, s/veh		5.8	9.3		33.9	
Approach LOS		A	A		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	14.9	48.3		11.8		63.2
Change Period (Y+Rc), s	3.5	4.0		3.5		4.0
Max Green Setting (Gmax), s	18.5	27.0		18.5		49.0
Max Q Clear Time (g_c+I1), s	11.3	11.1		8.3		2.0
Green Ext Time (p_c), s	0.2	3.7		0.1		7.5

Intersection Summary		
HCM 6th Ctrl Delay		9.8
HCM 6th LOS		A

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	168	904	645	4	1197	255	261	38	71	144
v/c Ratio	0.73	0.45	0.71	0.05	0.81	0.88	0.87	0.10	0.35	0.65
Control Delay	60.6	17.1	21.1	60.5	40.2	78.1	76.1	0.5	52.7	56.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	60.6	17.1	21.1	60.5	40.2	78.1	76.1	0.5	52.7	56.3
Queue Length 50th (ft)	128	246	329	3	515	202	207	0	52	92
Queue Length 95th (ft)	m#160	m381	m517	m10	#608	#351	#355	0	94	154
Internal Link Dist (ft)		96			333		304			770
Turn Bay Length (ft)	150		20	60				30		
Base Capacity (vph)	233	2026	911	86	1483	303	313	399	295	315
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.45	0.71	0.05	0.81	0.84	0.83	0.10	0.24	0.46

Intersection Summary

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

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	51	1013	419	3	1099	257	261	50	150	247
v/c Ratio	0.52	0.53	0.50	0.05	0.65	0.82	0.83	0.14	0.54	0.83
Control Delay	96.5	21.8	17.8	63.0	30.5	78.4	79.0	4.0	64.6	79.0
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	96.5	21.8	17.8	63.0	30.5	78.4	79.0	4.0	64.6	79.0
Queue Length 50th (ft)	46	415	211	2	341	254	258	0	136	219
Queue Length 95th (ft)	m84	508	384	m7	530	353	360	15	206	314
Internal Link Dist (ft)		96			333		304			770
Turn Bay Length (ft)	150		20	60				30		
Base Capacity (vph)	105	1913	835	66	1687	372	374	412	336	354
Starvation Cap Reductn	0	0	0	0	49	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.53	0.50	0.05	0.67	0.69	0.70	0.12	0.45	0.70

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

EXISTING PLUS PROJECT CONDITIONS
SYNCHRO OUTPUT SHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	648	354	316	592	6	230	2	941	1	0	2
Future Volume (veh/h)	6	648	354	316	592	6	230	2	941	1	0	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.96
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	1900	1826	1826	1841	1826	1826	1900	1900	1856	1900	1900	1900
Adj Flow Rate, veh/h	6	682	0	333	623	6	242	2	0	1	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	4	5	5	0	0	3	0	0	0
Cap, veh/h	11	1791		355	2508	24	269	2		8	0	16
Arrive On Green	0.01	0.52	0.00	0.40	1.00	1.00	0.15	0.15	0.00	0.02	0.00	0.02
Sat Flow, veh/h	1810	3469	1547	1753	3519	34	1795	15	1572	543	0	1086
Grp Volume(v), veh/h	6	682	0	333	307	322	244	0	0	3	0	0
Grp Sat Flow(s),veh/h/ln	1810	1735	1547	1753	1735	1818	1810	0	1572	1629	0	0
Q Serve(g_s), s	0.4	14.2	0.0	21.9	0.0	0.0	15.9	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.4	14.2	0.0	21.9	0.0	0.0	15.9	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.99		1.00	0.33		0.67
Lane Grp Cap(c), veh/h	11	1791		355	1236	1296	271	0		24	0	0
V/C Ratio(X)	0.55	0.38		0.94	0.25	0.25	0.90	0.00		0.12	0.00	0.00
Avail Cap(c_a), veh/h	60	1791		555	1236	1296	279	0		299	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.5	17.5	0.0	35.0	0.0	0.0	50.1	0.0	0.0	58.3	0.0	0.0
Incr Delay (d2), s/veh	15.0	0.6	0.0	13.6	0.5	0.5	28.4	0.0	0.0	1.6	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	0.2	5.7	0.0	8.7	0.2	0.2	9.4	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.4	18.1	0.0	48.6	0.5	0.5	78.5	0.0	0.0	60.0	0.0	0.0
LnGrp LOS	E	B		D	A	A	E	A		E	A	A
Approach Vol, veh/h		688	A		962			244	A		3	
Approach Delay, s/veh		18.6			17.1			78.5			60.0	
Approach LOS		B			B			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	27.3	65.9		5.3	3.7	89.5		21.5				
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5				
Max Green Setting (Gmax), s	38.0	27.5		22.0	4.0	61.5		18.5				
Max Q Clear Time (g_c+I1), s	23.9	16.2		2.2	2.4	2.0		17.9				
Green Ext Time (p_c), s	0.4	4.4		0.0	0.0	6.4		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			25.6
HCM 6th LOS			C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	842	593	4	1080	28	396	91	39	66	82	51
Future Volume (veh/h)	155	842	593	4	1080	28	396	91	39	66	82	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.99
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	1856	1841	1900	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	168	915	0	4	1174	30	501	0	0	72	89	55
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	196	2042		9	1650	42	568	0		180	111	68
Arrive On Green	0.04	0.19	0.00	0.01	0.95	0.95	0.16	0.00	0.00	0.10	0.10	0.10
Sat Flow, veh/h	1781	3526	1560	1810	3480	89	3450	0	1572	1781	1095	676
Grp Volume(v), veh/h	168	915	0	4	590	614	501	0	0	72	0	144
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	1810	1749	1820	1725	0	1572	1781	0	1771
Q Serve(g_s), s	11.3	27.6	0.0	0.3	6.4	6.4	17.0	0.0	0.0	4.5	0.0	9.5
Cycle Q Clear(g_c), s	11.3	27.6	0.0	0.3	6.4	6.4	17.0	0.0	0.0	4.5	0.0	9.5
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	196	2042		9	829	863	568	0		180	0	179
V/C Ratio(X)	0.86	0.45		0.43	0.71	0.71	0.88	0.00		0.40	0.00	0.80
Avail Cap(c_a), veh/h	200	2042		75	829	863	647	0		297	0	295
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	56.9	31.6	0.0	59.2	1.8	1.8	49.0	0.0	0.0	50.5	0.0	52.8
Incr Delay (d2), s/veh	28.4	0.7	0.0	27.6	5.1	5.0	12.4	0.0	0.0	1.4	0.0	8.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	13.2	0.0	0.2	2.0	2.1	8.4	0.0	0.0	2.1	0.0	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	85.2	32.3	0.0	86.8	6.9	6.8	61.4	0.0	0.0	52.0	0.0	60.9
LnGrp LOS	F	C		F	A	A	E	A		D	A	E
Approach Vol, veh/h		1083	A		1208			501	A		216	
Approach Delay, s/veh		40.5			7.1			61.4			57.9	
Approach LOS		D			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	74.0		24.3	17.7	61.4		16.6				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	54.5		22.5	13.5	46.0		20.0				
Max Q Clear Time (g_c+I1), s	13.3	29.6		19.0	13.3	8.4		11.5				
Green Ext Time (p_c), s	0.0	7.2		0.7	0.0	10.0		0.6				

Intersection Summary		
HCM 6th Ctrl Delay		31.8
HCM 6th LOS		C

Notes
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	56	904	15	8	1046	5	0	0	9	0	0	44
Future Vol, veh/h	56	904	15	8	1046	5	0	0	9	0	0	44
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	120	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	92	92	88	88	92	92	92	88	92	88
Heavy Vehicles, %	0	4	2	2	4	0	2	2	2	0	2	0
Mvmt Flow	64	1027	16	9	1189	6	0	0	10	0	0	50

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1199	0	0	1043	0	0	-	-	522	-	-	602
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	4.14	-	-	-	-	6.94	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.22	-	-	-	-	3.32	-	-	3.3
Pot Cap-1 Maneuver	589	-	-	663	-	-	0	0	499	0	0	448
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	587	-	-	663	-	-	-	-	499	-	-	446
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	12.4	14.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	499	587	-	-	663	-	-	446
HCM Lane V/C Ratio	0.02	0.108	-	-	0.013	-	-	0.112
HCM Control Delay (s)	12.4	11.9	-	-	10.5	-	-	14.1
HCM Lane LOS	B	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.1	0.4	-	-	0	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	72	732	92	8	1003	52	12	10	9	26	2	33
Future Volume (veh/h)	72	732	92	8	1003	52	12	10	9	26	2	33
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1707	1826	1826	1781	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	75	762	96	8	1045	54	12	10	9	27	2	34
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	13	5	5	8	0	0	0	0	3
Cap, veh/h	95	2286	288	10	2281	118	191	75	67	210	12	126
Arrive On Green	0.07	0.97	0.97	0.01	1.00	1.00	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1767	3138	395	1626	3350	173	1280	909	818	1149	142	1532
Grp Volume(v), veh/h	75	428	430	8	541	558	12	0	19	29	0	34
Grp Sat Flow(s),veh/h/ln	1767	1763	1771	1626	1735	1788	1280	0	1727	1291	0	1532
Q Serve(g_s), s	2.5	0.7	0.7	0.3	0.0	0.0	0.5	0.0	0.6	1.0	0.0	1.2
Cycle Q Clear(g_c), s	2.5	0.7	0.7	0.3	0.0	0.0	2.1	0.0	0.6	1.6	0.0	1.2
Prop In Lane	1.00		0.22	1.00		0.10	1.00		0.47	0.93		1.00
Lane Grp Cap(c), veh/h	95	1284	1290	10	1181	1218	191	0	142	222	0	126
V/C Ratio(X)	0.79	0.33	0.33	0.79	0.46	0.46	0.06	0.00	0.13	0.13	0.00	0.27
Avail Cap(c_a), veh/h	150	1284	1290	87	1181	1218	472	0	521	531	0	462
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.82	0.82	0.82	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.5	0.3	0.3	29.6	0.0	0.0	27.0	0.0	25.6	26.1	0.0	25.9
Incr Delay (d2), s/veh	5.5	0.7	0.7	32.3	1.1	1.0	0.1	0.0	0.2	0.1	0.0	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	1.1	0.3	0.3	0.2	0.3	0.3	0.2	0.0	0.2	0.4	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.0	1.0	1.0	61.9	1.1	1.0	27.1	0.0	25.7	26.2	0.0	26.3
LnGrp LOS	C	A	A	E	A	A	C	A	C	C	A	C
Approach Vol, veh/h		933			1107			31			63	
Approach Delay, s/veh		3.5			1.5			26.2			26.3	
Approach LOS		A			A			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.9	47.7		8.4	6.7	44.9		8.4				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	3.2	27.7		18.1	5.1	25.4		18.1				
Max Q Clear Time (g_c+I1), s	2.3	2.7		3.6	4.5	2.0		4.1				
Green Ext Time (p_c), s	0.0	1.8		0.0	0.0	2.4		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			3.5
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	113	605	16	41	988	125	2	34	21	51	5	73
Future Volume (veh/h)	113	605	16	41	988	125	2	34	21	51	5	73
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.98	0.99		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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	122	651	17	44	1062	134	2	37	23	55	5	78
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	154	2370	62	54	1929	243	67	195	169	230	16	174
Arrive On Green	0.17	1.00	1.00	0.04	0.82	0.82	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1795	3507	92	1781	3111	392	34	1762	1522	1041	147	1572
Grp Volume(v), veh/h	122	327	341	44	596	600	39	0	23	60	0	78
Grp Sat Flow(s),veh/h/ln	1795	1763	1836	1781	1749	1754	1796	0	1522	1187	0	1572
Q Serve(g_s), s	3.9	0.0	0.0	1.5	6.6	6.6	0.0	0.0	0.8	2.2	0.0	2.8
Cycle Q Clear(g_c), s	3.9	0.0	0.0	1.5	6.6	6.6	1.2	0.0	0.8	3.4	0.0	2.8
Prop In Lane	1.00		0.05	1.00		0.22	0.05		1.00	0.92		1.00
Lane Grp Cap(c), veh/h	154	1191	1240	54	1084	1088	262	0	169	247	0	174
V/C Ratio(X)	0.79	0.27	0.27	0.82	0.55	0.55	0.15	0.00	0.14	0.24	0.00	0.45
Avail Cap(c_a), veh/h	206	1191	1240	169	1084	1088	600	0	459	510	0	474
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	0.76	0.76	0.76	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.3	0.0	0.0	28.6	2.6	2.6	24.2	0.0	24.1	25.6	0.0	25.0
Incr Delay (d2), s/veh	9.6	0.5	0.5	8.5	1.5	1.5	0.1	0.0	0.1	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	0.2	0.2	0.7	1.6	1.6	0.5	0.0	0.3	0.8	0.0	1.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	33.9	0.5	0.5	37.1	4.1	4.1	24.3	0.0	24.2	25.8	0.0	25.6
LnGrp LOS	C	A	A	D	A	A	C	A	C	C	A	C
Approach Vol, veh/h		790			1240			62			138	
Approach Delay, s/veh		5.7			5.3			24.3			25.7	
Approach LOS		A			A			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.3	44.5		10.1	8.6	41.2		10.1				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	5.7	25.2		18.1	6.9	24.0		18.1				
Max Q Clear Time (g_c+I1), s	3.5	2.0		5.4	5.9	8.6		3.2				
Green Ext Time (p_c), s	0.0	1.3		0.2	0.0	2.9		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			7.2									
HCM 6th LOS			A									

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	131	491	883	149	173	274
Future Volume (veh/h)	131	491	883	149	173	274
Initial Q (Qb), veh	0	0	0	0	0	0
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	1885	1841	1841	1841	1870	1870
Adj Flow Rate, veh/h	141	528	949	160	186	295
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	4	4	4	2	2
Cap, veh/h	176	2306	1496	252	384	342
Arrive On Green	0.20	1.00	0.50	0.50	0.22	0.22
Sat Flow, veh/h	1795	3589	3067	501	1781	1585
Grp Volume(v), veh/h	141	528	558	551	186	295
Grp Sat Flow(s),veh/h/ln	1795	1749	1749	1728	1781	1585
Q Serve(g_s), s	4.5	0.0	14.0	14.0	5.5	10.8
Cycle Q Clear(g_c), s	4.5	0.0	14.0	14.0	5.5	10.8
Prop In Lane	1.00			0.29	1.00	1.00
Lane Grp Cap(c), veh/h	176	2306	879	869	384	342
V/C Ratio(X)	0.80	0.23	0.63	0.63	0.48	0.86
Avail Cap(c_a), veh/h	230	2306	879	869	537	478
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.98	0.98	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.5	0.0	10.9	10.9	20.6	22.7
Incr Delay (d2), s/veh	10.3	0.2	3.5	3.5	0.4	8.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	0.1	5.1	5.0	2.2	4.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.8	0.2	14.4	14.4	21.0	31.3
LnGrp LOS	C	A	B	B	C	C
Approach Vol, veh/h		669	1109		481	
Approach Delay, s/veh		7.3	14.4		27.3	
Approach LOS		A	B		C	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.4	34.2		16.4		43.6
Change Period (Y+Rc), s	3.5	4.0		3.5		4.0
Max Green Setting (Gmax), s	7.7	23.2		18.1		34.4
Max Q Clear Time (g_c+I1), s	6.5	16.0		12.8		2.0
Green Ext Time (p_c), s	0.0	3.5		0.2		3.0

Intersection Summary	
HCM 6th Ctrl Delay	15.0
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	740	442	392	592	2	198	1	689	5	5	9
Future Volume (veh/h)	8	740	442	392	592	2	198	1	689	5	5	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.95
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	1900	1826	1826	1841	1826	1826	1900	1900	1856	1900	1900	1900
Adj Flow Rate, veh/h	8	771	0	408	617	2	206	1	0	5	5	9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	5	5	4	5	5	0	0	3	0	0	0
Cap, veh/h	14	1777		423	2645	9	231	1		11	11	20
Arrive On Green	0.01	0.51	0.00	0.48	1.00	1.00	0.13	0.13	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1810	3469	1547	1753	3546	11	1801	9	1572	445	445	800
Grp Volume(v), veh/h	8	771	0	408	302	317	207	0	0	19	0	0
Grp Sat Flow(s),veh/h/ln	1810	1735	1547	1753	1735	1823	1810	0	1572	1689	0	0
Q Serve(g_s), s	0.7	20.9	0.0	33.8	0.0	0.0	16.9	0.0	0.0	1.7	0.0	0.0
Cycle Q Clear(g_c), s	0.7	20.9	0.0	33.8	0.0	0.0	16.9	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.26		0.47
Lane Grp Cap(c), veh/h	14	1777		423	1294	1360	232	0		43	0	0
V/C Ratio(X)	0.58	0.43		0.97	0.23	0.23	0.89	0.00		0.44	0.00	0.00
Avail Cap(c_a), veh/h	48	1777		479	1294	1360	284	0		248	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	74.2	22.9	0.0	38.2	0.0	0.0	64.4	0.0	0.0	72.1	0.0	0.0
Incr Delay (d2), s/veh	13.8	0.8	0.0	29.7	0.4	0.4	22.4	0.0	0.0	5.3	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	0.4	8.7	0.0	15.2	0.2	0.2	9.3	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.0	23.7	0.0	67.9	0.4	0.4	86.7	0.0	0.0	77.3	0.0	0.0
LnGrp LOS	F	C		E	A	A	F	A		E	A	A
Approach Vol, veh/h		779	A		1027			207	A		19	
Approach Delay, s/veh		24.4			27.2			86.7			77.3	
Approach LOS		C			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	39.2	80.8		7.3	4.1	115.9		22.7
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	41.0	49.5		22.0	4.0	86.5		23.5
Max Q Clear Time (g_c+I1), s	35.8	22.9		3.7	2.7	2.0		18.9
Green Ext Time (p_c), s	0.3	7.9		0.0	0.0	6.3		0.3

Intersection Summary	
HCM 6th Ctrl Delay	32.7
HCM 6th LOS	C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	49	983	402	3	1027	14	512	15	53	146	145	92
Future Volume (veh/h)	49	983	402	3	1027	14	512	15	53	146	145	92
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.99
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	1856	1841	1900	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	51	1024	0	3	1070	15	544	0	0	152	151	96
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	65	1911		7	1797	25	612	0		279	170	108
Arrive On Green	0.05	0.72	0.00	0.01	1.00	1.00	0.18	0.00	0.00	0.16	0.16	0.16
Sat Flow, veh/h	1781	3526	1560	1810	3529	49	3450	0	1572	1781	1083	688
Grp Volume(v), veh/h	51	1024	0	3	530	555	544	0	0	152	0	247
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	1810	1749	1830	1725	0	1572	1781	0	1771
Q Serve(g_s), s	4.2	19.8	0.0	0.2	0.0	0.0	23.1	0.0	0.0	11.8	0.0	20.5
Cycle Q Clear(g_c), s	4.2	19.8	0.0	0.2	0.0	0.0	23.1	0.0	0.0	11.8	0.0	20.5
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	65	1911		7	890	931	612	0		279	0	277
V/C Ratio(X)	0.78	0.54		0.42	0.60	0.60	0.89	0.00		0.54	0.00	0.89
Avail Cap(c_a), veh/h	101	1911		62	890	931	793	0		338	0	337
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.7	12.4	0.0	74.2	0.0	0.0	60.2	0.0	0.0	58.3	0.0	62.0
Incr Delay (d2), s/veh	18.4	1.1	0.0	35.4	2.9	2.8	9.9	0.0	0.0	1.7	0.0	21.4
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	2.3	6.8	0.0	0.2	0.7	0.7	11.1	0.0	0.0	5.5	0.0	10.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.1	13.4	0.0	109.7	2.9	2.8	70.2	0.0	0.0	60.0	0.0	83.4
LnGrp LOS	F	B		F	A	A	E	A		E	A	F
Approach Vol, veh/h		1075	A		1088			544	A		399	
Approach Delay, s/veh		17.0			3.2			70.2			74.5	
Approach LOS		B			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	85.8		31.1	10.0	80.9		28.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.1	63.9		34.5	8.5	60.5		28.5
Max Q Clear Time (g_c+I1), s	2.2	21.8		25.1	6.2	2.0		22.5
Green Ext Time (p_c), s	0.0	9.5		1.5	0.0	8.9		1.0

Intersection Summary			
HCM 6th Ctrl Delay			28.9
HCM 6th LOS			C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Existing + Project PM

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	40	1117	37	26	992	3	0	0	33	0	0	49
Future Vol, veh/h	40	1117	37	26	992	3	0	0	33	0	0	49
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	120	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	2	2	4	0	2	2	2	0	2	0
Mvmt Flow	43	1214	40	28	1078	3	0	0	36	0	0	53

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1085	0	0	1254	0	0	-	-	627	-	-	545
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	4.14	-	-	-	-	6.94	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.22	-	-	-	-	3.32	-	-	3.3
Pot Cap-1 Maneuver	651	-	-	551	-	-	0	0	426	0	0	488
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	649	-	-	551	-	-	-	-	426	-	-	486
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	14.2	13.3
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	426	649	-	-	551	-	-	486
HCM Lane V/C Ratio	0.084	0.067	-	-	0.051	-	-	0.11
HCM Control Delay (s)	14.2	10.9	-	-	11.9	-	-	13.3
HCM Lane LOS	B	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.3	0.2	-	-	0.2	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	32	1044	77	18	864	22	53	13	24	73	7	98
Future Volume (veh/h)	32	1044	77	18	864	22	53	13	24	73	7	98
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1707	1826	1826	1781	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	36	1160	86	20	960	24	59	14	27	81	8	109
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	13	5	5	8	0	0	0	0	3
Cap, veh/h	44	2251	167	22	2304	58	200	93	179	272	23	251
Arrive On Green	0.05	1.00	1.00	0.03	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1767	3320	246	1626	3455	86	1204	575	1108	1115	141	1552
Grp Volume(v), veh/h	36	615	631	20	482	502	59	0	41	89	0	109
Grp Sat Flow(s),veh/h/ln	1767	1763	1803	1626	1735	1807	1204	0	1683	1256	0	1552
Q Serve(g_s), s	1.5	0.0	0.0	0.9	0.0	0.0	3.5	0.0	1.6	4.1	0.0	4.7
Cycle Q Clear(g_c), s	1.5	0.0	0.0	0.9	0.0	0.0	9.2	0.0	1.6	5.6	0.0	4.7
Prop In Lane	1.00		0.14	1.00		0.05	1.00		0.66	0.91		1.00
Lane Grp Cap(c), veh/h	44	1195	1222	22	1157	1205	200	0	272	295	0	251
V/C Ratio(X)	0.82	0.51	0.52	0.90	0.42	0.42	0.29	0.00	0.15	0.30	0.00	0.43
Avail Cap(c_a), veh/h	153	1195	1222	98	1157	1205	303	0	415	414	0	383
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.93	0.93	0.93	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.5	0.0	0.0	36.4	0.0	0.0	32.9	0.0	27.0	29.2	0.0	28.3
Incr Delay (d2), s/veh	13.2	1.6	1.6	32.2	1.0	1.0	0.3	0.0	0.1	0.2	0.0	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	0.8	0.5	0.5	0.5	0.3	0.3	1.0	0.0	0.6	1.4	0.0	1.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	1.6	1.6	68.6	1.0	1.0	33.2	0.0	27.1	29.4	0.0	28.8
LnGrp LOS	D	A	A	E	A	A	C	A	C	C	A	C
Approach Vol, veh/h		1282			1004			100			198	
Approach Delay, s/veh		2.9			2.4			30.7			29.1	
Approach LOS		A			A			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.5	54.9		15.6	5.4	54.0		15.6				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	4.5	41.0		18.5	6.5	39.0		18.5				
Max Q Clear Time (g_c+I1), s	2.9	2.0		7.6	3.5	2.0		11.2				
Green Ext Time (p_c), s	0.0	2.9		0.2	0.0	2.1		0.1				
Intersection Summary												
HCM 6th Ctrl Delay			5.8									
HCM 6th LOS			A									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	59	1063	10	28	745	47	14	13	46	173	6	171
Future Volume (veh/h)	59	1063	10	28	745	47	14	13	46	173	6	171
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.99
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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	62	1119	11	29	784	49	15	14	48	182	6	180
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	79	2123	21	35	1898	119	73	45	369	94	0	381
Arrive On Green	0.09	1.00	1.00	0.04	1.00	1.00	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1795	3576	35	1781	3335	208	0	188	1536	0	0	1586
Grp Volume(v), veh/h	62	552	578	29	411	422	29	0	48	188	0	180
Grp Sat Flow(s),veh/h/ln	1795	1763	1848	1781	1749	1794	188	0	1536	0	0	1586
Q Serve(g_s), s	2.5	0.0	0.0	1.2	0.0	0.0	0.0	0.0	1.8	0.0	0.0	7.3
Cycle Q Clear(g_c), s	2.5	0.0	0.0	1.2	0.0	0.0	18.0	0.0	1.8	18.0	0.0	7.3
Prop In Lane	1.00		0.02	1.00		0.12	0.52		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	79	1047	1097	35	996	1022	118	0	369	94	0	381
V/C Ratio(X)	0.78	0.53	0.53	0.84	0.41	0.41	0.25	0.00	0.13	1.99	0.00	0.47
Avail Cap(c_a), veh/h	203	1047	1097	202	996	1022	118	0	369	94	0	381
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.88	0.90	0.90	0.90	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.8	0.0	0.0	35.9	0.0	0.0	23.7	0.0	22.4	37.5	0.0	24.4
Incr Delay (d2), s/veh	5.5	1.7	1.6	15.8	1.1	1.1	0.4	0.0	0.1	481.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	0.5	0.5	0.7	0.3	0.3	0.4	0.0	0.6	14.3	0.0	2.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.4	1.7	1.6	51.7	1.1	1.1	24.1	0.0	22.4	518.5	0.0	24.8
LnGrp LOS	D	A	A	D	A	A	C	A	C	F	A	C
Approach Vol, veh/h		1192			862			77			368	
Approach Delay, s/veh		3.6			2.8			23.1			277.0	
Approach LOS		A			A			C			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.0	48.5		21.5	6.8	46.7		21.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	8.5	37.5		18.0	8.5	37.5		18.0
Max Q Clear Time (g_c+I1), s	3.2	2.0		20.0	4.5	2.0		20.0
Green Ext Time (p_c), s	0.0	2.5		0.0	0.0	1.9		0.0

Intersection Summary		
HCM 6th Ctrl Delay		44.2
HCM 6th LOS		D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	226	1007	663	105	93	131
Future Volume (veh/h)	226	1007	663	105	93	131
Initial Q (Qb), veh	0	0	0	0	0	0
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	1885	1841	1841	1841	1870	1870
Adj Flow Rate, veh/h	238	1060	698	111	98	138
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	4	4	4	2	2
Cap, veh/h	275	2756	1768	281	199	177
Arrive On Green	0.31	1.00	0.59	0.59	0.11	0.11
Sat Flow, veh/h	1795	3589	3098	478	1781	1585
Grp Volume(v), veh/h	238	1060	406	403	98	138
Grp Sat Flow(s),veh/h/ln	1795	1749	1749	1735	1781	1585
Q Serve(g_s), s	9.4	0.0	9.3	9.4	3.9	6.4
Cycle Q Clear(g_c), s	9.4	0.0	9.3	9.4	3.9	6.4
Prop In Lane	1.00			0.28	1.00	1.00
Lane Grp Cap(c), veh/h	275	2756	1029	1020	199	177
V/C Ratio(X)	0.86	0.38	0.39	0.40	0.49	0.78
Avail Cap(c_a), veh/h	443	2756	1029	1020	439	391
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	25.3	0.0	8.3	8.3	31.3	32.4
Incr Delay (d2), s/veh	5.0	0.4	1.1	1.1	0.7	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.6	0.1	3.2	3.2	1.7	2.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	30.3	0.4	9.4	9.4	32.0	35.2
LnGrp LOS	C	A	A	A	C	D
Approach Vol, veh/h		1298	809		236	
Approach Delay, s/veh		5.8	9.4		33.9	
Approach LOS		A	A		C	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.0	48.1		11.9		63.1
Change Period (Y+Rc), s	3.5	4.0		3.5		4.0
Max Green Setting (Gmax), s	18.5	27.0		18.5		49.0
Max Q Clear Time (g_c+I1), s	11.4	11.4		8.4		2.0
Green Ext Time (p_c), s	0.2	3.7		0.1		7.6
Intersection Summary						
HCM 6th Ctrl Delay			9.9			
HCM 6th LOS			A			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	168	915	645	4	1204	262	267	42	72	144
v/c Ratio	0.73	0.45	0.71	0.05	0.81	0.90	0.89	0.11	0.36	0.65
Control Delay	59.9	16.9	20.9	59.5	40.3	80.7	78.0	0.6	52.9	56.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.9	16.9	20.9	59.5	40.3	80.7	78.0	0.6	52.9	56.3
Queue Length 50th (ft)	129	250	331	3	518	209	212	0	52	92
Queue Length 95th (ft)	m#160	m385	m#522	m10	#614	#365	#366	0	95	154
Internal Link Dist (ft)		96			333		304			770
Turn Bay Length (ft)	150		20	60				30		
Base Capacity (vph)	233	2021	908	86	1478	303	313	399	295	315
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.72	0.45	0.71	0.05	0.81	0.86	0.85	0.11	0.24	0.46

Intersection Summary

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

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	51	1024	419	3	1085	272	277	55	152	247
v/c Ratio	0.53	0.54	0.51	0.05	0.65	0.84	0.85	0.15	0.54	0.83
Control Delay	96.7	22.8	18.5	63.3	30.9	79.4	80.3	5.1	64.6	78.2
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	96.7	22.8	18.5	63.3	31.0	79.4	80.3	5.1	64.6	78.2
Queue Length 50th (ft)	44	430	262	2	337	266	272	0	138	219
Queue Length 95th (ft)	m84	517	379	m7	524	377	383	22	208	314
Internal Link Dist (ft)		96			333		304			770
Turn Bay Length (ft)	150		20	60				30		
Base Capacity (vph)	103	1885	824	64	1663	372	374	412	336	354
Starvation Cap Reductn	0	0	0	0	41	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.54	0.51	0.05	0.67	0.73	0.74	0.13	0.45	0.70

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

NEAR TERM CONDITIONS

SYNCHRO OUTPUT SHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	673	371	328	616	6	241	2	980	1	0	2
Future Volume (veh/h)	6	673	371	328	616	6	241	2	980	1	0	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.96
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	1900	1826	1826	1841	1826	1826	1900	1900	1856	1900	1900	1900
Adj Flow Rate, veh/h	6	708	0	345	648	6	254	2	0	1	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	4	5	5	0	0	3	0	0	0
Cap, veh/h	11	1743		371	2493	23	277	2		8	0	16
Arrive On Green	0.01	0.50	0.00	0.28	0.94	0.94	0.15	0.15	0.00	0.02	0.00	0.02
Sat Flow, veh/h	1810	3469	1547	1753	3521	33	1796	14	1572	543	0	1086
Grp Volume(v), veh/h	6	708	0	345	319	335	256	0	0	3	0	0
Grp Sat Flow(s),veh/h/ln	1810	1735	1547	1753	1735	1819	1810	0	1572	1629	0	0
Q Serve(g_s), s	0.4	15.3	0.0	23.0	1.7	1.7	16.7	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.4	15.3	0.0	23.0	1.7	1.7	16.7	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.99		1.00	0.33		0.67
Lane Grp Cap(c), veh/h	11	1743		371	1228	1288	279	0		24	0	0
V/C Ratio(X)	0.55	0.41		0.93	0.26	0.26	0.92	0.00		0.12	0.00	0.00
Avail Cap(c_a), veh/h	60	1743		555	1228	1288	279	0		299	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.5	18.7	0.0	42.2	1.1	1.1	50.0	0.0	0.0	58.3	0.0	0.0
Incr Delay (d2), s/veh	15.0	0.7	0.0	13.6	0.5	0.5	32.4	0.0	0.0	1.6	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	0.2	6.2	0.0	10.7	0.6	0.6	10.1	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.4	19.4	0.0	55.8	1.6	1.6	82.4	0.0	0.0	60.0	0.0	0.0
LnGrp LOS	E	B		E	A	A	F	A		E	A	A
Approach Vol, veh/h		714	A		999			256	A		3	
Approach Delay, s/veh		19.8			20.3			82.4			60.0	
Approach LOS		B			C			F			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	28.4	64.3		5.3	3.7	89.0		22.0				
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5				
Max Green Setting (Gmax), s	38.0	27.5		22.0	4.0	61.5		18.5				
Max Q Clear Time (g_c+I1), s	25.0	17.3		2.2	2.4	3.7		18.7				
Green Ext Time (p_c), s	0.4	4.3		0.0	0.0	6.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			28.3									
HCM 6th LOS			C									

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	871	621	4	1126	28	410	88	37	68	86	53
Future Volume (veh/h)	162	871	621	4	1126	28	410	88	37	68	86	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.99
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	1856	1841	1900	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	176	947	0	4	1224	30	515	0	0	74	93	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
Percent Heavy Veh, %	2	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	200	2015		9	1618	40	580	0		187	115	71
Arrive On Green	0.04	0.19	0.00	0.01	0.93	0.93	0.17	0.00	0.00	0.11	0.11	0.11
Sat Flow, veh/h	1781	3526	1560	1810	3485	85	3450	0	1572	1781	1091	680
Grp Volume(v), veh/h	176	947	0	4	614	640	515	0	0	74	0	151
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	1810	1749	1821	1725	0	1572	1781	0	1771
Q Serve(g_s), s	11.8	28.7	0.0	0.3	10.1	10.1	17.5	0.0	0.0	4.7	0.0	10.0
Cycle Q Clear(g_c), s	11.8	28.7	0.0	0.3	10.1	10.1	17.5	0.0	0.0	4.7	0.0	10.0
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	200	2015		9	812	846	580	0		187	0	186
V/C Ratio(X)	0.88	0.47		0.43	0.76	0.76	0.89	0.00		0.40	0.00	0.81
Avail Cap(c_a), veh/h	200	2015		75	812	846	647	0		297	0	295
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.0	32.5	0.0	59.2	2.6	2.7	48.8	0.0	0.0	50.1	0.0	52.5
Incr Delay (d2), s/veh	32.8	0.8	0.0	27.6	6.5	6.3	13.3	0.0	0.0	1.4	0.0	8.8
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	7.5	13.8	0.0	0.2	2.7	2.8	8.7	0.0	0.0	2.2	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.8	33.3	0.0	86.8	9.1	8.9	62.1	0.0	0.0	51.5	0.0	61.4
LnGrp LOS	F	C		F	A	A	E	A		D	A	E
Approach Vol, veh/h		1123	A		1258			515	A		225	
Approach Delay, s/veh		42.1			9.3			62.1			58.1	
Approach LOS		D			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	73.1		24.7	18.0	60.2		17.1				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	54.5		22.5	13.5	46.0		20.0				
Max Q Clear Time (g_c+I1), s	2.3	30.7		19.5	13.8	12.1		12.0				
Green Ext Time (p_c), s	0.0	7.4		0.6	0.0	10.4		0.6				

Intersection Summary		
HCM 6th Ctrl Delay		33.3
HCM 6th LOS		C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	59	947	1096	5	4	46
Future Vol, veh/h	59	947	1096	5	4	46
Conflicting Peds, #/hr	4	0	0	4	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	85	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	4	4	0	0	0
Mvmt Flow	67	1076	1245	6	5	52

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1255	0	-	0	1924	630
Stage 1	-	-	-	-	1252	-
Stage 2	-	-	-	-	672	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	561	-	-	-	60	429
Stage 1	-	-	-	-	237	-
Stage 2	-	-	-	-	474	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	559	-	-	-	52	427
Mov Cap-2 Maneuver	-	-	-	-	146	-
Stage 1	-	-	-	-	208	-
Stage 2	-	-	-	-	472	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	15.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	559	-	-	-	146	427
HCM Lane V/C Ratio	0.12	-	-	-	0.031	0.122
HCM Control Delay (s)	12.3	-	-	-	30.4	14.6
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.4	-	-	-	0.1	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	757	96	8	1042	54	13	10	9	23	2	35
Future Volume (veh/h)	75	757	96	8	1042	54	13	10	9	23	2	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.98		0.97	0.98		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1707	1826	1826	1781	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	78	789	100	8	1085	56	14	10	9	24	2	36
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	13	5	5	8	0	0	0	0	3
Cap, veh/h	99	2286	290	10	2275	117	194	74	67	208	13	125
Arrive On Green	0.07	0.97	0.97	0.01	1.00	1.00	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1767	3136	397	1626	3350	173	1277	909	818	1140	160	1532
Grp Volume(v), veh/h	78	443	446	8	562	579	14	0	19	26	0	36
Grp Sat Flow(s),veh/h/ln	1767	1763	1771	1626	1735	1788	1277	0	1727	1300	0	1532
Q Serve(g_s), s	2.6	0.7	0.7	0.3	0.0	0.0	0.6	0.0	0.6	0.8	0.0	1.3
Cycle Q Clear(g_c), s	2.6	0.7	0.7	0.3	0.0	0.0	2.1	0.0	0.6	1.4	0.0	1.3
Prop In Lane	1.00		0.22	1.00		0.10	1.00		0.47	0.92		1.00
Lane Grp Cap(c), veh/h	99	1285	1290	10	1178	1215	194	0	141	221	0	125
V/C Ratio(X)	0.79	0.35	0.35	0.79	0.48	0.48	0.07	0.00	0.13	0.12	0.00	0.29
Avail Cap(c_a), veh/h	162	1285	1290	87	1178	1215	475	0	521	532	0	462
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.4	0.3	0.3	29.6	0.0	0.0	26.9	0.0	25.6	26.1	0.0	25.9
Incr Delay (d2), s/veh	5.2	0.7	0.7	31.7	1.1	1.1	0.1	0.0	0.2	0.1	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	0.3	0.3	0.2	0.4	0.4	0.2	0.0	0.2	0.3	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	1.0	1.0	61.3	1.1	1.1	27.0	0.0	25.7	26.1	0.0	26.4
LnGrp LOS	C	A	A	E	A	A	C	A	C	C	A	C
Approach Vol, veh/h		967			1149			33			62	
Approach Delay, s/veh		3.5			1.5			26.3			26.3	
Approach LOS		A			A			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.9	47.7		8.4	6.9	44.8		8.4				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	3.2	27.7		18.1	5.5	25.4		18.1				
Max Q Clear Time (g_c+I1), s	2.3	2.7		3.4	4.6	2.0		4.1				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	2.5		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			3.5
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	117	625	17	43	1026	131	2	36	22	53	4	76
Future Volume (veh/h)	117	625	17	43	1026	131	2	36	22	53	4	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.98	0.99		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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	126	672	18	46	1103	141	2	39	24	57	4	82
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	159	2352	63	56	1908	243	67	201	173	235	13	179
Arrive On Green	0.18	1.00	1.00	0.04	0.82	0.82	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1795	3504	94	1781	3106	396	32	1765	1523	1048	113	1572
Grp Volume(v), veh/h	126	338	352	46	620	624	41	0	24	61	0	82
Grp Sat Flow(s),veh/h/ln	1795	1763	1835	1781	1749	1753	1797	0	1523	1161	0	1572
Q Serve(g_s), s	4.0	0.0	0.0	1.5	7.4	7.4	0.0	0.0	0.9	2.3	0.0	2.9
Cycle Q Clear(g_c), s	4.0	0.0	0.0	1.5	7.4	7.4	1.2	0.0	0.9	3.6	0.0	2.9
Prop In Lane	1.00		0.05	1.00		0.23	0.05		1.00	0.93		1.00
Lane Grp Cap(c), veh/h	159	1183	1232	56	1074	1077	268	0	173	248	0	179
V/C Ratio(X)	0.79	0.29	0.29	0.82	0.58	0.58	0.15	0.00	0.14	0.25	0.00	0.46
Avail Cap(c_a), veh/h	206	1183	1232	169	1074	1077	601	0	459	505	0	474
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	0.73	0.73	0.73	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.2	0.0	0.0	28.6	2.8	2.8	24.1	0.0	23.9	25.6	0.0	24.9
Incr Delay (d2), s/veh	10.6	0.6	0.6	7.6	1.7	1.7	0.1	0.0	0.1	0.2	0.0	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.9	0.2	0.2	0.7	1.7	1.8	0.5	0.0	0.3	0.8	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	0.6	0.6	36.2	4.4	4.5	24.2	0.0	24.1	25.7	0.0	25.5
LnGrp LOS	C	A	A	D	A	A	C	A	C	C	A	C
Approach Vol, veh/h		816			1290			65			143	
Approach Delay, s/veh		5.9			5.6			24.2			25.6	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	44.3		10.3	8.8	40.9		10.3
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.7	25.2		18.1	6.9	24.0		18.1
Max Q Clear Time (g_c+I1), s	3.5	2.0		5.6	6.0	9.4		3.2
Green Ext Time (p_c), s	0.0	1.3		0.2	0.0	3.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	7.4
HCM 6th LOS	A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	136	507	917	156	181	286
Future Volume (veh/h)	136	507	917	156	181	286
Initial Q (Qb), veh	0	0	0	0	0	0
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	1885	1841	1841	1841	1870	1870
Adj Flow Rate, veh/h	146	545	986	168	195	308
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	4	4	4	2	2
Cap, veh/h	182	2278	1460	248	398	354
Arrive On Green	0.20	1.00	0.49	0.49	0.22	0.22
Sat Flow, veh/h	1795	3589	3062	505	1781	1585
Grp Volume(v), veh/h	146	545	580	574	195	308
Grp Sat Flow(s),veh/h/ln	1795	1749	1749	1727	1781	1585
Q Serve(g_s), s	4.6	0.0	15.1	15.2	5.7	11.2
Cycle Q Clear(g_c), s	4.6	0.0	15.1	15.2	5.7	11.2
Prop In Lane	1.00			0.29	1.00	1.00
Lane Grp Cap(c), veh/h	182	2278	860	849	398	354
V/C Ratio(X)	0.80	0.24	0.67	0.68	0.49	0.87
Avail Cap(c_a), veh/h	230	2278	860	849	537	478
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	11.6	11.6	20.3	22.4
Incr Delay (d2), s/veh	11.3	0.2	4.2	4.3	0.3	9.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.1	5.6	5.6	2.2	4.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.6	0.2	15.8	15.9	20.7	32.4
LnGrp LOS	C	A	B	B	C	C
Approach Vol, veh/h		691	1154		503	
Approach Delay, s/veh		7.5	15.9		27.8	
Approach LOS		A	B		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.6	33.5		16.9		43.1
Change Period (Y+Rc), s	3.5	4.0		3.5		4.0
Max Green Setting (Gmax), s	7.7	23.2		18.1		34.4
Max Q Clear Time (g_c+I1), s	6.6	17.2		13.2		2.0
Green Ext Time (p_c), s	0.0	3.1		0.2		3.1

Intersection Summary	
HCM 6th Ctrl Delay	16.0
HCM 6th LOS	B

1: Soquel Ave & Soquel Dr

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	769	463	406	615	2	207	1	716	5	5	9
Future Volume (veh/h)	8	769	463	406	615	2	207	1	716	5	5	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.95
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	1900	1826	1826	1841	1826	1826	1900	1900	1856	1900	1900	1900
Adj Flow Rate, veh/h	8	801	0	423	641	2	216	1	0	5	5	9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	5	5	4	5	5	0	0	3	0	0	0
Cap, veh/h	14	1730		437	2626	8	240	1		11	11	20
Arrive On Green	0.01	0.50	0.00	0.50	1.00	1.00	0.13	0.13	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1810	3469	1547	1753	3547	11	1802	8	1572	445	445	800
Grp Volume(v), veh/h	8	801	0	423	313	330	217	0	0	19	0	0
Grp Sat Flow(s),veh/h/ln	1810	1735	1547	1753	1735	1823	1810	0	1572	1689	0	0
Q Serve(g_s), s	0.7	22.6	0.0	35.1	0.0	0.0	17.7	0.0	0.0	1.7	0.0	0.0
Cycle Q Clear(g_c), s	0.7	22.6	0.0	35.1	0.0	0.0	17.7	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.26		0.47
Lane Grp Cap(c), veh/h	14	1730		437	1284	1350	241	0		43	0	0
V/C Ratio(X)	0.58	0.46		0.97	0.24	0.24	0.90	0.00		0.44	0.00	0.00
Avail Cap(c_a), veh/h	48	1730		479	1284	1350	284	0		248	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	74.2	24.5	0.0	37.0	0.0	0.0	64.0	0.0	0.0	72.1	0.0	0.0
Incr Delay (d2), s/veh	13.8	0.9	0.0	31.0	0.5	0.4	24.6	0.0	0.0	5.3	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	0.4	9.5	0.0	15.8	0.2	0.2	9.9	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.0	25.4	0.0	68.1	0.5	0.4	88.6	0.0	0.0	77.3	0.0	0.0
LnGrp LOS	F	C		E	A	A	F	A		E	A	A
Approach Vol, veh/h		809	A		1066			217	A		19	
Approach Delay, s/veh		26.0			27.3			88.6			77.3	
Approach LOS		C			C			F			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	40.4	78.8		7.3	4.1	115.1		23.5				
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5				
Max Green Setting (Gmax), s	41.0	49.5		22.0	4.0	86.5		23.5				
Max Q Clear Time (g_c+I1), s	37.1	24.6		3.7	2.7	2.0		19.7				
Green Ext Time (p_c), s	0.3	8.1		0.0	0.0	6.6		0.3				
Intersection Summary												
HCM 6th Ctrl Delay			33.5									
HCM 6th LOS			C									

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	1018	421	3	1091	14	506	15	50	151	152	96
Future Volume (veh/h)	51	1018	421	3	1091	14	506	15	50	151	152	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.99
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	1856	1841	1900	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	53	1060	0	3	1136	15	538	0	0	157	158	100
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	68	1897		7	1779	23	606	0		289	176	111
Arrive On Green	0.05	0.72	0.00	0.01	1.00	1.00	0.18	0.00	0.00	0.16	0.16	0.16
Sat Flow, veh/h	1781	3526	1560	1810	3532	47	3450	0	1572	1781	1085	687
Grp Volume(v), veh/h	53	1060	0	3	562	589	538	0	0	157	0	258
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	1810	1749	1830	1725	0	1572	1781	0	1772
Q Serve(g_s), s	4.4	21.4	0.0	0.2	0.0	0.0	22.8	0.0	0.0	12.1	0.0	21.4
Cycle Q Clear(g_c), s	4.4	21.4	0.0	0.2	0.0	0.0	22.8	0.0	0.0	12.1	0.0	21.4
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	68	1897		7	881	922	606	0		289	0	288
V/C Ratio(X)	0.78	0.56		0.42	0.64	0.64	0.89	0.00		0.54	0.00	0.90
Avail Cap(c_a), veh/h	101	1897		62	881	922	793	0		338	0	337
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.6	12.9	0.0	74.2	0.0	0.0	60.4	0.0	0.0	57.7	0.0	61.6
Incr Delay (d2), s/veh	20.0	1.2	0.0	35.4	3.5	3.4	9.7	0.0	0.0	1.6	0.0	23.1
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	2.4	7.4	0.0	0.2	0.9	0.9	10.9	0.0	0.0	5.6	0.0	11.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.6	14.1	0.0	109.7	3.5	3.4	70.1	0.0	0.0	59.3	0.0	84.7
LnGrp LOS	F	B		F	A	A	E	A		E	A	F
Approach Vol, veh/h		1113	A		1154			538	A		415	
Approach Delay, s/veh		17.7			3.7			70.1			75.1	
Approach LOS		B			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	85.2		30.9	10.2	80.1		28.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.1	63.9		34.5	8.5	60.5		28.5
Max Q Clear Time (g_c+I1), s	2.2	23.4		24.8	6.4	2.0		23.4
Green Ext Time (p_c), s	0.0	9.9		1.5	0.0	9.9		0.9

Intersection Summary	
HCM 6th Ctrl Delay	28.8
HCM 6th LOS	C

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	42	1190	1054	3	10	51
Future Vol, veh/h	42	1190	1054	3	10	51
Conflicting Peds, #/hr	4	0	0	4	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	85	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	4	0	0	0
Mvmt Flow	46	1293	1146	3	11	55

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1153	0	-	0	1891	579
Stage 1	-	-	-	-	1152	-
Stage 2	-	-	-	-	739	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	613	-	-	-	63	463
Stage 1	-	-	-	-	267	-
Stage 2	-	-	-	-	438	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	611	-	-	-	58	461
Mov Cap-2 Maneuver	-	-	-	-	163	-
Stage 1	-	-	-	-	246	-
Stage 2	-	-	-	-	436	-

Approach	EB		WB		SB	
HCM Control Delay, s	0.4		0		16.3	
HCM LOS					C	

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	611	-	-	-	163	461
HCM Lane V/C Ratio	0.075	-	-	-	0.067	0.12
HCM Control Delay (s)	11.4	-	-	-	28.7	13.9
HCM Lane LOS	B	-	-	-	D	B
HCM 95th %tile Q(veh)	0.2	-	-	-	0.2	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	1089	81	19	892	23	56	14	25	66	7	103
Future Volume (veh/h)	34	1089	81	19	892	23	56	14	25	66	7	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1707	1826	1826	1781	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	38	1210	90	21	991	26	62	16	28	73	8	114
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	13	5	5	8	0	0	0	0	3
Cap, veh/h	46	2253	167	23	2300	60	203	99	172	266	25	249
Arrive On Green	0.05	1.00	1.00	0.03	1.00	1.00	0.16	0.16	0.16	0.16	0.16	0.16
Sat Flow, veh/h	1767	3319	246	1626	3450	91	1199	614	1075	1091	154	1552
Grp Volume(v), veh/h	38	642	658	21	498	519	62	0	44	81	0	114
Grp Sat Flow(s),veh/h/ln	1767	1763	1803	1626	1735	1806	1199	0	1690	1245	0	1552
Q Serve(g_s), s	1.6	0.0	0.0	1.0	0.0	0.0	3.7	0.0	1.7	3.6	0.0	5.0
Cycle Q Clear(g_c), s	1.6	0.0	0.0	1.0	0.0	0.0	9.0	0.0	1.7	5.3	0.0	5.0
Prop In Lane	1.00		0.14	1.00		0.05	1.00		0.64	0.90		1.00
Lane Grp Cap(c), veh/h	46	1197	1224	23	1156	1204	203	0	271	291	0	249
V/C Ratio(X)	0.82	0.54	0.54	0.91	0.43	0.43	0.30	0.00	0.16	0.28	0.00	0.46
Avail Cap(c_a), veh/h	153	1197	1224	98	1156	1204	307	0	417	412	0	383
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.92	0.92	0.92	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.4	0.0	0.0	36.4	0.0	0.0	32.8	0.0	27.1	29.2	0.0	28.5
Incr Delay (d2), s/veh	12.2	1.7	1.7	32.5	1.1	1.0	0.3	0.0	0.1	0.2	0.0	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.8	0.6	0.6	0.6	0.3	0.3	1.1	0.0	0.7	1.3	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	1.7	1.7	68.9	1.1	1.0	33.1	0.0	27.2	29.4	0.0	29.0
LnGrp LOS	D	A	A	E	A	A	C	A	C	C	A	C
Approach Vol, veh/h		1338			1038			106			195	
Approach Delay, s/veh		3.0			2.4			30.7			29.2	
Approach LOS		A			A			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	4.6	54.9		15.5	5.5	54.0		15.5				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	4.5	41.0		18.5	6.5	39.0		18.5				
Max Q Clear Time (g_c+I1), s	3.0	2.0		7.3	3.6	2.0		11.0				
Green Ext Time (p_c), s	0.0	3.1		0.2	0.0	2.2		0.1				

Intersection Summary			
HCM 6th Ctrl Delay			5.8
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	60	1101	10	28	768	49	15	14	48	181	4	178
Future Volume (veh/h)	60	1101	10	28	768	49	15	14	48	181	4	178
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.99
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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	63	1159	11	29	808	52	16	15	51	191	4	187
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	80	2124	20	35	1892	122	73	45	369	95	0	381
Arrive On Green	0.09	1.00	1.00	0.04	1.00	1.00	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1795	3577	34	1781	3328	214	0	188	1536	0	0	1586
Grp Volume(v), veh/h	63	571	599	29	425	435	31	0	51	195	0	187
Grp Sat Flow(s),veh/h/ln	1795	1763	1848	1781	1749	1793	188	0	1536	0	0	1586
Q Serve(g_s), s	2.6	0.0	0.0	1.2	0.0	0.0	0.0	0.0	2.0	0.0	0.0	7.6
Cycle Q Clear(g_c), s	2.6	0.0	0.0	1.2	0.0	0.0	18.0	0.0	2.0	18.0	0.0	7.6
Prop In Lane	1.00		0.02	1.00		0.12	0.52		1.00	0.98		1.00
Lane Grp Cap(c), veh/h	80	1047	1098	35	994	1020	118	0	369	95	0	381
V/C Ratio(X)	0.78	0.55	0.55	0.84	0.43	0.43	0.26	0.00	0.14	2.05	0.00	0.49
Avail Cap(c_a), veh/h	203	1047	1098	202	994	1020	118	0	369	95	0	381
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.87	0.87	0.87	0.89	0.89	0.89	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.8	0.0	0.0	35.9	0.0	0.0	23.8	0.0	22.4	37.5	0.0	24.6
Incr Delay (d2), s/veh	5.4	1.8	1.7	15.6	1.2	1.2	0.4	0.0	0.1	508.0	0.0	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	1.2	0.5	0.5	0.7	0.3	0.3	0.4	0.0	0.7	15.1	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	39.2	1.8	1.7	51.6	1.2	1.2	24.2	0.0	22.5	545.5	0.0	24.9
LnGrp LOS	D	A	A	D	A	A	C	A	C	F	A	C
Approach Vol, veh/h		1233			889			82			382	
Approach Delay, s/veh		3.7			2.8			23.1			290.6	
Approach LOS		A			A			C			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.0	48.5		21.5	6.9	46.6		21.5				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	8.5	37.5		18.0	8.5	37.5		18.0				
Max Q Clear Time (g_c+I1), s	3.2	2.0		20.0	4.6	2.0		20.0				
Green Ext Time (p_c), s	0.0	2.6		0.0	0.0	2.0		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			46.4									
HCM 6th LOS			D									

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	235	1044	684	110	97	135
Future Volume (veh/h)	235	1044	684	110	97	135
Initial Q (Qb), veh	0	0	0	0	0	0
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	1885	1841	1841	1841	1870	1870
Adj Flow Rate, veh/h	247	1099	720	116	102	142
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	4	4	4	2	2
Cap, veh/h	284	2747	1742	280	204	181
Arrive On Green	0.32	1.00	0.58	0.58	0.11	0.11
Sat Flow, veh/h	1795	3589	3091	483	1781	1585
Grp Volume(v), veh/h	247	1099	420	416	102	142
Grp Sat Flow(s),veh/h/ln	1795	1749	1749	1733	1781	1585
Q Serve(g_s), s	9.7	0.0	9.9	9.9	4.0	6.5
Cycle Q Clear(g_c), s	9.7	0.0	9.9	9.9	4.0	6.5
Prop In Lane	1.00			0.28	1.00	1.00
Lane Grp Cap(c), veh/h	284	2747	1015	1006	204	181
V/C Ratio(X)	0.87	0.40	0.41	0.41	0.50	0.78
Avail Cap(c_a), veh/h	443	2747	1015	1006	439	391
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.9	0.0	8.7	8.7	31.2	32.3
Incr Delay (d2), s/veh	6.1	0.4	1.2	1.3	0.7	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.7	0.1	3.5	3.4	1.7	2.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.0	0.4	9.9	9.9	31.9	35.1
LnGrp LOS	C	A	A	A	C	D
Approach Vol, veh/h		1346	836		244	
Approach Delay, s/veh		6.0	9.9		33.8	
Approach LOS		A	A		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.4	47.6		12.1		62.9
Change Period (Y+Rc), s	3.5	4.0		3.5		4.0
Max Green Setting (Gmax), s	18.5	27.0		18.5		49.0
Max Q Clear Time (g_c+I1), s	11.7	11.9		8.5		2.0
Green Ext Time (p_c), s	0.2	3.8		0.1		8.0

Intersection Summary			
HCM 6th Ctrl Delay			10.1
HCM 6th LOS			B

2: Commerical Way/Paul Sweet Rd & Soquel Dr

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	176	947	675	4	1254	268	274	40	74	151
v/c Ratio	0.75	0.47	0.75	0.05	0.86	0.91	0.90	0.10	0.36	0.67
Control Delay	59.5	14.4	19.1	64.0	46.0	83.2	80.8	0.5	52.3	56.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	14.4	19.1	64.0	46.0	83.2	80.8	0.5	52.3	56.7
Queue Length 50th (ft)	107	235	360	3	536	214	218	0	54	97
Queue Length 95th (ft)	m#194	m395	m#606	m10	#657	#376	#380	0	97	160
Internal Link Dist (ft)		96			333		304			770
Turn Bay Length (ft)	150		20	60				30		
Base Capacity (vph)	236	2007	903	84	1450	303	313	399	295	315
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.47	0.75	0.05	0.86	0.88	0.88	0.10	0.25	0.48

Intersection Summary

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

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	53	1060	439	3	1151	269	274	52	157	258
v/c Ratio	0.55	0.57	0.53	0.05	0.70	0.84	0.85	0.14	0.55	0.84
Control Delay	98.4	22.9	18.9	63.7	32.7	79.1	80.2	4.4	64.4	79.8
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	98.4	22.9	18.9	63.7	32.7	79.1	80.2	4.4	64.4	79.8
Queue Length 50th (ft)	47	455	262	2	435	264	269	0	142	229
Queue Length 95th (ft)	m87	544	m416	m7	560	371	377	18	214	327
Internal Link Dist (ft)		96			333		304			770
Turn Bay Length (ft)	150		20	60				30		
Base Capacity (vph)	103	1876	821	64	1653	372	374	412	336	354
Starvation Cap Reductn	0	0	0	0	30	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.57	0.53	0.05	0.71	0.72	0.73	0.13	0.47	0.73

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

NEAR TERM PLUS PROJECT CONDITIONS
SYNCHRO OUTPUT SHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	6	678	371	331	620	6	241	2	985	1	0	2
Future Volume (veh/h)	6	678	371	331	620	6	241	2	985	1	0	2
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.96
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	1900	1826	1826	1841	1826	1826	1900	1900	1856	1900	1900	1900
Adj Flow Rate, veh/h	6	714	0	348	653	6	254	2	0	1	0	2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	4	5	5	0	0	3	0	0	0
Cap, veh/h	11	1737		374	2493	23	277	2		8	0	16
Arrive On Green	0.01	0.50	0.00	0.28	0.94	0.94	0.15	0.15	0.00	0.02	0.00	0.02
Sat Flow, veh/h	1810	3469	1547	1753	3521	32	1796	14	1572	543	0	1086
Grp Volume(v), veh/h	6	714	0	348	322	337	256	0	0	3	0	0
Grp Sat Flow(s),veh/h/ln	1810	1735	1547	1753	1735	1819	1810	0	1572	1629	0	0
Q Serve(g_s), s	0.4	15.5	0.0	23.2	1.7	1.7	16.7	0.0	0.0	0.2	0.0	0.0
Cycle Q Clear(g_c), s	0.4	15.5	0.0	23.2	1.7	1.7	16.7	0.0	0.0	0.2	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.99		1.00	0.33		0.67
Lane Grp Cap(c), veh/h	11	1737		374	1228	1288	279	0		24	0	0
V/C Ratio(X)	0.55	0.41		0.93	0.26	0.26	0.92	0.00		0.12	0.00	0.00
Avail Cap(c_a), veh/h	60	1737		555	1228	1288	279	0		299	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.5	18.8	0.0	42.1	1.1	1.1	50.0	0.0	0.0	58.3	0.0	0.0
Incr Delay (d2), s/veh	15.0	0.7	0.0	13.9	0.5	0.5	32.4	0.0	0.0	1.6	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	0.2	6.3	0.0	10.8	0.6	0.6	10.1	0.0	0.0	0.1	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.4	19.6	0.0	56.0	1.6	1.6	82.4	0.0	0.0	60.0	0.0	0.0
LnGrp LOS	E	B		E	A	A	F	A		E	A	A
Approach Vol, veh/h		720	A		1007			256	A		3	
Approach Delay, s/veh		20.0			20.4			82.4			60.0	
Approach LOS		C			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	28.6	64.1		5.3	3.7	89.0		22.0
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	38.0	27.5		22.0	4.0	61.5		18.5
Max Q Clear Time (g_c+I1), s	25.2	17.5		2.2	2.4	3.7		18.7
Green Ext Time (p_c), s	0.4	4.3		0.0	0.0	6.8		0.0

Intersection Summary		
HCM 6th Ctrl Delay		28.3
HCM 6th LOS		C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	162	881	621	4	1131	29	415	95	41	69	86	53
Future Volume (veh/h)	162	881	621	4	1131	29	415	95	41	69	86	53
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.99
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	1856	1841	1900	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	176	958	0	4	1229	32	525	0	0	75	93	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
Percent Heavy Veh, %	2	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	200	2007		9	1606	42	588	0		187	115	71
Arrive On Green	0.04	0.19	0.00	0.01	0.92	0.92	0.17	0.00	0.00	0.11	0.11	0.11
Sat Flow, veh/h	1781	3526	1560	1810	3478	91	3450	0	1572	1781	1091	680
Grp Volume(v), veh/h	176	958	0	4	618	643	525	0	0	75	0	151
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	1810	1749	1820	1725	0	1572	1781	0	1771
Q Serve(g_s), s	11.8	29.1	0.0	0.3	11.0	11.0	17.9	0.0	0.0	4.7	0.0	10.0
Cycle Q Clear(g_c), s	11.8	29.1	0.0	0.3	11.0	11.0	17.9	0.0	0.0	4.7	0.0	10.0
Prop In Lane	1.00		1.00	1.00		0.05	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	200	2007		9	808	841	588	0		187	0	186
V/C Ratio(X)	0.88	0.48		0.43	0.76	0.77	0.89	0.00		0.40	0.00	0.81
Avail Cap(c_a), veh/h	200	2007		75	808	841	647	0		297	0	295
HCM Platoon Ratio	0.33	0.33	0.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	57.0	32.8	0.0	59.2	2.9	2.9	48.7	0.0	0.0	50.2	0.0	52.5
Incr Delay (d2), s/veh	32.8	0.8	0.0	27.6	6.8	6.6	13.9	0.0	0.0	1.4	0.0	8.8
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	7.5	14.0	0.0	0.2	2.9	3.0	8.9	0.0	0.0	2.2	0.0	4.9
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	89.8	33.6	0.0	86.8	9.7	9.5	62.6	0.0	0.0	51.5	0.0	61.4
LnGrp LOS	F	C		F	A	A	E	A		D	A	E
Approach Vol, veh/h		1134	A		1265			525	A		226	
Approach Delay, s/veh		42.3			9.8			62.6			58.1	
Approach LOS		D			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	72.8		25.0	18.0	59.9		17.1
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.0	54.5		22.5	13.5	46.0		20.0
Max Q Clear Time (g_c+I1), s	12.3	31.1		19.9	13.8	13.0		12.0
Green Ext Time (p_c), s	0.0	7.4		0.6	0.0	10.4		0.6

Intersection Summary	
HCM 6th Ctrl Delay	33.8
HCM 6th LOS	C

Notes
User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	59	947	15	8	1096	5	0	0	9	0	0	46
Future Vol, veh/h	59	947	15	8	1096	5	0	0	9	0	0	46
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	120	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	92	92	88	88	92	92	92	88	92	88
Heavy Vehicles, %	0	4	2	2	4	0	2	2	2	0	2	0
Mvmt Flow	67	1076	16	9	1245	6	0	0	10	0	0	52

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1255	0	0	1092	0	0	-	-	546	-	-	630
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	4.14	-	-	-	-	6.94	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.22	-	-	-	-	3.32	-	-	3.3
Pot Cap-1 Maneuver	561	-	-	635	-	-	0	0	482	0	0	429
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	559	-	-	635	-	-	-	-	482	-	-	427
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.7			0.1			12.6			14.6		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	482	559	-	-	635	-	-	427
HCM Lane V/C Ratio	0.02	0.12	-	-	0.014	-	-	0.122
HCM Control Delay (s)	12.6	12.3	-	-	10.7	-	-	14.6
HCM Lane LOS	B	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.1	0.4	-	-	0	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	766	96	8	1050	54	13	10	9	27	2	35
Future Volume (veh/h)	75	766	96	8	1050	54	13	10	9	27	2	35
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.98		0.98	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1707	1826	1826	1781	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	78	798	100	8	1094	56	14	10	9	28	2	36
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	13	5	5	8	0	0	0	0	3
Cap, veh/h	99	2279	286	10	2266	116	194	77	69	214	12	130
Arrive On Green	0.07	0.97	0.97	0.01	1.00	1.00	0.08	0.08	0.08	0.08	0.08	0.08
Sat Flow, veh/h	1767	3141	394	1626	3352	172	1279	910	819	1157	136	1534
Grp Volume(v), veh/h	78	448	450	8	566	584	14	0	19	30	0	36
Grp Sat Flow(s),veh/h/ln	1767	1763	1771	1626	1735	1789	1279	0	1728	1293	0	1534
Q Serve(g_s), s	2.6	0.8	0.8	0.3	0.0	0.0	0.6	0.0	0.6	1.0	0.0	1.3
Cycle Q Clear(g_c), s	2.6	0.8	0.8	0.3	0.0	0.0	2.2	0.0	0.6	1.6	0.0	1.3
Prop In Lane	1.00		0.22	1.00		0.10	1.00		0.47	0.93		1.00
Lane Grp Cap(c), veh/h	99	1279	1286	10	1173	1209	194	0	146	226	0	130
V/C Ratio(X)	0.79	0.35	0.35	0.79	0.48	0.48	0.07	0.00	0.13	0.13	0.00	0.28
Avail Cap(c_a), veh/h	162	1279	1286	87	1173	1209	471	0	521	531	0	463
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.80	0.80	0.80	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.4	0.3	0.3	29.6	0.0	0.0	26.9	0.0	25.4	26.0	0.0	25.7
Incr Delay (d2), s/veh	5.2	0.8	0.8	31.7	1.1	1.1	0.1	0.0	0.1	0.1	0.0	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	1.2	0.4	0.4	0.2	0.4	0.4	0.2	0.0	0.2	0.4	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.6	1.1	1.1	61.3	1.1	1.1	27.0	0.0	25.6	26.1	0.0	26.2
LnGrp LOS	C	A	A	E	A	A	C	A	C	C	A	C
Approach Vol, veh/h		976			1158			33			66	
Approach Delay, s/veh		3.6			1.5			26.2			26.1	
Approach LOS		A			A			C			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	3.9	47.5		8.6	6.9	44.6		8.6				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	3.2	27.7		18.1	5.5	25.4		18.1				
Max Q Clear Time (g_c+I1), s	2.3	2.8		3.6	4.6	2.0		4.2				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	2.6		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			3.5
HCM 6th LOS			A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	118	633	17	43	1034	131	2	36	22	53	5	76
Future Volume (veh/h)	118	633	17	43	1034	131	2	36	22	53	5	76
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.98	0.99		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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	127	681	18	46	1112	141	2	39	24	57	5	82
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	160	2354	62	56	1909	241	67	201	173	233	16	179
Arrive On Green	0.18	1.00	1.00	0.04	0.82	0.82	0.11	0.11	0.11	0.11	0.11	0.11
Sat Flow, veh/h	1795	3506	93	1781	3109	393	32	1765	1523	1036	140	1572
Grp Volume(v), veh/h	127	342	357	46	624	629	41	0	24	62	0	82
Grp Sat Flow(s),veh/h/ln	1795	1763	1836	1781	1749	1754	1797	0	1523	1175	0	1572
Q Serve(g_s), s	4.1	0.0	0.0	1.5	7.5	7.5	0.0	0.0	0.9	2.3	0.0	2.9
Cycle Q Clear(g_c), s	4.1	0.0	0.0	1.5	7.5	7.5	1.2	0.0	0.9	3.5	0.0	2.9
Prop In Lane	1.00		0.05	1.00		0.22	0.05		1.00	0.92		1.00
Lane Grp Cap(c), veh/h	160	1183	1232	56	1074	1077	267	0	173	249	0	179
V/C Ratio(X)	0.79	0.29	0.29	0.82	0.58	0.58	0.15	0.00	0.14	0.25	0.00	0.46
Avail Cap(c_a), veh/h	206	1183	1232	169	1074	1077	600	0	459	507	0	474
HCM Platoon Ratio	2.00	2.00	2.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.96	0.96	0.96	0.73	0.73	0.73	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	0.0	0.0	28.6	2.8	2.8	24.1	0.0	23.9	25.5	0.0	24.9
Incr Delay (d2), s/veh	10.9	0.6	0.6	7.6	1.7	1.7	0.1	0.0	0.1	0.2	0.0	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	2.0	0.2	0.2	0.7	1.8	1.8	0.5	0.0	0.3	0.8	0.0	1.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	35.0	0.6	0.6	36.2	4.5	4.5	24.2	0.0	24.1	25.7	0.0	25.5
LnGrp LOS	D	A	A	D	A	A	C	A	C	C	A	C
Approach Vol, veh/h		826			1299			65			144	
Approach Delay, s/veh		5.9			5.6			24.2			25.6	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	44.3		10.3	8.8	40.8		10.3
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	5.7	25.2		18.1	6.9	24.0		18.1
Max Q Clear Time (g_c+I1), s	3.5	2.0		5.5	6.1	9.5		3.2
Green Ext Time (p_c), s	0.0	1.4		0.3	0.0	3.0		0.1

Intersection Summary		
HCM 6th Ctrl Delay		7.5
HCM 6th LOS		A

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	137	514	924	156	181	287
Future Volume (veh/h)	137	514	924	156	181	287
Initial Q (Qb), veh	0	0	0	0	0	0
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	1885	1841	1841	1841	1870	1870
Adj Flow Rate, veh/h	147	553	994	168	195	309
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	4	4	4	2	2
Cap, veh/h	183	2276	1459	246	399	355
Arrive On Green	0.20	1.00	0.49	0.49	0.22	0.22
Sat Flow, veh/h	1795	3589	3066	502	1781	1585
Grp Volume(v), veh/h	147	553	584	578	195	309
Grp Sat Flow(s),veh/h/ln	1795	1749	1749	1727	1781	1585
Q Serve(g_s), s	4.7	0.0	15.3	15.4	5.7	11.3
Cycle Q Clear(g_c), s	4.7	0.0	15.3	15.4	5.7	11.3
Prop In Lane	1.00			0.29	1.00	1.00
Lane Grp Cap(c), veh/h	183	2276	858	847	399	355
V/C Ratio(X)	0.80	0.24	0.68	0.68	0.49	0.87
Avail Cap(c_a), veh/h	230	2276	858	847	537	478
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.97	0.97	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	11.7	11.7	20.3	22.4
Incr Delay (d2), s/veh	11.5	0.2	4.3	4.4	0.3	10.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	0.1	5.8	5.7	2.2	4.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	34.8	0.2	16.0	16.1	20.6	32.5
LnGrp LOS	C	A	B	B	C	C
Approach Vol, veh/h		700	1162		504	
Approach Delay, s/veh		7.5	16.1		27.9	
Approach LOS		A	B		C	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.6	33.4		17.0		43.0
Change Period (Y+Rc), s	3.5	4.0		3.5		4.0
Max Green Setting (Gmax), s	7.7	23.2		18.1		34.4
Max Q Clear Time (g_c+I1), s	6.7	17.4		13.3		2.0
Green Ext Time (p_c), s	0.0	3.1		0.2		3.2

Intersection Summary	
HCM 6th Ctrl Delay	16.1
HCM 6th LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	8	775	463	410	620	2	207	1	721	5	5	9
Future Volume (veh/h)	8	775	463	410	620	2	207	1	721	5	5	9
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.95
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	1900	1826	1826	1841	1826	1826	1900	1900	1856	1900	1900	1900
Adj Flow Rate, veh/h	8	807	0	427	646	2	216	1	0	5	5	9
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	5	5	4	5	5	0	0	3	0	0	0
Cap, veh/h	14	1723		441	2627	8	240	1		11	11	20
Arrive On Green	0.01	0.50	0.00	0.50	1.00	1.00	0.13	0.13	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1810	3469	1547	1753	3547	11	1802	8	1572	445	445	800
Grp Volume(v), veh/h	8	807	0	427	316	332	217	0	0	19	0	0
Grp Sat Flow(s),veh/h/ln	1810	1735	1547	1753	1735	1823	1810	0	1572	1689	0	0
Q Serve(g_s), s	0.7	22.9	0.0	35.4	0.0	0.0	17.7	0.0	0.0	1.7	0.0	0.0
Cycle Q Clear(g_c), s	0.7	22.9	0.0	35.4	0.0	0.0	17.7	0.0	0.0	1.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	1.00		1.00	0.26		0.47
Lane Grp Cap(c), veh/h	14	1723		441	1284	1350	241	0		43	0	0
V/C Ratio(X)	0.58	0.47		0.97	0.25	0.25	0.90	0.00		0.44	0.00	0.00
Avail Cap(c_a), veh/h	48	1723		479	1284	1350	284	0		248	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	74.2	24.8	0.0	36.7	0.0	0.0	64.0	0.0	0.0	72.1	0.0	0.0
Incr Delay (d2), s/veh	13.8	0.9	0.0	31.4	0.5	0.4	24.6	0.0	0.0	5.3	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	0.4	9.6	0.0	15.9	0.2	0.2	9.9	0.0	0.0	0.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.0	25.7	0.0	68.1	0.5	0.4	88.6	0.0	0.0	77.3	0.0	0.0
LnGrp LOS	F	C		E	A	A	F	A		E	A	A
Approach Vol, veh/h		815	A		1075			217	A		19	
Approach Delay, s/veh		26.3			27.3			88.6			77.3	
Approach LOS		C			C			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	40.7	78.5		7.3	4.1	115.1		23.5				
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5				
Max Green Setting (Gmax), s	41.0	49.5		22.0	4.0	86.5		23.5				
Max Q Clear Time (g_c+I1), s	37.4	24.9		3.7	2.7	2.0		19.7				
Green Ext Time (p_c), s	0.3	8.1		0.0	0.0	6.7		0.3				

Intersection Summary			
HCM 6th Ctrl Delay			33.6
HCM 6th LOS			C

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	51	1029	421	3	1076	15	535	16	55	153	152	96
Future Volume (veh/h)	51	1029	421	3	1076	15	535	16	55	153	152	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.99
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	1856	1841	1900	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	53	1072	0	3	1121	16	569	0	0	159	158	100
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	68	1866		7	1747	25	636	0		289	176	111
Arrive On Green	0.05	0.70	0.00	0.01	0.99	0.99	0.18	0.00	0.00	0.16	0.16	0.16
Sat Flow, veh/h	1781	3526	1560	1810	3528	50	3450	0	1572	1781	1085	687
Grp Volume(v), veh/h	53	1072	0	3	556	581	569	0	0	159	0	258
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	1810	1749	1829	1725	0	1572	1781	0	1772
Q Serve(g_s), s	4.4	22.7	0.0	0.2	1.3	1.3	24.2	0.0	0.0	12.3	0.0	21.4
Cycle Q Clear(g_c), s	4.4	22.7	0.0	0.2	1.3	1.3	24.2	0.0	0.0	12.3	0.0	21.4
Prop In Lane	1.00		1.00	1.00		0.03	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	68	1866		7	866	906	636	0		289	0	288
V/C Ratio(X)	0.78	0.57		0.42	0.64	0.64	0.89	0.00		0.55	0.00	0.90
Avail Cap(c_a), veh/h	101	1866		62	866	906	793	0		338	0	337
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	70.6	13.8	0.0	74.2	0.4	0.4	59.7	0.0	0.0	57.8	0.0	61.6
Incr Delay (d2), s/veh	20.0	1.3	0.0	35.4	3.6	3.5	10.8	0.0	0.0	1.6	0.0	23.1
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	2.4	8.0	0.0	0.2	1.1	1.1	11.6	0.0	0.0	5.7	0.0	11.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	90.6	15.1	0.0	109.7	4.0	3.9	70.6	0.0	0.0	59.4	0.0	84.7
LnGrp LOS	F	B		F	A	A	E	A		E	A	F
Approach Vol, veh/h		1125	A		1140			569	A		417	
Approach Delay, s/veh		18.7			4.2			70.6			75.0	
Approach LOS		B			A			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	83.9		32.2	10.2	78.8		28.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.1	63.9		34.5	8.5	60.5		28.5				
Max Q Clear Time (g_c+I1), s	2.2	24.7		26.2	6.4	3.3		23.4				
Green Ext Time (p_c), s	0.0	10.0		1.5	0.0	9.6		0.9				
Intersection Summary												
HCM 6th Ctrl Delay			29.9									
HCM 6th LOS			C									

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	42	1171	37	26	1040	3	0	0	33	0	0	51
Future Vol, veh/h	42	1171	37	26	1040	3	0	0	33	0	0	51
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	120	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	2	2	4	0	2	2	2	0	2	0
Mvmt Flow	46	1273	40	28	1130	3	0	0	36	0	0	55

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1137	0	0	1313	0	0	-	-	657	-	-	571
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	4.14	-	-	-	-	6.94	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.22	-	-	-	-	3.32	-	-	3.3
Pot Cap-1 Maneuver	622	-	-	523	-	-	0	0	407	0	0	469
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	620	-	-	523	-	-	-	-	407	-	-	467
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.3	14.7	13.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	407	620	-	-	523	-	-	467
HCM Lane V/C Ratio	0.088	0.074	-	-	0.054	-	-	0.119
HCM Control Delay (s)	14.7	11.3	-	-	12.3	-	-	13.7
HCM Lane LOS	B	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0.3	0.2	-	-	0.2	-	-	0.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	1093	81	19	904	23	56	14	25	76	7	103
Future Volume (veh/h)	34	1093	81	19	904	23	56	14	25	76	7	103
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1707	1826	1826	1781	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	38	1214	90	21	1004	26	62	16	28	84	8	114
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	13	5	5	8	0	0	0	0	3
Cap, veh/h	46	2231	165	23	2278	59	202	103	180	277	22	259
Arrive On Green	0.05	1.00	1.00	0.03	1.00	1.00	0.17	0.17	0.17	0.17	0.17	0.17
Sat Flow, veh/h	1767	3320	246	1626	3452	89	1199	615	1076	1111	135	1553
Grp Volume(v), veh/h	38	644	660	21	505	525	62	0	44	92	0	114
Grp Sat Flow(s),veh/h/ln	1767	1763	1803	1626	1735	1806	1199	0	1690	1245	0	1553
Q Serve(g_s), s	1.6	0.0	0.0	1.0	0.0	0.0	3.7	0.0	1.7	4.2	0.0	5.0
Cycle Q Clear(g_c), s	1.6	0.0	0.0	1.0	0.0	0.0	9.6	0.0	1.7	5.9	0.0	5.0
Prop In Lane	1.00		0.14	1.00		0.05	1.00		0.64	0.91		1.00
Lane Grp Cap(c), veh/h	46	1185	1212	23	1145	1192	202	0	282	300	0	259
V/C Ratio(X)	0.82	0.54	0.55	0.91	0.44	0.44	0.31	0.00	0.16	0.31	0.00	0.44
Avail Cap(c_a), veh/h	153	1185	1212	98	1145	1192	298	0	417	412	0	383
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.91	0.91	0.91	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	35.4	0.0	0.0	36.4	0.0	0.0	32.8	0.0	26.7	29.0	0.0	28.1
Incr Delay (d2), s/veh	12.2	1.8	1.8	32.3	1.1	1.1	0.3	0.0	0.1	0.2	0.0	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	0.8	0.6	0.6	0.6	0.4	0.4	1.1	0.0	0.7	1.5	0.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.6	1.8	1.8	68.7	1.1	1.1	33.2	0.0	26.8	29.2	0.0	28.5
LnGrp LOS	D	A	A	E	A	A	C	A	C	C	A	C
Approach Vol, veh/h		1342			1051			106			206	
Approach Delay, s/veh		3.1			2.4			30.5			28.8	
Approach LOS		A			A			C			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	4.6	54.4		16.0	5.5	53.5		16.0
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	4.5	41.0		18.5	6.5	39.0		18.5
Max Q Clear Time (g_c+I1), s	3.0	2.0		7.9	3.6	2.0		11.6
Green Ext Time (p_c), s	0.0	3.1		0.2	0.0	2.2		0.1

Intersection Summary	
HCM 6th Ctrl Delay	5.9
HCM 6th LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	62	1113	10	29	780	49	15	14	48	181	6	179
Future Volume (veh/h)	62	1113	10	29	780	49	15	14	48	181	6	179
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.99
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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	65	1172	11	31	821	52	16	15	51	191	6	188
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	83	2119	20	37	1889	120	73	45	369	95	0	381
Arrive On Green	0.09	1.00	1.00	0.04	1.00	1.00	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	1795	3577	34	1781	3332	211	0	188	1536	0	0	1586
Grp Volume(v), veh/h	65	577	606	31	431	442	31	0	51	197	0	188
Grp Sat Flow(s),veh/h/ln	1795	1763	1848	1781	1749	1794	188	0	1536	0	0	1586
Q Serve(g_s), s	2.7	0.0	0.0	1.3	0.0	0.0	0.0	0.0	2.0	0.0	0.0	7.7
Cycle Q Clear(g_c), s	2.7	0.0	0.0	1.3	0.0	0.0	18.0	0.0	2.0	18.0	0.0	7.7
Prop In Lane	1.00		0.02	1.00		0.12	0.52		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	83	1044	1095	37	992	1017	118	0	369	95	0	381
V/C Ratio(X)	0.78	0.55	0.55	0.83	0.43	0.43	0.26	0.00	0.14	2.08	0.00	0.49
Avail Cap(c_a), veh/h	203	1044	1095	202	992	1017	118	0	369	95	0	381
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.86	0.89	0.89	0.89	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	33.7	0.0	0.0	35.8	0.0	0.0	23.8	0.0	22.4	37.5	0.0	24.6
Incr Delay (d2), s/veh	5.1	1.8	1.7	14.2	1.2	1.2	0.4	0.0	0.1	521.9	0.0	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	1.2	0.5	0.5	0.7	0.3	0.3	0.4	0.0	0.7	15.4	0.0	2.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	38.8	1.8	1.7	50.0	1.2	1.2	24.2	0.0	22.5	559.4	0.0	24.9
LnGrp LOS	D	A	A	D	A	A	C	A	C	F	A	C
Approach Vol, veh/h		1248			904			82			385	
Approach Delay, s/veh		3.7			2.9			23.1			298.4	
Approach LOS		A			A			C			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	48.4		21.5	7.0	46.5		21.5
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	8.5	37.5		18.0	8.5	37.5		18.0
Max Q Clear Time (g_c+I1), s	3.3	2.0		20.0	4.7	2.0		20.0
Green Ext Time (p_c), s	0.0	2.7		0.0	0.0	2.0		0.0

Intersection Summary			
HCM 6th Ctrl Delay			47.4
HCM 6th LOS			D

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	237	1054	694	110	97	137
Future Volume (veh/h)	237	1054	694	110	97	137
Initial Q (Qb), veh	0	0	0	0	0	0
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	1885	1841	1841	1841	1870	1870
Adj Flow Rate, veh/h	249	1109	731	116	102	144
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	4	4	4	2	2
Cap, veh/h	286	2743	1739	276	206	183
Arrive On Green	0.32	1.00	0.58	0.58	0.12	0.12
Sat Flow, veh/h	1795	3589	3098	477	1781	1585
Grp Volume(v), veh/h	249	1109	425	422	102	144
Grp Sat Flow(s),veh/h/ln	1795	1749	1749	1735	1781	1585
Q Serve(g_s), s	9.8	0.0	10.2	10.2	4.0	6.6
Cycle Q Clear(g_c), s	9.8	0.0	10.2	10.2	4.0	6.6
Prop In Lane	1.00			0.27	1.00	1.00
Lane Grp Cap(c), veh/h	286	2743	1011	1003	206	183
V/C Ratio(X)	0.87	0.40	0.42	0.42	0.49	0.79
Avail Cap(c_a), veh/h	443	2743	1011	1003	439	391
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	24.8	0.0	8.8	8.8	31.1	32.3
Incr Delay (d2), s/veh	6.3	0.4	1.3	1.3	0.7	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	0.1	3.5	3.5	1.7	2.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.2	0.4	10.1	10.1	31.8	35.0
LnGrp LOS	C	A	B	B	C	D
Approach Vol, veh/h		1358	847		246	
Approach Delay, s/veh		6.0	10.1		33.7	
Approach LOS		A	B		C	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	15.4	47.4		12.2		62.8
Change Period (Y+Rc), s	3.5	4.0		3.5		4.0
Max Green Setting (Gmax), s	18.5	27.0		18.5		49.0
Max Q Clear Time (g_c+I1), s	11.8	12.2		8.6		2.0
Green Ext Time (p_c), s	0.2	3.9		0.1		8.1
Intersection Summary						
HCM 6th Ctrl Delay			10.2			
HCM 6th LOS			B			

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	176	958	675	4	1261	275	279	45	75	151
v/c Ratio	0.75	0.48	0.75	0.05	0.87	0.93	0.91	0.11	0.36	0.67
Control Delay	59.5	14.1	18.8	64.5	46.8	85.5	81.6	0.6	52.4	56.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	59.5	14.1	18.8	64.5	46.8	85.5	81.6	0.6	52.4	56.7
Queue Length 50th (ft)	103	209	363	4	542	222	224	0	54	97
Queue Length 95th (ft)	m#189	m402	m#614	m8	#664	#390	#388	0	98	160
Internal Link Dist (ft)		96			333		304			770
Turn Bay Length (ft)	150		20	60				30		
Base Capacity (vph)	236	2000	900	84	1443	303	313	399	295	315
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.48	0.75	0.05	0.87	0.91	0.89	0.11	0.25	0.48

Intersection Summary

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

m Volume for 95th percentile queue is metered by upstream signal.

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	53	1072	439	3	1137	284	290	57	159	258
v/c Ratio	0.55	0.58	0.54	0.05	0.70	0.85	0.86	0.15	0.55	0.84
Control Delay	97.5	23.7	19.3	63.3	32.8	80.1	81.4	5.3	64.6	79.8
Queue Delay	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay	97.5	23.7	19.3	63.3	32.9	80.1	81.4	5.3	64.6	79.8
Queue Length 50th (ft)	46	469	295	3	431	277	284	0	144	229
Queue Length 95th (ft)	m87	558	m406	m7	555	#409	#420	23	218	327
Internal Link Dist (ft)		96			333		304			770
Turn Bay Length (ft)	150		20	60				30		
Base Capacity (vph)	103	1852	811	64	1629	372	374	412	336	354
Starvation Cap Reductn	0	0	0	0	26	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.58	0.54	0.05	0.71	0.76	0.78	0.14	0.47	0.73

Intersection Summary

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

m Volume for 95th percentile queue is metered by upstream signal.

CUMULATIVE CONDITIONS SYNCHRO OUTPUT SHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	998	549	486	912	9	357	3	1453	2	0	3
Future Volume (veh/h)	9	998	549	486	912	9	357	3	1453	2	0	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.96
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	1900	1826	1826	1841	1826	1826	1900	1900	1856	1900	1900	1900
Adj Flow Rate, veh/h	9	1051	0	512	960	9	376	3	0	2	0	3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	4	5	5	0	0	3	0	0	0
Cap, veh/h	16	1402		540	2477	23	277	2		11	0	17
Arrive On Green	0.01	0.40	0.00	0.10	0.23	0.23	0.15	0.15	0.00	0.02	0.00	0.02
Sat Flow, veh/h	1810	3469	1547	1753	3520	33	1796	14	1572	658	0	987
Grp Volume(v), veh/h	9	1051	0	512	473	496	379	0	0	5	0	0
Grp Sat Flow(s),veh/h/ln	1810	1735	1547	1753	1735	1819	1810	0	1572	1646	0	0
Q Serve(g_s), s	0.6	31.1	0.0	34.8	27.6	27.6	18.5	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	0.6	31.1	0.0	34.8	27.6	27.6	18.5	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.99		1.00	0.40		0.60
Lane Grp Cap(c), veh/h	16	1402		540	1221	1280	279	0		28	0	0
V/C Ratio(X)	0.58	0.75		0.95	0.39	0.39	1.36	0.00		0.18	0.00	0.00
Avail Cap(c_a), veh/h	60	1402		555	1221	1280	279	0		302	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.3	30.6	0.0	52.9	24.2	24.2	50.8	0.0	0.0	58.2	0.0	0.0
Incr Delay (d2), s/veh	11.8	3.7	0.0	25.0	0.9	0.9	182.7	0.0	0.0	2.3	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	0.3	13.4	0.0	20.2	13.1	13.7	22.6	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.1	34.3	0.0	78.0	25.2	25.1	233.5	0.0	0.0	60.5	0.0	0.0
LnGrp LOS	E	C		E	C	C	F	A		E	A	A
Approach Vol, veh/h		1060	A		1481			379	A		5	
Approach Delay, s/veh		34.6			43.4			233.5			60.5	
Approach LOS		C			D			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	40.0	52.5		5.5	4.0	88.4		22.0
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5
Max Green Setting (Gmax), s	38.0	27.5		22.0	4.0	61.5		18.5
Max Q Clear Time (g_c+I1), s	36.8	33.1		2.4	2.6	29.6		20.5
Green Ext Time (p_c), s	0.1	0.0		0.0	0.0	10.3		0.0

Intersection Summary	
HCM 6th Ctrl Delay	64.9
HCM 6th LOS	E

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	1291	921	6	1708	83	567	91	248	101	127	79
Future Volume (veh/h)	241	1291	921	6	1708	83	567	91	248	101	127	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.99
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	1856	1841	1900	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	262	1403	0	7	1857	90	687	0	0	110	138	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	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	200	1796		16	1374	66	647	0		257	158	98
Arrive On Green	0.11	0.51	0.00	0.01	0.41	0.41	0.19	0.00	0.00	0.14	0.14	0.14
Sat Flow, veh/h	1781	3526	1560	1810	3389	163	3450	0	1572	1781	1092	681
Grp Volume(v), veh/h	262	1403	0	7	949	998	687	0	0	110	0	224
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	1810	1749	1803	1725	0	1572	1781	0	1772
Q Serve(g_s), s	13.5	38.9	0.0	0.5	48.7	48.7	22.5	0.0	0.0	6.8	0.0	14.8
Cycle Q Clear(g_c), s	13.5	38.9	0.0	0.5	48.7	48.7	22.5	0.0	0.0	6.8	0.0	14.8
Prop In Lane	1.00		1.00	1.00		0.09	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	200	1796		16	709	731	647	0		257	0	256
V/C Ratio(X)	1.31	0.78		0.45	1.34	1.37	1.06	0.00		0.43	0.00	0.87
Avail Cap(c_a), veh/h	200	1796		75	709	731	647	0		297	0	295
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.3	24.0	0.0	59.2	35.7	35.7	48.7	0.0	0.0	46.8	0.0	50.3
Incr Delay (d2), s/veh	169.5	3.5	0.0	18.6	161.5	173.3	53.0	0.0	0.0	1.1	0.0	21.9
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	15.5	16.5	0.0	0.3	51.7	55.7	14.5	0.0	0.0	3.1	0.0	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	222.8	27.5	0.0	77.8	197.2	209.0	101.8	0.0	0.0	47.9	0.0	72.1
LnGrp LOS	F	C		E	F	F	F	A		D	A	E
Approach Vol, veh/h		1665	A		1954			687	A		334	
Approach Delay, s/veh		58.2			202.8			101.8			64.2	
Approach LOS		E			F			F			E	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.5	65.6		27.0	18.0	53.2		21.8
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.0	54.5		22.5	13.5	46.0		20.0
Max Q Clear Time (g_c+I1), s	15.5	40.9		24.5	15.5	50.7		16.8
Green Ext Time (p_c), s	0.0	8.4		0.0	0.0	0.0		0.5

Intersection Summary	
HCM 6th Ctrl Delay	126.0
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	87	1597	1704	8	6	68
Future Vol, veh/h	87	1597	1704	8	6	68
Conflicting Peds, #/hr	4	0	0	4	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	85	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	4	4	0	0	0
Mvmt Flow	99	1815	1936	9	7	77

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1949	0	-	0	3051	977
Stage 1	-	-	-	-	1945	-
Stage 2	-	-	-	-	1106	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	304	-	-	-	10	254
Stage 1	-	-	-	-	100	-
Stage 2	-	-	-	-	283	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	303	-	-	-	7	253
Mov Cap-2 Maneuver	-	-	-	-	47	-
Stage 1	-	-	-	-	67	-
Stage 2	-	-	-	-	282	-

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	31
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	303	-	-	-	47	253
HCM Lane V/C Ratio	0.326	-	-	-	0.145	0.305
HCM Control Delay (s)	22.5	-	-	-	94.2	25.4
HCM Lane LOS	C	-	-	-	F	D
HCM 95th %tile Q(veh)	1.4	-	-	-	0.5	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	1122	337	12	1544	81	100	16	14	34	3	51
Future Volume (veh/h)	112	1122	337	12	1544	81	100	16	14	34	3	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1707	1826	1826	1781	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	117	1169	351	12	1608	84	104	17	15	35	3	53
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	13	5	5	8	0	0	0	0	3
Cap, veh/h	136	1975	582	96	2432	126	160	122	108	191	15	204
Arrive On Green	0.08	0.74	0.74	0.08	0.97	0.97	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1767	2665	785	1626	3349	174	1270	923	815	1139	112	1547
Grp Volume(v), veh/h	117	766	754	12	828	864	104	0	32	38	0	53
Grp Sat Flow(s),veh/h/ln	1767	1763	1688	1626	1735	1788	1270	0	1738	1252	0	1547
Q Serve(g_s), s	11.1	33.8	35.6	1.2	7.6	7.9	13.8	0.0	2.8	3.9	0.0	5.2
Cycle Q Clear(g_c), s	11.1	33.8	35.6	1.2	7.6	7.9	20.4	0.0	2.8	6.7	0.0	5.2
Prop In Lane	1.00		0.47	1.00		0.10	1.00		0.47	0.92		1.00
Lane Grp Cap(c), veh/h	136	1307	1251	96	1260	1299	160	0	230	206	0	204
V/C Ratio(X)	0.86	0.59	0.60	0.12	0.66	0.67	0.65	0.00	0.14	0.18	0.00	0.26
Avail Cap(c_a), veh/h	223	1307	1251	96	1260	1299	190	0	271	240	0	241
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.55	0.55	0.55	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	77.5	10.1	10.3	74.2	0.9	0.9	76.2	0.0	65.2	67.9	0.0	66.3
Incr Delay (d2), s/veh	8.7	1.9	2.2	0.1	1.5	1.5	3.3	0.0	0.1	0.2	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	5.4	13.0	13.2	0.5	1.6	1.7	4.7	0.0	1.2	1.5	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.3	12.0	12.5	74.4	2.4	2.4	79.5	0.0	65.3	68.1	0.0	66.5
LnGrp LOS	F	B	B	E	A	A	E	A	E	E	A	E
Approach Vol, veh/h		1637			1704			136			91	
Approach Delay, s/veh		17.5			2.9			76.2			67.2	
Approach LOS		B			A			E			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	14.0	130.0		26.0	16.6	127.4		26.0				
Change Period (Y+Rc), s	4.0	* 4		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	6.5	* 1.3E2		26.5	21.5	111.0		26.5				
Max Q Clear Time (g_c+I1), s	3.2	37.6		8.7	13.1	9.9		22.4				
Green Ext Time (p_c), s	0.0	4.2		0.1	0.0	4.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			14.1									
HCM 6th LOS			B									

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	174	926	25	64	1521	194	3	53	33	79	6	113
Future Volume (veh/h)	174	926	25	64	1521	194	3	53	33	79	6	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.99
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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	187	996	27	69	1635	209	3	57	35	85	6	122
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	301	2530	69	144	1978	248	22	172	202	41	1	209
Arrive On Green	0.34	1.00	1.00	0.16	1.00	1.00	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1795	3503	95	1781	3114	390	0	1296	1526	0	5	1576
Grp Volume(v), veh/h	187	501	522	69	903	941	60	0	35	91	0	122
Grp Sat Flow(s),veh/h/ln	1795	1763	1835	1781	1749	1755	1296	0	1526	5	0	1576
Q Serve(g_s), s	14.9	0.0	0.0	6.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	12.4
Cycle Q Clear(g_c), s	14.9	0.0	0.0	6.0	0.0	0.0	22.5	0.0	3.5	22.5	0.0	12.4
Prop In Lane	1.00		0.05	1.00		0.22	0.05		1.00	0.93		1.00
Lane Grp Cap(c), veh/h	301	1273	1326	144	1111	1115	194	0	202	42	0	209
V/C Ratio(X)	0.62	0.39	0.39	0.48	0.81	0.84	0.31	0.00	0.17	2.18	0.00	0.58
Avail Cap(c_a), veh/h	301	1273	1326	144	1111	1115	194	0	202	42	0	209
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	0.82	0.38	0.38	0.38	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.0	0.0	0.0	68.1	0.0	0.0	66.3	0.0	65.5	84.6	0.0	69.4
Incr Delay (d2), s/veh	2.4	0.8	0.7	0.4	2.6	3.2	0.3	0.0	0.1	603.2	0.0	2.8
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	6.1	0.3	0.3	2.7	0.8	1.0	2.4	0.0	1.4	8.8	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.4	0.8	0.7	68.4	2.6	3.2	66.6	0.0	65.6	687.8	0.0	72.2
LnGrp LOS	D	A	A	E	A	A	E	A	E	F	A	E
Approach Vol, veh/h		1210			1913			95			213	
Approach Delay, s/veh		9.0			5.3			66.3			335.2	
Approach LOS		A			A			E			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.2	126.8		26.0	32.0	112.0		26.0
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	13.7	122.8		22.5	28.5	108.0		22.5
Max Q Clear Time (g_c+I1), s	8.0	2.0		24.5	16.9	2.0		24.5
Green Ext Time (p_c), s	0.0	2.2		0.0	0.2	6.6		0.0

Intersection Summary	
HCM 6th Ctrl Delay	28.8
HCM 6th LOS	C

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	202	751	1359	231	268	424
Future Volume (veh/h)	202	751	1359	231	268	424
Initial Q (Qb), veh	0	0	0	0	0	0
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	1885	1841	1841	1841	1870	1870
Adj Flow Rate, veh/h	217	808	1461	248	288	456
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	4	4	4	2	2
Cap, veh/h	275	2510	1614	268	424	378
Arrive On Green	0.20	0.95	0.54	0.54	0.24	0.24
Sat Flow, veh/h	1795	3589	3074	496	1781	1585
Grp Volume(v), veh/h	217	808	844	865	288	456
Grp Sat Flow(s),veh/h/ln	1795	1749	1749	1730	1781	1585
Q Serve(g_s), s	19.5	2.6	72.8	78.0	25.0	40.5
Cycle Q Clear(g_c), s	19.5	2.6	72.8	78.0	25.0	40.5
Prop In Lane	1.00			0.29	1.00	1.00
Lane Grp Cap(c), veh/h	275	2510	946	936	424	378
V/C Ratio(X)	0.79	0.32	0.89	0.92	0.68	1.21
Avail Cap(c_a), veh/h	280	2510	946	936	424	378
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.94	0.94	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.1	1.2	34.6	35.8	58.8	64.8
Incr Delay (d2), s/veh	12.1	0.3	12.5	15.9	3.6	115.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.8	33.6	36.2	11.8	28.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	77.2	1.5	47.1	51.7	62.4	180.5
LnGrp LOS	E	A	D	D	E	F
Approach Vol, veh/h		1025	1709		744	
Approach Delay, s/veh		17.5	49.4		134.8	
Approach LOS		B	D		F	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	30.0	96.0		44.0		126.0
Change Period (Y+Rc), s	4.0	* 4		3.5		4.0
Max Green Setting (Gmax), s	26.5	* 92		40.5		122.0
Max Q Clear Time (g_c+I1), s	21.5	80.0		42.5		4.6
Green Ext Time (p_c), s	0.1	7.8		0.0		5.3

Intersection Summary	
HCM 6th Ctrl Delay	58.3
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

7: Hwy 1 Off Ramp & Commerical Way Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.1	0.2	691.0	703.3	0.1	381.5
Total Del/Veh (s)	3.2	5.4	10.3	4.8	96.3	18.7	913.8	37.7

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	262	1403	1001	7	1947	357	358	270	110	224
v/c Ratio	1.11	0.74	1.17	0.09	1.47	1.18	1.15	0.68	0.43	0.80
Control Delay	108.3	19.2	99.3	57.7	246.0	152.0	142.2	31.5	51.2	65.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.3	19.2	99.3	57.7	246.0	152.0	142.2	31.5	51.2	65.7
Queue Length 50th (ft)	~245	498	~880	5	~1097	~348	~343	96	77	151
Queue Length 95th (ft)	m#174	m420	m#633	22	#1238	#547	#542	194	134	#251
Internal Link Dist (ft)		96			333		304			770
Turn Bay Length (ft)	150		20	60				30		
Base Capacity (vph)	235	1886	857	80	1324	303	311	399	295	315
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.74	1.17	0.09	1.47	1.18	1.15	0.68	0.37	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1139	686	602	912	3	307	2	1061	8	8	14
Future Volume (veh/h)	12	1139	686	602	912	3	307	2	1061	8	8	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.96
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	1900	1826	1826	1841	1826	1826	1900	1900	1856	1900	1900	1900
Adj Flow Rate, veh/h	12	1186	0	627	950	3	320	2	0	8	8	15
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	5	5	4	5	5	0	0	3	0	0	0
Cap, veh/h	19	1539		479	2505	8	282	2		14	14	27
Arrive On Green	0.01	0.44	0.00	0.55	1.00	1.00	0.16	0.16	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1810	3469	1547	1753	3547	11	1799	11	1572	437	437	820
Grp Volume(v), veh/h	12	1186	0	627	465	488	322	0	0	31	0	0
Grp Sat Flow(s),veh/h/ln	1810	1735	1547	1753	1735	1823	1810	0	1572	1694	0	0
Q Serve(g_s), s	1.0	43.4	0.0	41.0	0.0	0.0	23.5	0.0	0.0	2.7	0.0	0.0
Cycle Q Clear(g_c), s	1.0	43.4	0.0	41.0	0.0	0.0	23.5	0.0	0.0	2.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.99		1.00	0.26		0.48
Lane Grp Cap(c), veh/h	19	1539		479	1225	1288	284	0		56	0	0
V/C Ratio(X)	0.63	0.77		1.31	0.38	0.38	1.14	0.00		0.55	0.00	0.00
Avail Cap(c_a), veh/h	48	1539		479	1225	1288	284	0		248	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	73.9	35.3	0.0	34.0	0.0	0.0	63.3	0.0	0.0	71.4	0.0	0.0
Incr Delay (d2), s/veh	12.2	3.8	0.0	153.3	0.9	0.9	95.1	0.0	0.0	6.2	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	0.5	18.9	0.0	33.8	0.3	0.3	18.4	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.1	39.1	0.0	187.3	0.9	0.9	158.3	0.0	0.0	77.6	0.0	0.0
LnGrp LOS	F	D		F	A	A	F	A		E	A	A
Approach Vol, veh/h		1198	A		1580			322	A		31	
Approach Delay, s/veh		39.6			74.8			158.3			77.6	
Approach LOS		D			E			F			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	44.0	70.5		8.5	4.6	110.0		27.0				
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5				
Max Green Setting (Gmax), s	41.0	49.5		22.0	4.0	86.5		23.5				
Max Q Clear Time (g_c+I1), s	43.0	45.4		4.7	3.0	2.0		25.5				
Green Ext Time (p_c), s	0.0	3.1		0.1	0.0	11.8		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			70.0									
HCM 6th LOS			E									

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	1508	624	5	1884	20	483	22	223	223	225	143
Future Volume (veh/h)	76	1508	624	5	1884	20	483	22	223	223	225	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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	1856	1841	1900	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	79	1571	0	5	1962	21	519	0	0	232	234	149
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	98	1810		11	1646	18	588	0		338	206	131
Arrive On Green	0.07	0.68	0.00	0.01	0.93	0.93	0.17	0.00	0.00	0.19	0.19	0.19
Sat Flow, veh/h	1781	3526	1560	1810	3543	38	3450	0	1572	1781	1083	689
Grp Volume(v), veh/h	79	1571	0	5	966	1017	519	0	0	232	0	383
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	1810	1749	1832	1725	0	1572	1781	0	1772
Q Serve(g_s), s	6.6	52.1	0.0	0.4	69.7	69.7	22.0	0.0	0.0	18.2	0.0	28.5
Cycle Q Clear(g_c), s	6.6	52.1	0.0	0.4	69.7	69.7	22.0	0.0	0.0	18.2	0.0	28.5
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	98	1810		11	813	851	588	0		338	0	337
V/C Ratio(X)	0.81	0.87		0.44	1.19	1.19	0.88	0.00		0.69	0.00	1.14
Avail Cap(c_a), veh/h	101	1810		62	813	851	793	0		338	0	337
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	68.7	19.8	0.0	73.8	5.3	5.3	60.8	0.0	0.0	56.6	0.0	60.8
Incr Delay (d2), s/veh	36.0	5.9	0.0	24.6	97.2	99.0	9.0	0.0	0.0	5.6	0.0	91.7
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	3.9	19.6	0.0	0.3	24.1	25.7	10.5	0.0	0.0	8.8	0.0	21.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.8	25.8	0.0	98.4	102.5	104.3	69.8	0.0	0.0	62.2	0.0	152.5
LnGrp LOS	F	C		F	F	F	E	A		E	A	F
Approach Vol, veh/h		1650	A		1988			519	A		615	
Approach Delay, s/veh		29.6			103.4			69.8			118.4	
Approach LOS		C			F			E			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	81.5		30.1	12.7	74.2		33.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.1	63.9		34.5	8.5	60.5		28.5
Max Q Clear Time (g_c+I1), s	2.4	54.1		24.0	8.6	71.7		30.5
Green Ext Time (p_c), s	0.0	7.2		1.5	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	76.1
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	62	1912	1828	5	16	76
Future Vol, veh/h	62	1912	1828	5	16	76
Conflicting Peds, #/hr	4	0	0	4	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	85	-	-	-	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	4	0	0	0
Mvmt Flow	67	2078	1987	5	17	83

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1996	0	-	0	3167	1000
Stage 1	-	-	-	-	1994	-
Stage 2	-	-	-	-	1173	-
Critical Hdwy	4.1	-	-	-	6.8	6.9
Critical Hdwy Stg 1	-	-	-	-	5.8	-
Critical Hdwy Stg 2	-	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	292	-	-	-	~ 8	245
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	261	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	291	-	-	-	~ 6	244
Mov Cap-2 Maneuver	-	-	-	-	50	-
Stage 1	-	-	-	-	72	-
Stage 2	-	-	-	-	260	-

Approach	EB	WB	SB
HCM Control Delay, s	0.7	0	41.8
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	291	-	-	-	50	244
HCM Lane V/C Ratio	0.232	-	-	-	0.348	0.339
HCM Control Delay (s)	21.1	-	-	-	111.4	27.1
HCM Lane LOS	C	-	-	-	F	D
HCM 95th %tile Q(veh)	0.9	-	-	-	1.2	1.4

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1614	268	28	1322	34	349	20	37	98	11	152
Future Volume (veh/h)	50	1614	268	28	1322	34	349	20	37	98	11	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1707	1826	1826	1781	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	56	1793	298	31	1469	38	388	22	41	109	12	169
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	13	5	5	8	0	0	0	0	3
Cap, veh/h	70	1770	285	35	1957	51	264	146	271	364	36	385
Arrive On Green	0.08	1.00	1.00	0.02	0.57	0.57	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1767	3027	486	1626	3452	89	1140	590	1100	1104	144	1559
Grp Volume(v), veh/h	56	1019	1072	31	737	770	388	0	63	121	0	169
Grp Sat Flow(s),veh/h/ln	1767	1763	1750	1626	1735	1806	1140	0	1691	1249	0	1559
Q Serve(g_s), s	2.3	0.0	43.6	1.4	24.0	24.1	11.0	0.0	2.2	5.3	0.0	6.9
Cycle Q Clear(g_c), s	2.3	0.0	43.6	1.4	24.0	24.1	18.5	0.0	2.2	7.5	0.0	6.9
Prop In Lane	1.00		0.28	1.00		0.05	1.00		0.65	0.90		1.00
Lane Grp Cap(c), veh/h	70	1031	1024	35	983	1024	264	0	417	399	0	385
V/C Ratio(X)	0.80	0.99	1.05	0.88	0.75	0.75	1.47	0.00	0.15	0.30	0.00	0.44
Avail Cap(c_a), veh/h	200	1031	1024	98	983	1024	264	0	417	399	0	385
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.70	0.70	0.70	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.2	0.0	0.0	36.6	12.2	12.3	34.0	0.0	22.1	24.8	0.0	23.9
Incr Delay (d2), s/veh	7.4	25.3	41.4	15.8	3.7	3.6	231.1	0.0	0.1	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.2	11.8	0.7	8.6	9.0	21.7	0.0	0.8	1.8	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	25.3	41.4	52.4	15.9	15.9	265.1	0.0	22.2	25.0	0.0	24.2
LnGrp LOS	D	C	F	D	B	B	F	A	C	C	A	C
Approach Vol, veh/h		2147			1538			451			290	
Approach Delay, s/veh		33.7			16.6			231.1			24.5	
Approach LOS		C			B			F			C	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.1	47.9		22.0	6.5	46.5		22.0
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	4.5	41.0		18.5	8.5	37.0		18.5
Max Q Clear Time (g_c+I1), s	3.4	45.6		9.5	4.3	26.1		20.5
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	3.1		0.0

Intersection Summary			
HCM 6th Ctrl Delay			47.3
HCM 6th LOS			D

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	88	1631	16	42	1138	73	22	20	71	268	6	264
Future Volume (veh/h)	88	1631	16	42	1138	73	22	20	71	268	6	264
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.99
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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	93	1717	17	44	1198	77	23	21	75	282	6	278
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	154	1960	19	54	1616	104	78	47	406	102	0	419
Arrive On Green	0.09	0.55	0.55	0.06	0.97	0.97	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1795	3575	35	1781	3328	214	0	179	1537	0	0	1587
Grp Volume(v), veh/h	93	845	889	44	629	646	44	0	75	288	0	278
Grp Sat Flow(s),veh/h/ln	1795	1763	1848	1781	1749	1793	179	0	1537	0	0	1587
Q Serve(g_s), s	3.5	29.2	29.3	1.7	2.6	2.6	0.0	0.0	2.6	0.0	0.0	10.9
Cycle Q Clear(g_c), s	3.5	29.2	29.3	1.7	2.6	2.6	18.5	0.0	2.6	18.5	0.0	10.9
Prop In Lane	1.00		0.02	1.00		0.12	0.52		1.00	0.98		1.00
Lane Grp Cap(c), veh/h	154	966	1013	54	849	871	126	0	406	102	0	419
V/C Ratio(X)	0.60	0.88	0.88	0.81	0.74	0.74	0.35	0.00	0.18	2.83	0.00	0.66
Avail Cap(c_a), veh/h	167	966	1013	84	849	871	126	0	406	102	0	419
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.10	0.10	0.10	0.62	0.62	0.62	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.9	13.7	13.8	32.7	0.6	0.6	21.4	0.0	19.9	35.0	0.0	23.0
Incr Delay (d2), s/veh	0.3	1.3	1.2	9.8	3.6	3.6	0.6	0.0	0.1	849.8	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	9.6	10.1	0.8	1.1	1.1	0.5	0.0	0.9	25.7	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.2	15.0	15.0	42.5	4.2	4.1	22.0	0.0	20.0	884.8	0.0	26.1
LnGrp LOS	C	B	B	D	A	A	C	A	B	F	A	C
Approach Vol, veh/h		1827			1319			119			566	
Approach Delay, s/veh		15.8			5.4			20.7			463.0	
Approach LOS		B			A			C			F	

Timer - Assigned Phs	1	2	4	5	6	8
Phs Duration (G+Y+Rc), s	5.6	42.4	22.0	10.0	38.0	22.0
Change Period (Y+Rc), s	3.5	4.0	3.5	4.0	* 4	3.5
Max Green Setting (Gmax), s	3.3	37.2	18.5	6.5	* 34	18.5
Max Q Clear Time (g_c+I1), s	3.7	31.3	20.5	5.5	4.6	20.5
Green Ext Time (p_c), s	0.0	2.7	0.0	0.0	3.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	78.5
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	348	1547	1013	163	144	200
Future Volume (veh/h)	348	1547	1013	163	144	200
Initial Q (Qb), veh	0	0	0	0	0	0
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	1885	1841	1841	1841	1870	1870
Adj Flow Rate, veh/h	366	1628	1066	172	152	211
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	4	4	4	2	2
Cap, veh/h	565	2565	1082	174	284	253
Arrive On Green	0.63	1.00	0.36	0.36	0.16	0.16
Sat Flow, veh/h	1795	3589	3087	482	1781	1585
Grp Volume(v), veh/h	366	1628	621	617	152	211
Grp Sat Flow(s),veh/h/ln	1795	1749	1749	1728	1781	1585
Q Serve(g_s), s	8.9	0.0	24.6	24.8	5.5	9.0
Cycle Q Clear(g_c), s	8.9	0.0	24.6	24.8	5.5	9.0
Prop In Lane	1.00			0.28	1.00	1.00
Lane Grp Cap(c), veh/h	565	2565	632	625	284	253
V/C Ratio(X)	0.65	0.63	0.98	0.99	0.53	0.83
Avail Cap(c_a), veh/h	565	2565	632	625	458	408
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.47	0.47	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.5	0.0	22.1	22.2	27.0	28.5
Incr Delay (d2), s/veh	1.0	0.6	31.9	33.1	0.6	3.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.4	0.2	14.6	14.6	2.3	3.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.5	0.6	54.0	55.3	27.6	32.4
LnGrp LOS	B	A	D	E	C	C
Approach Vol, veh/h		1994	1238		363	
Approach Delay, s/veh		2.6	54.6		30.4	
Approach LOS		A	D		C	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	26.0	29.3		14.7		55.3
Change Period (Y+Rc), s	4.0	* 4		3.5		4.0
Max Green Setting (Gmax), s	15.7	* 25		18.0		44.5
Max Q Clear Time (g_c+I1), s	10.9	26.8		11.0		2.0
Green Ext Time (p_c), s	0.3	0.0		0.1		15.0
Intersection Summary						
HCM 6th Ctrl Delay			23.3			
HCM 6th LOS			C			

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

7: Hwy 1 Off Ramp & Commerical Way Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	0.2	0.1	19.3	18.0	0.1	8.2
Total Del/Veh (s)	4.3	4.8	26.9	28.3	57.9	7.2	413.7	26.5

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	79	1571	650	5	1984	262	264	232	232	383
v/c Ratio	0.79	0.94	0.88	0.08	1.42	0.81	0.81	0.63	0.59	0.94
Control Delay	86.6	28.3	23.0	69.8	223.7	76.7	76.5	43.8	61.1	85.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.6	28.3	23.0	69.8	223.8	76.7	76.5	43.8	61.1	85.7
Queue Length 50th (ft)	79	716	386	4	~1388	256	257	139	209	363
Queue Length 95th (ft)	m76	m811	m539	m6	m#1376	361	364	230	313	#616
Internal Link Dist (ft)		96			333		304			770
Turn Bay Length (ft)	150		20	60				30		
Base Capacity (vph)	100	1672	740	61	1398	372	375	412	390	408
Starvation Cap Reductn	0	0	0	0	7	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.94	0.88	0.08	1.43	0.70	0.70	0.56	0.59	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

CUMULATIVE PLUS PROJECT CONDITIONS
SYNCHRO OUTPUT SHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	1003	549	489	916	9	357	3	1458	2	0	3
Future Volume (veh/h)	9	1003	549	489	916	9	357	3	1458	2	0	3
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.96
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	1900	1826	1826	1841	1826	1826	1900	1900	1856	1900	1900	1900
Adj Flow Rate, veh/h	9	1056	0	515	964	9	376	3	0	2	0	3
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	5	5	4	5	5	0	0	3	0	0	0
Cap, veh/h	16	1397		543	2477	23	277	2		11	0	17
Arrive On Green	0.01	0.40	0.00	0.10	0.23	0.23	0.15	0.15	0.00	0.02	0.00	0.02
Sat Flow, veh/h	1810	3469	1547	1753	3520	33	1796	14	1572	658	0	987
Grp Volume(v), veh/h	9	1056	0	515	475	498	379	0	0	5	0	0
Grp Sat Flow(s),veh/h/ln	1810	1735	1547	1753	1735	1819	1810	0	1572	1646	0	0
Q Serve(g_s), s	0.6	31.4	0.0	35.0	27.7	27.7	18.5	0.0	0.0	0.4	0.0	0.0
Cycle Q Clear(g_c), s	0.6	31.4	0.0	35.0	27.7	27.7	18.5	0.0	0.0	0.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.02	0.99		1.00	0.40		0.60
Lane Grp Cap(c), veh/h	16	1397		543	1221	1280	279	0		28	0	0
V/C Ratio(X)	0.58	0.76		0.95	0.39	0.39	1.36	0.00		0.18	0.00	0.00
Avail Cap(c_a), veh/h	60	1397		555	1221	1280	279	0		302	0	0
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	59.3	30.8	0.0	52.9	24.3	24.3	50.8	0.0	0.0	58.2	0.0	0.0
Incr Delay (d2), s/veh	11.8	3.9	0.0	25.3	0.9	0.9	182.7	0.0	0.0	2.3	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	0.3	13.5	0.0	20.3	13.2	13.8	22.6	0.0	0.0	0.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	71.1	34.6	0.0	78.2	25.2	25.2	233.5	0.0	0.0	60.5	0.0	0.0
LnGrp LOS	E	C		E	C	C	F	A		E	A	A
Approach Vol, veh/h		1065	A		1488			379	A		5	
Approach Delay, s/veh		35.0			43.6			233.5			60.5	
Approach LOS		C			D			F			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	40.2	52.3		5.5	4.0	88.4		22.0				
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5				
Max Green Setting (Gmax), s	38.0	27.5		22.0	4.0	61.5		18.5				
Max Q Clear Time (g_c+I1), s	37.0	33.4		2.4	2.6	29.7		20.5				
Green Ext Time (p_c), s	0.1	0.0		0.0	0.0	10.4		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			65.0
HCM 6th LOS			E

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	1301	921	6	1708	83	577	93	252	102	127	79
Future Volume (veh/h)	241	1301	921	6	1708	83	577	93	252	102	127	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.99
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	1856	1841	1900	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	262	1414	0	7	1857	90	699	0	0	111	138	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	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	200	1795		16	1374	66	647	0		257	158	98
Arrive On Green	0.11	0.51	0.00	0.01	0.41	0.41	0.19	0.00	0.00	0.14	0.14	0.14
Sat Flow, veh/h	1781	3526	1560	1810	3389	163	3450	0	1572	1781	1092	681
Grp Volume(v), veh/h	262	1414	0	7	949	998	699	0	0	111	0	224
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	1810	1749	1803	1725	0	1572	1781	0	1772
Q Serve(g_s), s	13.5	39.4	0.0	0.5	48.7	48.7	22.5	0.0	0.0	6.8	0.0	14.8
Cycle Q Clear(g_c), s	13.5	39.4	0.0	0.5	48.7	48.7	22.5	0.0	0.0	6.8	0.0	14.8
Prop In Lane	1.00		1.00	1.00		0.09	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	200	1795		16	709	731	647	0		257	0	256
V/C Ratio(X)	1.31	0.79		0.45	1.34	1.37	1.08	0.00		0.43	0.00	0.87
Avail Cap(c_a), veh/h	200	1795		75	709	731	647	0		297	0	295
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	53.3	24.1	0.0	59.2	35.7	35.7	48.7	0.0	0.0	46.8	0.0	50.3
Incr Delay (d2), s/veh	169.5	3.6	0.0	18.6	161.5	173.3	59.2	0.0	0.0	1.1	0.0	21.9
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	15.5	16.8	0.0	0.3	51.7	55.8	15.0	0.0	0.0	3.1	0.0	8.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	222.8	27.7	0.0	77.8	197.2	209.0	107.9	0.0	0.0	48.0	0.0	72.1
LnGrp LOS	F	C		E	F	F	F	A		D	A	E
Approach Vol, veh/h		1676	A		1954			699	A		335	
Approach Delay, s/veh		58.2			202.8			107.9			64.1	
Approach LOS		E			F			F			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.5	65.6		27.0	18.0	53.2		21.8				
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5				
Max Green Setting (Gmax), s	5.0	54.5		22.5	13.5	46.0		20.0				
Max Q Clear Time (g_c+I1), s	2.5	41.4		24.5	15.5	50.7		16.8				
Green Ext Time (p_c), s	0.0	8.2		0.0	0.0	0.0		0.5				

Intersection Summary	
HCM 6th Ctrl Delay	126.7
HCM 6th LOS	F

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	87	1597	15	8	1704	8	0	0	9	0	0	68
Future Vol, veh/h	87	1597	15	8	1704	8	0	0	9	0	0	68
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	120	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	92	92	88	88	92	92	92	88	92	88
Heavy Vehicles, %	0	4	2	2	4	0	2	2	2	0	2	0
Mvmt Flow	99	1815	16	9	1936	9	0	0	10	0	0	77

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1949	0	0	1831	0	0	-	-	916	-	-	977
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	4.14	-	-	-	-	6.94	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.22	-	-	-	-	3.32	-	-	3.3
Pot Cap-1 Maneuver	304	-	-	329	-	-	0	0	275	0	0	254
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	303	-	-	329	-	-	-	-	275	-	-	253
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1.2	0.1	18.6	25.4
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	275	303	-	-	329	-	-	253
HCM Lane V/C Ratio	0.036	0.326	-	-	0.026	-	-	0.305
HCM Control Delay (s)	18.6	22.5	-	-	16.2	-	-	25.4
HCM Lane LOS	C	C	-	-	C	-	-	D
HCM 95th %tile Q(veh)	0.1	1.4	-	-	0.1	-	-	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	112	1131	337	12	1552	81	100	16	14	40	3	51
Future Volume (veh/h)	112	1131	337	12	1552	81	100	16	14	40	3	51
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	0.99		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1707	1826	1826	1781	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	117	1178	351	12	1617	84	104	17	15	42	3	53
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	3	3	3	13	5	5	8	0	0	0	0	3
Cap, veh/h	136	1980	578	89	2417	125	160	126	111	199	13	212
Arrive On Green	0.08	0.74	0.74	0.07	0.96	0.96	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1767	2671	780	1626	3350	173	1271	923	815	1157	94	1548
Grp Volume(v), veh/h	117	770	759	12	833	868	104	0	32	45	0	53
Grp Sat Flow(s),veh/h/ln	1767	1763	1689	1626	1735	1788	1271	0	1738	1252	0	1548
Q Serve(g_s), s	11.1	34.1	36.0	1.2	9.1	9.4	13.7	0.0	2.8	4.7	0.0	5.2
Cycle Q Clear(g_c), s	11.1	34.1	36.0	1.2	9.1	9.4	21.2	0.0	2.8	7.5	0.0	5.2
Prop In Lane	1.00		0.46	1.00		0.10	1.00		0.47	0.93		1.00
Lane Grp Cap(c), veh/h	136	1307	1252	89	1252	1290	160	0	238	212	0	212
V/C Ratio(X)	0.86	0.59	0.61	0.14	0.67	0.67	0.65	0.00	0.13	0.21	0.00	0.25
Avail Cap(c_a), veh/h	223	1307	1252	89	1252	1290	185	0	271	239	0	241
HCM Platoon Ratio	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.54	0.54	0.54	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	77.5	10.1	10.3	75.1	1.1	1.1	76.2	0.0	64.5	67.6	0.0	65.6
Incr Delay (d2), s/veh	8.7	2.0	2.2	0.1	1.5	1.5	4.0	0.0	0.1	0.2	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	5.4	13.1	13.3	0.5	1.8	1.9	4.7	0.0	1.2	1.8	0.0	2.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.3	12.1	12.5	75.2	2.7	2.7	80.2	0.0	64.6	67.8	0.0	65.8
LnGrp LOS	F	B	B	E	A	A	F	A	E	E	A	E
Approach Vol, veh/h		1646			1713			136			98	
Approach Delay, s/veh		17.6			3.2			76.5			66.7	
Approach LOS		B			A			E			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	13.3	130.0		26.7	16.6	126.7		26.7				
Change Period (Y+Rc), s	4.0	* 4		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	6.5	* 1.3E2		26.5	21.5	111.0		26.5				
Max Q Clear Time (g_c+I1), s	3.2	38.0		9.5	13.1	11.4		23.2				
Green Ext Time (p_c), s	0.0	4.3		0.1	0.0	4.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay			14.3
HCM 6th LOS			B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	934	25	64	1529	194	3	53	33	79	7	113
Future Volume (veh/h)	175	934	25	64	1529	194	3	53	33	79	7	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.99
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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	188	1004	27	69	1644	209	3	57	35	85	8	122
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	301	2531	68	144	1980	246	22	172	202	41	1	209
Arrive On Green	0.34	1.00	1.00	0.16	1.00	1.00	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1795	3504	94	1781	3116	388	0	1296	1526	0	5	1576
Grp Volume(v), veh/h	188	505	526	69	907	946	60	0	35	93	0	122
Grp Sat Flow(s),veh/h/ln	1795	1763	1835	1781	1749	1755	1296	0	1526	5	0	1576
Q Serve(g_s), s	15.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	12.4
Cycle Q Clear(g_c), s	15.0	0.0	0.0	6.0	0.0	0.0	22.5	0.0	3.5	22.5	0.0	12.4
Prop In Lane	1.00		0.05	1.00		0.22	0.05		1.00	0.91		1.00
Lane Grp Cap(c), veh/h	301	1273	1326	144	1111	1115	194	0	202	41	0	209
V/C Ratio(X)	0.62	0.40	0.40	0.48	0.82	0.85	0.31	0.00	0.17	2.25	0.00	0.58
Avail Cap(c_a), veh/h	301	1273	1326	144	1111	1115	194	0	202	41	0	209
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.82	0.82	0.82	0.37	0.37	0.37	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.0	0.0	0.0	68.1	0.0	0.0	66.3	0.0	65.5	84.6	0.0	69.4
Incr Delay (d2), s/veh	2.5	0.8	0.7	0.3	2.6	3.2	0.3	0.0	0.1	634.5	0.0	2.8
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	6.2	0.3	0.3	2.7	0.8	1.0	2.4	0.0	1.4	9.1	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.5	0.8	0.7	68.4	2.6	3.2	66.6	0.0	65.6	719.1	0.0	72.2
LnGrp LOS	D	A	A	E	A	A	E	A	E	F	A	E
Approach Vol, veh/h		1219			1922			95			215	
Approach Delay, s/veh		9.0			5.2			66.3			352.0	
Approach LOS		A			A			E			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	17.2	126.8		26.0	32.0	112.0		26.0				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	13.7	122.8		22.5	28.5	108.0		22.5				
Max Q Clear Time (g_c+I1), s	17.0	2.0		24.5	17.0	2.0		24.5				
Green Ext Time (p_c), s	0.0	2.2		0.0	0.2	6.7		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			29.9									
HCM 6th LOS			C									

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	203	758	1366	231	268	425
Future Volume (veh/h)	203	758	1366	231	268	425
Initial Q (Qb), veh	0	0	0	0	0	0
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	1885	1841	1841	1841	1870	1870
Adj Flow Rate, veh/h	218	815	1469	248	288	457
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	4	4	4	2	2
Cap, veh/h	275	2510	1616	267	424	378
Arrive On Green	0.20	0.95	0.54	0.54	0.24	0.24
Sat Flow, veh/h	1795	3589	3077	494	1781	1585
Grp Volume(v), veh/h	218	815	848	869	288	457
Grp Sat Flow(s),veh/h/ln	1795	1749	1749	1730	1781	1585
Q Serve(g_s), s	19.6	2.6	73.4	78.8	25.0	40.5
Cycle Q Clear(g_c), s	19.6	2.6	73.4	78.8	25.0	40.5
Prop In Lane	1.00			0.29	1.00	1.00
Lane Grp Cap(c), veh/h	275	2510	946	936	424	378
V/C Ratio(X)	0.79	0.32	0.90	0.93	0.68	1.21
Avail Cap(c_a), veh/h	280	2510	946	936	424	378
HCM Platoon Ratio	1.33	1.33	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.93	0.93	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	65.2	1.2	34.7	36.0	58.8	64.8
Incr Delay (d2), s/veh	12.3	0.3	12.8	16.5	3.6	116.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.6	0.8	33.9	36.7	11.8	28.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	77.5	1.5	47.6	52.4	62.4	181.6
LnGrp LOS	E	A	D	D	E	F
Approach Vol, veh/h		1033	1717		745	
Approach Delay, s/veh		17.5	50.0		135.5	
Approach LOS		B	D		F	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	30.0	96.0		44.0		126.0
Change Period (Y+Rc), s	4.0	* 4		3.5		4.0
Max Green Setting (Gmax), s	26.5	* 92		40.5		122.0
Max Q Clear Time (g_c+I1), s	21.6	80.8		42.5		4.6
Green Ext Time (p_c), s	0.1	7.4		0.0		5.3

Intersection Summary	
HCM 6th Ctrl Delay	58.6
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

7: Hwy 1 Off Ramp/Back Driveway & Commerical Way/Commercial Way Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	1.2	0.1	691.4	684.5	238.4	377.5
Total Del/Veh (s)	3.6	5.5	57.0	39.3	100.5	19.4	1020.7	47.4

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	262	1403	1001	7	1947	357	358	270	110	224
v/c Ratio	1.11	0.74	1.17	0.09	1.47	1.18	1.15	0.68	0.43	0.80
Control Delay	108.3	19.2	99.3	57.7	246.0	152.0	142.2	31.5	51.2	65.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	108.3	19.2	99.3	57.7	246.0	152.0	142.2	31.5	51.2	65.7
Queue Length 50th (ft)	~245	498	~880	5	~1097	~348	~343	96	77	151
Queue Length 95th (ft)	m#174	m420	m#633	22	#1238	#547	#542	194	134	#251
Internal Link Dist (ft)		96			333		304			770
Turn Bay Length (ft)	150		20	60				30		
Base Capacity (vph)	235	1886	857	80	1324	303	311	399	295	315
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	1.11	0.74	1.17	0.09	1.47	1.18	1.15	0.68	0.37	0.71

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	1145	686	606	917	3	307	2	1066	8	8	14
Future Volume (veh/h)	12	1145	686	606	917	3	307	2	1066	8	8	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.97	1.00		1.00	1.00		0.96
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	1900	1826	1826	1841	1826	1826	1900	1900	1856	1900	1900	1900
Adj Flow Rate, veh/h	12	1193	0	631	955	3	320	2	0	8	8	15
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	5	5	4	5	5	0	0	3	0	0	0
Cap, veh/h	19	1539		479	2505	8	282	2		14	14	27
Arrive On Green	0.01	0.44	0.00	0.55	1.00	1.00	0.16	0.16	0.00	0.03	0.03	0.03
Sat Flow, veh/h	1810	3469	1547	1753	3547	11	1799	11	1572	437	437	820
Grp Volume(v), veh/h	12	1193	0	631	467	491	322	0	0	31	0	0
Grp Sat Flow(s),veh/h/ln	1810	1735	1547	1753	1735	1823	1810	0	1572	1694	0	0
Q Serve(g_s), s	1.0	43.7	0.0	41.0	0.0	0.0	23.5	0.0	0.0	2.7	0.0	0.0
Cycle Q Clear(g_c), s	1.0	43.7	0.0	41.0	0.0	0.0	23.5	0.0	0.0	2.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.01	0.99		1.00	0.26		0.48
Lane Grp Cap(c), veh/h	19	1539		479	1225	1288	284	0		56	0	0
V/C Ratio(X)	0.63	0.78		1.32	0.38	0.38	1.14	0.00		0.55	0.00	0.00
Avail Cap(c_a), veh/h	48	1539		479	1225	1288	284	0		248	0	0
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	73.9	35.4	0.0	34.0	0.0	0.0	63.3	0.0	0.0	71.4	0.0	0.0
Incr Delay (d2), s/veh	12.2	3.9	0.0	156.8	0.9	0.9	95.1	0.0	0.0	6.2	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	0.5	19.1	0.0	34.2	0.3	0.3	18.4	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.1	39.3	0.0	190.8	0.9	0.9	158.3	0.0	0.0	77.6	0.0	0.0
LnGrp LOS	F	D		F	A	A	F	A		E	A	A
Approach Vol, veh/h		1205	A		1589			322	A		31	
Approach Delay, s/veh		39.7			76.3			158.3			77.6	
Approach LOS		D			E			F			E	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	44.0	70.5		8.5	4.6	110.0		27.0				
Change Period (Y+Rc), s	3.0	4.0		3.5	3.0	4.0		3.5				
Max Green Setting (Gmax), s	41.0	49.5		22.0	4.0	86.5		23.5				
Max Q Clear Time (g_c+I1), s	43.0	45.7		4.7	3.0	2.0		25.5				
Green Ext Time (p_c), s	0.0	2.9		0.1	0.0	11.9		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		70.7
HCM 6th LOS		E

Notes

Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	1519	624	5	1884	20	497	24	228	225	225	143
Future Volume (veh/h)	76	1519	624	5	1884	20	497	24	228	225	225	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	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	1856	1841	1900	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	79	1582	0	5	1962	21	536	0	0	234	234	149
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	98	1793		11	1629	17	604	0		338	206	131
Arrive On Green	0.07	0.68	0.00	0.01	0.92	0.92	0.18	0.00	0.00	0.19	0.19	0.19
Sat Flow, veh/h	1781	3526	1560	1810	3543	38	3450	0	1572	1781	1083	689
Grp Volume(v), veh/h	79	1582	0	5	966	1017	536	0	0	234	0	383
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	1810	1749	1832	1725	0	1572	1781	0	1772
Q Serve(g_s), s	6.6	54.0	0.0	0.4	69.0	69.0	22.8	0.0	0.0	18.4	0.0	28.5
Cycle Q Clear(g_c), s	6.6	54.0	0.0	0.4	69.0	69.0	22.8	0.0	0.0	18.4	0.0	28.5
Prop In Lane	1.00		1.00	1.00		0.02	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	98	1793		11	804	843	604	0		338	0	337
V/C Ratio(X)	0.81	0.88		0.44	1.20	1.21	0.89	0.00		0.69	0.00	1.14
Avail Cap(c_a), veh/h	101	1793		62	804	843	793	0		338	0	337
HCM Platoon Ratio	1.33	1.33	1.33	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	68.7	20.7	0.0	73.8	6.0	6.0	60.4	0.0	0.0	56.6	0.0	60.8
Incr Delay (d2), s/veh	36.0	6.7	0.0	24.6	102.4	104.3	9.6	0.0	0.0	5.9	0.0	91.7
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	3.9	20.6	0.0	0.3	25.4	27.0	10.9	0.0	0.0	8.9	0.0	21.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	104.8	27.4	0.0	98.4	108.4	110.3	70.0	0.0	0.0	62.5	0.0	152.5
LnGrp LOS	F	C		F	F	F	E	A		E	A	F
Approach Vol, veh/h		1661	A		1988			536	A		617	
Approach Delay, s/veh		31.1			109.4			70.0			118.4	
Approach LOS		C			F			E			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	5.4	80.8		30.8	12.7	73.5		33.0
Change Period (Y+Rc), s	4.5	4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s	5.1	63.9		34.5	8.5	60.5		28.5
Max Q Clear Time (g_c+I1), s	2.4	56.0		24.8	8.6	71.0		30.5
Green Ext Time (p_c), s	0.0	6.0		1.5	0.0	0.0		0.0

Intersection Summary	
HCM 6th Ctrl Delay	79.0
HCM 6th LOS	E

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [NBR, EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	62	1912	18	12	1828	5	0	0	14	0	0	76
Future Vol, veh/h	62	1912	18	12	1828	5	0	0	14	0	0	76
Conflicting Peds, #/hr	4	0	0	0	0	4	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	85	-	-	120	-	-	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	4	2	2	4	0	2	2	2	0	2	0
Mvmt Flow	67	2078	20	13	1987	5	0	0	15	0	0	83

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1996	0	0	2098	0	0	-	-	1049	-	-	1000
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	4.1	-	-	4.14	-	-	-	-	6.94	-	-	6.9
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.22	-	-	-	-	3.32	-	-	3.3
Pot Cap-1 Maneuver	292	-	-	259	-	-	0	0	224	0	0	245
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	291	-	-	259	-	-	-	-	224	-	-	244
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.7	0.1	22.2	27.1
HCM LOS			C	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	224	291	-	-	259	-	-	244
HCM Lane V/C Ratio	0.068	0.232	-	-	0.05	-	-	0.339
HCM Control Delay (s)	22.2	21.1	-	-	19.6	-	-	27.1
HCM Lane LOS	C	C	-	-	C	-	-	D
HCM 95th %tile Q(veh)	0.2	0.9	-	-	0.2	-	-	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	50	1612	268	28	1334	34	349	20	37	114	11	152
Future Volume (veh/h)	50	1612	268	28	1334	34	349	20	37	114	11	152
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1856	1856	1856	1707	1826	1826	1781	1900	1900	1900	1900	1856
Adj Flow Rate, veh/h	56	1791	298	31	1482	38	388	22	41	127	12	169
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	3	3	3	13	5	5	8	0	0	0	0	3
Cap, veh/h	70	1770	285	35	1957	50	249	146	271	367	31	385
Arrive On Green	0.08	1.00	1.00	0.02	0.57	0.57	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	1767	3026	487	1626	3453	88	1140	590	1100	1116	125	1559
Grp Volume(v), veh/h	56	1018	1071	31	743	777	388	0	63	139	0	169
Grp Sat Flow(s),veh/h/ln	1767	1763	1750	1626	1735	1806	1140	0	1691	1241	0	1559
Q Serve(g_s), s	2.3	0.0	43.9	1.4	24.4	24.5	10.1	0.0	2.2	6.3	0.0	6.9
Cycle Q Clear(g_c), s	2.3	0.0	43.9	1.4	24.4	24.5	18.5	0.0	2.2	8.4	0.0	6.9
Prop In Lane	1.00		0.28	1.00		0.05	1.00		0.65	0.91		1.00
Lane Grp Cap(c), veh/h	70	1031	1024	35	983	1024	249	0	417	398	0	385
V/C Ratio(X)	0.80	0.99	1.05	0.88	0.76	0.76	1.56	0.00	0.15	0.35	0.00	0.44
Avail Cap(c_a), veh/h	200	1031	1024	98	983	1024	249	0	417	398	0	385
HCM Platoon Ratio	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.69	0.69	0.69	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	34.2	0.0	0.0	36.6	12.3	12.3	34.4	0.0	22.1	25.2	0.0	23.9
Incr Delay (d2), s/veh	7.4	25.1	41.1	15.6	3.8	3.7	270.4	0.0	0.1	0.2	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.2	11.7	0.7	8.7	9.1	23.1	0.0	0.8	2.1	0.0	2.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	41.6	25.1	41.1	52.2	16.1	16.0	304.8	0.0	22.2	25.4	0.0	24.2
LnGrp LOS	D	C	F	D	B	B	F	A	C	C	A	C
Approach Vol, veh/h		2145			1551			451			308	
Approach Delay, s/veh		33.5			16.8			265.3			24.7	
Approach LOS		C			B			F			C	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.1	47.9		22.0	6.5	46.5		22.0				
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5				
Max Green Setting (Gmax), s	4.5	41.0		18.5	8.5	37.0		18.5				
Max Q Clear Time (g_c+I1), s	3.4	45.9		10.4	4.3	26.5		20.5				
Green Ext Time (p_c), s	0.0	0.0		0.3	0.0	3.1		0.0				
Intersection Summary												
HCM 6th Ctrl Delay			50.5									
HCM 6th LOS			D									

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1643	16	43	1150	73	22	20	71	268	8	264
Future Volume (veh/h)	90	1643	16	43	1150	73	22	20	71	268	8	264
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.99	1.00		0.99
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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	95	1729	17	45	1211	77	23	21	75	282	8	278
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	154	1957	19	56	1618	103	78	47	406	101	0	419
Arrive On Green	0.09	0.55	0.55	0.06	0.97	0.97	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	1795	3576	35	1781	3330	211	0	179	1537	0	0	1587
Grp Volume(v), veh/h	95	851	895	45	635	653	44	0	75	290	0	278
Grp Sat Flow(s),veh/h/ln	1795	1763	1848	1781	1749	1793	179	0	1537	0	0	1587
Q Serve(g_s), s	3.6	29.6	29.7	1.7	2.7	2.7	0.0	0.0	2.6	0.0	0.0	10.9
Cycle Q Clear(g_c), s	3.6	29.6	29.7	1.7	2.7	2.7	18.5	0.0	2.6	18.5	0.0	10.9
Prop In Lane	1.00		0.02	1.00		0.12	0.52		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	154	965	1011	56	849	871	126	0	406	101	0	419
V/C Ratio(X)	0.62	0.88	0.88	0.81	0.75	0.75	0.35	0.00	0.18	2.86	0.00	0.66
Avail Cap(c_a), veh/h	167	965	1011	84	849	871	126	0	406	101	0	419
HCM Platoon Ratio	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.10	0.10	0.10	0.61	0.61	0.61	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	30.9	13.9	13.9	32.6	0.6	0.6	21.4	0.0	19.9	35.0	0.0	23.0
Incr Delay (d2), s/veh	0.4	1.4	1.3	10.9	3.7	3.7	0.6	0.0	0.1	862.9	0.0	3.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	9.7	10.2	0.9	1.1	1.1	0.5	0.0	0.9	26.0	0.0	4.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.3	15.2	15.2	43.5	4.3	4.2	22.0	0.0	20.0	897.9	0.0	26.1
LnGrp LOS	C	B	B	D	A	A	C	A	B	F	A	C
Approach Vol, veh/h		1841			1333			119			568	
Approach Delay, s/veh		16.1			5.6			20.7			471.2	
Approach LOS		B			A			C			F	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	5.7	42.3		22.0	10.0	38.0		22.0				
Change Period (Y+Rc), s	3.5	4.0		3.5	4.0	* 4		3.5				
Max Green Setting (Gmax), s	3.3	37.2		18.5	6.5	* 34		18.5				
Max Q Clear Time (g_c+I1), s	3.7	31.7		20.5	5.6	4.7		20.5				
Green Ext Time (p_c), s	0.0	2.6		0.0	0.0	3.4		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		79.5
HCM 6th LOS		E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	350	1557	1023	163	144	202
Future Volume (veh/h)	350	1557	1023	163	144	202
Initial Q (Qb), veh	0	0	0	0	0	0
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	1885	1841	1841	1841	1870	1870
Adj Flow Rate, veh/h	368	1639	1077	172	152	213
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	4	4	4	2	2
Cap, veh/h	563	2560	1084	173	286	255
Arrive On Green	0.63	1.00	0.36	0.36	0.16	0.16
Sat Flow, veh/h	1795	3589	3092	478	1781	1585
Grp Volume(v), veh/h	368	1639	627	622	152	213
Grp Sat Flow(s),veh/h/ln	1795	1749	1749	1729	1781	1585
Q Serve(g_s), s	9.1	0.0	25.0	25.1	5.5	9.1
Cycle Q Clear(g_c), s	9.1	0.0	25.0	25.1	5.5	9.1
Prop In Lane	1.00			0.28	1.00	1.00
Lane Grp Cap(c), veh/h	563	2560	632	625	286	255
V/C Ratio(X)	0.65	0.64	0.99	1.00	0.53	0.84
Avail Cap(c_a), veh/h	563	2560	632	625	458	408
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.46	0.46	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	10.7	0.0	22.2	22.3	26.9	28.5
Incr Delay (d2), s/veh	1.0	0.6	33.7	35.1	0.6	4.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.2	15.0	15.1	2.3	3.6
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.7	0.6	56.0	57.4	27.5	32.6
LnGrp LOS	B	A	E	E	C	C
Approach Vol, veh/h		2007	1249		365	
Approach Delay, s/veh		2.6	56.7		30.5	
Approach LOS		A	E		C	
Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	25.9	29.3		14.8		55.2
Change Period (Y+Rc), s	4.0	* 4		3.5		4.0
Max Green Setting (Gmax), s	15.7	* 25		18.0		44.5
Max Q Clear Time (g_c+I1), s	11.1	27.1		11.1		2.0
Green Ext Time (p_c), s	0.3	0.0		0.1		15.2
Intersection Summary						
HCM 6th Ctrl Delay			24.1			
HCM 6th LOS			C			

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

7: Hwy 1 Off Ramp & Commerical Way Performance by movement

Movement	EBT	EBR	WBT	WBR	NBL	NBR	SBR	All
Denied Del/Veh (s)	0.0	0.0	12.8	26.8	133.8	141.7	503.2	67.3
Total Del/Veh (s)	3.2	4.7	82.1	97.4	76.9	10.9	920.8	46.0

Lane Group	EBL	EBT	EBR	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	79	1571	650	5	1984	262	264	232	232	383
v/c Ratio	0.79	0.94	0.88	0.08	1.42	0.81	0.81	0.63	0.59	0.94
Control Delay	86.6	28.3	23.0	69.8	223.7	76.7	76.5	43.8	61.1	85.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.6	28.3	23.0	69.8	223.8	76.7	76.5	43.8	61.1	85.7
Queue Length 50th (ft)	79	716	386	4	~1388	256	257	139	209	363
Queue Length 95th (ft)	m76	m811	m539	m6	m#1376	361	364	230	313	#616
Internal Link Dist (ft)		96			333		304			770
Turn Bay Length (ft)	150		20	60				30		
Base Capacity (vph)	100	1672	740	61	1398	372	375	412	390	408
Starvation Cap Reductn	0	0	0	0	7	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.94	0.88	0.08	1.43	0.70	0.70	0.56	0.59	0.94

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

m Volume for 95th percentile queue is metered by upstream signal.

MITIGATED CONDITIONS SYNCHRO OUTPUT SHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	241	1301	921	0	1719	96	572	84	252	102	127	79
Future Volume (veh/h)	241	1301	921	0	1719	96	572	84	252	102	127	79
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		1.00	1.00		0.99
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	1856	1841	0	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	262	1414	0	0	1868	104	622	228	182	111	138	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	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	286	2067		0	2435	136	630	342	286	246	151	94
Arrive On Green	0.16	0.59	0.00	0.00	0.39	0.39	0.18	0.18	0.18	0.14	0.14	0.14
Sat Flow, veh/h	1781	3526	1560	0	6427	343	3450	1870	1565	1781	1092	680
Grp Volume(v), veh/h	262	1414	0	0	1438	534	622	228	182	111	0	224
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	0	1583	1764	1725	1870	1565	1781	0	1772
Q Serve(g_s), s	21.0	40.2	0.0	0.0	38.1	38.1	26.1	16.5	15.6	8.3	0.0	18.1
Cycle Q Clear(g_c), s	21.0	40.2	0.0	0.0	38.1	38.1	26.1	16.5	15.6	8.3	0.0	18.1
Prop In Lane	1.00		1.00	0.00		0.19	1.00		1.00	1.00		0.38
Lane Grp Cap(c), veh/h	286	2067		0	1874	696	630	342	286	246	0	244
V/C Ratio(X)	0.92	0.68		0.00	0.77	0.77	0.99	0.67	0.64	0.45	0.00	0.92
Avail Cap(c_a), veh/h	330	2067		0	1874	696	630	342	286	246	0	244
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	59.9	20.7	0.0	0.0	38.1	38.1	59.1	55.1	54.8	57.5	0.0	61.7
Incr Delay (d2), s/veh	27.1	1.9	0.0	0.0	3.1	7.9	32.3	4.9	4.6	1.3	0.0	35.9
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	11.7	16.8	0.0	0.0	15.2	17.8	14.3	8.3	6.5	3.9	0.0	10.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	87.0	22.6	0.0	0.0	41.2	46.0	91.4	60.0	59.4	58.8	0.0	97.6
LnGrp LOS	F	C		A	D	D	F	E	E	E	A	F
Approach Vol, veh/h		1676	A		1972			1032			335	
Approach Delay, s/veh		32.7			42.5			78.8			84.7	
Approach LOS		C			D			E			F	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		89.5		31.0	27.8	61.7		24.5
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		85.0		26.5	26.9	53.6		20.0
Max Q Clear Time (g_c+I1), s		42.2		28.1	23.0	40.1		20.1
Green Ext Time (p_c), s		15.6		0.0	0.3	10.1		0.0

Intersection Summary	
HCM 6th Ctrl Delay	49.5
HCM 6th LOS	D

Notes

User approved volume balancing among the lanes for turning movement.
Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	934	25	64	1529	194	3	53	33	79	7	113
Future Volume (veh/h)	175	934	25	64	1529	194	3	53	33	79	7	113
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.97	1.00		0.99	1.00		0.99
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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	188	1004	27	69	1644	209	3	57	35	85	8	122
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	301	2531	68	144	1980	246	22	172	202	41	1	209
Arrive On Green	0.34	1.00	1.00	0.16	1.00	1.00	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1795	3504	94	1781	3116	388	0	1296	1526	0	5	1576
Grp Volume(v), veh/h	188	505	526	69	907	946	60	0	35	93	0	122
Grp Sat Flow(s),veh/h/ln	1795	1763	1835	1781	1749	1755	1296	0	1526	5	0	1576
Q Serve(g_s), s	15.0	0.0	0.0	6.0	0.0	0.0	0.0	0.0	3.5	0.0	0.0	12.4
Cycle Q Clear(g_c), s	15.0	0.0	0.0	6.0	0.0	0.0	22.5	0.0	3.5	22.5	0.0	12.4
Prop In Lane	1.00		0.05	1.00		0.22	0.05		1.00	0.91		1.00
Lane Grp Cap(c), veh/h	301	1273	1326	144	1111	1115	194	0	202	41	0	209
V/C Ratio(X)	0.62	0.40	0.40	0.48	0.82	0.85	0.31	0.00	0.17	2.25	0.00	0.58
Avail Cap(c_a), veh/h	301	1273	1326	144	1111	1115	194	0	202	41	0	209
HCM Platoon Ratio	2.00	2.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.81	0.81	0.81	0.41	0.41	0.41	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	52.0	0.0	0.0	68.1	0.0	0.0	66.3	0.0	65.5	84.6	0.0	69.4
Incr Delay (d2), s/veh	2.5	0.8	0.7	0.4	2.9	3.5	0.3	0.0	0.1	634.5	0.0	2.8
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	6.2	0.3	0.3	2.7	0.9	1.1	2.4	0.0	1.4	9.1	0.0	5.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	54.5	0.8	0.7	68.4	2.9	3.5	66.6	0.0	65.6	719.1	0.0	72.2
LnGrp LOS	D	A	A	E	A	A	E	A	E	F	A	E
Approach Vol, veh/h		1219			1922			95			215	
Approach Delay, s/veh		9.0			5.5			66.3			352.0	
Approach LOS		A			A			E			F	

Timer - Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	17.2	126.8		26.0	32.0	112.0		26.0
Change Period (Y+Rc), s	3.5	4.0		3.5	3.5	4.0		3.5
Max Green Setting (Gmax), s	13.7	122.8		22.5	28.5	108.0		22.5
Max Q Clear Time (g_c+I1), s	8.0	2.0		24.5	17.0	2.0		24.5
Green Ext Time (p_c), s	0.0	2.2		0.0	0.2	6.7		0.0

Intersection Summary		
HCM 6th Ctrl Delay		30.0
HCM 6th LOS		C

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	76	1519	624	0	1910	21	476	23	228	225	225	143
Future Volume (veh/h)	76	1519	624	0	1910	21	476	23	228	225	225	143
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.96	1.00		0.99	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	1856	1841	0	1841	1841	1811	1870	1856	1870	1900	1900
Adj Flow Rate, veh/h	79	1582	0	0	1990	22	496	0	254	234	234	149
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	3	4	0	4	4	6	2	3	2	0	0
Cap, veh/h	101	1661		0	2387	26	608	0	551	375	228	145
Arrive On Green	0.06	0.47	0.00	0.00	0.37	0.37	0.18	0.00	0.18	0.21	0.21	0.21
Sat Flow, veh/h	1781	3526	1560	0	6759	72	3450	0	3129	1781	1083	690
Grp Volume(v), veh/h	79	1582	0	0	1454	558	496	0	254	234	0	383
Grp Sat Flow(s),veh/h/ln	1781	1763	1560	0	1583	1825	1725	0	1564	1781	0	1772
Q Serve(g_s), s	4.2	40.9	0.0	0.0	26.5	26.5	13.1	0.0	6.9	11.3	0.0	20.0
Cycle Q Clear(g_c), s	4.2	40.9	0.0	0.0	26.5	26.5	13.1	0.0	6.9	11.3	0.0	20.0
Prop In Lane	1.00		1.00	0.00		0.04	1.00		1.00	1.00		0.39
Lane Grp Cap(c), veh/h	101	1661		0	1743	670	608	0	551	375	0	373
V/C Ratio(X)	0.78	0.95		0.00	0.83	0.83	0.82	0.00	0.46	0.62	0.00	1.03
Avail Cap(c_a), veh/h	103	1661		0	1743	670	726	0	659	375	0	373
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	44.2	24.1	0.0	0.0	27.4	27.4	37.7	0.0	35.1	34.1	0.0	37.5
Incr Delay (d2), s/veh	30.7	13.3	0.0	0.0	4.9	11.7	6.2	0.0	0.6	3.2	0.0	53.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	19.0	0.0	0.0	10.3	13.1	6.0	0.0	2.6	5.2	0.0	14.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	74.9	37.4	0.0	0.0	32.3	39.1	43.8	0.0	35.7	37.3	0.0	91.0
LnGrp LOS	E	D		A	C	D	D	A	D	D	A	F
Approach Vol, veh/h		1661	A		2012			750			617	
Approach Delay, s/veh		39.2			34.2			41.1			70.6	
Approach LOS		D			C			D			E	

Timer - Assigned Phs		2		4	5	6		8
Phs Duration (G+Y+Rc), s		49.3		21.2	9.9	39.4		24.5
Change Period (Y+Rc), s		4.5		4.5	4.5	4.5		4.5
Max Green Setting (Gmax), s		41.5		20.0	5.5	31.5		20.0
Max Q Clear Time (g_c+I1), s		42.9		15.1	6.2	28.5		22.0
Green Ext Time (p_c), s		0.0		1.5	0.0	2.6		0.0

Intersection Summary			
HCM 6th Ctrl Delay			41.3
HCM 6th LOS			D

Notes

User approved volume balancing among the lanes for turning movement.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	1643	16	43	1150	73	58	20	71	268	8	265
Future Volume (veh/h)	90	1643	16	43	1150	73	58	20	71	268	8	265
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.97	1.00		0.96	1.00		0.98	1.00		0.99
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	1885	1856	1856	1870	1841	1841	1811	1811	1826	1900	1900	1885
Adj Flow Rate, veh/h	95	1729	17	45	1211	77	61	21	75	282	8	279
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	3	3	2	4	4	6	6	5	0	0	1
Cap, veh/h	343	1909	19	57	1230	78	105	36	122	345	10	310
Arrive On Green	0.19	0.53	0.53	0.03	0.37	0.37	0.08	0.08	0.08	0.20	0.20	0.20
Sat Flow, veh/h	1795	3575	35	1781	3329	211	1299	447	1513	1762	50	1583
Grp Volume(v), veh/h	95	851	895	45	635	653	82	0	75	290	0	279
Grp Sat Flow(s),veh/h/ln	1795	1763	1848	1781	1749	1792	1746	0	1513	1812	0	1583
Q Serve(g_s), s	4.2	40.0	40.2	2.3	33.1	33.2	4.2	0.0	4.4	14.1	0.0	15.8
Cycle Q Clear(g_c), s	4.2	40.0	40.2	2.3	33.1	33.2	4.2	0.0	4.4	14.1	0.0	15.8
Prop In Lane	1.00		0.02	1.00		0.12	0.74		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	343	941	987	57	646	662	141	0	122	354	0	310
V/C Ratio(X)	0.28	0.90	0.91	0.79	0.98	0.99	0.58	0.00	0.61	0.82	0.00	0.90
Avail Cap(c_a), veh/h	343	941	987	64	646	662	351	0	304	364	0	318
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)	0.10	0.10	0.10	0.61	0.61	0.61	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.8	19.3	19.4	44.2	28.7	28.8	40.8	0.0	40.9	35.4	0.0	36.1
Incr Delay (d2), s/veh	0.0	1.7	1.7	25.9	23.9	24.1	1.4	0.0	1.9	12.4	0.0	25.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.8	15.0	15.7	1.4	17.5	18.0	1.8	0.0	1.7	7.3	0.0	8.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.8	21.1	21.1	70.1	52.6	52.9	42.2	0.0	42.7	47.9	0.0	62.1
LnGrp LOS	C	C	C	E	D	D	D	A	D	D	A	E
Approach Vol, veh/h		1841			1333			157			569	
Approach Delay, s/veh		21.6			53.3			42.4			54.8	
Approach LOS		C			D			D			D	
Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	6.4	53.1		21.5	21.6	38.0		10.9				
Change Period (Y+Rc), s	3.5	4.0		3.5	4.0	* 4		3.5				
Max Green Setting (Gmax), s	3.3	37.2		18.5	6.5	* 34		18.5				
Max Q Clear Time (g_c+I1), s	4.3	42.2		17.8	6.2	35.2		6.4				
Green Ext Time (p_c), s	0.0	0.0		0.2	0.0	0.0		0.3				

Intersection Summary	
HCM 6th Ctrl Delay	38.1
HCM 6th LOS	D

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

PROPOSED HIGHWAY 1/SOQUEL DR & SOQUEL AVE INTERCHANGE

PROPOSED HIGHWAY 1/SOQUEL DR & SOQUEL AVE INTERCHANGE

EXMA, TBCT, exlo, exto10, exto11, PRPN_HOV-2, Wetdel, bmpsHOV, EX-Aerial, EX PR Soquel To Morrissey

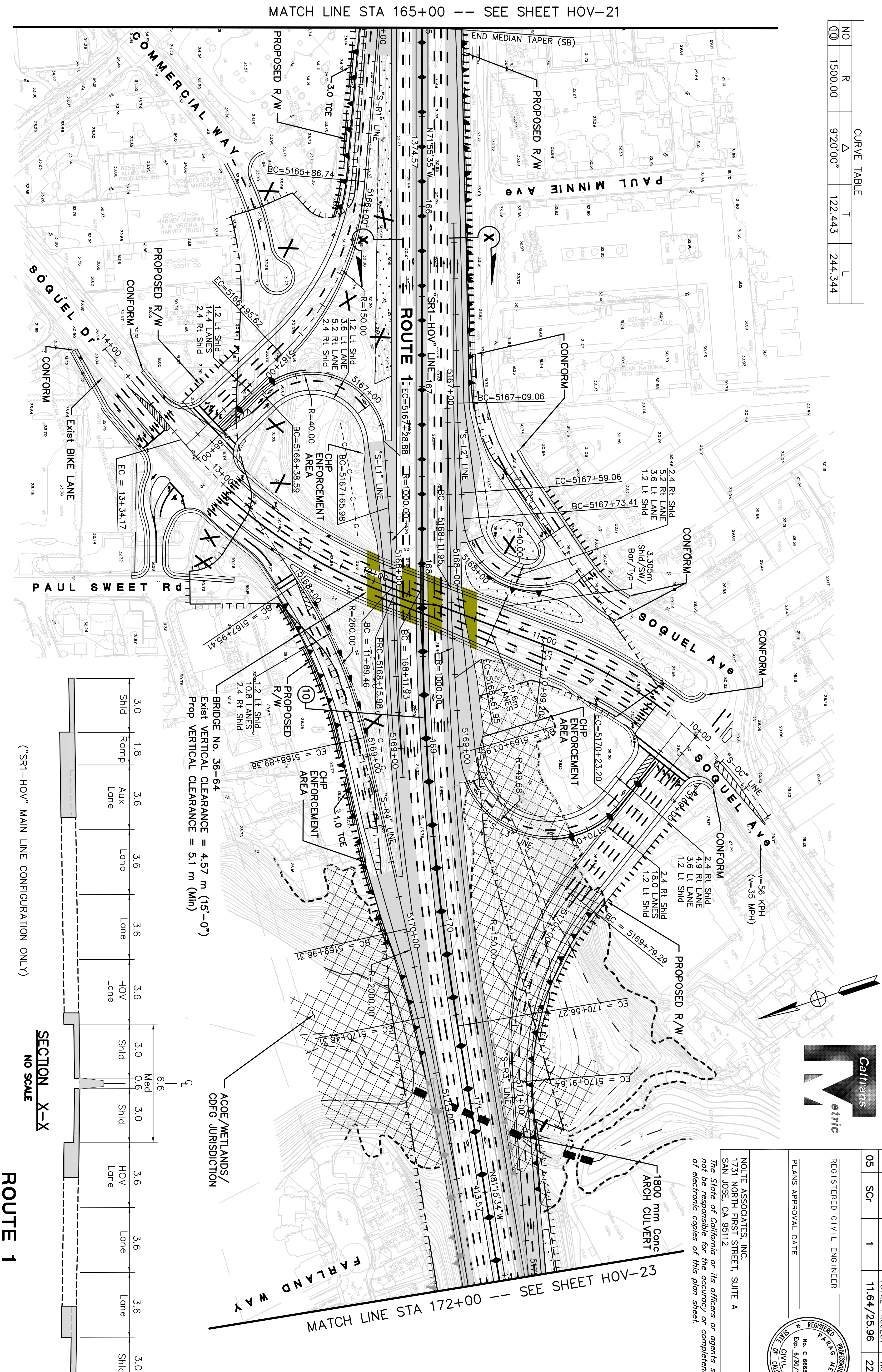
STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION | DESIGN OVERSIGHT | CALCULATED/ DESIGNED BY | DATE | REVISED BY | CHECKED BY | DATE REVISED

Caltrans

NUMBER	DATE	REVISION
4	3/2008	REVISED SHOULDER WIDTHS ON MAIN LINE
3	4/2007	ADDED CUT/FILL LINES, WALLS & DATA FOR FACT SHEETS
2	2/2007	REVISED APE LINE WORK
1	2/2007	ADDED STATION LINE INFORMATION

CURVE TABLE

NO	R	Δ	T	L
10	1500.00	9°20'00"	122.443	244.344



FOR REDUCED PLANS ORIGINAL SCALE IS IN MILLIMETERS 0 20 40 60 80

ALL DIMENSIONS ARE IN METERS, UNLESS OTHERWISE SHOWN.

ROUTE 1
HOV LANE ALTERNATIVE
DECEMBER, 2009
SCALE: 1:1000

HOV-22

DIST	COUNTY	ROUTE	KILOMETER POST TOTAL PROJECT	SHEET No	TOTAL SHEETS
05	SCr	1	11.64/25.96	22	26

REGISTERED CIVIL ENGINEER

PLANS APPROVAL DATE

NOLTE ASSOCIATES, INC.
1731 NORTH FIRST STREET, SUITE A
SAN JOSE, CA 95112

The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this plan sheet.

REGISTERED PROFESSIONAL ENGINEER PARAG MEHTA No. C 66638 Exp. 6/30/10 CIVIL STATE OF CALIFORNIA

LAST REVISION

DATE PLOTTED => 9/9/10

METHODOLOGY, COMMENTS, AND CORRESPONDENCE WITH SCC STAFF

Kimley»Horn

MEMORANDUM

From: Frederik Venter, P.E. and Jacob Mirabella, Kimley-Horn and Associates

To: Rodolfo Rivas, P.E., County of Santa Cruz

Date: March 22, 2018

Re: **CVS Pharmacy Santa Cruz – Proposed Development Conditions, Analysis Methodology, Trip Generation, Trip Distribution, and Study Intersections**

This memorandum documents the assumptions that will be used to prepare the traffic study for the proposed CVS Pharmacy in Santa Cruz County. The proposed development conditions, analysis methodology, trip generation, trip distribution, and study intersections are discussed below.

<u>Project Description</u>

The proposed CVS Pharmacy will be constructed in Santa Cruz County, will have approximately 13,111-square feet of gross floor area, and will have two entrances and exits (one located on Soquel Drive and one located on Commercial Way). A small storage warehouse, one apartment unit, and a furniture store currently exists on the project site and will be demolished with the construction of the CVS Pharmacy.

The proposed development will have a drive-through service for prescription pickups and is anticipated to primarily serve local Santa Cruz residents. The development's close proximity to the Dominican Hospital will provide hospital visitors a nearby pharmacy where they can pick up prescriptions, medical supplies, and a variety of retail items commonly sold in pharmacies.

<u>Development Conditions and Analysis Methodology</u>

This study proposes to evaluate weekday AM Peak (7:00am-9:00am) and PM Peak (4:00pm-6:00pm) periods. HCM 2010 methodologies will be used via Synchro V9 software and development conditions to be studied will include:

- Existing (2018) Conditions
- Existing (2018) Plus Project Conditions
- Near-Term (2020) Conditions
- Near-Term (2020) Plus Project Conditions
- Cumulative (2035) Conditions
- Cumulative (2035) Plus Project Conditions

<u>Trip Generation</u>

Trip generation was developed for this project using the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition. Pharmacy with Drive-Through Window (Land Use #881) average trip rates were used to determine project trips for the proposed 13,111-square foot pharmacy. The existing site currently has the following land uses:

- 2,400-square feet of warehouse storage (ITE Land Use 151)
- One (1) apartment unit (ITE Land Use 220)
- A 10,550-square foot furniture store (ITE Land Use 890)

The proposed project is anticipated to generate 1,432 gross daily trips, 50 gross AM Peak hour trips (27 IN / 23 OUT), and 135 gross PM Peak hour trips (68 IN / 67 OUT). The existing storage space, apartment unit, and furniture store generates 80 daily trips, 5 AM Peak hour trips (3 IN / 2 OUT), and 7 PM Peak hour trips (3 IN / 4 OUT). The existing land uses will be demolished with the construction of the project; therefore, the existing trips are assumed as a trip credit.

Pass-by trip credits for the project were calculated using ITE methodologies and data (Institute of Transportation Engineers Handbook, 3rd Edition, 2017), as well as knowledge of the area and the proposed development. ITE does not provide data for AM peak hour pass-by trips and the proposed development isn't anticipated to generate a high number of pass-by trips during the AM Peak hour, therefore, pass-by trips are conservatively estimated at 0% for the AM Peak hour period. ITE indicates a 49% pass-by trip proportion during the PM Peak hour for Land Use 881 (Pharmacy with Drive-Through Window). The Dominican Hospital is located directly north of the proposed CVS Pharmacy and it is anticipated that hospital trips will be linked with trips to the proposed CVS. Additionally, Soquel Drive/Avenue is a busy roadway connecting City and County residents to work and retail land uses; therefore, it is anticipated that a high number of pass-by trips will be generated by the proposed development, as represented by the 49% pass-by trip proportion. Diverted link trips are expected to be relatively low and no reductions are assumed as a conservative estimate.

Assuming the credit for existing uses and pass-by trips, the net new trip generation for the proposed project is 1,286 daily trips, 45 AM Peak hour trips (24 IN / 21 OUT), and 62 PM Peak hour trips (32 IN / 30 OUT). **Table 1** below shows the results of the trip generation analysis.

Table 1: Trip Generation

Land Use	Size	Units	Daily Trip Rate	Daily Trips	AM Peak Hour Rate	AM Peak Hour Trips (IN/OUT)	PM Peak Hour Rate	PM Peak Hour Trips (IN/OUT)
Existing Conditions[1]								
Mini-Warehousing (LU 151)	2.4	1,000 SF	1.51	4	0.10	1 (1/0)	0.17	1 (0/1)
Apartment (LU 220)	1	DU	7.32	8	0.46	1 (0/1)	0.56	1 (1/0)
Furniture Store (LU 890)	10.55	1,000 SF	6.30	68	0.26	3 (2/1)	0.52	5 (2/3)
Total Existing Trip Credit	-	-	-	**-80**	-	**-5 (-3/-2)**	-	**-7 (-3/-4)**
Proposed Conditions[1]								
Pharmacy with Drive-Through Window (LU 881)	13,111	SF	109.16	1,432	3.84	50 (27/23)	10.29	135 (68/67)
Pass-By Reduction[1]								
Retail Pass-By Reduction (PM: 49%)[2]	-	-	-	**-66**	-	**0 (0/0)**	-	**-66 (-33/-33)**
Net Trip Generation	-	-	-	**1,286**	-	**45 (24/21)**	-	**62 (32/30)**

Source: *Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition (2017)*

1. Trip generation estimates based on ITE average rates.
2. Pass-by trip reduction based on ITE data. Diverted link trip reductions were conservatively not assumed in this trip generation estimate.

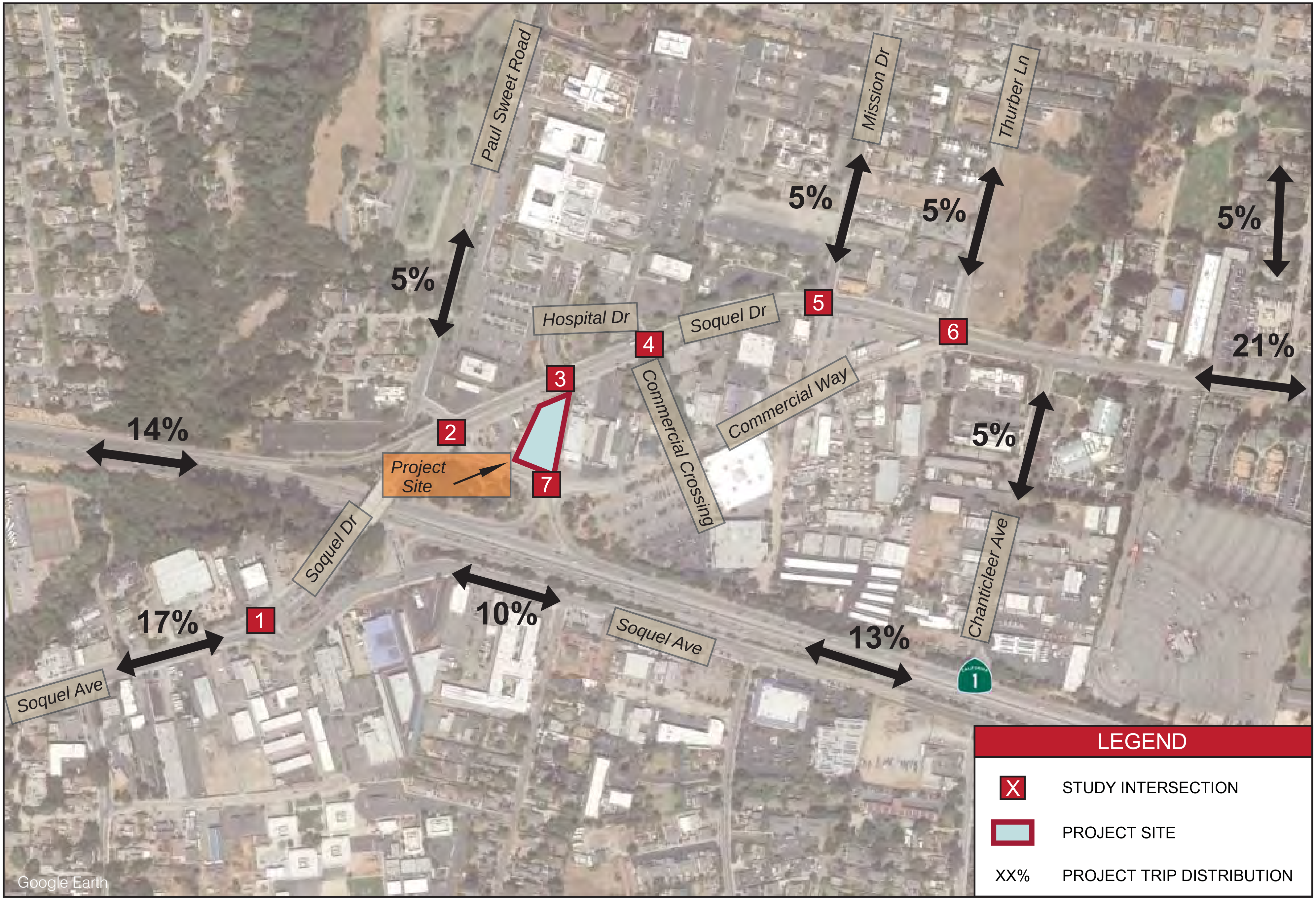
Study Intersections and Trip Distribution

Study intersections were selected in consultation with Santa Cruz Count (SCC) and California Department of Transportation (Caltrans) District 5 staff. The project trip distribution was developed based on traffic patterns in the study area, the local travel demand model, and knowledge of the study area.

The following intersections are included in this study:

1. Soquel Drive / Soquel Avenue
2. Soquel Drive / Paul Sweet Road-Commercial Way
3. Soquel Drive / Hospital Drive-Project Driveway
4. Soquel Drive / Hospital Drive-Commercial Crossing
5. Soquel Drive / Mission Drive
6. Soquel Drive / Thurber Lane
7. Highway 1 NB On/Off Ramps / Commercial Way

Study intersections and the project trip distribution are shown in **Figure 1**.



Kimley»Horn
Expect More. Experience Better.

CVS Pharmacy Santa Cruz

Figure 1

Study Intersections and Project Trip Distribution

HIGHWAY 1 CORRIDOR INVESTMENT PROGRAM PROJECT ALTERNATIVES

Highway 1 Project Alternatives (Morrissey to San Andreas)

The three alternatives currently under consideration are the HOV Lane Alternative, the Transportation Systems Management Alternative, and the No-Build Alternative, as described below.

Build Alternatives

HOV Lane Alternative

The HOV Lane Alternative would widen the existing four-lane highway to a six-lane facility by adding an HOV lane next to the median in both the northbound and southbound directions. Along the southern portion of the project, the existing median generally is wide enough to add the new HOV lanes within the existing right-of-way. A mandatory standard median width (6.6 m or 21.7 ft.) would be used through most of the corridor, north of Freedom Boulevard. Where existing frontage roads would be impacted, non-standard inside shoulder widths of 1.5 m (5 ft) are proposed to reduce right-of-way requirements and impacts. Such non-standard design features would require design exceptions, which are currently under review. In some locations as identified herein, widening would extend outside the existing State right-of-way.

The HOV Lane Alternative would modify or reconstruct all nine interchanges within the project limits to improve merging operations and ramp geometrics, lengthen acceleration and deceleration lanes, and improve sight distances. The Bay Avenue/Porter Street and 41st Avenue interchanges would be modified to operate as one interchange. Where feasible, design deficiencies on existing ramps would be corrected. Ramp metering and HOV lanes would be provided on all Highway 1 on-ramps. The HOV Lane Alternative would include auxiliary lanes between interchange ramps and Transportation Operations System electronic equipment, such as changeable message signs, highway advisory radio, closed-circuit television, microwave detection systems and vehicle detection systems as described also under the Transportation Systems Management Alternative—with the exception that an auxiliary lane would not be constructed northbound between State Park Drive and Park Avenue (see Section 1.3.1.3, Common Design Features of the Build Alternatives).

Bridge structures and the Capitola Avenue Overcrossing would be modified or replaced to accommodate the new HOV lanes. New and widened highway crossing structures would include shoulder and sidewalk facilities to accommodate pedestrians and bicycles. The HOV Lane Alternative would include three new pedestrian/bicycle overcrossings of Highway 1, as described also under the Transportation Systems Management Alternative and detailed in Section 1.3.1.3. The existing UPPR structures would be replaced, not relocated or lowered, to minimize environmental impacts. The Highway 1 bridge over Aptos Creek would be widened on the outsides to accommodate the new HOV lanes.

Bus pads with pedestrian access to local streets would be constructed at some highway ramps to facilitate highway access and improve travel times for buses, and locations for future Park and Ride lots would be considered.

Retaining walls would be constructed to minimize right-of-way acquisition and reduce or avoid environmental impacts. At locations where frontage roads are adjacent to Highway 1, concrete barriers will be constructed to separate the two facilities and minimize right-of-way acquisition. The project also would include demolition and disposal, excavation, borrow and fill, sound walls, right-of-way acquisition, and temporary easements.

Mainline Improvements with the HOV Lane Alternative

- Highway 1 would be widened to allow for two standard width (3.6 m [12 ft]) mixed-flow lanes, one standard width (3.6 m [12 ft]) HOV lane and standard outside (3m [10 ft]) shoulders.
- The proposed widening will be constructed into the median where the existing median width is over 13.8 meters (45 feet). Where the existing median width is less than 45 feet, the required widening will be both into the median and at the outside shoulder, but generally within the existing Highway 1 right-of-way.
- Where auxiliary lanes are proposed, widening to the outside would be increased by 3.76m (12 ft).
- A mandatory standard median width of 6.6 m (21.7 ft) is proposed through most of the corridor.
- The highway centerline would be shifted northward in the vicinity of the Union Pacific Railroad crossings to reduce impacts to wetlands. The bridge over Aptos Creek would be widened.
- Highway 1 would be lowered to obtain vertical clearance at the Union Pacific Railroad crossings in Aptos. A mandatory standard median width of .6 m (21.7 ft) is proposed to minimize impacts to the Union Pacific Railroad.
- Median and inside shoulder width would be non-standard to reduce impacts to adjacent streets at three segments on Highway 1 between State Park Drive and Bay Avenue, and one segment south of Soquel Drive. At these four constrained locations, the inside shoulder would be a non-standard 1.5 m (5 ft) and the median a non-standard 5.2 m (17 ft).

Auxiliary Lane Improvements with the HOV Lane Alternative

Auxiliary lanes would be added in at the following locations:

- Northbound and southbound between Freedom Boulevard and Rio Del Mar Boulevard – outside widening of up to 6.8 m (22.3 ft) is proposed.
- Northbound and southbound between Rio Del Mar Boulevard and State Park Drive – outside widening of up to 10m (32.8 ft) is proposed.
- Southbound along Highway 1 between State Park Drive and Park Avenue – outside widening of up to 5.8 m (19 ft) is proposed.
- Northbound and southbound along Highway 1 from Park Avenue to Bay Avenue/Porter Street – outside widening up to 14.9 m (49 ft) is proposed, and
- Northbound and southbound from 41st Street to Soquel Drive/Soquel Avenue – outside widening of up to 6.4 m (21 ft) is proposed.

Interchange Improvements with the HOV Lane Alternative

All interchanges within the project limits would be modified to improve merging operations and ramp geometrics, and to improve accessibility and safety for pedestrians and bicyclists.

Interchange improvements would generally include the following:

- HOV lanes and ramp metering would be provided on all on-ramps.
- Ramps would be widened and their geometrics improved where feasible.
- CHP enforcement areas would be provided at all on-ramps except Park Avenue, southbound.
- Intersections of freeway ramps with local roads would be modified to provide less skewed intersections with crosswalks for pedestrians and bicycles; free-right turns would be eliminated where feasible and traffic signals installed.
- Local roadways would be widened at the interchanges to serve anticipated travel demand.
- Retaining walls would be constructed to minimize impacts to local roadways, development, and wetlands and waterways.
- Drainage facilities would be provided for adequate drainage and treatment of storm water runoff.

Other specific improvements are identified by interchange area.

- **Changes at San Andreas/Larkin Valley Roads Interchange**
  - The existing northbound cloverleaf off-ramp merge onto Larkin Valley Road would be eliminated in favor of a signalized tee intersection.

  - A signalized intersection would be provided at the San Andreas Road ramps and the free-right turns eliminated.
  - The southbound Highway 1 bridge over San Andreas/Larkin Valley Road would be widened approximately 5m (16.4 ft) into the median to accommodate the HOV lanes.
  - On ramps would be widened to add HOV lane.
  - New sidewalks would be added along San Andreas/Larkin Valley Roads.
- **Changes at Freedom Boulevard Interchange**
  - The existing ramp termini at Freedom Boulevard would be modified to provide less skewed intersections with Freedom Boulevard. These intersections would be signalized, and free-right turns eliminated.
  - The Freedom Boulevard / Bonita Drive intersection would be improved.
  - The Freedom Boulevard Bridge would be replaced with a wider structure with standard vertical clearance over Highway 1.
  - New sidewalks would be added along Freedom Boulevard.
- **Changes at Rio Del Mar Boulevard Interchange**
  - The northbound on-ramp would be realigned to form a four-way intersection with Rio Del Mar Boulevard. This intersection would be signalized, and free right turns eliminated.
  - Soquel Drive would be shifted northward to accommodate the roadway widening along the northbound off ramp.
  - The ramp configuration on the south side would be retained, but ramps would be widened and the intersection with Rio Del Mar Boulevard would be signalized, and free-right turns eliminated.
  - The Rio Del Mar Boulevard bridge over Highway 1 would be replaced and widened to accommodate four through lanes and left turn pockets.
  - Sidewalk would be added along eastbound Rio Del Mar Boulevard; sidewalk on westbound is existing.
- **Changes at State Park Drive Interchange**
  - The State Park Drive bridge over Highway 1 would be replaced with a longer, wider bridge, to accommodate four vehicle lanes, bike lanes, and sidewalk, and to span the proposed width of Highway 1.
  - The existing on-ramps would be widened to accommodate an HOV lane.
  - Sidewalk would be added along eastbound Rio Del Mar Boulevard; sidewalk along westbound is existing.
  - The existing northbound cloverleaf on-ramp free-right is changed to a signalized right turn.
  - State Park drive is widened to four lanes.

- **Changes at Park Avenue Interchange**
  - The existing diamond interchange ramps would be retained and widened.
  - Park Avenue would be widened between Cabrillo College Drive and McGregor Drive. Widening would include shoulders and sidewalks for bicycle/pedestrian movements.
  - The two Highway 1 bridges over Park Avenue would be replaced with one structure to accommodate the HOV lanes, and a wider Park Avenue.
  - Sidewalk would be added along westbound Park Avenue; sidewalk along eastbound is existing.
- **Changes at Bay Avenue/Porter Street and 41st Avenue Interchanges** - Improvements at the Bay Avenue/Porter Street and 41st Avenue interchanges are designed so that these two interchanges work as a single interchange.
  - The ramps at Bay Avenue/Porter Street would be reconstructed to form less skewed intersections with Bay Avenue/Porter Street.
  - The existing southbound Highway 1 off-ramp to Bay Avenue/Porter Street would be eliminated. Southbound traffic bound for Bay Avenue/Porter Street would exit at 41st Street and continue on a new southbound collector road to Bay Avenue/Porter Street.
  - The existing on-ramp from westbound Porter Street to northbound Highway 1 would be modified to become a northbound frontage road.
  - The new collector from 41st Avenue would require a new structure over wetlands at Soquel Wharf.
  - Northbound traffic exiting Highway 1 would bear right to access Bay Avenue/Porter Street, or stay left and continue on a new structure over Bay Avenue/Porter Street, join the northbound collector, and end at a new signalized intersection at 41st Avenue.
  - At 41st Avenue, southbound on and off ramps would be eliminated and replaced with diagonal ramps forming signalized tee intersections with 41st Avenue.
  - At 41st Avenue, the northbound on ramps would include a realigned loop on and a new collector.
  - The 41st Avenue bridge over Highway 1 would be replaced and widened; the new bridge would provide bike lanes and sidewalks for pedestrians and bicycles, and accommodate the widening of Highway 1.
- **Changes at Soquel Drive/Soquel Avenue Interchange**
  - The northbound Highway 1 off-ramp to Soquel Drive would be realigned to a signalized tee intersection with Soquel Drive. The existing access to Commercial Way would be eliminated.
  - The Soquel Drive to northbound Highway 1 free-right turn would be eliminated.

- The geometrics of two existing northbound on-ramps from Soquel Avenue would be improved, HOV lanes added, and free-right entrance to the loop ramp would become a signalized tee.
- The existing northbound off-ramp from Highway 1 to Soquel Drive would be eliminated and replaced with a diagonal ramp forming a signalized intersection with Soquel Drive.
- A new southbound diagonal off-ramp and a loop on-ramp would be controlled by a signalized intersection at Soquel Avenue. The existing southbound hook on-ramp would be widened to accommodate an HOV lane.
- The Soquel Drive/Soquel Avenue bridge over Highway 1 would be reconstructed to accommodate HOV lanes. The new bridge would have sidewalks and bike lanes for pedestrians and bicycles,
- The culvert at Arana Gulch would be extended underneath the widened Highway 1 and new southbound off-ramp.
- Sidewalk would be added along eastbound Soquel Drive/Soquel Avenue; sidewalk along westbound is existing.

- **Improvements at Morrissey Boulevard interchange**
  - The southbound exit from Highway 1 to Morrissey Boulevard would be realigned to terminate at a new signalized intersection with Morrissey Boulevard.
  - Morrissey Boulevard between Highway 1 and Fairmont Avenue would be widened and realigned.
  - The existing Morrissey Boulevard on-ramp to southbound Highway 1 would be eliminated and replaced with a new three-lane on-ramp from Morrissey Boulevard.
  - The existing southbound exit and on-ramp at Elk Street would be eliminated.
  - Sidewalk would be added along eastbound Morrissey Boulevard; sidewalk along westbound is existing.
  - The Morrissey Boulevard Bridge would be replaced to accommodate the new HOV lanes on Highway 1, and sidewalks and bike lanes on Morrissey Boulevard.
  - The existing northbound access from Rooney Street would be eliminated.
  - The existing northbound loop from Morrissey Boulevard would be eliminated, as would access to Rooney Street from this northbound loop.
  - A new northbound diagonal on-ramp with an HOV lane would be constructed. Entrance to the new diagonal would be at a signalized intersection with Morrissey Boulevard.

Transit-Related Facilities

In addition to the HOV lanes on the freeway ramps and mainline, the HOV Lane Alternative would include the following features to facilitate freeway-oriented transit services and operations:

- Both on-ramps and both off-ramps at the reconfigured Park Avenue interchange include options for bus pads and bus shelters.
- Ramps and collectors at the Bay Avenue/Porter Street and 41st Avenue interchange include options for bus pads and shelters.
- A future Park and Ride lot is under consideration at the 41st Avenue interchange, to be coordinated with the bus facilities
- Feasibility for a Park and Ride lot in the Bay Avenue/Porter Street interchange area would be determined during final design.

New Bicycle/Pedestrian Overcrossings

The HOV Lane Alternative would construct new bicycle/pedestrian overcrossings of Highway 1 at the following locations:

- Mar Vista Drive – the crossing would start on the north side of Highway 1 and parallel the highway eastward for about 200 m (600 ft), doubling back westward as it climbs before crossing the highway at a right angle and then descending by switchbacks to and along Mar Vista Drive for about 180m (550 ft); multiple configurations are under consideration.
- Chanticleer Avenue – the crossing would start at the Chanticleer cul-de-sac on the north side of Highway 1 and parallel the highway for about 180m (550 ft) to the west before crossing it on a curved or perpendicular alignment, returning to terminate just west of Chanticleer on the south side of the highway.
- Trevethan Avenue – the crossing would start on the north side of Highway 1 at Trevethan Avenue and parallel the highway about 200m (600 ft) before crossing on an angle and continuing along the banks of the western tributary to Arana Gulch to terminate close to Harbor High School.

Transportation Systems Management Alternative

The Transportation Systems Management Alternative was formulated to identify Highway 1 improvements that would partially address the project purpose and need, and could be achieved at lower cost or with lesser impacts than the HOV Lane Alternative. Transportation Systems Management strategies typically consist of improvements that can benefit the operations of existing facilities without increasing the number of through lanes. Examples of

Transportation Systems Management strategies include ramp metering, auxiliary lanes, turning lanes, and traffic signal coordination.

General Description

The Transportation Systems Management Alternative proposes to add ramp metering and construct HOV bypass lanes on existing interchange on-ramps, improve existing nonstandard geometric elements at various ramps, and add auxiliary lanes along the mainline between major interchange pairs within the project limits, as described below and summarized in Section 1.3.1.3, Common Design Features of the Build Alternatives. Auxiliary lanes are designed to reduce conflicts between traffic entering and exiting the highway by connecting from the on-ramp of one interchange to the off-ramp of the next; they are not designed to serve through traffic.

The Transportation Systems Management Alternative also would include Transportation Operations System electronic equipment as described for the HOV Lane Alternative. It would include HOV bypass lanes on interchange on-ramps, but would not construct HOV lanes or any additional through lanes on the mainline.

The Transportation Systems Management alternative would reconstruct the north and south Aptos railroad underpasses and the State Park Drive, Capitola Avenue, and 41st Avenue overcrossings, widen the Aptos Creek and Soquel Creek bridges, and construct new pedestrian/bicycle overcrossings over Highway 1, features it shares with the HOV Lane Alternative, as described in Section 1.3.1.3.

Auxiliary Lanes

Auxiliary lanes to be constructed on Highway 1 with the Transportation Systems Management Alternative consist of the following:

- Northbound and southbound between Freedom Boulevard and Rio Del Mar Boulevard – outside widening up to 5 m (16.7 ft) on each side is proposed.
- Northbound and southbound between Rio Del Mar Boulevard and State Park Drive – outside widening up to 6.5 m (21.7 ft) on each side is proposed.
- Northbound and southbound between State Park Drive and Park Avenue – northbound, up to 5 m (16.7 ft) of outside widening; southbound, up to 5 m (16.7 ft) of outside widening is proposed.
- Northbound and southbound between Park Avenue and Bay Avenue/Porter Street – northbound, outside widening of about 5.5 m (18.3 ft) would occur; southbound, outside widening of about 5 m (16.7 ft) is proposed; and

- Northbound and southbound from 41st Avenue to Soquel Drive/Soquel Avenue – northbound, there would be outside widening of about 5.5 m (18.3 ft) and southbound, widening would be about 5 m (16.7 ft).

New Bicycle/Pedestrian Overcrossings

The Transportation Systems Management Alternative would construct new bicycle/pedestrian overcrossings of Highway 1 at Mar Vista Drive, Chanticleer Avenue and Trevethan Avenue as described under the HOV Lane Alternative.

Other Improvements

Additional improvements that would be constructed under the Transportation Systems Management Alternative include:

- CHP enforcement areas at on-ramps.
- The Highway 1 bridge over Aptos Creek would be widened to accommodate the auxiliary lanes.
- The Capitola Avenue bridge would be replaced over the widened Highway 1.
- The Soquel Avenue southbound off-ramp from Highway 1 would be widened for two exit lanes, leading to the existing two left turns and one free right-turn at Soquel Avenue.

1.3.1.1 Common Design Features of the Build Alternatives

The HOV Lane Alternative shares three primary sets of features with the Transportation Systems Management Alternative: new auxiliary lanes, new pedestrian/bicycle overcrossings of Highway 1, and Transportation Operations System electronic equipment. These common design features are highlighted here but the auxiliary lanes are discussed in detail within the separate description of each alternative, since specifics vary.

Auxiliary Lanes

Auxiliary lanes would be constructed in the following locations under either the HOV Lane or Transportation Systems Management Alternative:

- Freedom Boulevard and Rio Del Mar Boulevard – northbound and southbound.
- Rio Del Mar Boulevard and State Park Drive – northbound and southbound
- State Park Drive and Park Avenue – both directions in the TSM alternative; southbound only in the HOV alternative.
- Park Avenue and Bay Avenue/Porter Street – northbound and southbound.
- 41st Avenue and Soquel Avenue/Soquel Drive – northbound and southbound.

New Bicycle/Pedestrian Overcrossings

Both build alternatives would construct new bicycle/pedestrian overcrossings of Highway 1 at Mar Vista Drive, Chanticleer Avenue and Trevethan Avenue, as described under the HOV Lane Alternative.

Other Common Features of the Build Alternatives

Both the HOV Lane and Transportation Systems Management Alternatives would construct HOV lanes and install ramp metering on the Highway 1 on-ramps within the project limits. Under the Transportation Systems Management Alternative, however, no new HOV lanes would be incorporated into the freeway mainline.

Both build alternatives would include reconstruction of the north and south Aptos railroad underpasses and the State Park Drive, Capitola Avenue, and 41st Avenue overcrossings. Also, under both alternatives, the Aptos Creek and Soquel Creek bridges would be widened.

Both the HOV Lane and Transportation Systems Management Alternatives also would include Transportation Operations System: equipment such as changeable message signs, highway advisory radio, closed-circuit television, microwave detection systems and vehicle detection systems.

IMPROVEMENT COST ESTIMATES

Kimley»Horn

Client:	Boos Development West LLC	Date:	03/21/19
Project:	Soquel Drive / Mission Drive Intersection	Prepared By:	DW
KHA No.:	097XXXXXX	Checked By:	NP

NB Split Phase, SB Split Phase

Title:	Opinion of Probable Project Cost Estimate for Fair Share	Sheet	1

Item No.	Item Code	Description	QTY.	Unit	Unit Cost	Total
1		Mobilization	1	LS	$500.00	$ 500
2		Traffic Control	1	LS	$5,000.00	$ 5,000
3		Remove Thermoplastic Traffic Stripe		LF	$2.00	$ -
4		Remove Thermoplastic Pavement Marking		SF	$5.00	$ -
5		Roadside Sign (One Post - Metal)		EA	$400.00	$ -
6		4" Thermoplastic Traffic Stripe		LF	$1.50	$ -
7		6" Thermoplastic Traffic Stripe		LF	$2.50	$ -
8		8" Thermoplastic Traffic Stripe		LF	$4.00	$ -
9		Thermoplastic Pavement Marking		SF	$5.00	$ -
10		Thermoplastic Pavement Marking (Green)		SF	$12.00	$ -
11		Modify Signal Controller (Phasing and Timings)	1	LS	$50,000.00	$ 50,000
		Construction Subtotal				$ 55,500
		Construction Contingency			15%	$ 8,325
		Construction				$ 64,000
		Construction Management / Support			10%	$ 7,000
		Environmental Studies / Permitting			0%	$ -
		Engineering Design / PS&E			15%	$ 10,000
		Project Management / City Administration			0%	$ -
		Right-of-Way Acquisition & Support			0%	$ -
		Survey & Utility Coordination			0%	$ -
		Total Estimated Project Cost				**$ 81,000**

Vehicle Miles Traveled (VMT)

Application Number 191157

Attachment 4

FEHR & PEERS

Final Memorandum

Date: December 11, 2020

To: Dudley Campbell, Devenney Group Ltd., Architects.

From: Mark Howard, EIT and Daniel Rubins, Fehr & Peers

Subject: Dominican Hospital Vehicle Miles Traveled (VMT) Assessment

SJ19-1925.02

This memorandum describes the results of a VMT assessment performed for the proposed Dominican Hospital modernization Project. The Project will include an 84,054-square foot (s.f.) hospital expansion, renovation of the existing surgical department of 12,448 s.f., and the construction of a 409-space multi-level parking structure.

The modernization of Dominican Hospital would allow it to better serve its patients in Santa Cruz County, not increase the number of licensed patient beds and will continue to primarily serve Santa Cruz County. The small increase (0.02% or less) in daily boundary VMT could be off set by participating in regional transportation demand management programs like Cruz511.org.

SB 743 VMT Assessment Overview

Senate Bill (SB) 743, signed by Governor Jerry Brown in 2013, is changing the way transportation impacts are identified under the California Environmental Quality Act (CEQA). Specifically, the legislation directed the State of California's Office of Planning and Research (OPR) to look at different metrics for identifying transportation impacts. Following several years of draft proposals and related public comments, OPR issued its *Technical Advisory on Evaluating Transportation Impacts in CEQA* (December 2018) to assist practitioners in implementing the CEQA Guidelines revisions to use vehicle miles traveled (VMT) as the preferred metric for assessing passenger vehicle related impacts. Along with this OPR advisory guidance, the CEQA guidelines were updated in December 2018, such that vehicle LOS will no longer be used as a determinant of significant environmental impacts, and an analysis of VMT will be required. The use of VMT for CEQA is required as of July 2020.

Santa Cruz County has prepared its guidance for SB 743 implementation under the *Analyzing Vehicle Miles Traveled for CEQA Compliance* (July 2020). This document indicates a hospital would use a net change in the regional daily VMT generated by Santa Cruz County as the VMT threshold (Exhibit 3 – Significance Thresholds and Methodology). The regional daily VMT is the sum of the employee and customer VMT in Santa Cruz County in any type of vehicle.

Project Description

Dominican Hospital is planning for the future and has identified a need to modernize to continue providing healthcare in Santa Cruz County at the highest level and to provide enhanced care capabilities. The main purpose for the hospital modernization Project is to enhance patient and operating room quality by converting existing semi-private rooms to private rooms and replacing existing operating rooms. The combination of converting the existing semi-private rooms to private rooms and adding 60 new private patient's rooms will not increase the total number of patient beds. Dominican Hospital currently has 222 licensed patient beds. The modernization will result in a total of 222 licensed patient beds when the Project is completed.

The Project includes the following components:

- Renovation of 12,448 s.f. in the existing surgical department for patient's room
- Addition of 84,054 s.f. in a new hospital tower
- Construction of a 409-space parking structure

The proposed hospital expansion will be located on the northeast side of the existing hospital building. It will consist of three levels plus a basement floor containing storage and mechanical equipment. This hospital modernization will replace eight existing operating rooms with 10 new operating rooms on the ground level and provide 60 new patient rooms on two levels (30 private patient rooms per floor) by converting of the existing facility's semi-private patient rooms into private patient rooms, thus not increasing the total number of licensed patient beds for the hospital.

Technical Approach

As noted above, the modernization will not increase the number of patient beds. In addition, the Project is primarily serving Santa Cruz County, meaning only a small portion of vehicle trips travel outside of Santa Cruz County. Furthermore, the hospital expects to add fewer than 40 employees with this modernization. This analysis discusses the expected distribution of daily vehicle trips and the Project's resulting effect on VMT under Existing Conditions:

- Distribution of Daily Trips: To confirm the Project is primarily serving Santa Cruz County, we compared the trip distribution from the Santa Cruz County Regional Transportation

Commission (SCCRTC) travel model for the Project transportation analysis zone and from the StreetLight©[1] trip data for the Dominican Hospital campus.

- Project's Effect on VMT under Existing Conditions: The change in boundary VMT was evaluated using the SCCRTC travel model with 1) 39 additional employees to reflect the employment growth estimate prepared by Dominican Hospital (see **Attachment A**), and 2) 197 additional employees to reflect the 901 additional daily trips to be used by County Public Works staff to estimate the traffic fee.

To conduct a VMT assessment, certain methodological determinations must first be made based on the County guidelines. The necessary determinations, and the selected tools to be used in this case, are as follows:

- Select a VMT calculation tool
    - Use the SCCRTC travel forecasting model with a modification to the land use input for TAZ to classify 1,483 service employees as public employees. This was done for consistency with the cumulative year land use inputs that classified the hospital as public employees – a more appropriate classification of hospital employees. This change does not affect the daily trip generation.
    - As shown in **Table 1**, the service population is the sum of the number of employees plus residents within Santa Cruz County. The land use input is an important part of the VMT generation.
- Select the VMT accounting method
    - Boundary VMT and Boundary VMT per Service Population: The Project's effect on VMT is evaluated using the boundary VMT which is the VMT that occurs within all of Santa Cruz County by any type of vehicle and an adjustment for vehicles once they travel outside of Santa Cruz County (see **Attachment B**). This captures all on-road vehicle travel on a roadway network for any purpose and includes local trips as well as trips that pass through the area without stopping. The boundary VMT is divided by the service population (residents plus employees) to distinguish the effects of Project employment growth from the effects of changes in personal travel behavior. The boundary VMT is used to evaluate the "regional VMT change" described in the *Santa Cruz County Analyzing Vehicle Miles Traveled for CEQA Compliance* (October 2020) by including all VMT generated by employees and customers in Santa Cruz County and pass-through VMT on the roadways. Because people travel by vehicle to work or to consume a good and/or service, this is all the VMT on the roadway system in Santa Cruz County with adjustments for trips that have a trip end outside of the County.

[1] StreetLight© is a data vendor that provides location-based data from cellular devices and GPS data from equipped vehicles that can be used to estimate average trip lengths, as well as trip origins and destinations.

- Calculate the existing daily boundary VMT estimates
  - The analysis presented here uses VMT from all trip purposes and vehicle types (i.e., there is no separation of VMT by land use) for Santa Cruz County under base year conditions from the SCCRTC travel model.

Table 1: Santa Cruz County Service Populations

Population	Existing Conditions	Existing with Project Conditions
Employees (A)	111,910	111,950
Residents (B)	272,650	272,650
Service Population (A + B = C)[1,2]	384,560	384,600

Notes:
1. Rounded service population and VMT to nearest 10.
2. Service population is defined as the sum of all residents and employees.

Source: Fehr & Peers, 2020.

VMT Assessment

Distribution of Trips

To confirm that the hospital primarily serves Santa Cruz County the trip distribution from the SCCRTC travel model and StreetLight© data are summarized in **Table 2**. The trip distribution is a summary of two slightly different geographic areas because of the smallest land use summary unit in the SCCRTC travel model is the transportation analysis zone, and the Dominican Hospital campus for the StreetLight© data.

Table 2: Project Distribution

Location	SCCRTC Travel Model[1]	StreetLight Data
Santa Cruz County	94%	91%
Santa Clara County	4%	4%
Monterey County	2%	3%
Other Counties[2]	0%	2%

Notes:
1. Summary of daily trip select zone analysis for transportation analysis zone (TAZ 514).
2. Not including Santa Cruz, Santa Clara, and Monterey County.

Source: Fehr & Peers, 2020.

Both sources indicate that most of the hospital trips have an origin and a destination within Santa Cruz County. The SCCRTC travel model estimates 94 percent of the vehicle trips to and from the Project transportation analysis zone that includes the Project site stay within Santa Cruz County. The StreetLight© data indicates that 91 percent of Dominican Hospital campus trips are within Santa Cruz County. The average trip length estimated by the SCCRTC travel model was 7.5 miles, which is similar to the 9.1 miles estimated by StreetLight© data, both trip lengths would remain fully in Santa Cruz County. Because most of the project trips stay within Santa Cruz County, the use of the SCCRTC travel model is sufficient to estimate the effects on the boundary VMT in Santa Cruz County.

Project's Effect on VMT under Existing Conditions

As noted earlier, the Project's effect on VMT is evaluated using the boundary VMT, which captures all VMT on the roadway network within Santa Cruz County, including local trips plus interregional travel that does not have an origin or destination within the area. The geographical boundary method was adjusted at the SCCRTC travel model external stations to include the impact of vehicles once they travel outside the area limits. The use of boundary VMT is a more complete evaluation of the potential effects of the Project because it captures the combined effect of new VMT, shifting existing VMT to/from other neighborhoods, and/or shifts in existing traffic to alternate travel routes or modes. The boundary VMT is also divided by the service population (sum of residents and employees) to account for the effects of population and/or employment growth and the effects of changes in personal travel behavior within the specified geographic area.

The Project's effect on VMT was evaluated by adding 39 additional employees to the Dominican Hospital TAZ and comparing the boundary VMT with and without the Project as shown in **Table 3**. Under Existing Conditions, the boundary VMT per service population is 21.3. And with the addition of 39 employees under Existing with Project Conditions the boundary VMT per service population remains 21.3. The boundary VMT on the Santa Cruz County roadway system only increases by 70 daily boundary VMT with the additional 39 employees. This is a 0.0009% increase in the Santa Cruz County boundary VMT.

Table 3: Project's Effect on VMT with 39 Employees

VMT Metric	Existing Conditions	Existing with Project Conditions (39 Employees)
Daily Trips[3]	1,481,330	1,481,370
Boundary Vehicle Miles Traveled (A)[1]	8,184,260	8,184,330
Service Population (B)[1,2]	384,560	384,600
VMT per Service Population (A/B = C)[1]	21.3	21.3

Notes:
1. Rounded service population and VMT to nearest 10. VMT per service population rounded to the nearest tenth.
2. Service population is defined as the sum of all employees, and residents.
3. Daily trips rounded to nearest 10 and include the countywide daily trips and the pass-through trips.
Source: Fehr & Peers, 2020.

The Project's effect on VMT was evaluated by adding 197 additional employees to the Dominican Hospital TAZ and comparing the boundary VMT with and without the Project as shown in **Table 4**. This scenario tested the approximately 900 additional daily trips to be used by County Public Works staff to estimate the traffic fee. Under Existing Conditions, the boundary VMT per service population is 21.3. With the addition of 197 employees under Existing with Project Conditions the boundary VMT per service population remains 21.3. The boundary VMT on the Santa Cruz County roadway system only increases by 1,680 daily boundary VMT with the additional 197 employees. This is a 0.02% increase in the Santa Cruz County boundary VMT.

Table 4: Project's Effect on VMT with 197 Employees

VMT Metric	Existing Conditions	Existing with Project Conditions (197 Employees)
Daily Trips[3]	1,481,330	1,481,590
Boundary Vehicle Miles Traveled (A)[1]	8,184,260	8,185,940
Service Population (B)[1,2]	384,560	384,760
VMT per Service Population (A/B = C)	21.3	21.3

Notes:
1. Rounded service population and VMT to nearest 10. VMT per service population rounded to the nearest tenth.
2. Service population is defined as the sum of all employees and residents.
3. Daily trips rounded to nearest 10 and include the countywide daily trips and the pass-through trips.
Source: Fehr & Peers, 2020.

Conclusion

The VMT assessment above shows that the Dominican Hospital modernization would primarily serve Santa Cruz County and increase the change VMT on Santa Cruz County roadways by 0.02% or less.

Attachment

Attachment A Dominican Hospital Employment Growth Estimates
Attachment B External Station Distance Adjustments

Data provided by Dominican Hospital Project Team May 4, 2020.

Existing						
	# of rooms	Min. Staffing Ratio per room	Support Staff per unit	Subtotal	**Planned utilization**	
Opearting Rooms	8	6	3	51	75%	
Preoperative Care Unit	7	1/4	1	3		
Post Anesthesia Care Unit	10	1/2	1	6		
Patient Rooms						
ICU Unit	n/c					
NICU Unit	n/c					
Maternal Child Health Unit	n/c					
Acute Rehab	n/c					
Med Surg / TELE						
TCU(North East)	36	1/4	3	12		
M/S (North West)	26	1/5	3	9		
M/S (West)	30	1/5	3	9		
			Approximate Staffing Total	90		
Proposed						
	# of rooms	Staffing Ratio per room		Total		
Operating Rooms	10	6	4	64		
Preoperative Care Unit	18	1/4	2	7		
Post Anesthesia Care Unit	18	1/2	2	11		
Patient Rooms						
ICU Unit	n/c					
NICU Unit	n/c					
Maternal Child Health Unit	n/c					
Acute Rehab	n/c					
Med Surg / TELE					75%	
TCU(North East)	16	1/4	3	7		Assumed Tele ratio
M/S (North East)	19	1/5	3	7		
M/S (North West)	14	1/5	3	6		
M/S (West)	17	1/5	3	7		
New Tower M/S L2	30	1/5	3	9		
New Tower M/S L3	30	1/4	3	11		Assumed Tele ratio
			Approximate Staffing Total	129		
			Potential Staffing Increase	39		
Patient Volume Assumptions	**Planning Start Date**	**Planning Forecast Date**	**% of change**	**Planned utilization**	**% of cases during Primary Shift**	**Typical Planned Shift Hours per OR**
	2017	**2030**				
Inpatient Surgery	2679	3326	24%			
Outpatient Surgery	1699	2489	46%			
Total Surgical cases	4378	5815	33%	75%	80%	40
Family @ bedside assumption	# of beds	Family Members per bedside	% of increase			
Existing	222	1.5		333		
Future State	222	1.5	10%	366.3		
			Potential visitor Increase	33.3		

Attachment B: External Station Distance Adjustments							
ID	STREET NAME	EXISTING CONDITIONS			EXISISTING WITH PROJECT CONDITIONS		
		DISTANCE	DAILY VOLUME	DAILY VMT	DISTANCE	DAILY VOLUME	DAILY VMT
15589	SKYLINE BLVD	5.87	701	4,115	5.87	701	4,115
22734	WARD RD	5.87	0	0	5.87	0	0
40606	CABRILLO HWY	11.03	5,326	58,743	11.03	5,326	58,747
22414	WHITEHOUSE RD	0.68	0	0	0.68	0	0
45599	CANYON RD	1.06	0	0	1.06	0	0
21939	JOHANSEN TRL	1.05	0	0	1.05	0	0
22754	CHINA GRADE RD	0.99	0	0	0.99	0	0
22435	BLACK RD	0.75	0	0	0.75	0	0
33150	SUMMIT RD	0.56	0	0	0.56	0	0
35209	SANTA CRUZ HWY	14.90	52,350	780,019	14.90	52,354	780,082
33137	OLD SUMMIT RD	14.90	0	0	14.90	0	0
22969	BEAR CREEK RD	0.40	0	0	0.40	0	0
68	THURWACHER RD	23.03	107	2,468	23.03	107	2,468
10440	STATE HWY 1	23.03	25,941	597,431	23.03	25,943	597,475
45043	STATE HWY 1	23.03	25,342	583,623	23.03	25,344	583,667
44969	ROGGE LN	23.03	445	10,256	23.03	445	10,256
41647	MAIN ST	23.03	25,987	598,476	23.03	25,989	598,523
45047	MURPHY RD	23.03	905	20,836	23.03	905	20,837
47543	LOCAL RD	9.79	5,662	55,430	9.79	5,662	55,433
45610	CONGRESS SPRINGS RD	0.83	2,570	2,144	0.83	2,570	2,144
40702	RIVERSIDE DR	23.03	10,911	251,276	23.03	10,912	251,297
			TOTAL	2,964,816		TOTAL	2,965,043

Source: Fehr & Peers, 2020.

Geotechnical (Soils) Report

Application Number 191157

Attachment 5

Preliminary Report
Geotechnical Investigation

Hospital Expansion and Parking Structure
Dominican Hospital, Dignity Health
Santa Cruz, Santa Cruz County, California

October 31, 2019

#2019-070G

RUTHERFORD + CHEKENE

October 31, 2019

Mr. Kevin Lew
Preconstruction Director
Northern Pacific Division
McCarthy Building Companies, INC.
1265 Battery Street, 3rd Floor
San Francisco, CA 94111

2019-070G

Subject: **PRELIMINARY GEOTECHNICAL INVESTIGATION REPORT**
PROPOSED HOSPITAL EXPANSION AND PARKING STRUCTURE,
DOMINICAN HOSPITAL, DIGNITY HEALTH
SANTA CRUZ, SANTA CRUZ COUNTY, CA

Dear Mr. Lew:

We are pleased to transmit herewith a copy of our preliminary report for the geotechnical investigation for the proposed Hospital Expansion and Parking Structure, Dominican Hospital and Parking Structure, at Santa Cruz, California. The original scope of our services was described in our proposal to you, dated October 17, 2018.

The purposes of this report was to define preliminary potential measures to mitigate identified geologic hazards and to document preliminary geotechnical recommendations needed for design. For completeness and ease of reference, we have included summaries of the findings from our geologic hazard evaluation.

We note that the preliminary recommendations contained in this report are for the early phase of design. As the design evolves, these recommendations must be revisited.

If there are questions regarding any aspect of this report, please contact us. We appreciate the opportunity to be of service to you on this most interesting project.

Sincerely,

RUTHERFORD + CHEKENE

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SECTION 1
SITE AND PROJECT INFORMATION

INTRODUCTION

General

This report summarizes the preliminary findings and recommendations from our geotechnical investigation on the sites of the proposed Hospital Expansion and Parking structure for the Dominican Hospital Expansion project, at Santa Cruz, California. Our investigation has addressed the particular geotechnical aspects of both projects as described below.

Purpose

The purpose of this investigation was to evaluate potential geologic hazards at the site, and subsequently develop detailed recommendations and criteria needed for design.

Description of Project Sites

The proposed Dominican Hospital Expansion project site is located within the Dominican Hospital Soquel Campus.

The Hospital Expansion site is bounded to the north by Dominican Way, to the south by the Emergency Department, to the east by the Original East Wing, and to the west by Hospital Drive. Currently, the site is an asphalt concrete-paved parking lot serving the Emergency Department.

The new parking structure site is bounded to the north by the Dominican Way, to the south by Medical Office Buildings, to the east Mission Drive and to the west by the Hospital Drive parking lot. Currently the site is a parking lot with asphalt paving.

The locations of the two project sites are shown on Figure 1: Site Vicinity Map, and Figure 2: Site Location Map in Appendix A.

Description of Proposed Project

The proposed Dominican Hospital Expansion project will involve of the demolition of the existing parking lot walkway and construction of a new 3-level expansion. The new expansion will include a partial basement level in the southwest corner of the building. The expansion is anticipated to have a gross footprint of approximately 32,000 GSF. The proposed hospital structure will be designed to meet regulatory requirements of the Office of Statewide Health Planning and Development (OSHPD).

The proposed parking structure will involve the demolition of the existing parking lot and construction of a new 3-level parking structure.

Site Elevations

We based the site elevations in this report on a topographical survey, dated 1 March 2001 for Dominican Hospital. The elevations in the survey are based on the 1929 National Geodetic Vertical Datum (NGVD).

Subsurface Exploration and Laboratory Testing

Subsurface Exploration: To obtain adequate subsurface information for use in properly characterizing the site and developing appropriate foundation and other recommendations, we drilled and logged: i) six exploratory borings at the proposed Hospital Expansion site ranging from 40 to 41.5 feet in depth, and ii) five exploratory borings at the proposed Parking Structure site ranging from 30 to 31 feet in depth. The logs of the exploratory borings are presented in Appendix C.

The locations of the exploratory borings are shown in Figure 3: Site and Exploration Location Plan in Appendix A.

Laboratory Testing: We performed laboratory tests on a selected number of soil samples from the subsurface exploration program. The tests were aimed at defining the index, strength, and empirical compressibility characteristics of representative soil samples. We also performed corrosivity analysis on four soil samples from the Hospital Expansion and the Parking Structure sites to determine the corrosivity potential of those samples. The laboratory test results are presented in Appendix D.

Environmental Soil Profiling

We performed an environmental study to characterize the site soils for disposal purposes. The scope of the study was based on assumed excavation depths and volumes of materials to be hauled-off the sites. The environmental profiling effort was spearheaded by Weber Hayes and Associates (WHA), serving as a subconsultant to our office. The results of the environmental profiling is presented in Appendix E.

Infiltration Study

We performed an infiltration study to determine the infiltration rates of the soils at the locations of the proposed bio-retention planters for the Hospital Expansion and Parking Structure. The infiltration study effort was spearheaded by Weber Hayes and Associates (WHA), serving as a subconsultant to our office. The results of the infiltration study is presented are Appendix F.

Previous Geotechnical Investigations

Geotechnical information relevant to the project was obtained from previous investigations performed by Pacific Crest Engineering Inc. and Zinn Geology.

Scope – Limitations

1. This geotechnical investigation has addressed the specific geotechnical issues deemed relevant to the proposed Dominican Hospital Expansion and Parking Structure projects only as described above. General conclusions and recommendations presented herein are valid only when applied to the projects as described above. No attempt should be made to extend or extrapolate these conclusions and recommendations to other areas or designs without review and written authorization by this office. Anyone relying on this report for other projects or designs, without appropriate review by our office, does so at his/her own risk.

2. This report has been prepared for the exclusive use of Dignity Health Dominican Hospital and its consultants for specific application to the proposed Hospital Expansion and Parking Structure projects as described herein. In the event that there are any changes in ownership, nature, or design of the project, the conclusions and recommendations contained in this report shall not be considered valid unless (1) the project changes are reviewed by Rutherford + Chekene and (2) the conclusions and recommendations presented in this report are modified or verified in writing.

3. The discussion, conclusions, and recommendations contained in this report are based in part upon the data obtained from exploratory borings performed as part of this geotechnical investigation. The nature and extent of variations between the borings may not become evident until construction. If variations are discovered, it will be necessary to re-evaluate the recommendations of this report.

4. This report should not be part of the contract documents for the proposed project described herein. The report is provided for informational purposes only.

5. We cannot be responsible for the impacts of any changes in geotechnical or geologic standards, practices, or regulations subsequent to the performance of our services if we are not consulted subsequent to the changes.

6. We can neither vouch for the accuracy of information supplied by others, nor accept consequences for any use of segregated portions of this report without prior consultation with our office.

7. The opinions set forth in this report are not based upon an examination of the location or condition of utility lines or other subsurface structures on the property. Any risks arising from the location or condition of such lines must be assumed by those performing the construction.

8. Rutherford + Chekene assumes no responsibility for the management of contaminated or hazardous materials that may be found on the site.

    a. Rutherford + Chekene assumes no responsibility for the management of the contaminated or hazardous materials that may be found on the site.

b. Rutherford + Chekene has not performed an investigation to determine the potential health risks of contaminated or hazardous materials found on site. The Owner must provide the results of such an investigation, if it has been performed.

c. The Construction Contractor is responsible for ensuring that personnel within the work area are protected from hazardous materials. If hazardous materials are discovered, the Contractor must immediately notify the Owner and cease work until conditions can be maintained in accordance with all applicable regulations.

Review of Design Documents

We should be provided the opportunity to perform a general review of the final design drawings and specifications, prepared by members of the design team that are outside of our office, for their conformance with and proper application of our geotechnical recommendations. Our review will be brief in nature, limited to the earthwork and foundation aspects of the project, and will not involve any calculations or checking of plan completeness. If we are not accorded the opportunity to make this recommended review, we cannot assume responsibility for misinterpretation of our recommendations.

Organization of Report

This report has been organized into six sections as follows:

1. Section 1 – Site and Project Information
2. Section 2 – Geology and Subsurface Conditions
3. Section 3 – Geologic Hazard Study
4. Section 4 – Conclusions and Design Recommendations
5. Section 5 – Construction Observation
6. Section 6 – Field Exploration and Laboratory Testing Program
7. Section 7 – Environmental Soil Profiling
8. Section 8 – Infiltration Study
9. Section 9 – References
10. Section 10 – Appendices

SECTION 2
GEOLOGY AND SUBSURFACE CONDITIONS

GEOLOGY

General

We commissioned GeoInsite, Inc. of Los Gatos, California to perform a geologic hazards evaluation of the proposed site. Their report, titled "Geologic Hazards Investigation, Hospital Expansion, Dominican Hospital, Dignity Health, Santa Cruz, California", is presented in Appendix B of this report.

We have presented brief summaries of the findings and conclusions from GeoInsite's report in Sections 2 and 3 of this report. For further details, please refer to GeoInsite's report in Appendix B.

Regional and Local Geology

The project site is located in Santa Cruz County, which is situated on the southwestern slope of the central Santa Cruz Mountains. The Santa Cruz Mountains are part of the Coast Ranges geomorphic province of California. The province is characterized by generally northwest-trending, elongated mountain ranges from 600 to 1300 meters (2,000 to 4,000 feet) above sea level separated by narrow valleys.

The city of Santa Cruz lies on a narrow coastal plain at the mouth of San Lorenzo River Valley o the northern shore of the Monterey Bay. The coastal plain is bounded landward by the Santa Cruz Mountains. A majority of the City of Santa Cruz lies on a relatively flat topographic bench known as a marine terrace, which was formed by marine wave erosion action at a time when the land surface was lower than at present and eventually underwent gradual rise during regional uplift of the California coastline.

In general, the site is underlain by sediments sequence that are characterized as the lowest emergent coastal terrace deposits. The lowest emergent coastal terrace deposits are described as semi-consolidated to unconsolidated, generally well-sorted/poorly graded sand with thin gravel layers, flat-lying Quaternary age marine terrace deposits. These marine sediments are underlain by flat lying to gently southward dipping Pliocene age Purisima Formation sandstone bedrock.

The San Andreas Fault is the dominant structural feature within the Coast Ranges and is often observed as a long, narrow and linear valley associated with the active trace of the San Andreas Fault zone. The San Andreas Fault system is a fundamental geologic boundary between two of the earth's tectonic plates - the North American and Pacific plates. The fault system follows a northwest-trending path through most of California, arising in the south from a set of transform faults in the Gulf of California and joining, to the north, the Mendocino Fracture Zone offshore of the northern part of the state.

This area is characterized by active and potentially active faults. The active faults include San Andreas, Zayante-Vergeles, and Monterey Bay faults that could produce major earthquakes that could impact the site.

Detailed descriptions about the various faults "in the vicinity of the site" are presented in GeoInsite's report in Appendix B.

Site Soil Conditions

Based on the earth materials encountered in the borings from current and past investigations at or in the vicinity of the site, we have developed generalized subsurface profiles for the site. Our generalized subsurface profiles are shown in Figures 4 to 10 in Appendix A.

In general, the soil conditions at the site are fairly consistent and can be divided into two major categories, from highest to lowest strata:

1. *Marine Terrace Deposit:* This Marine Deposit layer consist of loose to dense clayey sand, sandy/silty clay. At the Hospital Expansion project site, this layer varies in thickness from 20 to 25 feet. At the Parking Structure project site, this layer varies in thickness from 25 to 30 feet.

2. *Purisima Formation:* The Marine Deposit layer is underlain by Purisima Formation which is a flat lying to gently southward-dipping yellowish brown to yellowish gray fine-grained sandstone. The sandstone that we encountered was deeply to moderately weathered and had low hardness characteristics. At the Hospital Expansion and Parking project sites, the Purisima Formation extends to the maximum depth of our exploration, which was at 41.5 and 31 feet below ground surface, respectively.

Groundwater Conditions

Perched groundwater was encountered at all the boring locations. Based on our investigation ground water was encountered ranging in elevation from +92.0 to +97.0 feet at the Hospital Expansion site and +92 to +94.0 feet at the Parking Structure site. Groundwater was encountered at the elevation of approximately +94.0 feet in the boring drilled during Pacific Crest Engineering field investigation in March 2007.

According to USGS National Water Information System data, the historical highest groundwater elevation of +80.4 feet was recorded in 1982 at one of the wells located in the vicinity of the project site. Local groundwater conditions will likely fluctuate according to seasonal and climate conditions. Based on the preceding discussions we recommend that the design groundwater elevation be considered to be at elevation +97 feet.

SECTION 3
SUMMARY OF GEOLOGIC HAZARDS EVALUATION

SUMMARY OF GEOLOGIC HAZARDS

General

The summary of findings contained in the geologic hazards section of this report is presented in detail in GeoInsite's report in Appendix B. Table 1 shows a summary of the results of the geologic hazards evaluation of the site. The potential for occurrences of each identified hazard is rated qualitatively on a scale of increasing probability: negligible, low, moderate, high.

Table 1
Summary of Potential Geologic Hazards

Possible Geologic Hazard	Potential Occurrence at Site
Fault Rupture	Low
Seismic Ground Shaking	High
Seismically Induced Ground Displacement or Failure	
Liquefaction in Localized Sand Pockets	Moderate to High
Cyclic Softening	Low
Lateral Spreading	Low
Compaction Settlement	Moderate to High
Non-Seismic Ground Displacement or Failure	
Landslides	Low
Subsidence	Low
Expansive Soils	Low
Flooding	Low
Tsunamis	Low
Seiches	Low
Erosion	Low
Soil Corrosivity	Moderate to High
Sea Level Rise	Low
Other Potential Hazards Naturally Occurring Asbestos Radon Gas Compressible/Collapsible Soils` Volcanic Hazards	 Low Low to Moderate Low Negligible

Fault Rupture: The site is not located within an Alquist-Priolo Studies Zone established for active fault. No active faults have been mapped within the project site, nor has a known fault been projected to traverse the site. Therefore, the hazard due to fault rupture within the site is considered low.

Seismic Ground Shaking: The site is located in a highly seismically active region of California due to the relatively short distance between major active faults and the site. Therefore, the site is susceptible to very strong ground shaking induced by a major earthquake. The potential sources of such a major earthquake include: 1) the San Andreas fault (Santa Cruz Mountain segment), located about 9.5 miles to the northeast; 2) Zayante (-Vergeles) Fault, located about 6.7 miles to the northeast and 3) Monterey Bay-Tularcitos Fault Zone located about 6.6 miles to the southwest at their closest proximity to the site. Based on the preceding, we judge the potential for strong ground shaking on the sites to be high.

Seismically Induced Ground Displacement or Failure: Seismically induced ground displacement or failure includes liquefaction, compaction settlement, lateral spreading and seismic slope failure.

Liquefaction: Liquefaction is a phenomenon whereby loose, saturated, granular sediments lose a significant portion of their shear strength due to the generation of excess pore water pressure resulting from cyclic loading during an earthquake event. Liquefaction can result in loss of foundation support, failures due to lateral spreading, and differential compaction of affected soils. The requisite condition for liquefaction is the presence of loose, cohesionless, granular soils below the water table.

Based on the presence of pockets of loose to medium dense sandy materials encountered in some of the borings at the Hospital Expansion site and historical highest groundwater level, we judge that the potential for liquefaction in local pockets of 1loose sandy soils below the groundwater have moderate to high potential for liquefaction.

Cyclic Softening of Fine-Grained Materials: Cyclic softening occurs when fined-grained soils subjected to ground shaking exhibits behavior similar to liquefaction. Based on the criteria developed by Bray and Sancio (2004), the limit amount of fine-grained materials on the site do not meet the criteria that would make them susceptible to cyclic softening during a major earthquake. We therefore judge the potential for cyclic softening of fine-grained soils to be low.

Lateral Spreading: Lateral spreading is defined by lateral displacement of gently sloping ground as a result of pore pressure build-up or liquefaction in a shallow underlying deposit during an earthquake. Based on the relatively flat sites, we judge the potential for lateral spreading to be low.

Compaction Settlement: Compaction settlement, or seismic densification, occurs when loose granular soils above the water table increase in density as a result of earthquake shaking. The soil densification can result in differential settlement because of variations in soil composition, thickness and initial density.

Based on the presence of alternating loose sand layers in the upper 20 to 30 feet beneath the sites, we judge the potential for compaction settlement to be moderate to high.

Non-Seismic Ground Displacement or Failure: Non-seismic induced ground displacement or failure includes landslides, subsidence, and expansive soils.

Landslides: Seismic hazard mapping by the Association of Bay Area Governments identified zones in the site vicinity considered susceptible to earthquake- and rainfall-induced landslides. The project side is outside the identified landslide zone, we therefore judge the potential for landslides to be low.

Subsidence: Subsidence typically occurs as a result of subsurface fluid extraction or compression of soft, geologically youthful sediments. The extraction of water for municipal or agricultural use could cause subsidence. Therefore, we judge the potential for subsidence at the project site to be low.

Expansive Soils: Expansive soil is clayey soil that will shrink or swell significantly with changes in moisture content, often causing damages to structure. Localized pockets of expansive soil were encountered at boring EB-6. The proposed basement excavation in this area will remove the localized pocket of expansive soils. We therefore judge the potential for expansive soils to be low.

Flood Inundation: The Federal Emergency Management Agency's National Flood Insurance Program designates areas that are susceptible to flooding. Inundation occurs when the ground surface becomes submerged by flood waters. According to the Santa Cruz County Flood Map (Map #06087C0351E), the site is not located within a flood zone. We therefore judge the potential for storm-induced flooding of the site to be low.

Tsunamis: Tsunamis are transient long-period sea waves generated by submarine earthquakes or volcanic eruptions. According to the "Tsunami Inundation Map for Emergency Planning (2009)" of Soquel Quadrangle, the site is not within projected areas of inundation resulting from a tsunami. Therefore, we judge the potential for tsunami inundation at the site to be low.

Seiches: Seiches occur as large waves within enclosed bodies of water such as lakes or reservoirs and result from violent earthquake shaking. Based on the absence of enclosed water bodies adjacent to the site, we judge the potential for seiche inundation at the site to be low.

Erosion: The site is either vegetated or paved. Slope erosion has been reduced by providing vegetative cover, where possible and reducing fill slope gradients and making provisions for surface drainage.

Assuming the site remains vegetated and/or is covered with hardscape in association with surface drainage provisions, we judge the potential for substantial erosion at the site to be low.

Soil Corrosivity: We performed tests to evaluate the corrosive potential of two selected soil samples from the Hospital Expansion site and two selected soil samples from the Parking Structure site.

We selected soil samples for the Parking Structure site from borings PEB-3 at a depth of 5 feet and PEB-4 at a depth of 2 feet. The results indicate that the samples are moderately corrosive to corrosive. We also selected soil samples from the Hospital Expansion site from borings EB-2 at a depth of 6 feet and EB-6 at a depth of 15 feet. The results indicate that the samples are moderately corrosive.

We therefore conclude the potential for soil corrosivity to be moderate to high.

Sea Level Rise: The project sites are not located near low lying areas or near the seashores. We judge the potential of impacts of sea level rise to be negligible.

Other Potential Hazards: We considered other potential geologic hazards including hazards posed by naturally occurring asbestos, radon gas, compressible soils, and volcanic activity.

Naturally occurring asbestos is associated with ultrabasic rocks that contain serpentine. The site vicinity is underlain by marine terrace deposit and ultrabasic rock was not encountered in borings drilled at the site. We therefore judge the potential for the occurrence of naturally occurring asbestos at the sites to be low.

Radon gas is a naturally-occurring colorless, tasteless and odorless radioactive gas that forms in soils from the decay of trace amounts of uranium that are naturally present in soils. The U.S. Environmental Protection Agency (EPA) recommends that action be taken to reduce radon in structures with an average annual level higher than four picocuries per liter (4.0pCi/l). In 2016, the California Department of Health Services performed 538 radon gas tests within zip code 95060, which is where the project site is located. Of the 538 tests performed, 39 test results exceeded EPA's recommended level with a maximum recorded radon level of 25.5 pCi/l. Based on the preceding information, we judge the potential for impacts from radon gas to be low to moderate.

According to the County, the project sites are not located in a Compressible Soil Hazards or Dike Failure Hazard Zone. We therefore judge the potential for impacts from compressible soil hazard or dike failure on the project to be low.

Potential hazards associated with active volcanos include inundation by ash, pyroclastic flows, and mudflows. The severity of volcanic hazards on a site is related to proximity of the site to the volcanic source, magnitude, type of volcanic activity, and direction of prevailing winds. No recent volcanic activity is present in the Santa Cruz Area. Given the lack of major volcanic activity in the vicinity, we judge the potential for the sites o be impacted by volcanic hazards to be negligible.

SITE-SPECIFIC LIQUEFACTION ANALYSIS

General

Based on the geologic hazards evaluation, the site is considered as having a high potential for liquefaction due to the presence of a loose to medium dense sand layer. We therefore performed a site-specific liquefaction analysis.

Software: We analyzed the liquefaction potential of coarse-grained materials encountered at the site using boring log (SPT) and procedures contained in publications: NCEER (1997), Seed et al. (2014), and Boulanger & Idriss (2014). We used the computer program LiqSVs, version 1.3.2.4 which was developed by Geologismiki in 2007, to analyze the SPT data.

LiqSVs determines the factor of safety against liquefaction at various depths. This factor of safety is given by the ratio of cyclic resistance ratio (CRR) over the earthquake-induced cyclic stress ratio (CSR). CSR is determined using the peak ground acceleration (PGA) at the site in a horizontal direction, as generated by design earthquake. The program can also estimate the post-liquefaction induced vertical settlement and lateral displacement.

The methods that are included are:

1. NCEER (1997)
2. Boulanger & Idriss (2014)

Per the NCEER (1997) procedure and the other methods, the program accounts for the scaling effects of earthquake magnitude on the CSR by using a magnitude scaling factor (MSF). The CSR is also corrected using a stress reduction factor, r_d.

We selected Boulanger and Idriss (2014) as our method of analysis. The program calculated the CSR using Standard Penetration Test (SPT) blow counts corrected for overburden stress, rod energy, borehole diameter, rod length, sampling method, and fines content. For the boring drilled, we corrected the blow counts by choosing the appropriate options in LiqSVs for these corrections.

Soil Profiles and Design Groundwater Elevation: We analyzed the soil profiles prepared from each of the exploratory borings performed as part of our investigation.

For the analysis, we used groundwater elevation that corresponds to the highest historical groundwater level of +97.0 feet, which was the groundwater elevation encountered in boring EB-3.

Seismic Scenarios Analyzed: We performed our liquefaction analysis using the code-based seismic parameters. We used a maximum considered earthquake with a moment magnitude of M7.9 earthquake on the San Andreas Fault with and a mean peak ground acceleration (PGA_M) of 0.83g.

Criterion for Identifying Potentially Liquefiable Layers: LiqSVs enabled us to calculate corrected cyclic resistance ratios (CRR) required to cause liquefaction as well as the MSF adjusted cyclic stress ratios (CSR) induced by the design earthquake at various depths. The factor of safety against liquefaction occurrence is given by the equation:

$$FS = CRR_{7.5}/CSR$$

In this investigation, we assumed that liquefaction occurs when the factor of safety (FS) is less than 1.2 for our seismic scenario. Our analysis indicates that there was a liquefiable layer in the Hospital Expansion site boring EB-5 soil profile analyzed. We also performed an analysis to estimate liquefaction-induced settlement, using LiqSVs.

The results of the liquefaction analysis indicate that for boring EB-5, the layer between elevation 97.0 feet to elevation 93.0 feet was potentially liquefiable and the associated settlements were estimated to be 0.3 inch. The liquefaction results indicate that there were no liquefiable layers in the remaining borings at the Hospital Expansion and the Parking Structure. The summary of the liquefaction analysis results for the Hospital Expansion and Parking Structure are presented in Table 2 and Table 3, respectively.

As noted in Table 2, the results of our analysis show that the potentially liquefiable soils occurring in a non-contiguous pockets as shown in Figures 11-12.

Potential Impacts of Liquefaction in Localized Areas: Liquefaction in localized areas could result in substantial differential settlement between individual column footings, if used. Depending on the relative elevations of the bottom of the column footings and the closest potentially liquefiable layer, liquefaction could also cause bearing capacity failure of column footings. Localized liquefaction could also affect the performance of utility lines unless flexible connections are provided where utility lines interface with building or site walls.

Table 2
Results of Liquefaction Analysis for Hospital Expansion

Exploration Location I.D.	Elevation of Top of Liquefiable Layer (ft)	Elevation of Bottom of Liquefiable Layer (ft)	Thickness of Liquefiable Layer (ft)	Total Liquefaction-Induced Settlement (inches)
EB-1	--	--	--	No Liquefiable layers
EB-2	--	--	--	No Liquefiable layers
EB-3	--	--	--	No Liquefiable layers
EB-4	--	--	--	No Liquefiable layers
EB-5	97	93	4	0.3
EB-6	--	--	--	No Liquefiable layers

Table 3
Results of Liquefaction Analysis for Parking Structure

Exploration Location I.D.	Elevation of Top of Liquefiable Layer (ft)	Elevation of Bottom of Liquefiable Layer (ft)	Thickness of Liquefiable Layer (ft)	Total Liquefaction-Induced Settlement (inches)
PEB-1	--	--	--	No Liquefiable layers
PEB-2	--	--	--	No Liquefiable layers
PEB-3	--	--	--	No Liquefiable layers
PEB-4	--	--	--	No Liquefiable layers
PEB-5	--	--	--	No Liquefiable layers

SITE-SPECIFIC COMPACTION SETTLEMENT ANALYSIS

Methodology: We used the software LiqSVs which uses the procedure by Pradel (1998) to estimate the volumetric compression of non-saturated sandy soils undergoing seismic loading. This procedure is similar to that for liquefaction-induced settlement described above. The sandy soils above the design groundwater level are divided into sublayers. The amount of compaction settlement depends directly on the density of the soil and the amplitude of cyclic shear strain introduced in the soil. The analysis, which depends on the shear modulus of the soil and the effective cyclic shear strain, estimates volumetric strain due to earthquake-induced compaction. This procedure was developed for a magnitude M=7.5 earthquake, and corrections can be made to estimate volumetric strain for earthquakes of other magnitudes. The amount of earthquake-induced compaction is then estimated by multiplying the thickness of each sublayer by its corresponding volumetric strain and summing the amount for all the sublayers to obtain the total ground surface settlement.

Seismic Scenarios Analyzed: We performed compaction analysis for the site for the same seismic scenarios as those used for the liquefaction analysis above.

Results: Our boring log data indicate that the borings with silty sand and poorly grade sand above the design groundwater elevation will undergo compaction settlement. The results of our analysis indicate that except for boring EB-4, the estimated compaction settlement values range from 0.1 to 0.7 inch. Boring EB-4 did not have any compaction settlement. The results of the compaction settlement analysis for Hospital Expansion site and Parking Structure site are presented in Table 4 and Table 5, respectively.

Table 4
Results of Compaction Analysis for Hospital Expansion

Exploration Location I.D.	Elevation of Top of Compaction Settlement Layer (ft)	Elevation of Bottom of Compaction Settlement Layer (ft)	Thickness of Compaction Settlement Layer (ft)	Total Compaction Settlement (inches)
EB-1	+102.9	+97.9	5.0	0.1
EB-2	+103.8	+98.3	5.0	0.2
EB-3	+108.3	+98.3	10.0	0.3
EB-4	–	–	–	No Compaction Settlement
EB-5	–	–	–	No Compaction Settlement
EB-6	+103.2	+97.2	6.0	0.2

Table 5
Results of Compaction Analysis for Parking Structure

Exploration Location I.D.	Elevation of Top of Compaction Settlement Layer (ft)	Elevation of Bottom of Compaction Settlement Layer (ft)	Thickness of Compaction Settlement Layer (ft)	Total Compaction Settlement (inches)
PEB-1	+104.3	+99.3	5	0.2
PEB-2	+107	+97	10	0.5
PEB-3	+104	+99	5	0.1
PEB-4	+102	+97	5	0.4
PEB-5	+100.7	+96.7	4.0	0.1

SECTION 4
CONCLUSIONS AND DESIGN RECOMMENDATIONS

POTENTIAL IMPACTS OF IDENTIFIED HAZARDS AND RECOMMENDED MITIGATIONS

Conclusions

Based on the results of the geologic hazard evaluation, we developed the following conclusions regarding the potential impacts of the four identified primary hazards (strong ground shaking, liquefaction, compaction settlement, and soil corrosivity) on the site:

1. *Seismic Ground Shaking*: Strong ground shaking should be expected at the site during a major earthquake in keeping with the seismicity of the area. Ground shaking can induce lateral forces in existing and new structures that could lead to damage. Ground shaking can also induce liquefaction in granular soils under the groundwater table.

2. *Liquefaction*: Liquefaction can result in a loss of foundation support and settlement of affected soils which can lead to the settlement of the structure and utility lines. The requisite condition for liquefaction is the presence of loose, cohesionless, granular soils below the water table. Liquefaction-induced settlement should be accounted for in the design of flexible connection where utility lines enter the structure.

3. *Compaction Settlement*: Loose sandy soils above groundwater can settle and undergo compaction settlement also called "cyclic densification" or "dynamic compaction" induced by ground shaking. Compaction settlement can lead to settlement of structures and utility lines founded or bearing in soil above potentially susceptible layer. Compaction differential settlement should be accounted for in the design of flexible connection where utility lines enter the structure.

4. *Soil Corrosivity*: Soil corrosivity could result in the corrosion of buried metallic pipes as well as reinforcing bars in foundation elements.

5. *Radon Gas*: Long-term exposure to elevated levels of radon increases one's risk of developing lung cancer.

In the following descriptions we discuss mitigation options of the four groups of geologic hazards that were identified as having moderate to high likelihood of occurrence – Ground shaking, liquefaction, compaction settlement, soil corrosivity, and radon gas.

<u>Ground Shaking</u>: The primary approach to mitigating the potential impacts of ground shaking on the proposed buildings is to design the building in accordance with the current seismic design code. We have therefore developed recommendations for seismic design parameters per the 2019 California Building Code (CBC) which referenced the ASCE 7-16. The seismic design parameters are presented in the section this section.

<u>Liquefaction-Induced Settlement</u>: The primary approach to mitigating the potential impacts of liquefaction on a surface structure supported on footings is to design the structure to sustain liquefaction-induced bearing capacity reduction and or anticipated differential settlement.

Compaction Settlement: Compaction settlement could result in total and differential settlement along the alignment of the conduits, especially the buried ones. Mitigation of these potential problems could be accomplished by proper bedding and trench backfilling along the alignment of conduits.

Detailed trench backfilling and earthwork recommendations are presented in subsequent sections of this report.

Soil Corrosivity: We recommend that all buried iron, steel, cast iron, ductile iron, galvanized steel, and dielectric coated steel or iron should be protected against corrosion depending on the critical nature of the structure they are serving. All underground metallic pressure piping such as ductile iron firewater pipelines should also be protected against corrosion.

For reinforced concrete elements in contact with the site soils, we recommend using a dense concrete mix. We also recommend that provisions be made in the contract documents to ensure that adequate cover is provided for reinforcement in both shallow and deep foundations in accordance with ACI requirements.

We recommend that a Corrosion Engineer be consulted for specific corrosion-related recommendations for the project.

Radon Gas: In addition to indoor radon levels can be influenced by local variability in factors such as soil permeability and climatic conditions, and by facts such as building design, construction, condition and usage. Building specific radon levels can only be determined by indoor radon testing. We recommend that a radon specialist be consulted for specific radon-related recommendations for the project.

DESIGN RECOMMENDATIONS FOR MITIGATING IDENTIFIED HAZARDS

Seismic Design Parameters

General: The primary approach to mitigate the potential impacts of ground shaking on the proposed structures is to design the buildings in accordance with the current seismic design code. We therefore developed recommendations for seismic design parameters per the 2019 California Building Code (CBC) and ASCE 7-16.

Site Conditions: The Hospital Expansion site is located at latitude 36.9904 degrees north and longitude 121.9831 degrees west. The Parking Structure site is located at latitude 36.9900 degrees north and longitude 121.9815 degrees west.

Site Classification: Based on currently available information, the site is classified as Site Class D.

The site class might appear to be complicated by the fact that non-contiguous pockets of liquefiable soils will be formed under MCE scenario. According to the 2019 CBC, a site underlain by liquefiable soil should be classified as F. The code (specifically, Chapter 20 of ASCE/SEI 7-16) however states that if the period of the proposed structure is less than 0.5 seconds, the presence of the liquefiable soil can be ignored and the site can be classified based on the characteristics of the soils in the non liquefied state. The effect of the potentially liquefiable soil can also be ignored if the liquefiable soils are completely removed during basement excavation or if ground improvement techniques are used to mitigate the potential for liquefaction. We judge that the effect of liquefaction on site classification can also be ignored if the liquefiable zones are relatively thin, fairly localized, and non-contiguous. Under the latter scenario, the localized, non-contiguous zones of liquefiable soils are unlikely to dictate the response of the site to ground shaking.

Based on the subsurface information that we have gathered and the results of our site-specific liquefaction analyses, we conclude that the site class is considered as D.

Seismic Design Parameters based on ASCE 7-16 Section 11.4.3-11.4.4 Design Response Spectrum: We used the mapped seismic parameters obtained from SEAOC/OSHPD online seismic design tool, https://seismicmaps.org/. The mapped seismic design parameters for the Hospital Expansion and the Parking Structure are presented in Table 6.

Table 6
2019 CBC Seismic Design Parameters Based on Mapped Spectral Accelerations

Site Class		**Hospital Expansion**	**Parking Structure**
		D	D
Mapped Spectral Response Acceleration Parameters	S_S (From 0.2 sec Mapped Spectral Accelerations)	1.789	1.793
	S_1 (From 1.0 sec. Mapped Spectral Accelerations)	0.691	0.692
Adjusted MCE Spectral Acceleration Parameters	S_{MS}	1.789	1.793
	S_{M1}	---	---
Design Spectral Acceleration Parameters	$S_{DS} = 2/3S_{MS}$	1.193	1.195
	$S_{D1} = 2/3S_{M1}$	---	---
Site-Modified MCE_G Peak Ground Acceleration	MCE_G PGA_M	0.826	0.828

---Parameters obtained from site-specific design spectrum or factored mapped values

DESIGN RECOMMENDATIONS FOR BUILDINGS AND SITE WORK

Foundation Systems

General: We have identified potentially liquefiable soils under seismic ground shaking at boring location EB-5 through our liquefaction analysis. The liquefiable zone is relatively thin and non-contiguous. These localized liquefiable zones are unlikely to dictate the response of the site to ground shaking. The presence of these zones should however be accounted for in the design of new foundations.

For structures with a basement, the impact of liquefaction can be minimized either by using drilled piers or other types of deep foundation extending below the liquefiable pockets or by performing ground improvement.

Evaluated Foundation Systems: We evaluated two different foundation systems for the new building: 1) a shallow foundation and 2) a drilled pier foundation.

The results of our evaluation are as follows:

1. Shallow Foundations: Given that the site is underlain by localized areas of potentially liquefiable soils, we considered the use of a mat foundation and/or spread footings connected with grade beams that could bridge those pockets of liquefiable soils. This system would be more economical than a drilled pier foundation system.

   We considered the option of mitigating the potentially liquefiable soils using soil improvement techniques such as compaction grouting, stone columns, or rammed aggregates. We reasoned that if ground improvement is performed on a "global" scale within and slightly beyond the proposed building footprint, individual column or strip footings could be used to support the building. Some of the major difficulties associated with this approach are: a) the ineffectiveness of compaction grouting as a means of densifying a granular soil pocket that might be within a clay zone, b) the stability of the holes associated with rammed aggregates extending below the groundwater table. Another major difficulty is in evaluating the effectiveness of the ground improvement because of the interspersed nature of the potentially liquefiable pockets. We concluded that ground improvement techniques that involve stiffening elements, such as soil cement columns and control density fill (CDF) piers, are likely to be more effective in minimizing the potential impacts of the liquefiable soil pocket on shallow foundations, but are likely to be expensive.

2. Drilled Pier Foundation: A drilled pier foundation system is ideal for structures subjected to both significant compressive and tensile loading. It is also ideal for structures that have basement and non basement areas or are underlain by potentially liquefiable soils, especially if the potentially liquefiable soils are not contiguous. The proposed I-occupancy structure has basement and non basement areas and is underlain by non contiguous potentially liquefiable soil layers and might be subjected to hydrostatic uplift

forces in the garage area. A drilled pier foundation system connected by grade beams could therefore be considered for the new Hospital Expansion.

Alternatively, auger pressure grouted piles APG piles, Tubex piles, Fundex or other types of screw piles connected by grade beams could be used instead of drilled piers. For a given subsurface condition, these alternate piles are likely to have a higher capacity than a drilled pier of the same dimensions.

Foundation System for New Structures: Based on the preceding, we recommend that a shallow foundation system be considered as the preferred foundation system for the new hospital building. The footings must be connected by grade beams. The parking garage can be supported on a mat foundation and or footings connected by grade beams.

Shallow Foundations

General: The architectural design of the proposed structures is still at the beginning stage hence details regarding the bearing elevations, vertical and lateral loads, and construction procedures are not known at this time. Based on the preceding, we recommend that a shallow foundation system be considered as the preferred foundation system for the new Hospital Expansion and Parking Structure building.

Design of Footing for Vertical Loads: Footings should be designed in accordance with parameters presented in Table 7 for the Hospital Expansion and the Parking Structure.

Table 7
Allowable Bearing Pressures for Footing Bearing on Native Materials

Loading Conditions	**Allowable Bearing Pressure (psf)**	
	Basement Area	Non-Basement Area
Dead + Live Loads	3,000	2,500
Dead + Live + Seismic Loads	4,000	3,300
Ultimate Load	9,000	7,500

Footings designed in accordance with the allowable bearing pressures in Table 7 should have a minimum width of 24 inches, and the bottoms of the footings should be embedded at least 24 inches below the lowest adjacent rough grade.

Lateral Load Resistance: Lateral loads applied to a footing may be resisted by 1) friction at the base of the footing and 2) passive pressure against the side of the footing or mat foundation that is perpendicular to the applied force. These components of resistance may be assumed to act together at the limit state, and so may be added to estimate the total resistance available.

1. Friction at the Base of Footing

The horizontal frictional resistance, F_{base}, at the interface of the soil and a footing may be taken as:

$$F_{base} = f_s \text{ x Actual Dead Load Pressure (psf)}$$

where f_s is the friction coefficient at the interface of the soil and the footing. Fs should be assumed to be 0.30.

2. Passive Pressure Against the Side of the Footing

   For design purposes, a passive pressure perpendicular to the side of the footing can be taken as zero pressure (beginning at the lowest adjacent grade) and increasing as an equivalent fluid pressure of 250 pounds per cubic foot. The top one foot of passive pressure should be disregarded where the footing is not confined by a slab. To obtain the ultimate passive soil pressure, the allowable value should be multiplied by 1.5.

The values for friction at the base of footings provided above apply to foundations cast directly on native soil. For a condition where a waterproofing assembly is installed between the soil and the foundation element, the friction value is likely to be lower, depending on the properties of the proposed waterproofing assembly. Appropriate values should be provided by the manufacturer of the waterproofing assembly, based on test results, or by a qualified waterproofing consultant.

Footing Bearing at Different Elevation

Where the new and existing footings are separated but bear at different elevations or where two new footings bear at different elevation, estimate the surcharge imposed by the footing at a higher elevation on the nearby footing at a lower elevation using the appropriate footing stress contours in Figure 13 in Appendix A.

Construction of Foundations

To assure that the recommended passive and frictional resistances are developed from all footings, they should be cast directly against firm native soils.

The following measures are recommended to minimize the potential detrimental impacts of footing excavations on foundation performance:

1. Footing excavations should not be left open for a long time period, especially during the rainy season, and water should not be introduced into the excavations. The intent of this recommendation is to avoid the softening of the bearing soil by water, as well as the introduction of soft materials into the bottoms of excavations by erosion. If necessary, the excavations should be covered to minimize ponding or infiltration of rainwater.

2. Footing excavations should be thoroughly cleaned of all loose and soft materials immediately prior to concrete placement. The effort to clean the excavations is usually hampered by the presence of reinforcing bars in the excavations, making this a less preferred approach than the option described below for creating acceptable bearing conditions.

3. If footing construction on native soils occurs during the rainy season, a two-inch thick lean concrete layer should be placed at the bottom of the foundation excavations after suitable bearing conditions have been established. This lean concrete layer would ensure that the bearing conditions are maintained, provide a firm bearing surface for the mat reinforcement cage, and ensure adequate concrete cover on the bottom reinforcing bars. Also, any loose materials that accumulate in the excavation can be easily removed using air blowing techniques. This approach can also be adopted by the Contractor if he chooses, even if foundation construction occurs outside of the rainy season.

The Geotechnical Engineer should be given the opportunity to observe the bearing conditions prior to the placement of reinforcement and immediately before concrete placement. Remedial work should be performed, if necessary, until the bearing conditions are deemed to be satisfactory by the Geotechnical Engineer. The responsibility to maintain suitable bearing conditions and control sloughing of the sides of the excavation should remain with the Contractor.

Estimated Settlements of Buildings

General: Foundation settlements can be grouped into three main components: elastic settlement, inelastic settlement, and settlement induced by construction activities. The sum of these components can be considered the total settlement.

Estimated Settlement Induced by Building Loads: We will estimate the sum of the elastic and inelastic settlements of the foundations bearing at a given elevation when estimates of column dead loads are available from the Project Structural Engineer.

Differential Settlement Induced by Liquefaction and Dynamic Compaction: The potential differential settlement induced by the potentially liquefiable pocket is estimated to be about 0.3 inch over a span of 100 feet.

At the Parking Structure site, the estimated differential settlement due to compaction settlement is about 0.4 inch over a span of 120 feet.

Actual magnitudes of total settlement depend on the degree of disturbance existing in the foundation soils at the time of the foundation placement and on the final dead load pressure.

Interface Between New and Existing Foundations and Other Issues: Where new and existing foundations abut each other, the new foundation should bear at the same elevation as the adjacent existing foundation.

Uplift Resisting Elements

General: Uplift forces at the foundation level can be resisted by tiedowns as hole-downs in tension. Tiedowns will develop their tension resisting capacity through the bond developed between the shaft walls and the surrounding firm alluvial soil or bedrock. Anchors should be designed in accordance with the following criteria:

1. Design: For an 8-inch diameter tiedown with a maximum unbonded length of 10 feet, embedded in bedrock with an associated displacement of one-half inch at the ultimate load and to be post-grouted at a pressure of 300 psi or greater, can be assumed to have an average ultimate bond stress of 1.5 to 5.0 ksf. The allowable bond stress can be obtained by dividing the ultimate bond stress by a factor of safety of 2.0. The actual bond stress achieved is dependent on the Contractor's installation procedure. The Contractor should provide at least two post-grout tubes in each tiedown.

1. Spacing: Tiedowns should have a minimum center-to-center spacing of 4 feet.

2. Corrosion Protection: Tiedown anchors should have Class 1 corrosion protection.

3. Installation: Tiedowns will extend below the groundwater level. We therefore recommend that a segmented complete casing approach rather than an open hole method

should be used to install the tiedowns. Tiedowns should be installed under the continuous observation of the Geotechnical Engineer.

4. Performance and Proof Testing:

   Performance Testing: A minimum of two test tiedowns should be performance-tested prior to the installation of production tiedowns and two percent of the tiedowns randomly selected by Geotechnical Engineer during production installation. The preproduction tiedown should be tested in tension to 2.0 times the design load and the production tiedowns should be tested to 1.6 times the design load. The load sequence for the performance test is listed in Table 8.

   Proof Testing: Proof testing should be performed on all production tiedown anchors. The tiedown should be tested in tension to 1.5 times the design load. The load sequence for the proof testing should be as listed in Table 8.

   Creep Test: We understand that the tiedown anchors will be stressed and will therefore be subjected to a sustained load, such as a lock-off load. Therefore, the creep test requirement is necessary.

   The creep amount shall not exceed 0.04 inch at Test Load during the period of 1 to 10 minutes. If this value is exceeded, then the total creep movement within the period of 6 to 60 minutes shall not exceed 0.08 inch.

   Lock-Off Load: Shall conform to lock-off and lift-off procedures in Sections 8.4 and 8.5 of Post-Tensioning Institute's (PTI) "Recommendations for Prestressed Rock and Soil Anchors", fourth edition (2014).

5. Acceptance Criteria: Three groups of acceptance criteria should be satisfied:

   Creep: As indicated above.

   Lock Off: As indicated above.

   Movement: Per the requirement in Section 8.6.2 of Post-Tensioning Institute's (PTI) "Recommendations for Prestressed Rock and Soil Anchors", fourth edition (2014).

Table 8
Load Sequence for Performance Test

Type of Test	Load Sequence
Performance Testing	AL
	0.25 DL
	AL
	0.25 DL
	0.50 DL
	AL
	0.25 DL
	0.50 DL
	0.75 DL
	AL
	0.25 DL
	0.50 DL
	0.75 DL
	1.00 DL
	AL
	0.25 DL
	0.50 DL
	0.75 DL
	1.00 DL
	1.25 DL
	AL
	0.25 DL
	0.50 DL
	0.75 DL
	1.00 DL
	1.25 DL
	1.50 DL
	AL
	0.25 DL
	0.50 DL
	0.75 DL
	1.00 DL
	1.25 DL
	1.50 DL
	1.75 DL
	AL
	0.25 DL
	0.50 DL

Type of Test	Load Sequence
	0.75 DL
	1.00 DL
	1.25 DL
	1.50 DL
	1.75 DL
	2.00 DL
	2.00 DL (Hold for 10 minutes)
	AL (Adjust to Lock-off Load)
Proof Testing	AL
	0.25 DL
	0.50 DL
	0.75 DL
	1.00 DL
	1.25 DL
	1.50 DL
	1.50 DL (Hold for 10 Minutes)
	AL (Adjust to Lock-off Load)

BASEMENT WALLS AND SLABS

Permanent Retaining Walls

General: Permanent retaining walls should be designed to resist lateral earth pressures plus additional lateral pressures that may be caused by earthquakes, surcharge loads behind them, and water pressures, as described below.

Footings for retaining walls should be designed using the applicable criteria presented above for shallow foundations.

Design Lateral Earth Pressures: The retaining walls should be designed to resist lateral earth pressures from: 1) the static case and surcharge-induced pressures; and 2) the dynamic case and surcharge-induced pressures.

It should be noted that the following recommendations apply for walls retaining soils with a horizontal surface. If the ground surface behind the retaining walls is sloping, the lateral earth pressure will be higher.

The recommended design lateral earth pressures are as follows.

1. *Static Loading:* Based on the assumption that the excavation will be a sloped excavation and backfilled with granular materials, the lateral earth pressure of 45 pcf should be used for cantilevered walls. The corresponding value for top-restrained walls is 65 pcf equivalent fluid pressure. If it is a shored excavation, the lateral earth pressures may be higher.

2. *Dynamic Loading:* Based on the assumption that the excavation will be a sloped excavation and backfilled with granular materials, for a wall of height H feet, the dynamic earth pressure increment induced by an earthquake should be assumed to be about 18H psf plus static loading. If it is a shored excavation, the lateral earth pressures may be higher.

3. *Surcharge-Induced Pressure:* A uniform lateral pressure equal to 0.33 times any surcharge loads (uniform vertical pressure) behind walls should be account for surcharge directly behind cantilever walls. The corresponding factor for top-restrained wall is equal to 0.50.

4. *Other Surcharge-Related Issues:* For lateral pressures from nearby footings, traffic, trees, and other types of loading, we recommend using the procedure in Figure 16. Surcharge from nearby footings should be considered as strip load whereas surcharge from traffic loading should be considered as point loads spaced as axle loads at the applicable distances from each other and from the wall. Trees should also be considered as point loads representing the individual weights of the trees. The weights of the trees can be provided by an arborist.

Subdrainage for Permanent Retaining Walls

To prevent hydrostatic pressures against the retaining walls, a continuous drain should be installed. The drain should consist of prefabricated drainage panels (Miradrain or approved equal) with filter fabric on the side facing the earth, draining into a perforated collector pipe placed at the base of the wall. The perforations in the pipe should face downward. The pipe should be at least four inches in diameter and should connect to a free outlet.

As an alternative to prefabricated drainage panels, permeable backfill material at least one foot thick may be used. For this alternative, the permeable backfill material should conform to the gradation requirements for Class 2 Permeable Material as specified by the California Department of Transportation (Caltrans) Standard Specifications, Section 68.

The drainage panels or permeable blanket should extend from the bottom of the wall up to a depth of two feet below the finish grade level. The uppermost two feet of backfill should be composed of soils of lower permeability, placed as a "cap" to prevent direct flow of surface runoff water into the subdrainage system.

Slabs-on-Grade

Slab-On-Grade Floor: Design requirements for slab-on-grade floors that are not subjected to traffic loads should include provision of an adequate section for floor loads and prevention of dampness and efflorescence in the floor. To fulfill these objectives, we recommend the following section for such slab-on-grade floors:

1. Reinforced concrete slab of minimum 5-inch thickness.

2. Impervious membrane of good quality (Stego Wrap or approved equal) to prevent moisture vapor penetration into the slab, with resulting condensation, wetness and efflorescence. A thick nonwoven fabric to protect the Stego Wrap.

3. A minimum 6-inch thick granular base (underlying the vapor barrier) to serve as capillary break. The thickness of the granular base can be increased to allow for the installation of plumbing within this layer.

Slabs for Below-Grade Structures: Concrete slabs-on-grade for below grade structures, such as elevator or utility pits, may serve the dual role of acting as a foundation as well as a floor element. If the slab serves as a foundation, neither a base course nor a vapor barrier would be required, and the thickness of the slab should be based on criteria for designing a mat foundation.

If the slab is serving only as a floor element without traffic loads and is above the zone of influence of the design groundwater level, it should have the same elements as described above for slab-on-grade floor. Refer to the pavement section for criteria relating to the design of slab-on-grade that is subjected to traffic loads.

Structures with slabs-on-grade exposed to the atmosphere may not require the elements necessary to prevent dampness and efflorescence. The Architect should make a determination on which of these below-grade structures should be provided with the elements required to prevent dampness and efflorescence.

Waterproofing and Dampproofing

General: Simply stated, as a minimum, waterproofing should be provided where a hydrostatic pressure condition exists and dampproofing should be provided where such a condition does not exist. Based on this rule of thumb, waterproofing should be provided behind basement walls and underneath the mat foundation if both elements are designed using a pressurized system approach. On the other hand, if a total-relieved system approach is adopted for both elements, dampproofing might suffice for both elements although waterproofing could be provided in this case as well.

Basement Walls and Slab: We recommend the following for the proposed project:

1. As a minimum, dampproofing should be provided behind basement walls and under basement slabs, if they are designed as part of a total-relieved system or are above the design groundwater level.

2. Waterproofing should be provided behind basement walls and under basement slabs, if they are designed as part of a pressured or partial-relieved system.

Expertise: The recommendations given above should be considered as minimum general requirements. Details concerning the type, appropriateness, effectiveness, and adequacy of waterproofing and dampproofing elements, their lateral extent, and the locations of the elements are beyond our expertise. We recommend therefore that the services of a waterproofing consultant be sought for recommendations on those issues.

INTERFACES BETWEEN NEW AND EXISTING STRUCTURES

Connecting Tunnels

Connecting tunnels may be provided between the new hospital expansion and the existing hospital.

The tunnel walls can be designed using the recommendations for permanent retaining walls. The foundations for the tunnels can be designed using the recommendations provided for mat foundations. Unless lightweight backfill is specified, soil loads on the roof of the structure can be estimated using a unit weight of 130 pounds per cubic foot.

Elevators

New elevators are likely to be installed at a number of locations within the buildings. If a hole-less or traction-type elevator were used, a relatively shallow pit would be required for the operation of the elevator. Such a pit can be designed using the recommendations for retaining walls presented above.

If a hydraulic-type elevator were used, a shaft would have to be drilled for the "plunger". Such a shaft will extend several feet below the groundwater table. Caving of the shaft wall should be expected in gravelly or sandy soils that may be encountered below the depth of exploration unless a casing is advanced while drilling through that layer. Exploration of the site for the purpose of identifying materials that would be encountered in a drilled hole for a "plunger" was outside the scope of this investigation.

EARTHWORK AND PAVEMENTS

Demolition

Existing buildings, structures, and pavements in the areas of proposed new site improvements should be demolished. In particular, foundations of buildings-to-be-demolished should be removed so that they do not interfere with the design of the proposed new building. Debris resulting from demolition should be hauled away from the site.

In particular, the Contractor should be aware of existing utilities. The Contractor should determine the location of these utility lines prior to performing demolition at the site. Furthermore, if the utility lines are planned to remain in their current locations, the Contractor should take necessary precautions to prevent damage to the lines.

Pavements

General: We anticipate that asphalt concrete, concrete, and pervious concrete paving will be required for all new entry driveways and parking areas. This paving section is based on the procedures contained in the Caltrans Highway Design Manual, dated November 20, 2017, using a Traffic Index, TI = 7.0 for the driveways and TI = 5.0 for the parking areas. Selection of this design traffic parameter was based on assumed use and not on a detailed equivalent wheel load analysis or traffic study.

Asphalt Concrete Paving: For flexible paving design, the R-value, which represents the ability of the subsurface material to resist lateral deformation when acted upon by a vertical load, is estimated to be 30 for this site. The R-value is estimated based on the soil classification rather on the laboratory test results. Our recommendations for flexible asphalt concrete paving are presented in Table 9.

Concrete Pavements: The concrete pavement design is based on the determination that the site is classified as falling in the "Central Coast" region, based on the California Highway Design Manual's classification of California Pavement Climate regions. The site soil is classified as Type I subgrade soil. We estimated the section thickness, in Table 9, assuming that curbs will be installed to provide lateral support for the pavement sections.

Pavement Drainage: Our observations of pavement performance indicate that there is a strong correlation between poor pavement drainage conditions and the amount of pavement failures (potholes, settlement bowls, alligator cracks, etc.) observed. For this reason, we recommend that new pavement sections should be adequately drained by providing swales, culverts, subdrains, as deemed necessary.

Table 9
Recommended Pavement Sections

Proposed Use	Assumed Traffic Index	Asphalt Concrete Pavement		Concrete Pavement	
		Asphalt Pavement Section (inches)	Aggregate Base (inches)	Concrete Section (inches)	Aggregate Base (inches)
Parking Areas	5.0	2	8	9	6
	5.0	2.5	7	9	6
Driveways	7.0	2	14	9	6
	7.0	2.5	12	9	6

Miscellaneous: For the rigid (pervious) pavements, the designer should refer to AASHTO, ACI and other pavement design documents regarding requirements for concrete strength, jointing, etc.

It should be noted that the pavement sections described above were not designed to accommodate construction traffic. The Contractor should be aware of this and should sequence the construction in such a way that new pavement sections are not subjected to construction traffic.

For slabs-on-grade subjected to pedestrian traffic only, a minimum four-inch thick nominally reinforced concrete slab on prepared subgrade should be adequate.

Existing Street Pavement: Where adjacent street paving is breached and need to be replaced, the pavement section thickness and other requirements imposed by the City for breaching such street should be met.

Site Preparation

Except for areas of the site where it is specifically prohibited, the site should be cleared of all obstructions, including fences, buried utility lines and conduits, trees and other vegetation, and deleterious materials. Holes resulting from the removal of trees, underground structures, or improvements that extend below the planned finish grades should be cleared thoroughly and then be backfilled with suitable material compacted to the requirements described in "Engineered Fill and Backfill Placement".

In the areas of new improvements, the unpaved portions of the site should be stripped at least six inches below the existing grade. Concrete, wood, and other debris should be hauled off the site. Stripping should extend at least five feet beyond the footprint of the proposed new building. The resulting exposed soils after stripping should be reviewed by the Geotechnical Engineer before subsequent construction is performed. Unless the stripped materials are considered suitable for landscaping purposes, they should be hauled off the site.

Excavation and Slopes

Conventional excavation and earthwork equipment should be satisfactory for mass grading, foundation and basement excavations, and utility trenching on this site.

During the excavation operations, temporary cut slopes should be used, where feasible, to prevent movement of materials exposed on the excavation walls. A temporary slope gradient of 1:1 (horizontal: vertical) or flatter should be used.

Permanent cut and fill slopes, if any, should not exceed a gradient of 2:1 in order to ensure stability, encourage plant growth, and minimize erosion. In order to satisfy equilibrium conditions under earthquake loading, permanent slopes behind retaining walls should not exceed a gradient of 3:1. To provide erosion protection, permanent slopes should be initially stabilized with straw plugs and then planted with native plants, grasses, and shrubs consistent with the approved landscaping plan.

The Contractor should be aware that slope height, slope inclination, and excavation depths (including utility trench excavations) should in no case exceed those specified in local, state, or federal safety regulations; e.g., OSHA Health and Safety Standards for Excavations, 29 CFR Part 1926, or successor regulations.

Subgrade Stabilization

If necessary, stabilization of subgrade soils should be performed using a woven geotextile fabric such as Mirafi 500X or an approved equivalent. Subgrade stabilization should meet the following requirements:

1. The fabric should be laid loosely on a smooth, fairly level surface; folds and wrinkles in the fabric should be avoided.

2. Adjacent rolls of fabric should overlap a minimum of 24 inches.

3. During fill placement, a 12-inch lift of uncompacted fill should be placed over the fabric before compaction is commenced. Subsequent lifts of fill should then be placed per the requirements described under "Engineered Fill and Backfill Placement".

4. The fabric should be stored away from ultraviolet rays from the sun and should be covered with the required minimum thickness of engineered fill on the same day that it is laid on the subgrade.

Subgrade stabilization may be required during grading because of (1) wet or soft conditions and/or (2) unstable or pumping subgrade. These conditions may occur at the site due to perched groundwater or inclement weather conditions during construction. Where the aforementioned conditions occur, the existing soil should be excavated to a minimum depth of 12 inches. The overexcavated area should then be stabilized with geotextile fabric as described above.

In areas where subsequent foundation excavation will occur, such as in locations of proposed drilled piers, a nonwoven geotextile fabric such as Amoco ProPex 4508 (or an approved equal) may be used to stabilize the subgrade soils.

Subgrade Preparation

Unless otherwise stated in this report, any exposed subgrade that will receive fill should be prepared by scarifying to a depth of six inches and moisture-conditioning to a moisture content of about two percent above optimum moisture content or as directed by the Geotechnical Engineer. The moisture-conditioned material should then be compacted to at least 90 percent relative compaction (based on ASTM Test Method D1557). The moisture conditions are to be maintained until subsequent fill is placed.

Directly under slabs-on-grade and pavement sections, the exposed subgrade should be scarified to a depth of six inches, moisture-conditioned as described above, and compacted to at least 95 percent relative compaction. In cases where the slab or pavement section will bear on engineered fill, the top six inches of the fill should be compacted to a minimum 95 percent relative compaction.

Engineered Fill and Backfill Placement

General: In areas designated to receive fill, the subgrade-to-receive-fill should be prepared as described in the preceding subsection. Approved fill material should then be placed in lifts not exceeding eight inches in uncompacted thickness, moisture-conditioned to a moisture content of about two percent above the optimum moisture content of the material and compacted to at least 90 percent relative compaction (ASTM D1557).

In areas to be overlain by a slab-on-grade, each lift should be compacted, at a suitable moisture content, to a minimum relative compaction of 95 percent in the uppermost six inches of all fill and backfill, and a minimum 90 percent at other depths.

In addition to being compacted to the required relative compaction, the engineered fill should also be stable, i. e., not exhibit "pumping" behavior. Ponding or jetting should not be used to densify fill or backfill.

Fill and Backfill Materials

Imported Fill: If imported material is required for fill and backfill, the imported material must be granular soil, free of organic matter, which does not exhibit excessive shrinkage or swelling behavior when subjected to changes in water content. Imported fill should contain no environmental contaminants or construction debris. The material should conform to the following:

1. Satisfy the following grading requirements:

U.S. Sieve Size	Percentage Passing (Dry Weight Composition)
2½-inch	100
No. 8	25-45
No. 200	0-10

2. Be thoroughly compactable without excessive voids.

3. Meet the following plasticity requirements:

    a. Maximum Plasticity Index of 12 (ASTM D4318).

    b. Maximum Liquid Limit of 35 (ASTM D4318).

The Contractor should provide written certification from a qualified environmental professional that the imported fill materials are free of hazardous and/or deleterious contaminants.

<u>Selective Stockpiling of Site-Derived Fill Materials</u>: During the excavation operations, the Geotechnical Engineer should be given the opportunity to identify native soils to be selectively stockpiled for use as fill or backfill. Site-derived fill materials contaminated by concrete and other debris should be considered as unsuitable fill materials. We note that because of their predominantly cohesive nature, moisture-conditioning of site-derived fill materials is likely to be difficult if earthwork operations are performed during the rainy season.

Aggregate Base Materials

Where aggregate base material is specified, the furnished material should meet the requirements of Class 2 Aggregate Base as described in the California Department of Transportation (Caltrans) Standard Specifications. Aggregate base materials should consist of virgin rock aggregates only or recycled aggregates. The Contractor should provide written certification from a qualified environmental professional stating that the imported aggregate base materials are free of hazardous and/or deleterious contaminants.

Drain Rock and Filter Fabric

Drain rock, if required, should consist of Class 2 Permeable Material, meeting gradation and other requirements contained in the California Standard Specifications. Alternatively, three-quarter-inch crushed rock encapsulated in filter fabric (Mirafi 140N, or approved equivalent) can be used instead of Class 2 Permeable Material. The Contractor should provide written certification to the Owner and the Geotechnical Engineer stating that drain rock materials meet all the requirements of Caltrans Class 2 Permeable Material. If the Contractor intends to use recycled Class 2 Permeable Material, the same written certification requirement stated above for recycled Class 2 Aggregate Base will apply.

Underground Utilities

Existing buried utility lines should be re-routed around proposed excavation areas. New and re-routed buried utility lines should be spaced away from the nearest footing such that the horizontal distance between the edge of the footing and the nearest edge of utility trench backfill is at least three times the depth of the footing embedment. The requirement is intended to maintain a zone of soil around the footing to enable full development of passive pressures.

Surface Drainage

Finished grading for surface drainage should be designed to direct surface runoff away from the new buildings toward discharge facilities. Ponding of surface water should not be allowed adjacent to the new buildings. Downspouts and gutters should be provided, and water from downspouts should be directed through unperforated pipes to storm drains. Alternatively, drainage culverts may be used to direct water from downspouts to storm drains.

Winter Construction

If earthwork operations are performed during the winter or the rainy season, long delays may result from the Contractor's inability to properly moisture-condition the mostly clayey site soils to achieve the required relative compaction. In that case, lime treatment could be employed to make the site soils workable and compactable. One should refer to the "Stabilization with Geotextile Fabric" subsection of this report for possible mitigation measures.

Once the subgrade soils have been properly compacted, a six-inch layer of Caltrans Class 2 Aggregate Base can be placed over the subgrade as a cap to maintain suitable working conditions, if necessary. Alternatively, the Contractor may choose to lime-treat the surface soils. Also, a gravelly surface course may be required on construction traffic routes to improve working conditions. Provisions should be made to dewater the excavations and to minimize the flow of surface runoff into the excavations if earthwork is performed during the rainy season.

We must note that the moisture content shown on the boring logs for the native soils reflects the moisture conditions at the time of the field exploration. The moisture content of those materials should be expected to be much higher if earthwork is performed during the winter or rainy season.

Impact of Site Conditions on Construction

Although this investigation was performed primarily for design purposes, a brief discussion of the impact of the site conditions on construction is presented for information purposes only. The discussion must not be considered as a presentation of every possible impact of site conditions on construction.

Utility Corridors: The Contractor should be aware that a large number of utility lines traverse the site. Some of these lines are within the alignment of existing roads. Since a number of the existing roads are to be demolished and the lines are active, the Contractor should take necessary precautions prior to and during demolition and earthwork (including excavation) operations to prevent damage to the utility lines.

Demolition: In areas of proposed site improvements, the Contractor should completely remove the foundations of buildings-to-be-demolished at the site, as well as any subsurface structures. The Contractor should review design drawings (or as-built drawings, if they exist) of the structures-to-be-demolished to familiarize himself/herself with the depths and locations of all buried and underground elements to be removed.

New Pavements: As previously noted, the Contractor should be aware that the design pavement sections are not designed for construction traffic, and he/she should sequence the construction in such a way that new pavement sections are not subjected to construction traffic.

Dust, Noise, and Vibration Control: Dust, noise and vibration control may be necessary to minimize the impact of construction activities on nearby buildings and on-going hospital operations.

SECTION 5
CONSTRUCTION OBSERVATION

CONSTRUCTION OBSERVATION

Summary

Since our recommendations are based on the interpretation of available subsurface information, and actual subsurface conditions may not be known fully until the construction phase, it is necessary that Rutherford + Chekene be retained to provide continuous geotechnical engineering services during the earthwork, excavation, and foundation construction phases of the project. This will allow us to (1) make necessary modifications to our recommendations should the actual subsurface conditions differ substantially from the conditions anticipated prior to the start of construction and (2) observe that the Contractor's work conforms to the geotechnical aspects of the construction documents.

Our construction observation services will include (but will not necessarily be limited to) the following:

1. Meet with the Construction Manager, the Architect/Engineer, Contractor, and Earthwork Subcontractor on the site at critical points during site preparation, excavation, foundation, and backfilling operations to coordinate our observation and geotechnical testing services with the work.

2. Review submittals on earthwork materials, ground monitoring, and survey points for shoring walls. Respond to RFIs.

3. Review any proposed earthwork materials, both on-site and imported, to determine their acceptability. We anticipate that you will hire a local accredited testing laboratory to perform the laboratory testing.

4. Interact with Testing Lab's personnel regarding field density tests of fills and subgrades

5. Review measured ground monitoring data for shored excavation walls and provide recommendations for remedial work, if necessary.

6. Continuous observation of tiedown installation.

7. Observe bearing conditions in mat foundation excavations, prior to placement of reinforcing and again immediately prior to the placement of concrete.

8. Prepare a report summarizing our observations and test results upon completion of construction.

SECTION 6
FIELD EXPLORATION
AND LABORATORY TESTING PROGRAM

FIELD INVESTIGATION

Exploratory Borings

We commissioned Taber Consultants, of West Sacramento, California to drill 11 borings. All of the borings were drilled with track-mounted CME-55 rig using rotary method. The borings were drilled between 15 July and 18 July 2019. A summary of the final depths of the exploratory borings is shown in Table 10.

Table 10
Exploratory Boring Depths

Project Site	Boring	Ground Surface Elevation (ft.)	Final Depth Below Existing Ground Surface (ft.)
Hospital Expansion	EB-1	+116.4	41
	EB-2	+116.8	40.8
	EB-3	+116.8	40.5
	EB-4	+114.3	40.3
	EB-5	+111.5	41.5
	EB-6	+116.7	40.8
Parking Structure	PEB-1	+117.8	30.8
	PEB-2	+120.5	31
	PEB-3	+117.5	30.9
	PEB-4	+115.0	31
	PEB-5	+119.2	31

The locations of the borings are shown on Figure 3, Site and Exploration Location Plan. The key to our exploratory boring and the exploratory boring logs are presented in Appendix C.

It should be noted that the ground surface elevations shown on the boring logs are based on an undated topographic survey of the site prepared by Aerial Data Inc.. We understand that the elevations shown on that survey are based on the 1929 National Geodetic Vertical Datum (NGVD).

We obtained two different types of samples during the course of our field investigation. The sampler types are as follows:

1. Standard Penetration Test (SPT) Sampler: We obtained disturbed samples using a SPT split-spoon sampler with equipment and procedures in accordance with ASTM Test Method D1586.

2. Modified California Sampler: We obtained fairly disturbed samples using a Modified California split-spoon drive sampler with liners. The Modified California sampler has an approximate inside diameter of 2.438 inches and an outside diameter of about 2.5 inches.

For each of the drive samples obtained (either SPT or Modified California), the number of blows required for every six-inch increment of penetration (or fraction thereof) was recorded. For each test, the total for the last 12-inches is the blow count. The blow counts on our exploratory boring logs represent the actual number of blows recorded during sampling. No conversions were made to the recorded blow counts on boring logs. For each sample obtained using an SPT sampler, the blow count is the SPT value, N.

We referenced Figure 1.24 of Fang (1991) to estimate conversion factors for blow counts from various samplers to N-value. The conversion method takes into consideration soil type, sampler size, hammer weight, and hammer drop distance. To convert actual blow counts by the Modified California Sampler to equivalent N-values, multiply by 0.6.

We logged the exploratory borings by visually examining the drill cuttings and recovered samples. On the corresponding logs, we recorded the number of blows required to advance the samplers. At the completion of drilling, we retained representative samples for laboratory testing and future reference. Our boring logs contain the information obtained in this exploration program.

The locations of the exploratory borings were determined by referencing landmarks around the site and by using a measuring wheel or measuring tape. The locations and elevations of the borings should be considered accurate only to the degree implied by the methods used.

The exploratory boring logs and soil profiles included herein show our interpretation of the subsurface conditions at the locations and dates indicated, and it is not warranted that the logs are representative of subsurface conditions at other locations and times. The stratification lines shown represent the approximate boundaries between material types; these transitions may be gradual. Also, we have developed soil and subsurface profiles by interpolation between the available data points, between which variations may occur in the actual conditions.

We must reiterate that the moisture contents shown on the boring logs in Appendix C for the native soils reflect the moisture conditions at the time of the field explorations. The moisture content of these materials should be expected to be much higher if earthwork is performed during the winter or rainy season.

LABORATORY TESTING PROGRAM

Testing Laboratory

We commissioned Cooper Testing Laboratory of Palo Alto to perform a program of laboratory tests on materials encountered in the exploratory borings to determine their index and strength properties.

Our program of tests included tests on soil samples to determine their moisture contents and dry densities, according to ASTM D2937.

Sieve analyses were performed on 14 samples to determine their gradation characteristics

We also had some samples tested to determine their liquid and plastic limits. These tests were performed in accordance with AST D 4318.

Five samples were tested to determine the percentage of particles (by weight) passing through the US #200 sieve. These tests followed the procedures detailed in ASTM D1140.

Gradation tests were performed on some samples in accordance with ASTM D 422 with hydrometer tests performed on four samples.

Some unconfined compression tests were performed on samples in accordance with ASTM D 2166.

The results of the laboratory tests are presented on the boring logs at the appropriate sample depths and in Appendix E.

Corrosivity Analysis

We commissioned CERCO Analytical of Concord to perform a corrosivity analysis (per ASTM D1586) on four soil samples obtained from our exploratory borings for the current investigation. Tests were performed to measure the resistivity, pH, chloride and sulfate ion concentrations, and redox potentials of the samples. The results are summarized in CERCO's report in Appendix E.

Based on the resistivity measurements, CERCO concluded that all samples are classified as moderately corrosive to corrosive.

Measurements of chloride ion concentration in all samples reflect none detected with a reporting limit of 15 mg/kg.

The sulfate ion concentrations in the samples from the Parking Structure are 21 and 590 mg/kg. The detected concentration of 590 mg/kg indicate that it is sufficient to potentially be detrimental to reinforced concrete structures and cement mortar-coated steel at this location.

The sulfate ion concentration of 40 and 46 mg/kg in the two samples from the Hospital Expansion are determined to be insufficient to damage reinforced concrete structures and cement mortar-coated steel.

The pH levels of the two soil samples from the Parking Structure are 5.58 and 6.59. Any soils with a pH of less than 6.0 is considered to be corrosive to buried iron, steel, mortar-coated steel and reinforced concrete structures. Therefore, corrosion prevention measures need to be considered for structures to be placed in acidic soil.

The pH levels of 6.42 and 7.02 in the two samples from the Hospital Expansion do not present corrosion problems for buried iron, steel, mortar-coated steel and reinforced concrete structures.

The redox potential all four samples from Parking Structure and Hospital Expansion ranges between of 220-mV to 280-mV which is indicative of potentially "slightly corrosive" soils resulting from anaerobic soil conditions.

CERCO's original report, which is summarized above, is presented in Appendix E.

SECTION 7
ENVIRONMENTAL SOIL PROFILING

ENVIRONMENTAL SOIL PROFILING

Summary

Environmental profiling of the site soils involved taking environmental samples using drilling augers and sampling tools that have been steam cleaned and sending those samples to a certified environmental testing lab.

The environmental profiling effort was spearheaded by Weber Hayes and Associates as subconsultant to R+C. A report containing the results of the environmental profiling is presented in Appendix E.

The study involved sampling at six boring locations at the Hospital Expansion site and eight boring locations at the Parking Structure site and testing of selected composite samples. Two borings were advanced to depths of 11 feet within the basement footprint at the Hospital Expansion site and four borings were advanced to a depth of 5 feet within the remaining hospital expansion footprint to create a total four 4-point composite samples.

Eight borings were advanced to a depth of 2 feet within the proposed Parking Structure site to collect samples to assemble two 4-point composite samples.

The scope of the study was based on the volume of materials generated from a hospital building footprint of 32,000 square feet with a 5,000 square feet basement excavation, and a parking structure footprint of 70,000 square feet.

The 4-point composite samples from Hospital Expansion and Parking Structure sites were analyzed for the following:

1. TPH-diesel & motor oil by EPA Method 8015M
2. VOCs by EPA Method 8260
3. Title 22 (CAM 17) Metals by EPA Method 6010/7470
4. Pesticides by EPA Method 8081

The results are summarized as follows:

1. No organochlorine pesticides were detected in the soil samples
2. Low concentrations of petroleum hydrocarbons were detected in some of the samples.
3. No volatile organic compounds (VOCs) were detected in the soil samples.
4. Metals, occurring naturally in soil and rock were detected in varying concentrations. None of the metals' concentrations exceed the environmental screening levels (ESLs),

except for arsenic, cobalt and vanadium. Arsenic, cobalt and vanadium were detected in samples at concentrations exceeding residential ESLs. The concentrations detected do not indicate a health risk. It may be noted that the arsenic and vanadium levels are within concentrations occurring naturally in the soils.

SECTION 8
INFILTRATION STUDY

INFILTRATION STUDY

Summary

Infiltration study of site soils involved the performance of infiltration tests. The infiltration tests were located at the of the proposed bio-retention planter locations based on the civil plans provided. The locations of the infiltration tests are shown in Figure 15.

The environmental profiling effort was spearheaded by Weber Hayes and Associates as subconsultant to R+C. A report containing the results of the infiltration study is presented in Appendix F.

The borings were drilled on September 24, 2019 using a 2400 SK-1 rig-mounted on a 4WD F450 truck (Model No. Mobile B24). A total of eight infiltration tests were performed, four tests (IT-1 to IT-4) at the hospital expansion site and four (IT-5 to IT-8) at the parking garage site.

A boring, BP-1, was drilled near infiltration test IT-3 to provide a profile of the soils for the infiltration test. There are existing borings near the other infiltration test locations so profile borings are not needed at those locations. The profile boring was 6-in diameter and extended about 8 feet below the invert elevation of the IT-3. The boring cuttings were observed and the soils in the boring were sampled as necessary for accurate logging.

A summary of the final depths of the infiltration test holes and the boring profile is shown in Table 11.

Table 11
Infiltration Test Boring Depth

Project Site	Boring	Ground Surface Elevation (ft.)	Final Depth Below Existing Ground Surface (ft.)
Hospital Expansion	IT-1	+116.0	7.21
	IT-2	+116.0	7.8
	IT-3	+115.0	5.8
	IT-4	+110.0	7.0
	BP-1	+115.0	12.0
Parking Structure	IT-5	+118.5	9.2
	IT-6	+120.5	9.2
	IT-7	+116.2	6.9
	IT-8	+119.0	7.7

The infiltration test holes were 6-in dimeter and extended about 2 feet below the invert elevation of the planned SCMs. A perforated pipe, of diameter 2-in was placed in each infiltration test boring to facilitate the taking of the measurements during each infiltration test. The annulus between each perforated pipe and the boring sidewall was filled with pea-size gravel.

The infiltration tests were performed in accordance with the Shallow Quick Infiltration Testing Methodology contained in Earth Systems Pacific's report, "Native Soil Assessment for Small Infiltration-Based Stormwater Control Measures", dated December 2013.

The results of our infiltration study are presented in Table 12.

Table 12
Summary of Infiltration Test Results

Infiltration Test Locations	Infiltration Test Location I.D.	Infiltration Rate (inches/hour)
Hospital Expansion Site	IT-1	1.81
	IT-2	0.12
	IT-3	0.30
	IT-4	0.09
Parking Garage Site	IT-5	23.88
	IT-6	1.80
	IT-7	3.90
	IT-8	6.77

We understand that the County considers an infiltration rate of 0.6 inches per hour is generally a minimum acceptable value for native subsurface soils. In locations where the infiltration rate is lower than the minimum infiltration rate of 0.5 inches per hour, the proposed bio-retention planters may need to incorporate drains to help account for the low infiltration rates.

SECTION 9
REFERENCES

REFERENCES

Reports and Publications

The following reports and publications were used for information in the course of this investigation:

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SECTION 10
APPENDICES

APPENDIX A

Figures for this Report

Adapted from Google Earth

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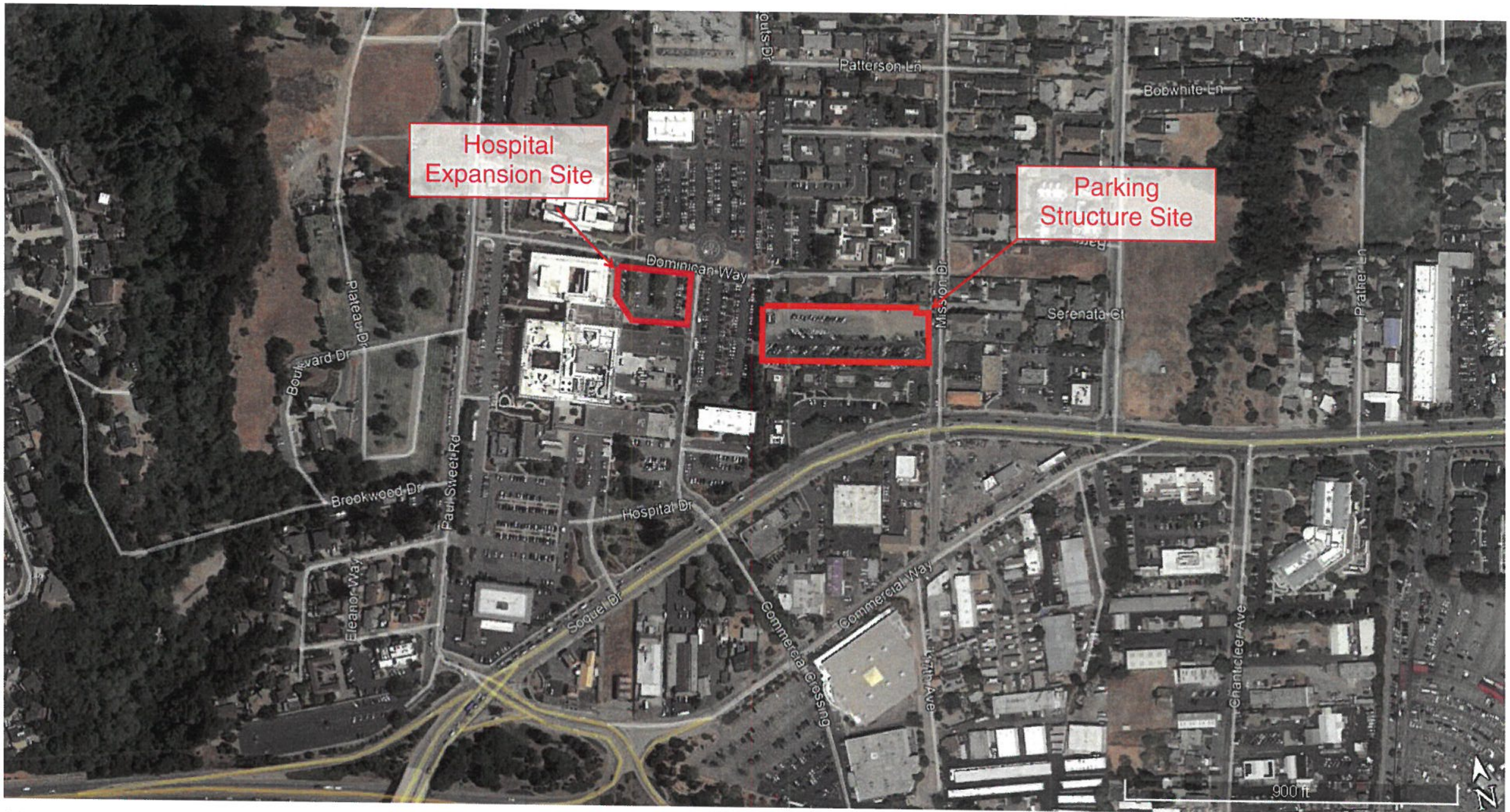
Site Vicinity Map
Hospital Expansion and Parking Structure
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No.: 2019-070G	DATE: 10/31/2019	FIGURE: 1	PAGE: A1



Adapted from Google Earth

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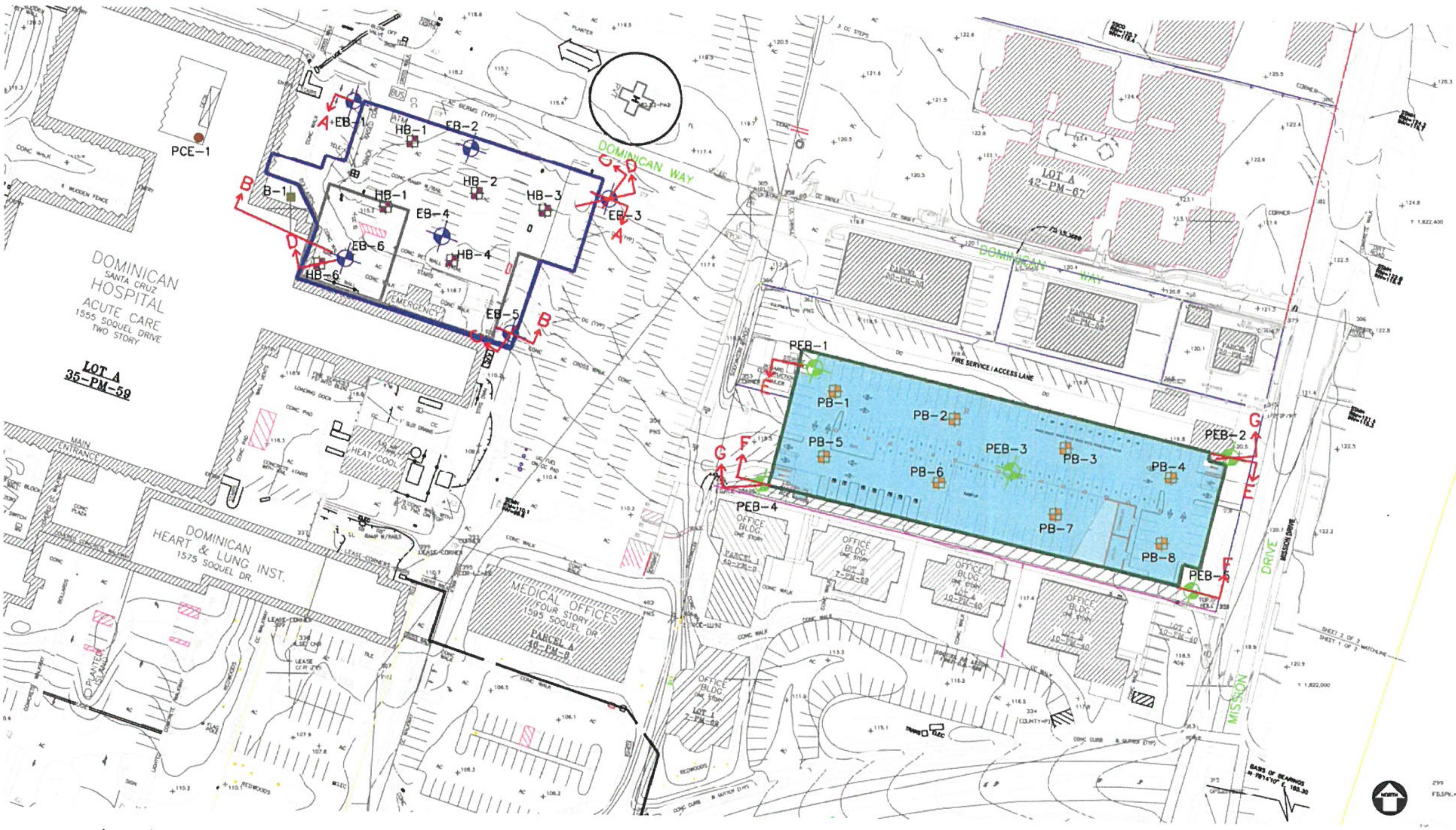
Site Location Map
Hospital Expansion and Parking Structure
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No.: 2019-070G	DATE: 10/31/2019	FIGURE: 2	PAGE: A2



Legend

EB-1	Hospital Boring Locations
PEB-1	Parking Structure Boring Locations
B-1	Boring by Pacific Crest Engineering (2007)
HB-1	Sampling Locations for Environmental Characterization for Hospital Expansion
PB-1	Sampling Locations for Environmental Characterization for Parking Structure
	Hospital Expansion Footprint
	Parking Structure Footprint
A A	Subsurface Profile

1 INCH = 80 FT

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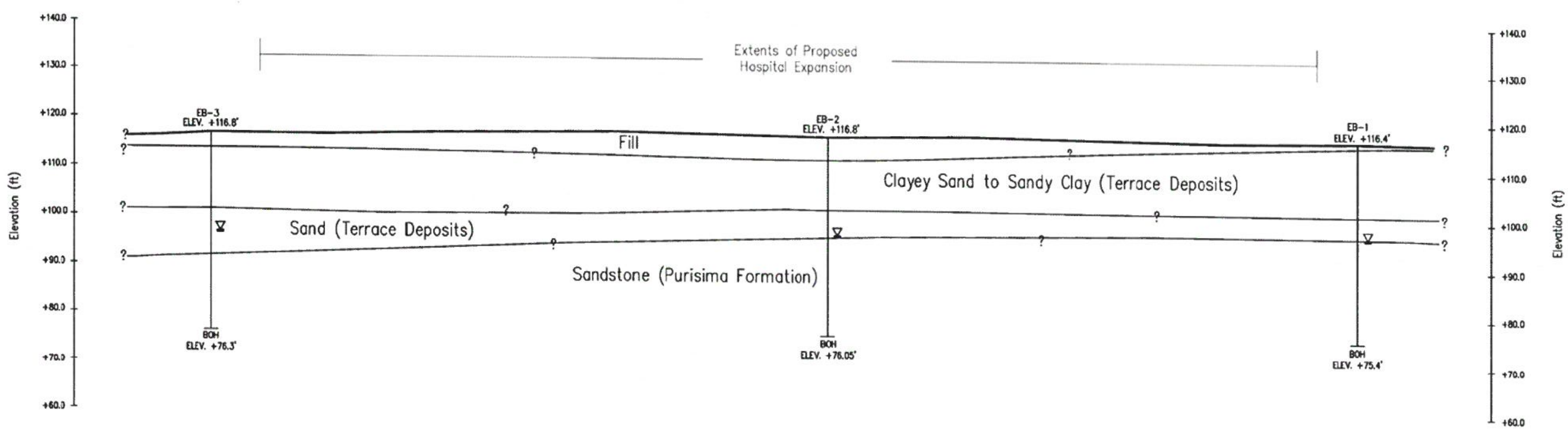
Site and Exploration Location Plan
Hospital Expansion and Parking Structure
Dominican Hospital, Dignity Health
Santa Cruz, California

JOB No.: 2019-070G	DATE: 10/31/2019	FIGURE: 3	PAGE: A3



LEGEND

EB-2	Boring I.D.
ELEV. +116.8'	Surface Elevation
BOH	Bottom of Hole
ELEV. +76.05'	Bottom of Hole Elevation
"?"	Indicates Uncertainty in the Stratification
⊻	Groundwater Encountered

Scale

0' 10' 20' 30' 40'

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Generalized Subsurface Profile A-A
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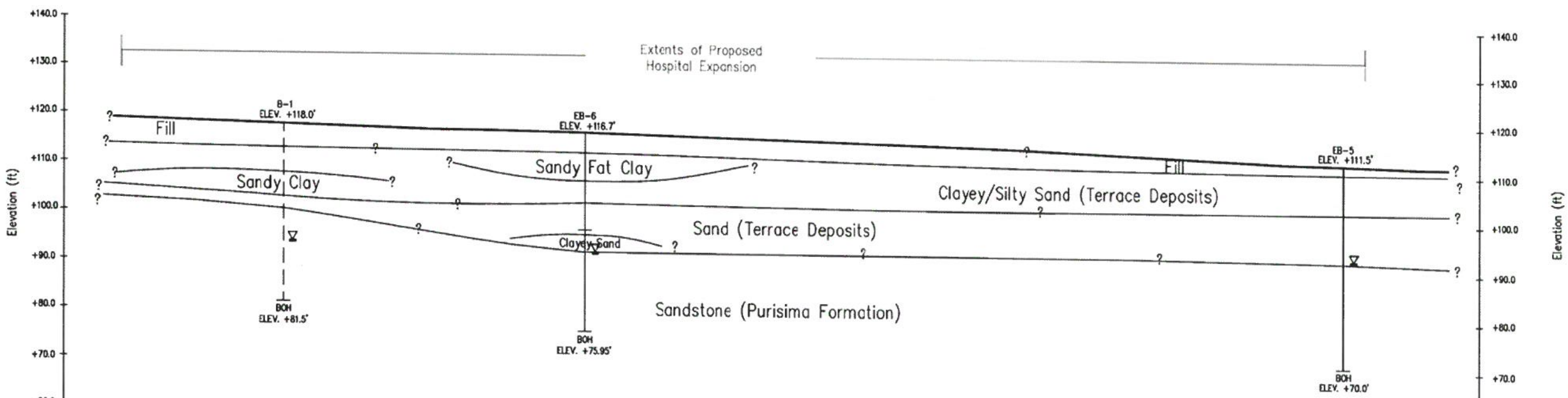
JOB No. 2019-070G	DATE 10/31/2019	FIGURE 4	PAGE A4



LEGEND

EB-6 — Boring I.D.
ELEV. +116.7' — Surface Elevation
BOH — Bottom of Hole
ELEV. +75.95' — Bottom of Hole Elevation
"?" — Indicates Uncertainty in the Stratification
⊽ — Groundwater Encountered

Scale

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Generalized Subsurface Profile B-B
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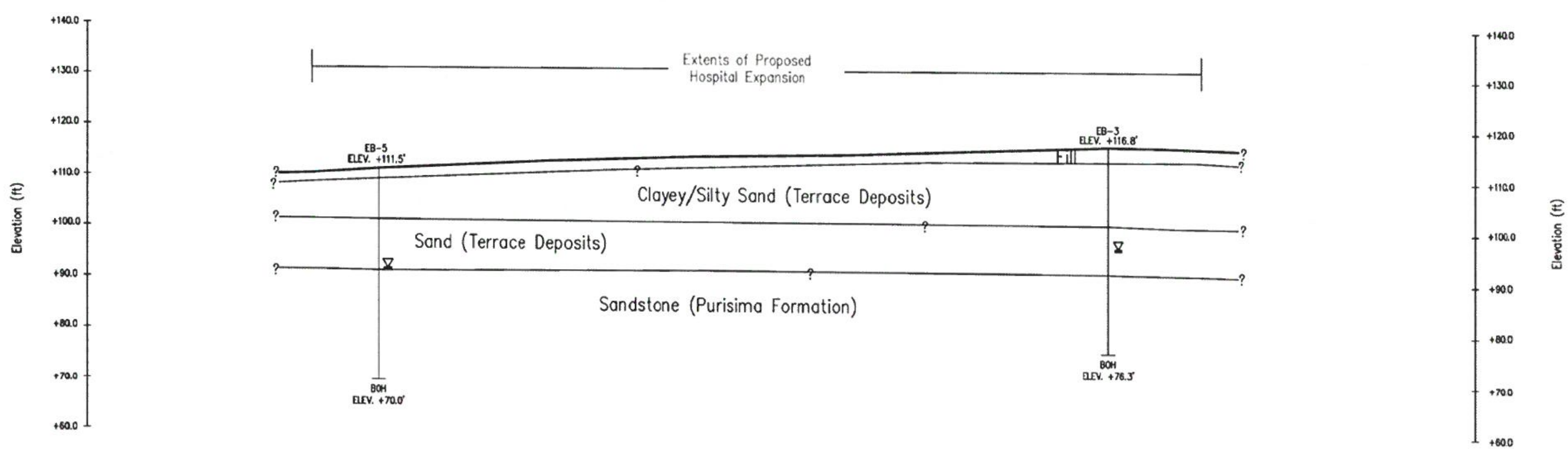
JOB No. 2019-070G	DATE 10/31/2019	FIGURE 5	PAGE: A5



LEGEND

EB-5 — Boring I.D.
ELEV. +111.5' — Surface Elevation
BOH — Bottom of Hole
ELEV. +70.0' — Bottom of Hole Elevation
"?" — Indicates Uncertainty in the Stratification
— Groundwater Encountered

Scale

0' 10' 20' 30' 40'

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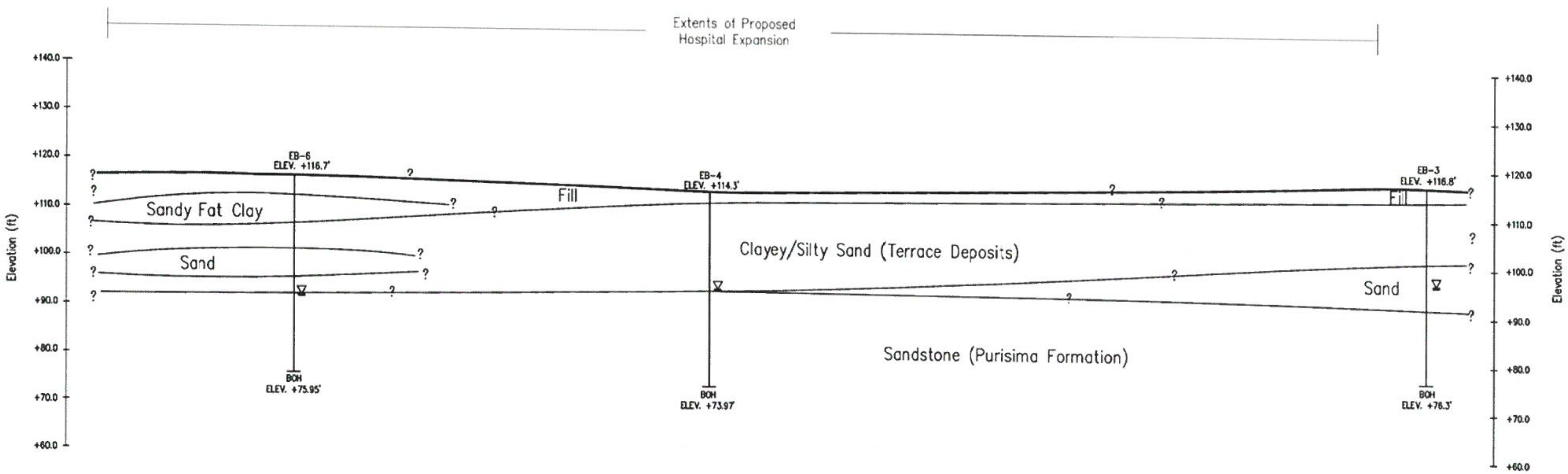
Generalized Subsurface Profile C-C
Hospital Expansion and Parking Structure
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No. 2019-070G	DATE 10/31/2019	FIGURE 6	PAGE A6



LEGEND

EB-6	Boring I.D.
ELEV. +116.7'	Surface Elevation
BOH	Bottom of Hole
ELEV. +75.95'	Bottom of Hole Elevation
"?"	Indicates Uncertainty in the Stratification
	Groundwater Encountered

Scale

0' 10' 20' 30' 40'

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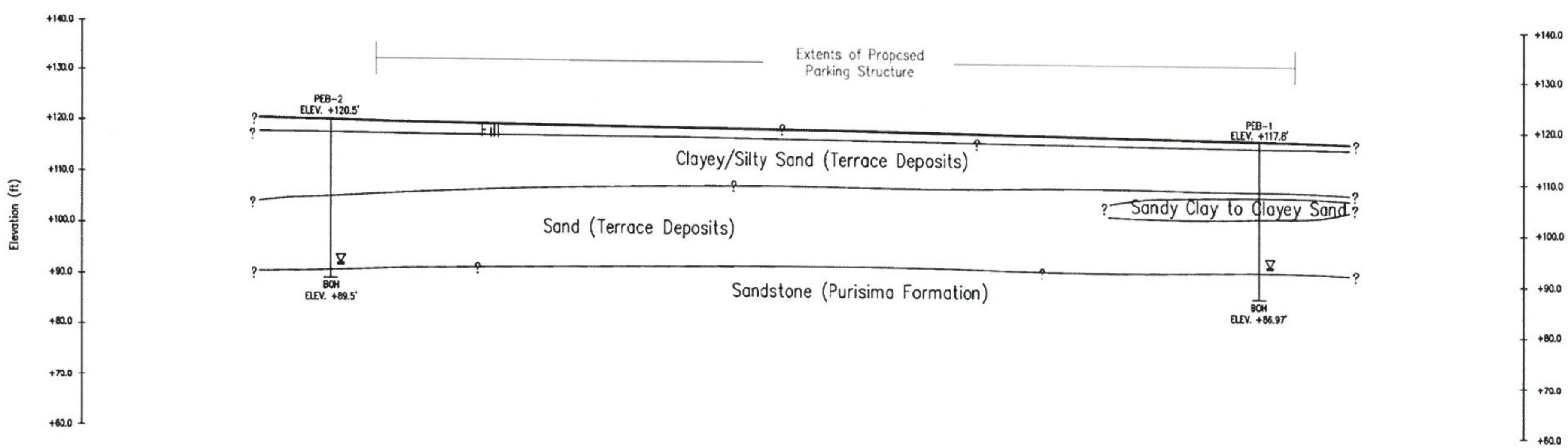
Generalized Subsurface Profile D-D
Hospital Expansion and Parking Structure
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No. 2019-070G	DATE 10/31/2019	FIGURE 7	PAGE A7



LEGEND

- PEB-2 — Boring I.D.
- ELEV. +120.5' — Surface Elevation
- BOH — Bottom of Hole
- ELEV. +89.5' — Bottom of Hole Elevation
- "?" — Indicates Uncertainty in the Stratification
- ▽ — Groundwater Encountered

Scale

Vertical 0' 10' 20' 30' 40'

Horizontal 0' 20' 40' 60' 80'

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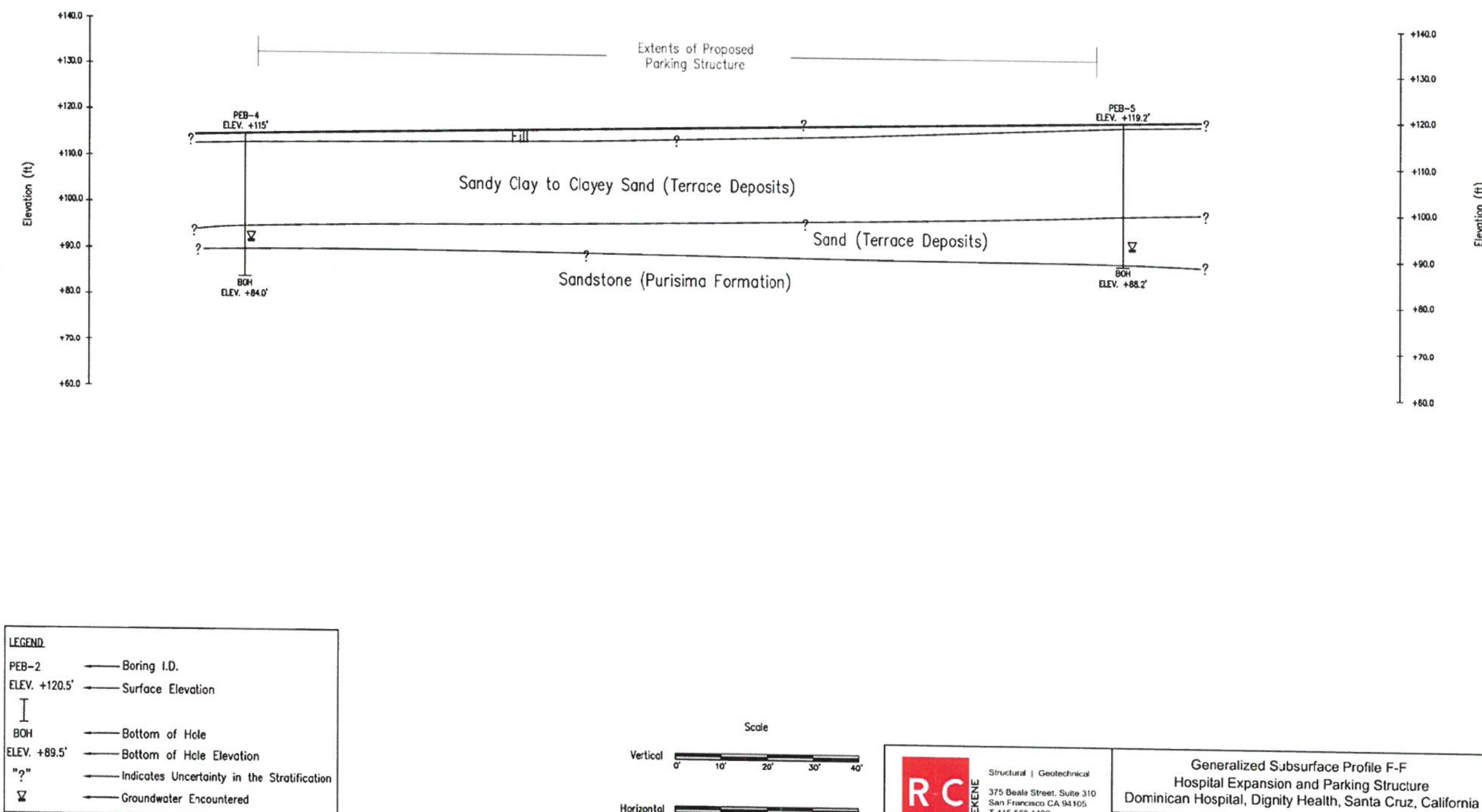
Generalized Subsurface Profile E-E
Hospital Expansion and Parking Structure
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No. 2019-070G	DATE 10/31/2019	FIGURE 8	PAGE A8



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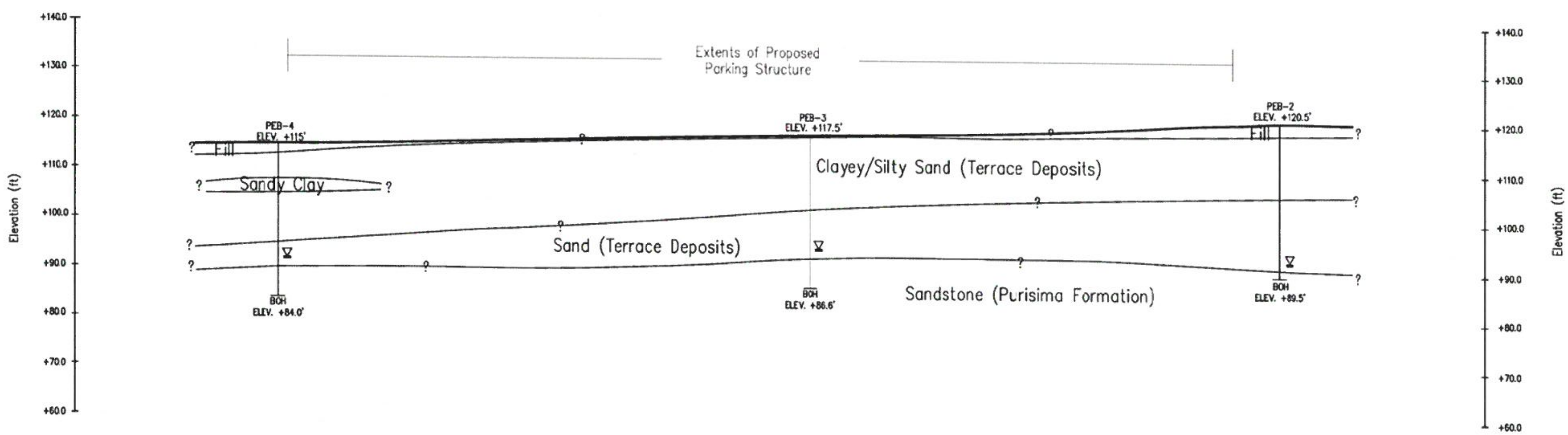
Generalized Subsurface Profile F-F
Hospital Expansion and Parking Structure
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No. 2019-070G	DATE 10/31/2019	FIGURE 9	PAGE: A9



LEGEND

PEB-2	Boring I.D.
ELEV. +120.5'	Surface Elevation
BOH	Bottom of Hole
ELEV. +89.5'	Bottom of Hole Elevation
"?"	Indicates Uncertainty in the Stratification
⊻	Groundwater Encountered

Scale

Vertical 0' 10' 20' 30' 40'

Horizontal 0' 20' 40' 60' 80'

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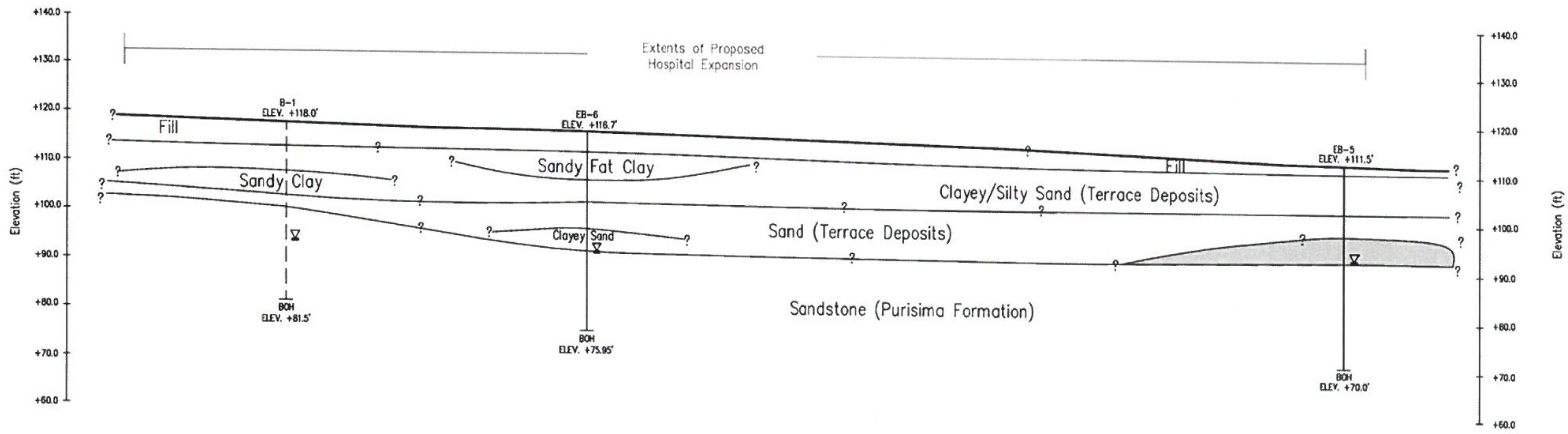
Generalized Subsurface Profile G-G
Hospital Expansion and Parking Structure
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No. 2019-070G	DATE 10/31/2019	FIGURE 10	PAGE A10



LEGEND

EB-6	Boring I.D.
ELEV. +116.7'	Surface Elevation
BOH	Bottom of Hole
ELEV. +75.95'	Bottom of Hole Elevation
"?"	Indicates Uncertainty in the Stratification
	Groundwater Encountered
	Potential Liquefiable Layer

Scale

0' 10' 20' 30' 40'

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Generalized Subsurface Profile with Potential Liquefiable Layers B-B
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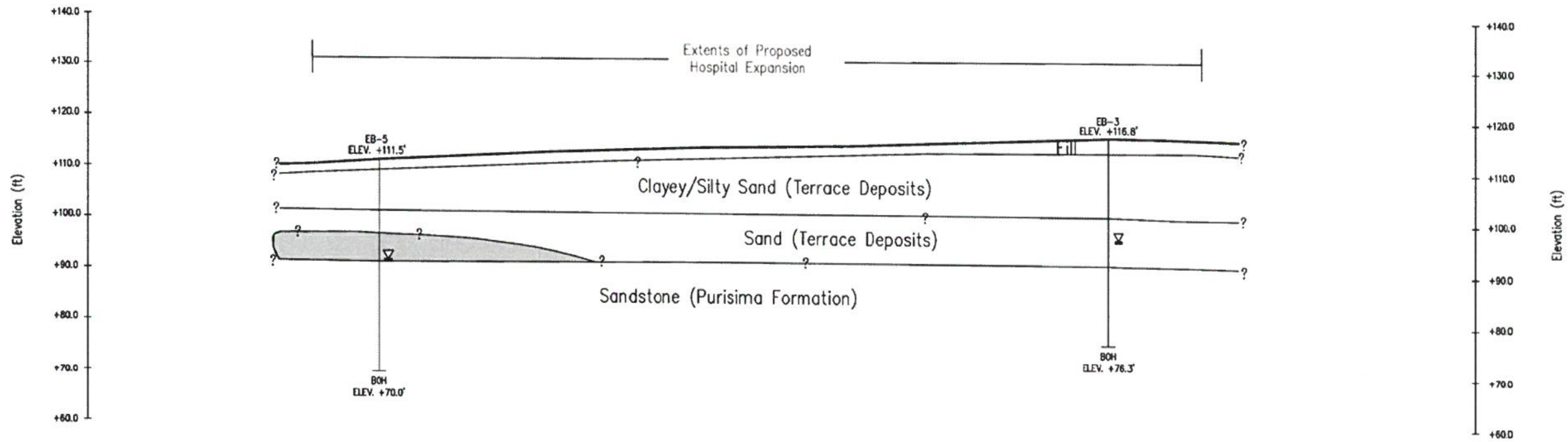
JOB No. 2019-070G	DATE 10/31/2019	FIGURE 11	PAGE A11



LEGEND

EB-5	Boring I.D.
ELEV. +111.5'	Surface Elevation
BOH	Bottom of Hole
ELEV. +70.0'	Bottom of Hole Elevation
"?"	Indicates Uncertainty in the Stratification
	Groundwater Encountered
	Potential Liquefiable Layer

Scale

0' 10' 20' 30' 40'

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Generalized Subsurface Profile with Potential Liquefiable Layers C-C
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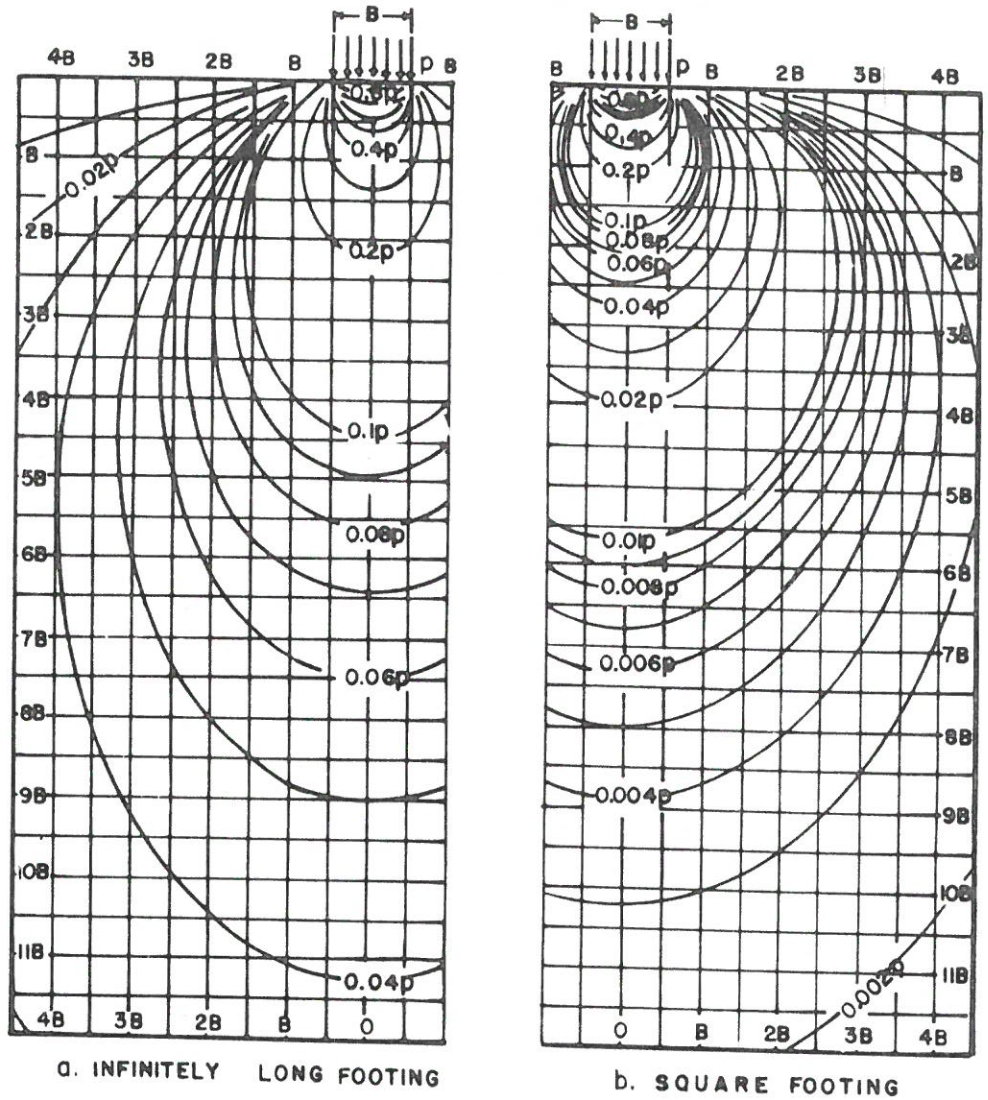
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No. 2019-070G	DATE 10/31/2019	FIGURE 12	PAGE: A12



Adapted from NAVFAC D.M 7.1

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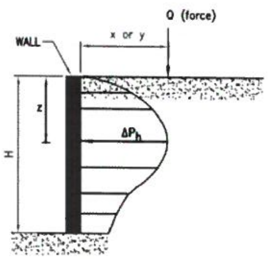
Stress Contours for Rough Estimate of Vertical Surcharge
Hospital Expansion and Parking Structure
Dominican Hospital, Dignity Health, Santa Cruz, California

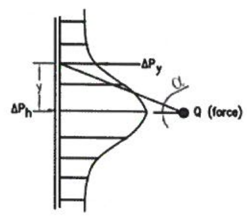
JOB No.: 2019-070G	DATE: 10/31/2019	FIGURE: 13	PAGE: A13



The horizontal pressure due to point load (Q) can be expressed as follows:

$$\Delta_{ph} = \frac{P}{\pi}\left[\frac{3x^2z}{R^5} - (1-2\nu)\left\{\frac{x^2-y^2}{Rr^2(R+z)} + \frac{y^2z}{R^3r^2}\right\}\right]$$

Where $R^2 = x^2+y^2+z^2$
$r^2 = x^2+y^2$
x and y are horizontal distance from the load to the stress point
z= depth of stress point below surface
ν = Poisson's ratio = 0.35

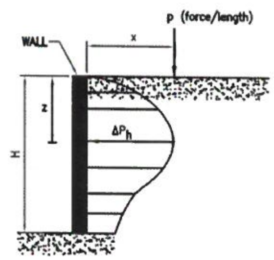


Increase in horizontal pressure, ΔP_y, at distance y from point load Q can be expressed as follows:

$$\Delta P_y = \Delta P_h \cos^2(1.1\alpha)$$

Where α is the angle shown above, in degrees.

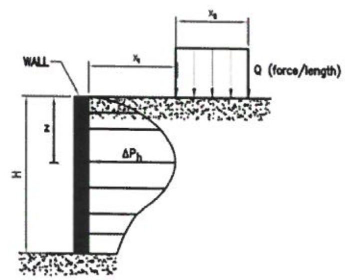
a. Point Load



The horizontal pressure due to line load (p) oriented parallel to the wall can be expressed as follows:

$$\Delta P_h = \frac{4p}{\pi}\cdot\frac{xz^2}{R^4}$$

Where $R^4 = x^4+z^4$
x = horizontal distance from the load to the stress point
z= depth of stress point below surface

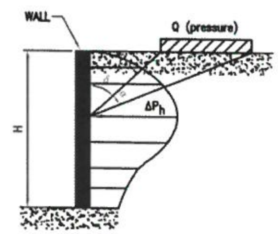


The horizontal pressure due to line load (Q) oriented perpendicular to the wall, can be expressed as follows:

$$\Delta P_h = \left(\frac{Q}{\pi z}\right)\left[\left[\frac{1}{\left[1+\left(\frac{z}{x_2}\right)^2\right]^{\frac{3}{2}}}\right] - \left[\frac{(1-2\nu)}{\left[1+\left(\frac{z}{x_2}\right)^2\right]^{\frac{1}{2}} + \frac{z}{x_2}}\right] - \left[\frac{1}{\left[1+\left(\frac{z}{x_1}\right)^2\right]^{\frac{3}{2}}}\right] + \left[\frac{(1-2\nu)}{\left[1+\left(\frac{z}{x_1}\right)^2\right]^{\frac{1}{2}} + \frac{z}{x_1}}\right]\right]$$

Where x_1= horizontal distance from the load to the stress point
z= depth of stress point below surface

b. Line Load



The horizontal pressure due to strip load (Q) oriented parallel to the wall, can be expressed as follows:

$$\Delta P_h = \frac{2Q}{\pi}\left[\alpha(\pi/180) - \sin\alpha\cos(\alpha+2\delta)\right]$$

Where δ and α are the angles shown above, in degrees.

c. Strip Load

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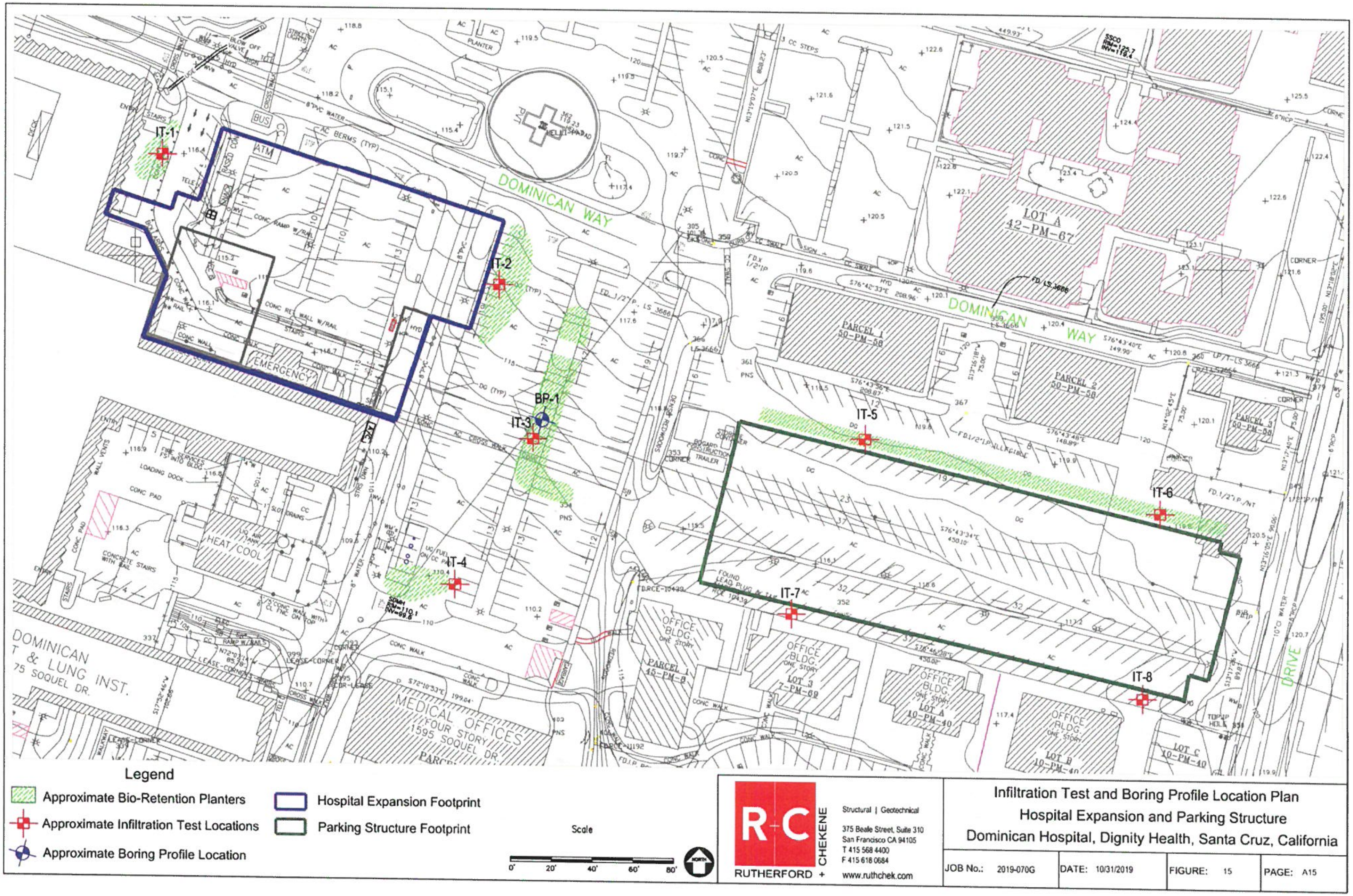
Surcharge From Various Load Types on Retaining Wall
Hospital Expansion and Parking Structure
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No.:2019-070G	DATE: 10/31/2019	FIGURE: 14	PAGE: A14



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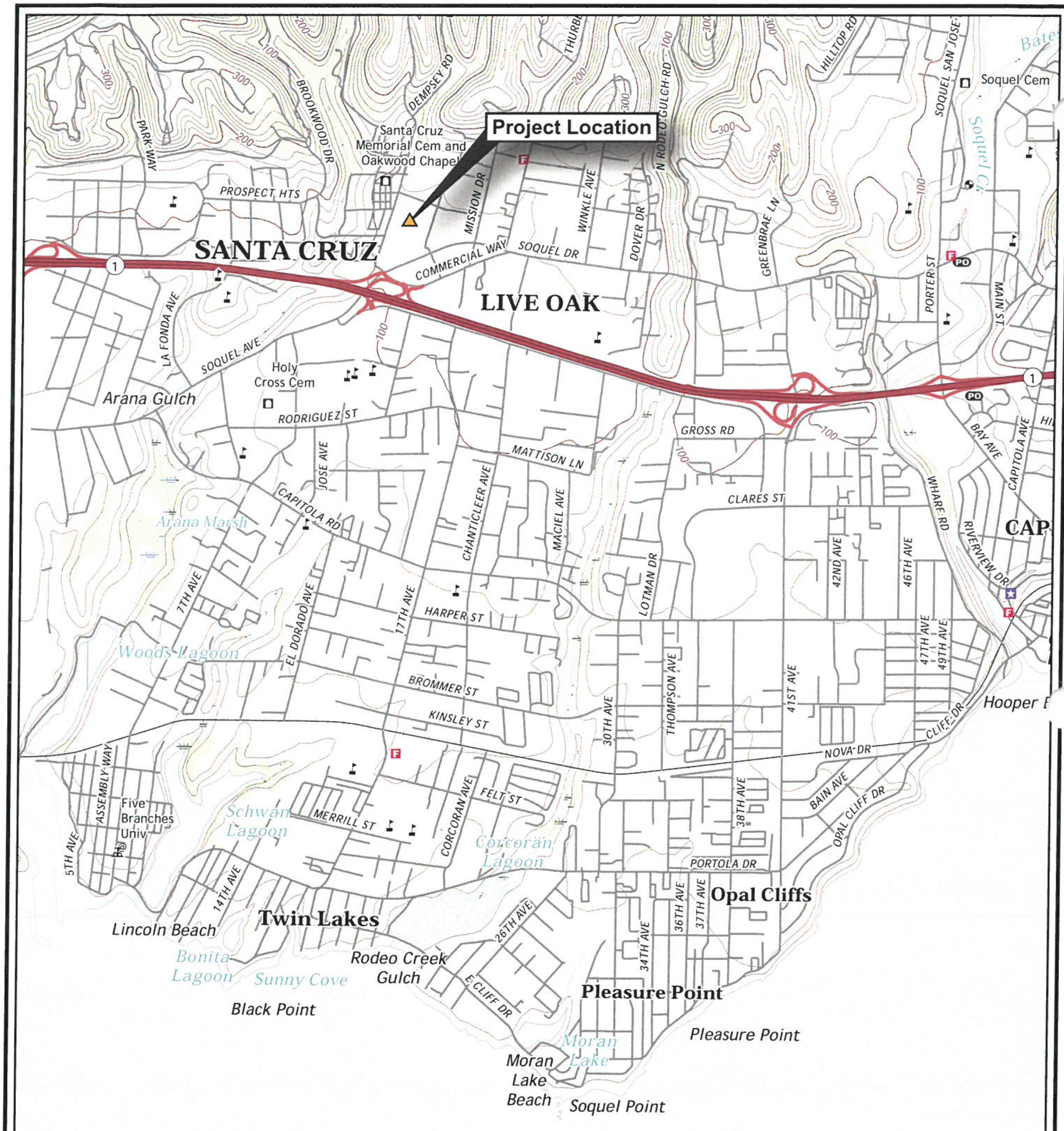
Infiltration Test and Boring Profile Location Plan
Hospital Expansion and Parking Structure
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No.: 2019-070G	DATE: 10/31/2019	FIGURE: 15	PAGE: A15

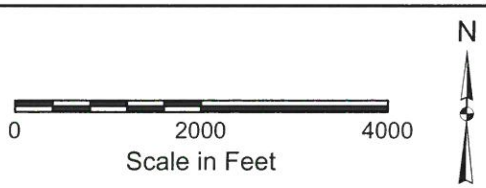
APPENDIX B

Geologic Hazards Evaluation By GeoInsite INC.

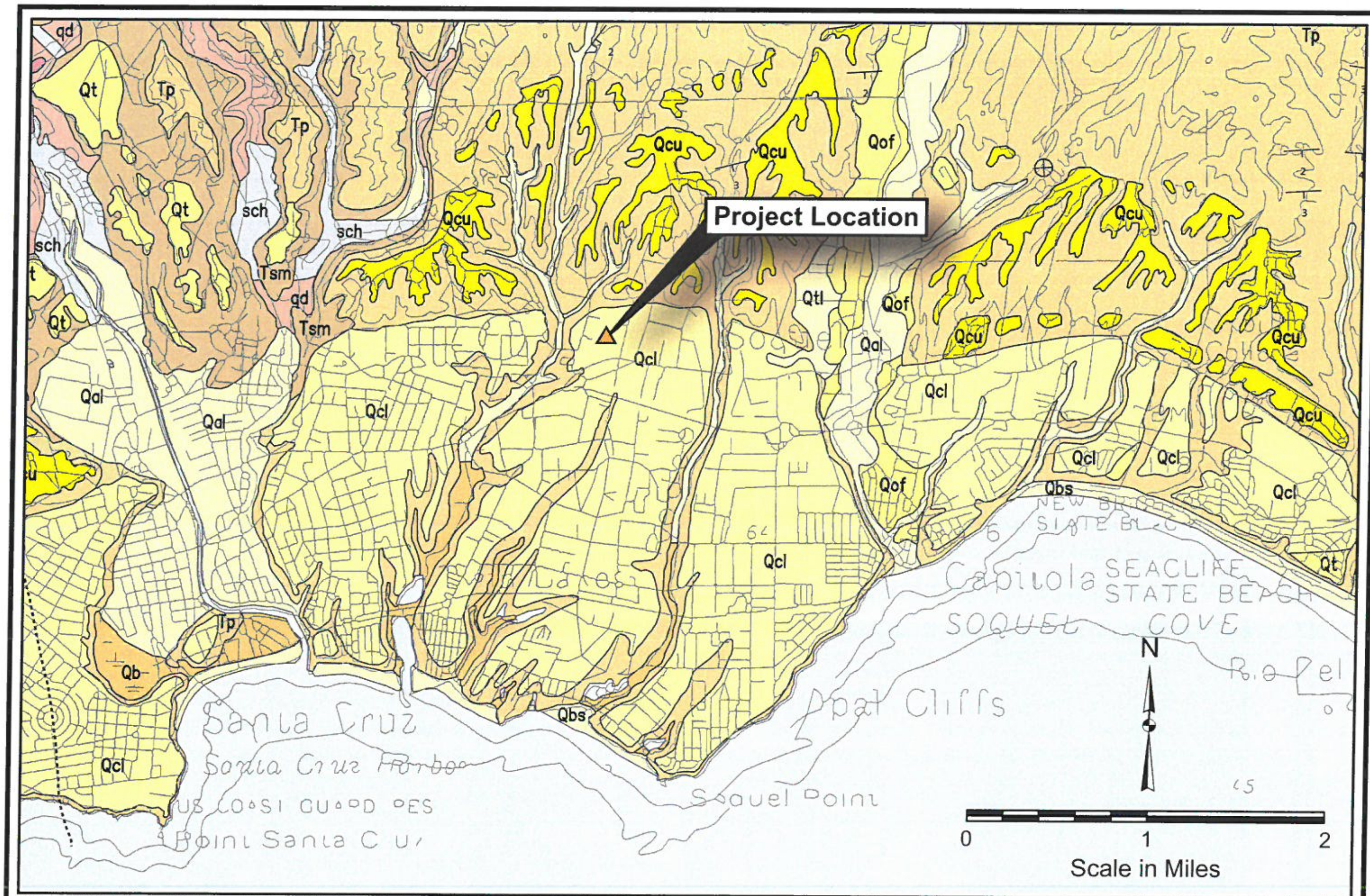
FIGURES



Source: Soquel 7.5-minute quadrangle, U.S. Geological Survey, 2018



GEOINSITE	GEOLOGIC HAZARDS INVESTIGATION Hospital Expansion Dominican Hospital, Dignity Health Santa Cruz, California	SITE LOCATION MAP
	Scale: As Noted · C1902 · September 2019	Figure 1



Source: USGS (Brabb, 1997) Open File Report 97-489 Geologic Map of Santa Cruz County, sheet 1 of 2

MAP SYMBOLS

Contact - Dashed where approximately located; queried where uncertain

Fault - Dashed where approximately located; dotted where concealed; queried where uncertain. Arrows indicate direction of relative movement

Anticline - Dashed where approximately located; queried where uncertain

Syncline - Dashed where approximately located; queried where uncertain

Strike and dip of beds

- 80 **Inclined**
- 50 **Approximate dip of bedding**
- **Vertical**
- **Horizontal**
- 60 **Overturned**

20 **Strike and dip of foliation**

SURFICIAL DEPOSITS

West of Soquel Creek

Qtl, Qal, Qb, Qbs

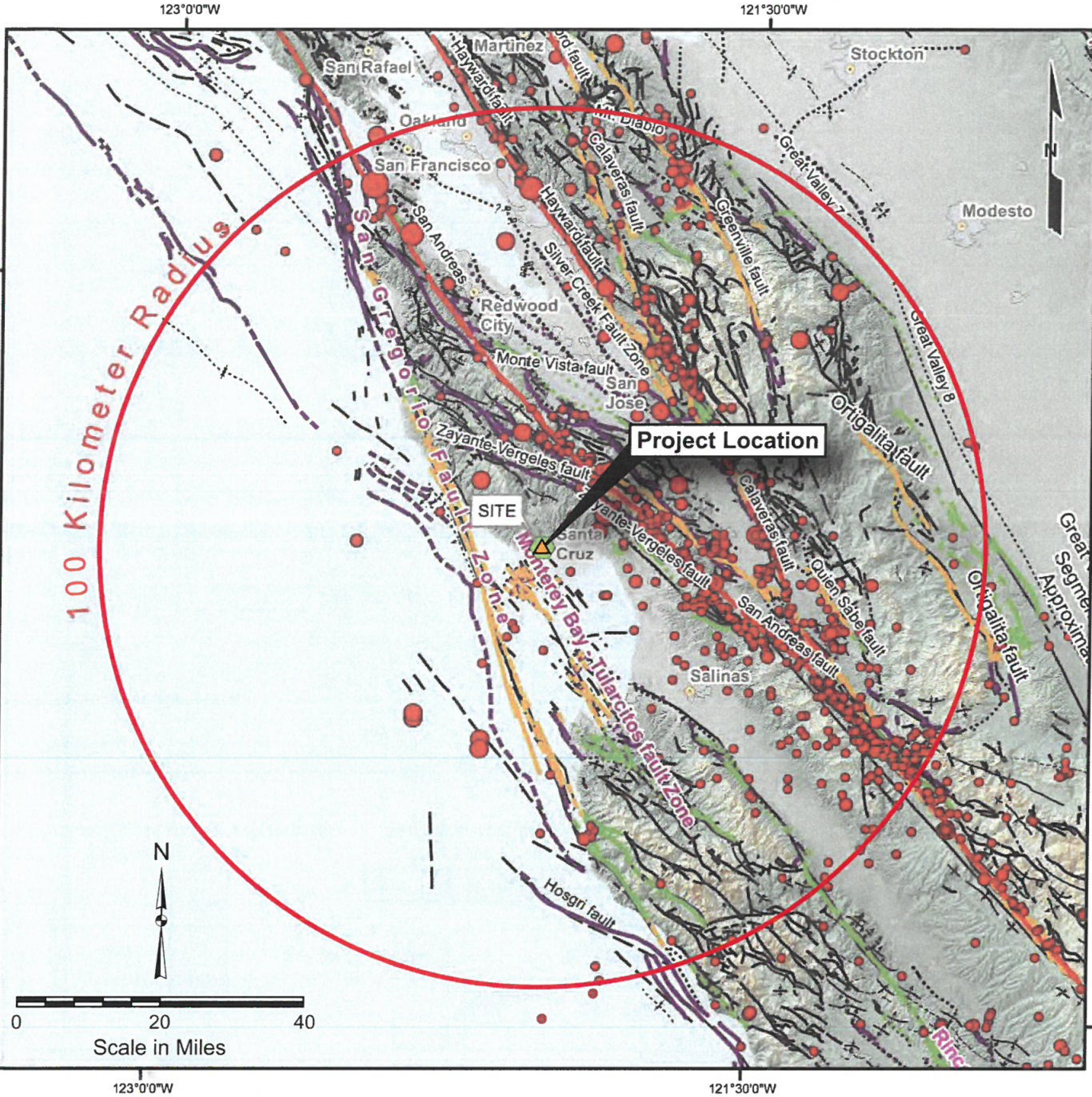
Qt: Qes, Qcl, Qcu

SEDIMENTARY AND VOLCANIC ROCKS

West of San Andreas Fault

Unit	Epoch	Series
Tp, Tps		Pliocene
Tsc, Tsm	Upper Miocene	Miocene
Unconformity		
Tm, Tlo	Middle Miocene	Miocene
Unconformity		
Tla	Lower Miocene	Miocene
Tvq, Tz		Oligocene
Tsl, Tsr, Tst		Oligocene / Eocene
Tbu, Tbm, Tbl, Tblc		Eocene
Tl, Tlss		Paleocene

GEOINSITE	GEOLOGIC HAZARDS INVESTIGATION Hospital Expansion Dominican Hospital, Dignity Health Santa Cruz, California		REGIONAL GEOLOGIC MAP
	Scale: As Noted	C1902	September 2019	Figure 2



Source: Compiled from catalogs: CGS by Real et al, (1978); ANSS Composite Catalog; Seeburger and Bolt (1976) and Toppozada et al, (2000). See text and references.

EXPLANATION

Quaternary Faults (Bryant, 2005; USGS, 2009)

Historic displacement (< 200 years)
- Mapped Fault Location
- Dashed where Approximated
- Concealed

Holocene displacement (< 11,000 years)
- Mapped Fault Location
- Dashed where Approximated
- Concealed

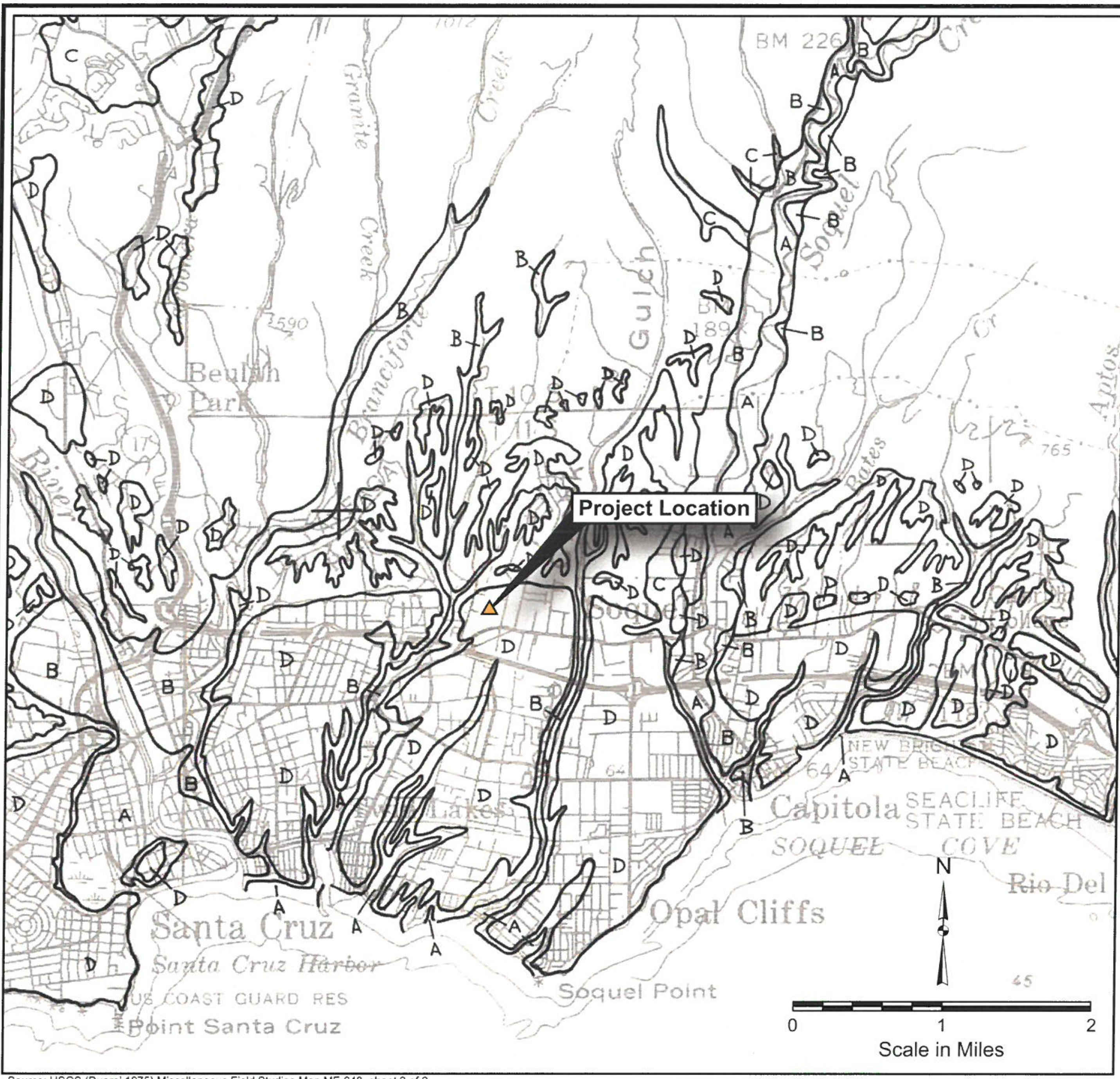
Late Quaternary displacement (< 750,000 years)
- Mapped Fault Location
- Dashed where Approximated
- Concealed

Quaternary displacement (< 1,600,000 years)
- Mapped Fault Location
- Dashed where Approximated
- Concealed

Pre-Quaternary Geologic Structures (CGS, 2000)
- fault, approx. located
- fault, approx. located, queried
- fault, certain
- fault, concealed
- fault, concealed, queried
- fault, inferred, queried

ANSS Earthquakes Magnitude
- 4.0 - 4.9
- 5.0 - 5.9
- 6.0 - 6.9
- 7.0 - 7.9
- 8.0 - 8.9

GEOINSITE	GEOLOGIC HAZARDS INVESTIGATION Hospital Expansion Dominican Hospital, Dignity Health Santa Cruz, California		REGIONAL FAULT MAP AND EARTHQUAKE EPICENTERS
	Scale: As Noted	C1902	September 2019	Figure 3



Source: USGS (Dupre',1975) Miscellaneous Field Studies Map MF-648, sheet 2 of 2

EXPLANATION

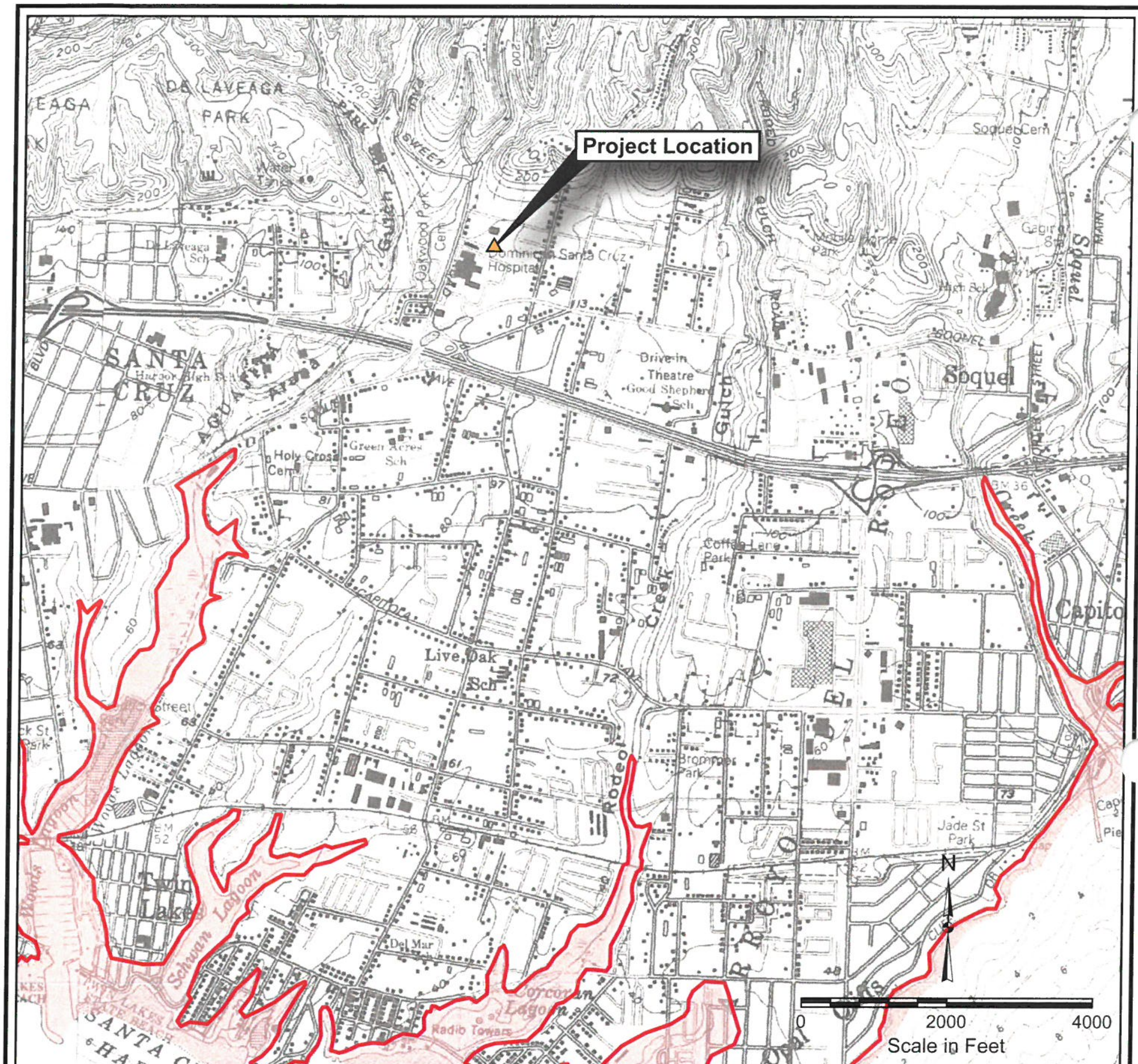
A HIGH POTENTIAL FOR LIQUEFACTION - Geologic units in this zone include younger flood-plain deposits (Qyf); some of the older flood-plain deposits (Qof) and alluvial deposits (Qal); basin deposits (Qb); beach sand (Qbs); and abandoned channel fill deposits (Qcf)

B MODERATELY HIGH POTENTIAL FOR LIQUEFACTION - Geologic units in this zone include some of the older flood-plain (Qof and alluvial (Qal) deposits; dune sand (Qds); colluvium (Qc); and alluvial fan deposits (Qf)

C MODERATELY LOW POTENTIAL FOR LIQUEFACTION - Geologic units in this zone are alluvial fan deposits (Qf); colluvium (Qc); older flood-plain deposits (Qof); and alluvial deposits (Qal)

D LOW POTENTIAL FOR LIQUEFACTION - Geologic units in this zone include eolian deposits of Manresa Beach (Qem) and Sunset Beach (Qes); terrace deposits (Qwf, Qwa, Qcu, Qce, Qt, and Qcl); Aromas Sand (Qa, Qac, and Qaf); and continental deposits (QTc)

GEOINSITE	GEOLOGIC HAZARDS INVESTIGATION Hospital Expansion Dominican Hospital, Dignity Health Santa Cruz, California			LIQUEFACTION POTENTIAL MAP
	Scale: As Noted	C1902	September 2019	Figure 4



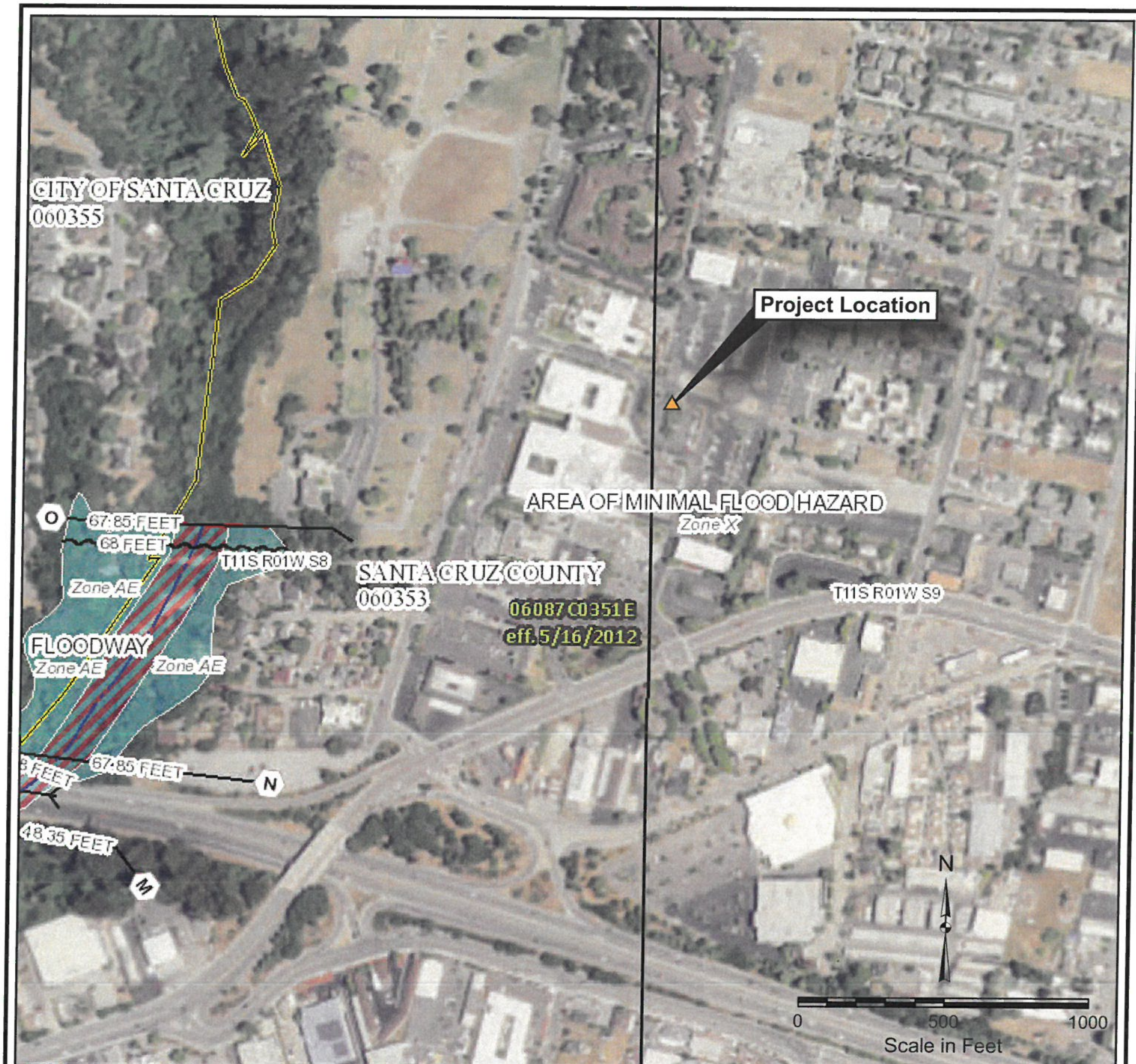
Source: State of California (2009) Tsunami Inundation Map for Emergency Planning, Soquel Quadrangle

EXPLANATION

Tsunami Inundation Line

Tsunami Inundation Area

GEOINSITE	GEOLOGIC HAZARDS INVESTIGATION Hospital Expansion Dominican Hospital, Dignity Health Santa Cruz, California			TSUNAMI INUNDATION MAP
	Scale: As Noted	C1902	September 2019	Figure 5



Source: FEMA (2012) National Flood Hazard Layer FIRMette, Panel 06087C0351E

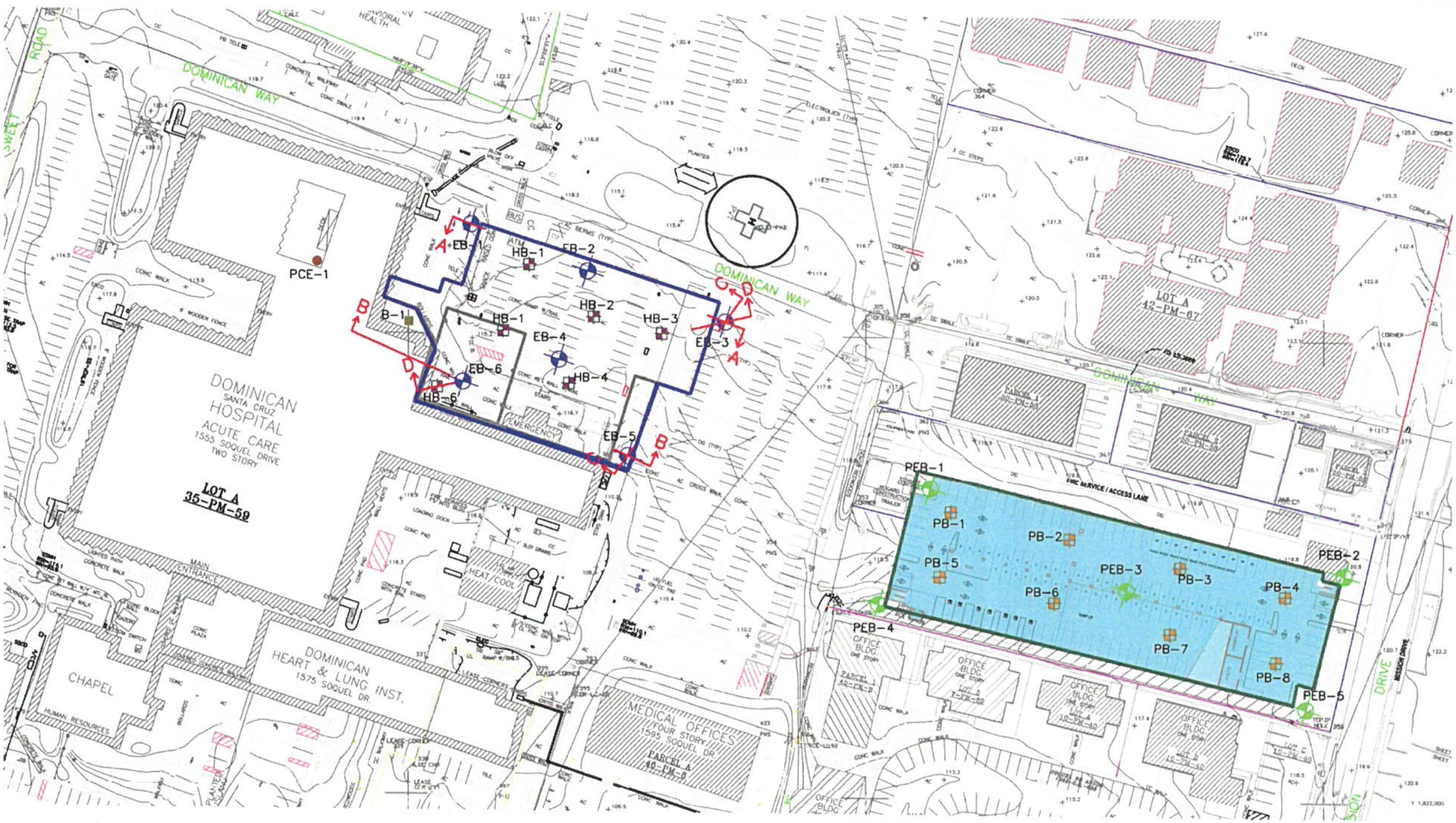
EXPLANATION

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) *Zone A, V, A99*
		With BFE or Depth *Zone AE, AO, AH, VE, AR*
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
		Future Conditions 1% Annual Chance Flood Hazard *Zone X*
		Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
		Area with Flood Risk due to Levee *Zone D*
OTHER AREAS	NO SCREEN	Area of Minimal Flood Hazard *Zone X*
		Effective LOMRs
		Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall

GEOINSITE	GEOLOGIC HAZARDS INVESTIGATION Hospital Expansion Dominican Hospital, Dignity Health Santa Cruz, California			FEMA FLOOD HAZARD MAP
	Scale: As Noted	C1902	September 2019	Figure 6

APPENDIX A

Geotechnical Drawings from Rutherford + Chekene



Legend

- EB-1 Hospital Boring Locations
- PEB-1 Parking Structure Boring Locations
- B-1 Boring by Pacific Crest Engineering (2007)
- HB-1 Sampling Locations for Environmental Characterization for Hospital Expansion
- PB-1 Locations for Environmental Characterization for Parking Structure
- Hospital Expansion Footprint
- Parking Structure Footprint
- A — A Subsurface Profile

1 20 40 80
1 INCH = 80 FT

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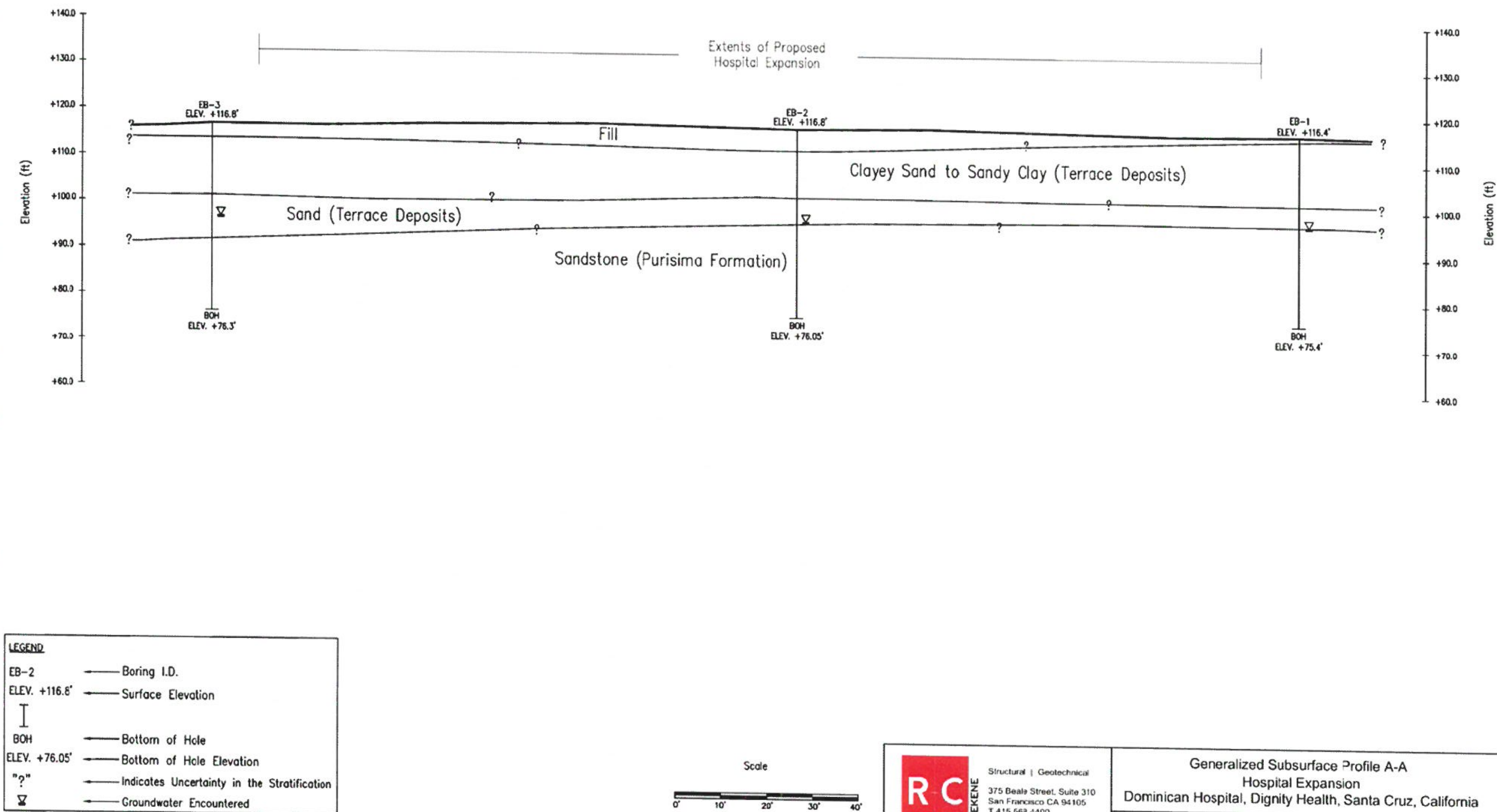
Site and Exploration Location Plan
Hospital Expansion
Dominican Hospital, Dignity Health
Santa Cruz, California

JOB No.: 2019-070G	DATE: 9/9/2019	FIGURE: 1	PAGE: A1



LEGEND

- EB-2 — Boring I.D.
- ELEV. +116.8' — Surface Elevation
- BOH — Bottom of Hole
- ELEV. +76.05' — Bottom of Hole Elevation
- "?" — Indicates Uncertainty in the Stratification
- ▽ — Groundwater Encountered

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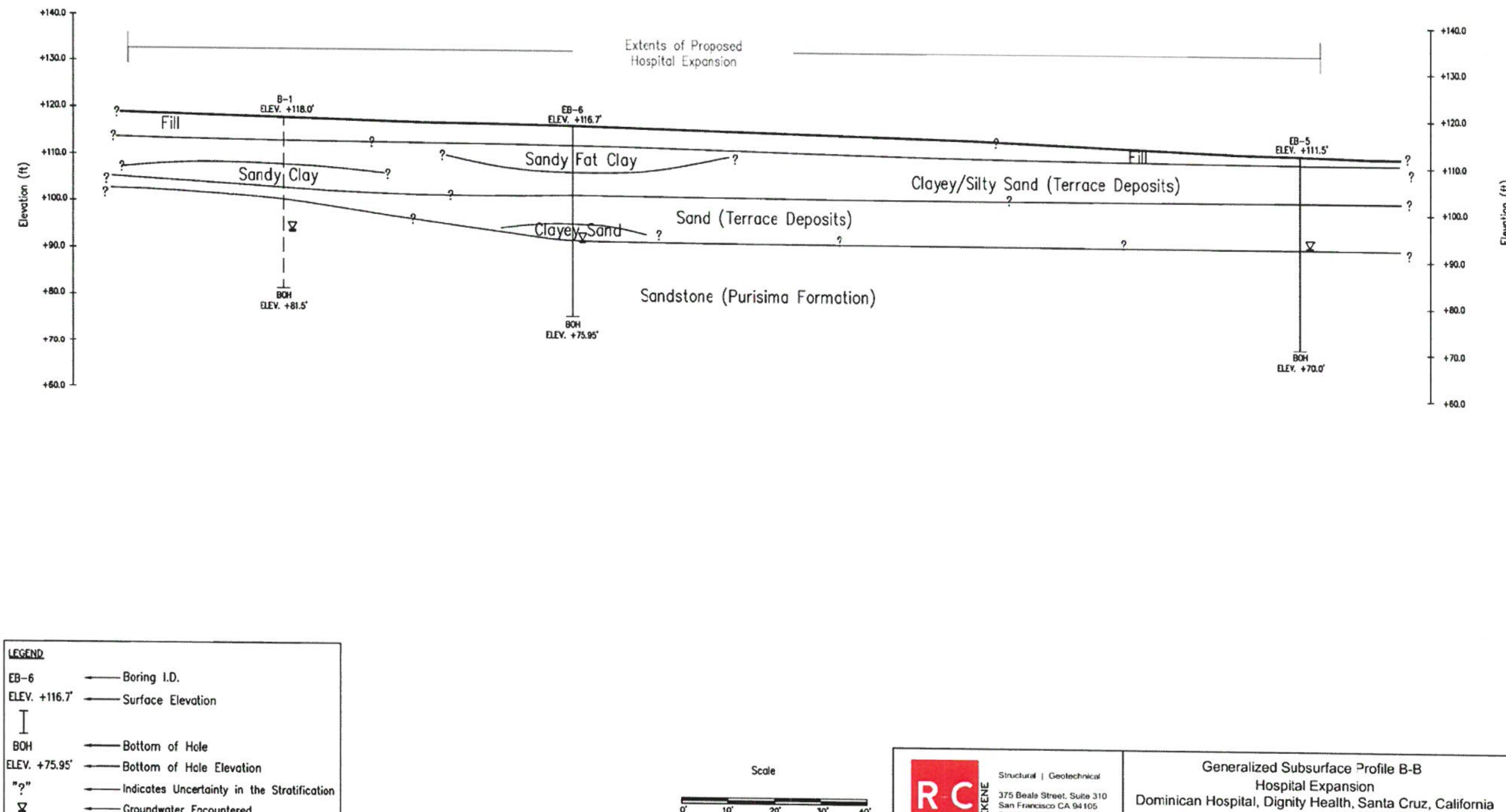
Generalized Subsurface Profile A-A
Hospital Expansion
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No. 2019-070G	DATE 8/9/2019	FIGURE 2	PAGE A2



LEGEND

EB-6	Boring I.D.
ELEV. +116.7'	Surface Elevation
BOH	Bottom of Hole
ELEV. +75.95'	Bottom of Hole Elevation
"?"	Indicates Uncertainty in the Stratification
⊻	Groundwater Encountered

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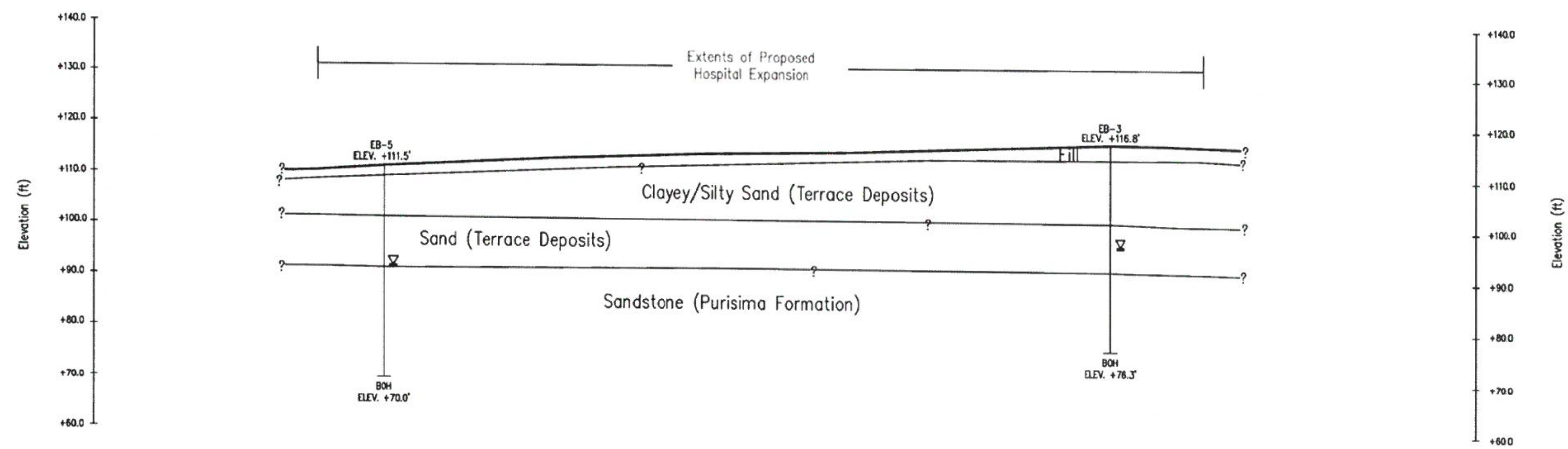
Generalized Subsurface Profile B-B
Hospital Expansion
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No. 2019-070G	DATE 8/29/2019	FIGURE 3	PAGE: A3



LEGEND

EB-5	Boring I.D.
ELEV. +111.5'	Surface Elevation
BOH	Bottom of Hole
ELEV. +70.0'	Bottom of Hole Elevation
"?"	Indicates Uncertainty in the Stratification
⧗	Groundwater Encountered

Scale

0' 10' 20' 30' 40'

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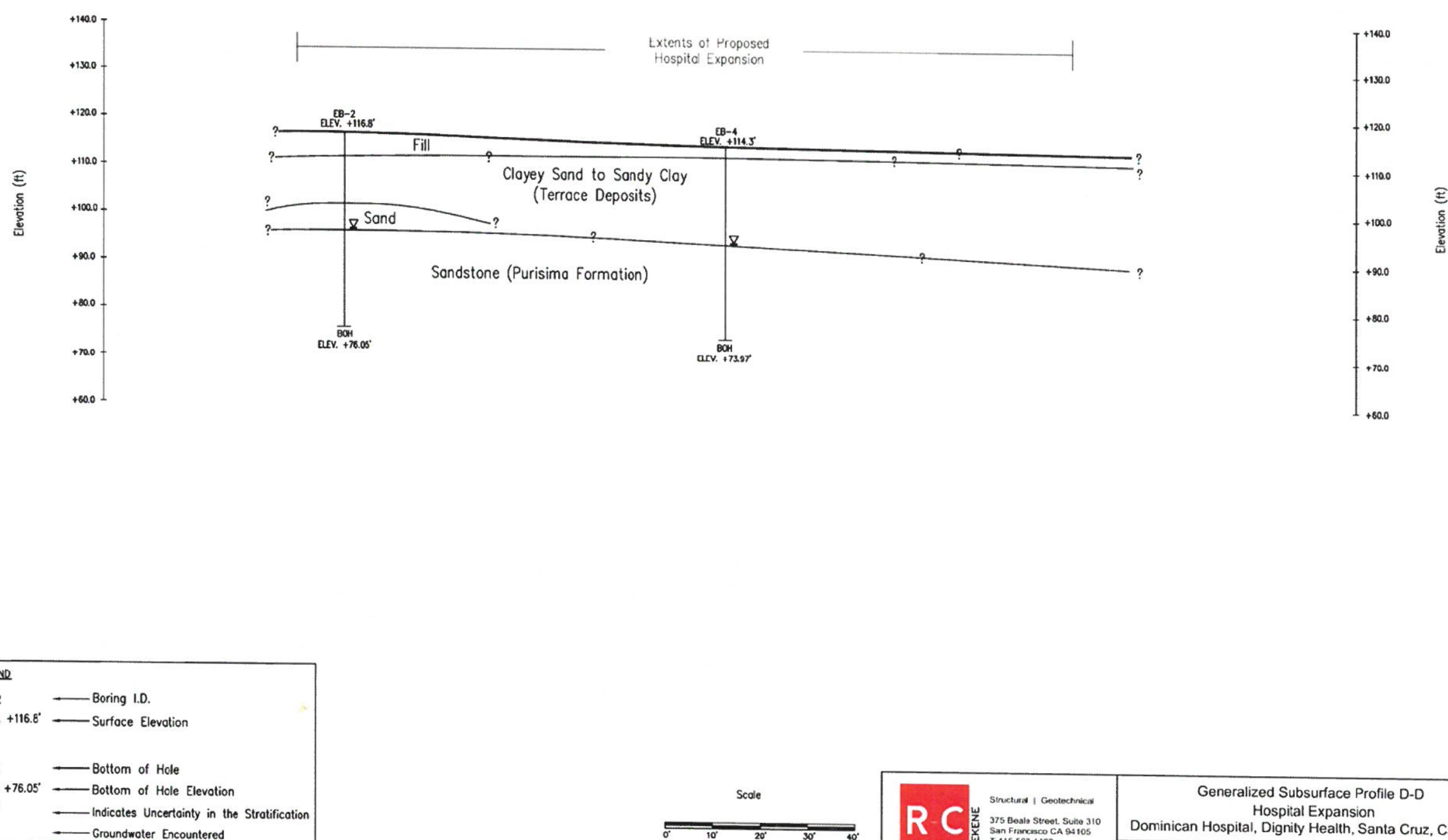
Generalized Subsurface Profile C-C
Hospital Expansion
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No. 2019-070G	DATE 8/9/2019	FIGURE 4	PAGE A4



LEGEND

EB-2	Boring I.D.
ELEV. +116.8'	Surface Elevation
BOH	Bottom of Hole
ELEV. +76.05'	Bottom of Hole Elevation
"?"	Indicates Uncertainty in the Stratification
▽	Groundwater Encountered

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Generalized Subsurface Profile D-D
Hospital Expansion
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No. 2019-070G	DATE 8/29/2019	FIGURE 6	PAGE A6

APPENDIX C

Current and Historical Boring Logs

SOIL SYMBOLS AND DESCRIPTIONS

GROUP ABBREVIATION (U.S.C.S.)	SYMBOL	GROUP NAME
GW		WELL GRADED GRAVELS
GP		POORLY GRADED GRAVELS
GM		SILTY GRAVELS
GC		CLAYEY GRAVELS
SW		WELL GRADED SANDS
SP		POORLY GRADED SANDS
SM		SILTY SANDS
SC		CLAYEY SANDS
ML		LOW PLASTICITY SILT
CL		LOW PLASTICITY CLAY
OL		LOW PLASTICITY ORGANIC SILT AND CLAY
MH		HIGH PLASTICITY SILT
CH		HIGH PLASTICITY CLAY
OH		HIGH PLASTICITY ORGANIC SILT AND CLAY

SAMPLE TYPES

SYMBOL	SAMPLE METHOD OR TOOL
	STANDARD PENETRATION TEST
	MODIFIED CALIFORNIA (2.0" O.D.)
	MODIFIED CALIFORNIA (2.5" O.D., 1.92" I.D.)
	CORE
	AUGER SAMPLE
	BULK SAMPLE
	NO RECOVERY

STANDARD PENETRATION TEST (SPT) SAMPLES ARE TAKEN BY DRIVING A STANDARD 1.4" I.D. SPLIT-SPOON SAMPLER INTO THE GROUND WITH A 140- POUND WEIGHT (HAMMER) FALLING 30 INCHES, PER ASTM D1586.

WATER LEVEL SYMBOLS

▽ WATER LEVEL DURING DRILLING, WITH DATE

▼ WATER LEVEL AFTER DRILLING, WITH DATE

SOIL DESCRIPTION TERMINOLOGY

SOILS ARE IDENTIFIED AND CLASSIFIED IN THIS REPORT ACCORDING TO THE UNIFIED SOIL CLASSIFICATION SYSTEM WITH THE FOLLOWING MODIFIERS:

CONSISTENCY OF SOILS

SPT, N BLOW COUNT	RELATIVE DENSITY
< 4	VERY LOOSE
4 - 10	LOOSE
10 - 30	MED. DENSE
30 - 50	DENSE
> 50	VERY DENSE

SPT, N BLOW COUNT	CLAY CONSISTENCY	UNCONFINED COMPRESSION STRENGTH (PSF)
< 2	VERY SOFT	< 500
2 - 5	SOFT	500 - 1000
5 - 10	MED. STIFF	1000 - 2000
10 - 20	STIFF	2000 - 4000
20 - 30	VERY STIFF	4000 - 8000
> 30	HARD	> 8000

SOIL MOISTURE

DESCRIPTIVE TERM	DESCRIPTION
DRY	DRY OF STANDARD PROCTOR OPTIMUM
DAMP	SAND ONLY
MOIST	NEAR STANDARD PROCTOR OPTIMUM
WET	WET OF STANDARD PROCTOR OPTIMUM
SATURATED	FREE WATER IN SAMPLE

PARTICLE SIZES

COMPONENTS	SIEVE OR SIEVE NO.
BOULDERS	OVER 12 INCHES
COBBLES	3 TO 12 INCHES
GRAVEL- COARSE	3/4 TO 3 INCHES
- FINE	NO. 4 TO 3/4 INCH
SAND - COARSE	NO. 10 TO NO. 4
- MEDIUM	NO. 40 TO NO. 10
- FINE	NO. 200 TO NO. 40
FINES (SILT AND CLAY)	BELOW NO. 200

NOTE:

1) THE BORING LOGS SHOW SUBSURFACE CONDITIONS AT THE DATES AND LOCATIONS SHOWN, AND ARE NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THE OTHER LOCATIONS AND TIMES.

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KEY TO EXPLORATORY BORING LOGS

Dominican Hospital Expansion

Dominican Hospital, Dignity Health, Santa Cruz, California

JOB No.: 2019-070G	Date: 10/31/2019	FIGURE: C1	PAGE: C1

EXPLORATORY BORING LOG

Ground Surface Elevation and Datum	Drilling Company	Notes	Boring Number
~ 116.4 feet,	Taber Drilling		EB-1

Groundwater Depth and Time	Drill Rig and Drilling Method
19.5 feet,	Track-mounted CME 55, Solid Stem Flight Auger

Start Date	Finish Date	Driller Name	Drilling Fluid	Page
07/17/2019	07/17/2109	Rick		1 of 2

Logged By	Borehole Diameter	Backfill Method	Hammer Type / Hammer Drop
R. Ford	4 inches	Cement	Auto, 140lb, 30

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA: Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA: Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
0				With 3 inches of asphalt.						
1–2		8 9 10		SILTY to CLAYEY SAND, (SM-SC), pale grayish yellow, reddish brown and black oxidation, moist, with occasional fine gravel. [Terrace Deposits]						
5–6		4 4 8		SANDY CLAY, (CL), pervasive dark reddish brown to black oxidation, moist, medium stiff to stiff. [Terrace Deposits]	28	94.2			56	
10–11		6 7 10		CLAYEY SAND, (SC), yellowish gray, yellowish orange oxidation, moist, medium dense, fine-grained sand. [Terrace Deposits]					34	
15–16		13 13 17		SAND, (SP), yellowish orange to pale yellowish gray, slightly moist, dense, fine to coarse sand, sub-rounded pebble gravel. [Terrace Deposits]						
19.5			▽							
20–21		14 22 32		SANDSTONE, light olive gray, yellowish red oxidation, fine sand, low hardness, friable, deeply weathered, weakly cemented. [Purisima Formation]						
25–26		25 50/5"		Light gray, reddish brown oxidation, moderately weathered.						

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EXPLORATORY BORING LOG
Dominican Hospital Expansion

Dominican Hospital, Dignity Health, Santa Cruz, California

JOB NUMBER	DATE	FIGURE	PAGE
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EXPLORATORY BORING LOG

Ground Surface Elevation and Datum		Drilling Company		Notes	Boring Number
~ 116.4 feet,		Taber Drilling			EB-1
Groundwater Depth and Time		**Drill Rig and Drilling Method**			
19.5 feet,		Track-mounted CME 55, Solid Stem Flight Auger			
Start Date	**Finish Date**	**Driller Name**	**Drilling Fluid**		**Page**
07/17/2019	07/17/2109	Rick			2 of 2
Logged By		**Borehole Diameter**	**Backfill Method**	**Hammer Type / Hammer Drop**	
R. Ford		4 inches	Cement	Auto, 140lb, 30	

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA: Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA: Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
31		20 39 50/5"								
32										
33										
34										
35		21 50/6"		Medium sand.						
36										
37										
38										
39										
40		25 50/6"		Notable color change to dark bluish gray at 40.1 feet.						
41				Boring terminated at 41 feet.						
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
52										
53										
54										
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56										
57										
58										
59										

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JOB NUMBER	DATE	FIGURE	PAGE
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EXPLORATORY BORING LOG

Ground Surface Elevation and Datum	Drilling Company		Notes	Boring Number
~ 116.8 feet,	Taber Drilling			EB-2
Groundwater Depth and Time	**Drill Rig and Drilling Method**			
20 feet,	Track-mounted CME 55, Solid Stem Flight Auger			
Start Date / **Finish Date**	**Driller Name**	**Drilling Fluid**		**Page**
07/16/2019 / 07/16/2019	Rick			1 of 2
Logged By	**Borehole Diameter**	**Backfill Method**	**Hammer Type / Hammer Drop**	
R. Ford	4 inches	Cement	Auto, 140lb, 30	

Depth (feet)	Blows/6 inches or pressure	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
0		Asphalt.						
1–2	11 13 11	SANDY CLAY to CLAYEY SAND, (CL-SC), grayish brown, yellowish brown, red mottled, slightly moist, very stiff, decomposed gravel, roots, and etc. [Fill]						
5–6	12 17 21	CLAYEY SAND, (SC), dark brownish gray, olive , moist, medium dense, organic rootlets. [Terrace Deposits]	11	124.1			44	
10–11	7 16 18	SANDY CLAY, (CL), grades to CLAYEY SAND, (SC), pale yellow to yellowish brown, moist, very stiff/dense, fine sand. [Terrace Deposits]					53	
15–16	12 12 17	SAND, (SP), pale yellow, slightly moist to dry, medium dense, fine-grained sand, clean. [Terrace Deposits]						
20–21	8 16 34	∇ SANDSTONE, olive yellow to light gray, yellowish red oxidation, fine-grained sand, low hardness, friable, weakly cemented, deeply weathered. [Purisima Formation]						
25–26	28 50/4"	Light gray, moderately weathered.						

APPENDIX C-LOG FORM DOMINICAN HOSPITAL-HOSPITAL EXPANSION 2019-070G.GPJ RUTHERFORD CHEKENE.GDT 10/29/19

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EXPLORATORY BORING LOG

Ground Surface Elevation and Datum		Drilling Company		Notes	Boring Number
~ 116.8 feet,		Taber Drilling			EB-2
Groundwater Depth and Time		**Drill Rig and Drilling Method**			
20 feet,		Track-mounted CME 55, Solid Stem Flight Auger			
Start Date	**Finish Date**	**Driller Name**	**Drilling Fluid**		**Page**
07/16/2019	07/16/2019	Rick			2 of 2
Logged By		**Borehole Diameter**	**Backfill Method**	**Hammer Type / Hammer Drop**	
R. Ford		4 inches	Cement	Auto, 140lb, 30	

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
30–31		24 50/3"								
35		28 50/1"								
40		28 50/3"		Notable color change to dark greenish gray, Silty Sandstone.						
40.75				Boring terminated at 40.75 feet.						

Depth scale: 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59

APPENDIX C-LOG FORM DOMINICAN HOSPITAL-HOSPITAL EXPANSION 2019-070G.GPJ RUTHERFORD CHEKENE.GDT 10/29/19

EXPLORATORY BORING LOG

Ground Surface Elevation and Datum		Drilling Company		Notes	Boring Number
~ 116.8 feet,		Taber Drilling			EB-3
Groundwater Depth and Time 20 feet,		**Drill Rig and Drilling Method** Track-mounted CME 55, Solid Stem Flight Auger			
Start Date 07/16/2019	**Finish Date** 07/16/2019	**Driller Name** Rick	**Drilling Fluid**		**Page** 1 of 2
Logged By R. Ford		**Borehole Diameter** 4 inches	**Backfill Method** Cement	**Hammer Type / Hammer Drop** Auto, 140lb, 30	

Depth (feet)	Blows/6 inches or pressure	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	Moisture Content (%)	Dry Density (pcf)	Plasticity Index	Liquid Limit	% Fines (-#200)	Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
0		Asphalt 3", baserock 4"						
1–2	7 6 5	SANDY CLAY, (CL), brown, gray mottled, moist, stiff. [Fill]						
3		Clayey sand zone, browish gray, moist, loose, fine sand to silt with rootlets, organics, wood, and etc.						
4		CLAYEY SAND, (SC), bluish gray, with reddish brown to olive mottling, moist, very stiff. [Terrace Deposits]						
5–6	4 8 14		18	111.7			50	UC=1804 psf
7		Light bluish gray at 6.50 feet.						
10–11	6 9 15	CLAYEY to SILTY SAND, (SC-SM), light brownish gray to pale olive to pale yellow, yellowish orange oxidation, moist, medium dense, fine sand. [Terrace Deposits]						
15–16	5 15 11	SAND, (SP), yellowish brown to yellowish orange, dry, medium, dense, fine sand, trace of fine gravel. [Terrace Deposits]						
20–21	9 11 16	Coarse sand, pebbles, wet, dark yellowish brown, yellowish orange, micaceous, rounded gravel.						
25–26	32 50/3"	SANDSTONE, light gray, reddish brown to yellowish red oxidation, low hardness, friable, weakly cemented, moderately to deeply weathered. [Purisima Formation]						

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Ground Surface Elevation and Datum		Drilling Company		Notes	Boring Number
~ 116.8 feet,		Taber Drilling			EB-3
Groundwater Depth and Time		**Drill Rig and Drilling Method**			
20 feet,		Track-mounted CME 55, Solid Stem Flight Auger			
Start Date	**Finish Date**	**Driller Name**	**Drilling Fluid**		**Page**
07/16/2019	07/16/2019	Rick			2 of 2
Logged By		**Borehole Diameter**	**Backfill Method**	**Hammer Type / Hammer Drop**	
R. Ford		4 inches	Cement	Auto, 140lb, 30	

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA: Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA: Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
30–31		27 50/2"								
35		31 50/2"		Distinct yellow oxidation.						
40		50/6"		Distinct color change to dark gray, abrupt contact, fine sand to silt.						
40.5				Boring terminated at 40.5 feet.						

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EXPLORATORY BORING LOG

Ground Surface Elevation and Datum	Drilling Company		Notes	Boring Number
~ 114.3 feet,	Taber Drilling			EB-4
Groundwater Depth and Time	**Drill Rig and Drilling Method**			
20 feet,	Track-mounted CME 55, Solid Stem Flight Auger			
Start Date / **Finish Date**	**Driller Name**	**Drilling Fluid**		**Page**
07/15/2019 / 07/15/2019	Rick			1 of 2
Logged By	**Borehole Diameter**	**Backfill Method**	**Hammer Type / Hammer Drop**	
R. Ford	4 inches	Cement	Auto, 140lb, 30	

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA: Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA: Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
0				3 inches of asphalt.						
1–2		11 16 18		Decomposed granite, gravel with sand, medium dense. [Fill]						
2–4				SANDY CLAY to CLAYEY SAND, (CL-SC), dark yellowish brown, grayish brown, slightly moist, very stiff to medium dense, roots up to 1/8" diameter, silty zones, fine sand. [Terrace Deposit]						
5–6		5 8 11		CLAYEY SAND, (SC), light grayish brown zone, moist, medium dense, yellowish red oxidized fine gravel.	44	74.7				UC=2046 psf
10–11		11 23 23		Yellowish gray, light yellowish orange oxidation, slightly moist, dense, fine-grained sand, poorly consolidated.					48	
15–16		17 23 25		Grayish yellow, olive hue, dense, less silt.						
20–21		15 40 50/3"	▽	SANDSTONE, light olive gray, yellowish red oxidation mottling, low hardness, friable, weakly cemented, deeply to moderately weathered. [Purisima Formation]						
25–26		25 50/6"		Light gray, yellowish oxidation.						
29										

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JOB NUMBER	DATE	FIGURE	PAGE
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EXPLORATORY BORING LOG

Ground Surface Elevation and Datum		Drilling Company		Notes	Boring Number
~ 114.3 feet,		Taber Drilling			EB-4
Groundwater Depth and Time		**Drill Rig and Drilling Method**			
20 feet,		Track-mounted CME 55, Solid Stem Flight Auger			
Start Date	**Finish Date**	**Driller Name**	**Drilling Fluid**		**Page**
07/15/2019	07/15/2019	Rick			2 of 2
Logged By		**Borehole Diameter**	**Backfill Method**	**Hammer Type / Hammer Drop**	
R. Ford		4 inches	Cement	Auto, 140lb, 30	

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA: Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA: Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
		30								
31		50/5"								
32										
33										
34										
35		29								
36		50/6"		Light gray to olive brown.						
37										
38										
39										
40		50/4"								
41				Boring terminated at 40.33 feet.						
42										
43										
44										
45										
46										
47										
48										
49										
50										
51										
52										
53										
54										
55										
56										
57										
58										
59										

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EXPLORATORY BORING LOG

Ground Surface Elevation and Datum	Drilling Company	Notes	Boring Number
~ 111.5 feet,	Taber Drilling		**EB-5**
Groundwater Depth and Time	**Drill Rig and Drilling Method**		
19.5 feet,	Track-mounted CME 55, Solid Stem Flight Auger		

Start Date	Finish Date	Driller Name	Drilling Fluid	Page
07/15/2019	07/15/2019	Rick		1 of 2

Logged By	Borehole Diameter	Backfill Method	Hammer Type / Hammer Drop
R. Ford	4 inches	Cement	Auto, 140lb, 30

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA: Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA: Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
0				5 inches of asphalt.						
1–2		5 7 10		CLAYEY SAND to SILTY SAND, (SC-SM), brown, gray, brown, red, loose. [Fill]	21	106.2				
2				SILTY SAND, (SM), reddish gray, grayish brown, with reddish brown mottling, moist, medium dense, fine sand. [Terrace Deposit]						
5		5 8 15		CLAYEY SAND, (SC), light grayish brown, yellowish orange oxidation, moist, medium dense, very stiff, fine sand, charcoal fragments. [Terrace Deposit]	17	115.0			45	
10		10 20 25		SAND with Silt, (SP), poorly graded, yellow to yellowish brown, slightly moist, dense, fine to coarse sand, pebble, gravel locally. [Terrace Deposit]					7	
15		8 10 10		Yellowish to olive brown, abundant gold mica flakes.					8	
19.5			▽							
20		19 36 50/5"		SANDSTONE, light gray, yellowish orange oxidation, fine to medium-grained sand, low hardness, friable, weakly cemented, deeply to moderately weathered. [Purisima Formation]						
25		16 41 50/4"		Light gray to olive brown.						

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

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EXPLORATORY BORING LOG

Ground Surface Elevation and Datum		Drilling Company		Notes	Boring Number
~ 111.5 feet,		Taber Drilling			EB-5
Groundwater Depth and Time		**Drill Rig and Drilling Method**			
19.5 feet,		Track-mounted CME 55, Solid Stem Flight Auger			
Start Date	**Finish Date**	**Driller Name**	**Drilling Fluid**		**Page**
07/15/2019	07/15/2019	Rick			2 of 2
Logged By		**Borehole Diameter**	**Backfill Method**	**Hammer Type / Hammer Drop**	
R. Ford		4 inches	Cement	Auto, 140lb, 30	

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA: Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA: Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
31		24 45 50/3"								
35–36		20 50/6"								
40–41		13 23 33		Notable color change to greenish gray, SILTY SANDSTONE.						
41.5				Boring terminated at 41.5 feet.						

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EXPLORATORY BORING LOG

Ground Surface Elevation and Datum	Drilling Company	Notes	Boring Number
~ 116.7 feet,	Taber Drilling		EB-6

Groundwater Depth and Time	Drill Rig and Drilling Method
24.5 feet,	Track-mounted CME 55, Solid Stem Flight Auger

Start Date	Finish Date	Driller Name	Drilling Fluid	Page
07/16/2019	07/16/2019	Rick		1 of 2

Logged By	Borehole Diameter	Backfill Method	Hammer Type / Hammer Drop
R. Ford	4 inches	Cement	Auto, 140lb, 30

Depth (feet)	Blows/6 inches or pressure	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	Moisture Content (%)	Dry Density (pcf)	Plasticity Index	Liquid Limit	% Fines (-#200)	Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
0		2 to 3 inches of asphalt.						
1–2	10, 14, 21	SANDY CLAY and CLAYEY SAND with GRAVEL, (CL-SC), mixed, greenish gray, yellow to yellowish brown, moist, very stiff/medium dense, abundant fine gravel. [Fill]						
4–6	5, 3, 5	Sandy Fat CLAY, (CH), yellow to gray brown, reddish brown oxidation, moist, medium stiff, medium plasticity locally. [Terrace Deposit]	36	79.5	33	60		
10–11	4, 8, 12	CLAYEY SAND to SILTY SAND, (SC-SM), light grayish brown, reddish brown oxidation, moist, medium dense, fine sand. [Terrace Deposit]	21	98.4				
15–16	10, 11, 14	SAND with Silt, (SP), grayish yellow to yellowish orange, slightly moist, medium dense, fine sand, occasional fine gravel. [Terrace Deposit]					10	
20–21	11, 9, 13	Coarse sand with abundant granite gravel.					17	
21		CLAYEY SAND, (SC), dark yellowish brown, olive brown, moist, medium dense, micaceous.						
24.5		∇						
25–26	25, 50/5"	SANDSTONE, light gray, reddish brown and yellowish orange oxidation, low hardness, friable, weakly cemented, moderately to deeply weathered. [Purisima Formation]						

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JOB NUMBER	DATE	FIGURE	PAGE
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EXPLORATORY BORING LOG

Ground Surface Elevation and Datum		Drilling Company		Notes	Boring Number
~ 116.7 feet,		Taber Drilling			EB-6
Groundwater Depth and Time		**Drill Rig and Drilling Method**			
24.5 feet,		Track-mounted CME 55, Solid Stem Flight Auger			
Start Date	**Finish Date**	**Driller Name**	**Drilling Fluid**		**Page**
07/16/2019	07/16/2019	Rick			2 of 2
Logged By		**Borehole Diameter**	**Backfill Method**	**Hammer Type / Hammer Drop**	
R. Ford		4 inches	Cement	Auto, 140lb, 30	

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
31		36 50/6"								
35		22								
36		42 50/3"								
40		28 50/3"								
41				Boring terminated at 40.75 feet.						

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JOB NUMBER	DATE	FIGURE	PAGE
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EXPLORATORY BORING LOG

Ground Surface Elevation and Datum		Drilling Company		Notes	Boring Number
~ 117.8 feet,		Taber Drilling			PEB-1
Groundwater Depth and Time		**Drill Rig and Drilling Method**			
24.5 feet,		Track-mounted CME 55, Solid Stem Flight Auger			
Start Date	**Finish Date**	**Driller Name**	**Drilling Fluid**		**Page**
07/17/2019	07/17/2019	Rick			1 of 2
Logged By		**Borehole Diameter**	**Backfill Method**	**Hammer Type / Hammer Drop**	
R. Ford		4 inches	Cement	Auto, 140lb, 30	

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
0–1.5				GRAVEL, (GP), to SANDY CLAY with GRAVEL. [Fill]						
1.5–5		14, 21, 19		SILTY SAND to CLAYEY SAND, (SM-SC), yellowish gray to yellowish brown, reddish brown and trace of black oxidation, slightly moist, medium dense, fine sand. [Terrace Deposit]						
5–10		15, 19, 23		CLAYEY SAND, (SC), grayish yellow, yellowish gray, olive yellow, slightly moist, medium dense, fine sand. [Terrace Deposit]	18	94.9			48	
10–11		7, 8, 8		SAND, (SP), yellowish brown, moist, medium dense, medium-grained. [Terrace Deposit]						
11–15				SANDY CLAY to CLAYEY SAND, (CL-SC), yellowish brown, moist, stiff to very stiff. [Terrace Deposit]						
15–25.5		7, 10, 15		SAND, (SP), yellowish gray, yellowish brown, mottled, slightly moist, fine sand to silt, medium dense. [Terrace Deposit]						
20		16, 16, 16		Yellowish brown, dense, fine grained sand, clean.						
24.5			▽							
25–25.5		14, 50/5"								
25.5–30				SANDSTONE, olive brown to olive gray, fine medium-grained sand, low hardness, friable, weakly cemented, deeply weathered. [Purisima Formation]						

Depth scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

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EXPLORATORY BORING LOG
Dominican Hospital Parking Structure

Dominican Hospital, Dignity Health, Santa Cruz, California

JOB NUMBER	DATE	FIGURE	PAGE
2019-070G	10/31/219	C 8	C14

EXPLORATORY BORING LOG

Ground Surface Elevation and Datum	Drilling Company	Notes	Boring Number
~ 117.8 feet,	Taber Drilling		PEB-1
Groundwater Depth and Time	**Drill Rig and Drilling Method**		
24.5 feet,	Track-mounted CME 55, Solid Stem Flight Auger		

Start Date	Finish Date	Driller Name	Drilling Fluid	Page
07/17/2019	07/17/2019	Rick		2 of 2

Logged By	Borehole Diameter	Backfill Method	Hammer Type / Hammer Drop
R. Ford	4 inches	Cement	Auto, 140lb, 30

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	Moisture Content (%)	Dry Density (pcf)	Plasticity Index	Liquid Limit	% Fines (-#200)	Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
				LABORATORY DATA: Moisture-Density / Classification; **OTHER DATA**						
		30		Light gray, yellowish red oxidation.						
31		50/4"		Boring terminated at 30.83 feet.						
32										
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APPENDIX C-LOG FORM DOMINICAN HOSPITAL-PARKING STRUCTURE 2019-074G -PRELIMINARY.GPJ RUTHERFORD CHEKENE.GDT 10/29/19

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EXPLORATORY BORING LOG
Dominican Hospital Parking Structure

Dominican Hospital, Dignity Health, Santa Cruz, California

JOB NUMBER	DATE	FIGURE	PAGE
2019-070G	10/31/219	C 8	C15

EXPLORATORY BORING LOG

Ground Surface Elevation and Datum	Drilling Company	Notes	Boring Number
~ 120.5 feet,	Taber Drilling		PEB-2
Groundwater Depth and Time 28 feet,	**Drill Rig and Drilling Method** Track-mounted CME 55, Solid Stem Flight Auger		
Start Date 07/18/2019 / **Finish Date** 07/18/2019	**Driller Name** Rick / **Drilling Fluid**		**Page** 1 of 2
Logged By M. Javid	**Borehole Diameter** 4 inches / **Backfill Method** Cement	**Hammer Type / Hammer Drop** Auto, 140lb, 30	

Depth (feet)	Blows/6 inches or pressure	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	Moisture Content (%)	Dry Density (pcf)	Plasticity Index	Liquid Limit	% Fines (-#200)	Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
0		Decomposed granite, gray [Fill]						
1–2	3, 4, 4	CLAYEY SAND to SANDY CLAY, dark orangish brown, with fine-grained sand. [Fill]						
3–4	3, 3, 2	SILTY CLAY to CLAYEY SAND, (CL-SC), yellowish brown to grayish brown, dry, firm, traces of black oxidation. [Terrace Deposit]						
5–6	6, 19, 26	Became dense.	12	115.3				UC=3941 psf
7–8	10, 12, 17	CLAYEY SAND, (SC), olive gray, brownish gray, dense, mottled, fine-grained sand with traces of black oxidation. [Terrace Deposit]					31	
10–11	7, 9, 13	Yellowish brown, medium dense, damp to moist.	19	110.6			31	
15–16	7, 9, 8	SAND, (SP), yellowish brown, grayish brown, moist, medium dense, mottled, micaceous, fine-grained sand. [Terrace Deposit]						
20–21	14, 17, 24	Pale yellowish brown.						
25–26	23, 27, 23	Sub-rounded gravels, very dense, yellowish brown to olive gray.						
28		∇						
30		SANDSTONE, olive brown to olive gray, low hardness,						

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EXPLORATORY BORING LOG
Dominican Hospital Parking Structure
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB NUMBER	DATE	FIGURE	PAGE
2019-070G	10/31/219	C 9	C16

EXPLORATORY BORING LOG

Ground Surface Elevation and Datum		Drilling Company		Notes	Boring Number
~ 120.5 feet,		Taber Drilling			PEB-2
Groundwater Depth and Time		**Drill Rig and Drilling Method**			
28 feet,		Track-mounted CME 55, Solid Stem Flight Auger			
Start Date	**Finish Date**	**Driller Name**	**Drilling Fluid**		**Page**
07/18/2019	07/18/2019	Rick			2 of 2
Logged By		**Borehole Diameter**	**Backfill Method**	**Hammer Type / Hammer Drop**	
M. Javid		4 inches	Cement	Auto, 140lb, 30	

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA: Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA: Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
31		21 50/6"		friable. weakly cemented, deeply weathered, fine-grained sand. [Purisima Formation] Boring terminated at 31 feet.						

APPENDIX C-LOG FORM DOMINICAN HOSPITAL-PARKING STRUCTURE 2019-074G -PRELIMINARY.GPJ RUTHERFORD CHEKENE.GDT 10/29/19

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Dominican Hospital Parking Structure

Dominican Hospital, Dignity Health, Santa Cruz, California

EXPLORATORY BORING LOG

Ground Surface Elevation and Datum ~ 117.5 feet,	**Drilling Company** Taber Drilling	**Notes**	**Boring Number** PEB-3
Groundwater Depth and Time 23 feet,	**Drill Rig and Drilling Method** Track-mounted CME 55, Solid Stem Flight Auger		
Start Date 07/18/2019 / **Finish Date** 07/18/2019	**Driller Name** Rick / **Drilling Fluid**		**Page** 1 of 2
Logged By M. Javid	**Borehole Diameter** 4 inches / **Backfill Method** Cement	**Hammer Type / Hammer Drop** Auto, 140lb, 30	

Depth (feet)	Blows/6 inches or pressure	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	Moisture Content (%)	Dry Density (pcf)	Plasticity Index	Liquid Limit	% Fines (-#200)	Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
0–1		With 3 inches of asphalt, decomposed gravel with clayey sand, yellowish brown. [Fill]						
1–4.5	4, 4, 5; 4, 5, 6	SANDY CLAY to CLAYEY SAND, (SC-CL), gray to yellowish brown, moist, loose, fine-grained sand. [Terrace Deposit] Olive brown to yellowish brown, micaceous.						
4.5–7	5, 6, 6	SAND to CLAYEY SAND, (SP-SC), yellowish brown to olive brown, moist, fine-grained sand. [Terrace Deposit]						
7–10	7, 8, 6	CLAYEY SAND, (SC), brownish gray to olive gray, loose, fine-grained sand, trace of oxidation. [Terrace Deposit]	26	93.7			29	UC=708 psf
10–15	3, 3, 6	SAND TO CLAYEY SAND, (SP-SC), olive gray, grayish brown, moist, loose. [Terrace Deposit]						
15–25	9, 17, 34	SAND, (SP), yellowish gray to yellowish brown, moist, dense, fine-grained sand, mottled, with oxidization. [Terrace Deposit]	13	110.9				
20–21.5	19, 27, 46	Zone of coarse gravel.						
23		▽						
25–29	33, 50/6"	SANDSTONE, olive brown to olive gray, very dense, low hardness, friable, weakly cemented, deeply weathered, fine to medium-grained sand, with oxidization. [Purisima Formation]						

APPENDIX C-LOG FORM DOMINICAN HOSPITAL-PARKING STRUCTURE 2019-074G -PRELIMINARY.GPJ RUTHERFORD CHEKENE.GDT 10/29/19

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EXPLORATORY BORING LOG
Dominican Hospital Parking Structure
Dominican Hospital, Dignity Health, Santa Cruz, California

JOB NUMBER	DATE	FIGURE	PAGE
2019-070G	10/31/219	C 10	C18

EXPLORATORY BORING LOG

Ground Surface Elevation and Datum		Drilling Company		Notes	Boring Number
~ 117.5 feet,		Taber Drilling			PEB-3
Groundwater Depth and Time		**Drill Rig and Drilling Method**			
23 feet,		Track-mounted CME 55, Solid Stem Flight Auger			
Start Date	**Finish Date**	**Driller Name**	**Drilling Fluid**		**Page**
07/18/2019	07/18/2019	Rick			2 of 2
Logged By		**Borehole Diameter**	**Backfill Method**	**Hammer Type / Hammer Drop**	
M. Javid		4 inches	Cement	Auto, 140lb, 30	

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA: Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA: Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
		21								
31		50/5"		Boring terminated at 30.9 feet.						
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Dominican Hospital, Dignity Health, Santa Cruz, California

JOB NUMBER	DATE	FIGURE	PAGE
2019-070G	10/31/219	C 10	C19

EXPLORATORY BORING LOG

Ground Surface Elevation and Datum	Drilling Company	Notes	Boring Number
~ 115 feet,	Taber Drilling		PEB-4
Groundwater Depth and Time	**Drill Rig and Drilling Method**		
23 feet,	Track-mounted CME 55, Solid Stem Flight Auger		

Start Date	Finish Date	Driller Name	Drilling Fluid	Page
07/17/2019	07/17/2019	Rick		1 of 2

Logged By	Borehole Diameter	Backfill Method	Hammer Type / Hammer Drop
M. Javid	4 inches	Cement	Auto, 140lb, 30

Depth (feet)	Blows/6 inches or pressure	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	Moisture Content (%)	Dry Density (pcf)	Plasticity Index	Liquid Limit	% Fines (-#200)	Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
0		3 inches of asphalt.						
0–2		GRAVEL, (GP), decomposed granite, sandy clay. [Fill]						
2–3.5	3, 4, 5	CLAYEY SAND, (SC), yellowish brown to yellowish gray, loose, slightly moist, fine-grained sand. [Terrace Deposit]						
4–5.5	5, 8, 12	Yellowish gray to brownish gray, medium dense.	25	98.1			35	
6–7.5	4, 6, 7	Brownish gray, olive gray to brown, moist.						
9–10.5	2, 4, 5	SANDY CLAY, (CL), yellowish brown to olive brown, moist, soft, mica scattered. [Terrace Deposit]	34	87.4			60	
15–16.5	4, 6, 10	SANDY CLAY to CLAYEY SAND, (SC-CL), oilve brown, brownish yellow to yellowish brown, medium dense to dense, micaceous. [Terrace Deposit]						
20–21.5	27, 32, 30	SAND to CLAYEY SAND, (SP-SC), yellowish gray to yellowish brown, mottled, fine-grained sand, dense, moist. [Terrace Deposit]	6	109.5				
23		∇						
25–26	31, 50/6"	SANDSTONE, olive brown to oilve gray, fine to medium-grained sand, low harness, friable, weakly cemented, deeply weathered. [Purisima Formation]						

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EXPLORATORY BORING LOG

Ground Surface Elevation and Datum		Drilling Company		Notes	Boring Number
~ 115 feet,		Taber Drilling			PEB-4
Groundwater Depth and Time		**Drill Rig and Drilling Method**			
23 feet,		Track-mounted CME 55, Solid Stem Flight Auger			
Start Date	**Finish Date**	**Driller Name**	**Drilling Fluid**		**Page**
07/17/2019	07/17/2019	Rick			2 of 2
Logged By		**Borehole Diameter**	**Backfill Method**	**Hammer Type / Hammer Drop**	
M. Javid		4 inches	Cement	Auto, 140lb, 30	

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA: Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA: Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
		28								
31		50/6"		Boring terminated at 31 feet.						
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EXPLORATORY BORING LOG

Ground Surface Elevation and Datum ~ 119.2 feet,		**Drilling Company** Taber Drilling		**Notes**
Groundwater Depth and Time 27 feet,		**Drill Rig and Drilling Method** Track-mounted CME 55, Solid Stem Flight Auger		
Start Date 07/18/2019	**Finish Date** 07/18/2019	**Driller Name** Rick	**Drilling Fluid**	
Logged By M. Javid		**Borehole Diameter** 4 inches	**Backfill Method** Cement	**Hammer Type / Hammer Drop** Auto, 140lb, 30

Boring Number PEB-5

Page 1 of 2

Depth (feet)	Blows/6 inches or pressure	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	Moisture Content (%)	Dry Density (pcf)	Plasticity Index	Liquid Limit	% Fines (-#200)	Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
0		With 3 inches of asphalt, CLAYEY SAND, (SC), yellowish to reddish brown with fine gravel. [Fill?]						
1–2	3 3 3	CLAYEY SAND, (SC), dark brownish gray, slightly moist, loose/firm, fine-grained sand. [Terrace Deposit]						
5	50/6"	Grayish brown to olive brown, dense, trace of black oxidation.	24	92.4			38	
10	11 10 13	CLAYEY SAND, olive brown to yellowish brown, slightly moist, medium dense, fine-grained sand. [Terrace Deposit]						
15	6 9 10						34	
20	21 26 36	SAND, (SP), yellowish to reddish brown, slightly moist, dense, fine-grained sand with oxidization.						
25	19 22 20	Moist to slighly wet.						
27		∇						

LABORATORY DATA: Moisture-Density; Classification. OTHER DATA.

EXPLORATORY BORING LOG

Ground Surface Elevation and Datum		Drilling Company		Notes	Boring Number
~ 119.2 feet,		Taber Drilling			PEB-5
Groundwater Depth and Time		Drill Rig and Drilling Method			
27 feet,		Track-mounted CME 55, Solid Stem Flight Auger			
Start Date	Finish Date	Driller Name	Drilling Fluid		Page
07/18/2019	07/18/2019	Rick			2 of 2
Logged By		Borehole Diameter	Backfill Method	Hammer Type / Hammer Drop	
M. Javid		4 inches	Cement	Auto, 140lb, 30	

Depth (feet)	Sample Type/Interval	Blows/6 inches or pressure	Graphic Log	SOIL DESCRIPTION group name (symbol), color, consistency/density, moisture condition, other descriptions (Local Name or Material Type)	LABORATORY DATA: Moisture-Density: Moisture Content (%)	Dry Density (pcf)	Classification: Plasticity Index	Liquid Limit	% Fines (-#200)	OTHER DATA: Pocket Pen. (PP), Direct Shear (DS), Triaxial (Tx), Unconf. Compr.(UC)
		26								
31		50/5"		SANDSTONE, olive brown to olive gray, friable, low hardness, weakly cemented, deeply weathered with oxidization. [Purisima Formation]						
32				Boring terminated at 31 feet.						
33										
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UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D2488 (Modified)

PRIMARY DIVISIONS			GROUP SYMBOL	SECONDARY DIVISIONS
COARSE GRAINED SOILS MORE THAN HALF OF MATERIAL IS LARGER THAN #200 SIEVE SIZE	**GRAVELS** MORE THAN HALF OF COARSE FRACTION IS LARGER THAN #4 SIEVE	**CLEAN GRAVELS** (LESS THAN 5% FINES)	GW	Well graded gravels, gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels or gravels-sand mixtures, little or no fines
		GRAVELS (MORE THAN 12% FINES)	GM	Silty gravels, gravel-sand-silt mixtures, non-plastic fines
			GC	Clayey gravels, gravel-sand-clay mixtures, plastic fines
	SANDS MORE THAN HALF OF COARSE FRACTION IS SMALLER THAN #4 SIEVE	**CLEAN SANDS** (LESS THAN 5% FINES)	SW	Well graded sands, gravelly sands, little or no fines
			SP	Poorly graded sands or gravelly sands, little or no fines
		SANDS (MORE THAN 12% FINES)	SM	Silty sands, sand-silt mixtures, non-plastic fines
			SC	Clayey sands, sand-clay mixtures, plastic fines
FINE GRAINED SOILS MORE THAN HALF OF MATERIAL IS SMALLER THAN #200 SIEVE SIZE	**SILTS AND CLAYS** LIQUID LIMIT IS LESS THAN 35%		ML	Inorganic silts and very fine clayey sand silty sands, with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly, sand, silty or lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS LIQUID LIMIT IS BETWEEN 35% AND 50%		MI	Inorganic silts, clayey silts and silty fine sands of intermediate plasticity
			CI	Inorganic clays, gravelly/sandy clays and silty clays of intermediate plasticity
			OI	Organic clays and silty clays of intermediate plasticity
	SILTS AND CLAYS LIQUID LIMIT IS GREATER THAN 50%		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Organic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			PT	Peat and other highly organic soils

BORING LOG EXPLANATION

LOGGED BY______ DATE DRILLED____________ BORING DIAMETER________ BORING NO.____

Depth, ft.	Sample No. and Type	Symbol	SOIL DESCRIPTION	Unified Soil Classification	SPT "N" Value	Plasticity Index	Dry Density, p.c.f.	Moisture % of Dry Wt.	MISC. LAB RESULTS
1			← Ground water elevation		NOTE: All blows/foot are normalized to 2" outside diameter sampler size				
2	1-1		← Soil Sample Number						
	L		← Soil Sampler Size/Type						
3			L = 3" Outside Diameter						
			M = 2.5" Outside Diameter						
4			T = 2" Outside Diameter						
			ST = Shelby Tube						
5			BAG = Bag Sample						

RELATIVE DENSITY

SANDS AND GRAVELS	BLOWS/FOOT
VERY LOOSE	0-4
LOOSE	4-10
MEDIUM DENSE	10-30
DENSE	30-50
VERY DENSE	OVER 50

CONSISTENCY

SILTS AND CLAYS	BLOWS/FOOT
VERY SOFT	0-2
SOFT	2-4
FIRM	4-8
STIFF	8-16
VERY STIFF	16-32
HARD	OVER 32

Pacific Crest Engineering Inc. 444 Airport Blvd., Suite 106 Watsonville, CA 95076	**Boring Log Explanation** Cath Lab Addition, Dominican Hospital Santa Cruz, California	Figure No. 3 Project No. 0716 Date: 04/18/07

LOGGED BY CLR DATE DRILLED 3/23/07 BORING DIAMETER 4.5" BORING NO. 1

Depth (feet)	Sample No. and Type	Symbol	Soil Description	Unified Soil Classification	SPT "N" Value	Plasticity Index	Dry Density (pcf)	Moisture % of Dry Wt.	Misc. Lab Results
0–5	1-1 L		Variegated brown and tan Sandy Fat CLAY, mica scattered throughout the sample, very fine to very coarse grained, angular to sub-angular, roots scattered in the sample, high plasticity, damp, stiff	CH-OH	14	28			Direct Shear: C = 1100 Psf Ø = 23.8°
5–10	1-2 L		Brown Clayey SAND, sticky texture, fining downward, decrease in coarseness of sand, very fine to medium grained, sub-rounded, mica scattered throughout the sample, poorly graded, damp, medium dense	SC	22				
10–15	1-3 L		Variegated gray brown and red brown Sandy CLAY, mica scattered throughout the sample, very fine to fine grained, sub-rounded, medium plasticity, damp, very stiff	CL	28		110.1	19.8	Qu = 2809 Psf
13.5			Slight increase in sand content, coarsening downward						
15–17.5	1-4 L		Tan SAND, coarsening downward, very fine to fine grained with some medium coarse grains, sub-angular to sub-rounded, moderately poorly graded, damp, very dense	SP	50/5"		110.0	16.0	10.1% Passing #200 Sieve
17.5–24			Yellow tan SAND, very fine to fine grained, oxidation patches, mica scattered throughout the sample, sub-rounded, damp, very dense, (Purisima Sandstone Bedrock) Rocky drilling from 17 1/2 to 19 feet	SP					
20	1-5 L				50/4"		81.3	35.6	
22			▼ Ground water at approximately 22 feet						

Pacific Crest Engineering Inc. 444 Airport Blvd., Suite 106 Watsonville, CA 95076	**Log of Test Borings** Cath Lab Addition, Dominican Hospital Santa Cruz, California	Figure No. 4 Project No.0716 Date: 04/18/07

LOGGED BY CLR DATE DRILLED 3/23/07 BORING DIAMETER 4.5" BORING NO. 1

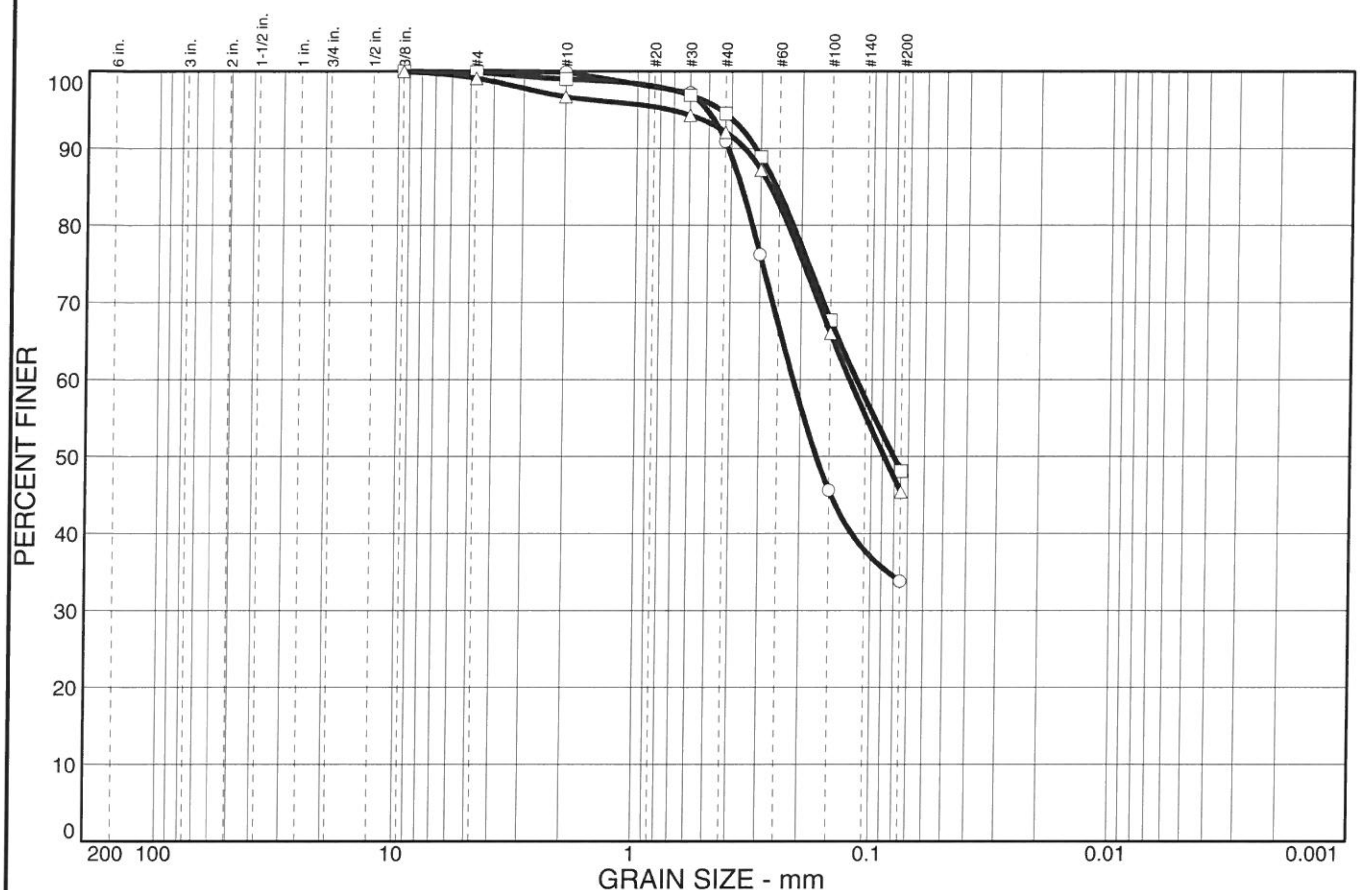
Depth (feet)	Sample No. and Type	Symbol	Soil Description	Unified Soil Classification	SPT "N" Value	Plasticity Index	Dry Density (pcf)	Moisture % of Dry Wt.	Misc. Lab Results
				SP					
25–26	1-6 T		Gray SAND, very fine to fine grained, poorly graded, sub-rounded shaped, oxidation patches, mica scattered throughout the sample, wet, very dense, (Purisima Sandstone Bedrock)		50/4"			39.4	
30–31	1-7 T		Some medium grained sand scattered throughout the sample, mottled oxidation patches, (Purisima Sandstone Bedrock)		50/5.5"			48.9	
35–36	1-8 T		Some patches of yellow sand, lack of medium grained sand, fining downward		60/5"			46.6	
37			Boring Terminated at 36 1/2 feet.						

Depth scale: 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48

APPENDIX D

Laboratory Test Results and Corrosivity Test Results

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			66.2	33.8					
□		0.1	51.8	48.1					
△		0.9	53.7	45.4					

SIEVE inches size	PERCENT FINER ○	□	△
3/8"		100.0	100.0
	GRAIN SIZE		
D_{60}	0.215	0.116	0.124
D_{30}			
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○	□	△
#4	100.0	99.9	99.1
#10	99.9	99.0	96.7
#30	97.2	96.9	94.3
#40	90.9	94.5	92.1
#50	76.2	88.9	87.2
#100	45.6	67.7	66.0
#200	33.8	48.1	45.4

SOIL DESCRIPTION

○ Yellowish Brown Clayey SAND

□ Reddish Brown Clayey SAND

△ Dark Olive Brown Clayey SAND

REMARKS:

○

□

△

○ Source: EB-1 Elev./Depth: 10-11.5'

□ Source: EB-4 Elev./Depth: 10-11.5'

△ Source: EB-5 Elev./Depth: 6-6.5'

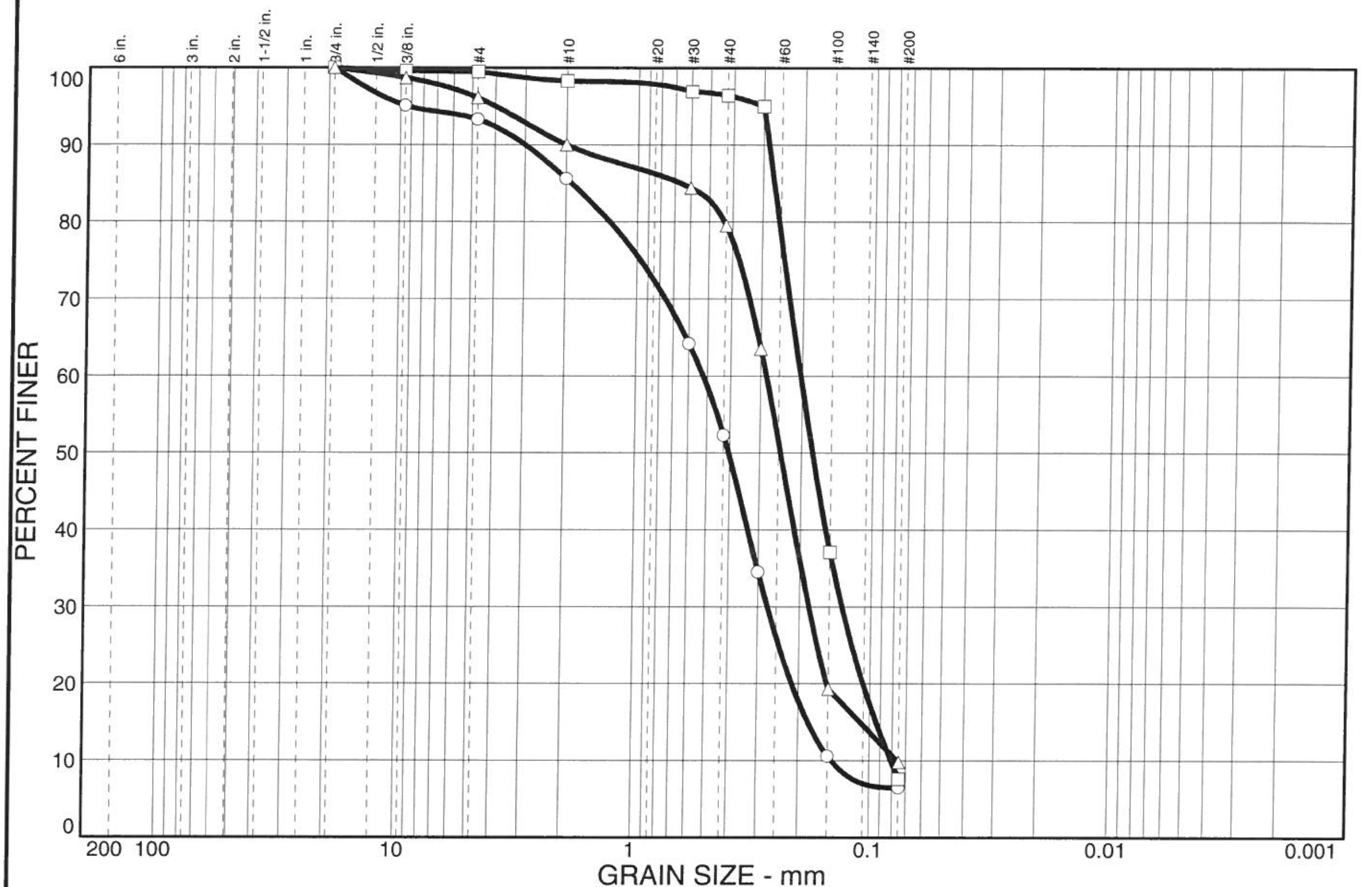
COOPER TESTING LABORATORY

Client: Rutherford & Chekene

Project: Dominican Hospital Expansion - 2019-070G

Project No.: 335-201 Figure

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		6.7	86.8	6.5					
□		0.5	91.9	7.6					
△		3.9	86.3	9.8					

SIEVE inches size	PERCENT FINER ○	□	△
3/4"	100.0	100.0	100.0
3/8"	95.1	99.6	98.7

	GRAIN SIZE		
D_{60}	0.521	0.203	0.284
D_{30}	0.273	0.133	0.183
D_{10}	0.145	0.0808	0.0761
	COEFFICIENTS		
C_c	0.99	1.07	1.55
C_u	3.60	2.52	3.73

SIEVE number size	PERCENT FINER ○	□	△
#4	93.3	99.5	96.1
#10	85.6	98.3	90.0
#30	64.2	96.9	84.4
#40	52.3	96.4	79.5
#50	34.5	95.0	63.5
#100	10.6	37.1	19.3
#200	6.5	7.6	9.8

SOIL DESCRIPTION

○ Yellowish Brown Poorly Graded SAND w/ Silt

□ Olive Brown Poorly Graded SAND w/ Silt

△ Olive Brown Poorly Graded SAND w/ Silt

REMARKS:

○

□

△

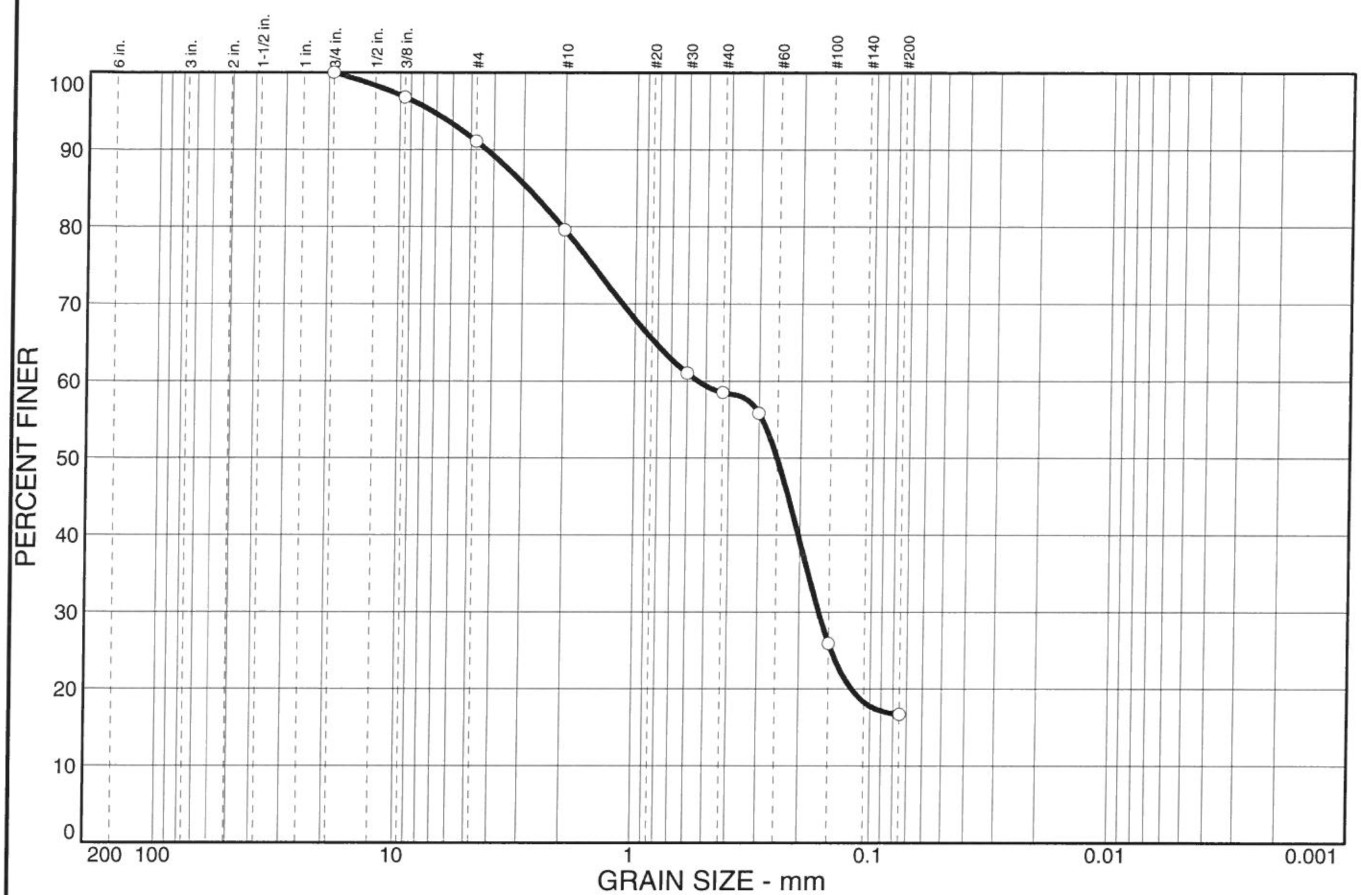
○ Source: EB-5 Elev./Depth: 10-11.5'

□ Source: EB-5 Elev./Depth: 15-16.5'

△ Source: EB-6 Elev./Depth: 15-16.5'

COOPER TESTING LABORATORY	Client: Rutherford & Chekene Project: Dominican Hospital Expansion - 2019-070G Project No.: 335-201 Figure

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		8.9	74.4	16.7					

SIEVE inches size	PERCENT FINER ○		
3/4"	100.0		
3/8"	96.8		
	GRAIN SIZE		
D_{60}	0.542		
D_{30}	0.166		
D_{10}			
	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	91.1		
#10	79.6		
#30	61.0		
#40	58.5		
#50	55.8		
#100	25.9		
#200	16.7		

SOIL DESCRIPTION

○ Dark Olive Brown Clayey SAND

REMARKS:

○

○ Source: EB-6

Elev./Depth: 20-21.5'

COOPER TESTING LABORATORY

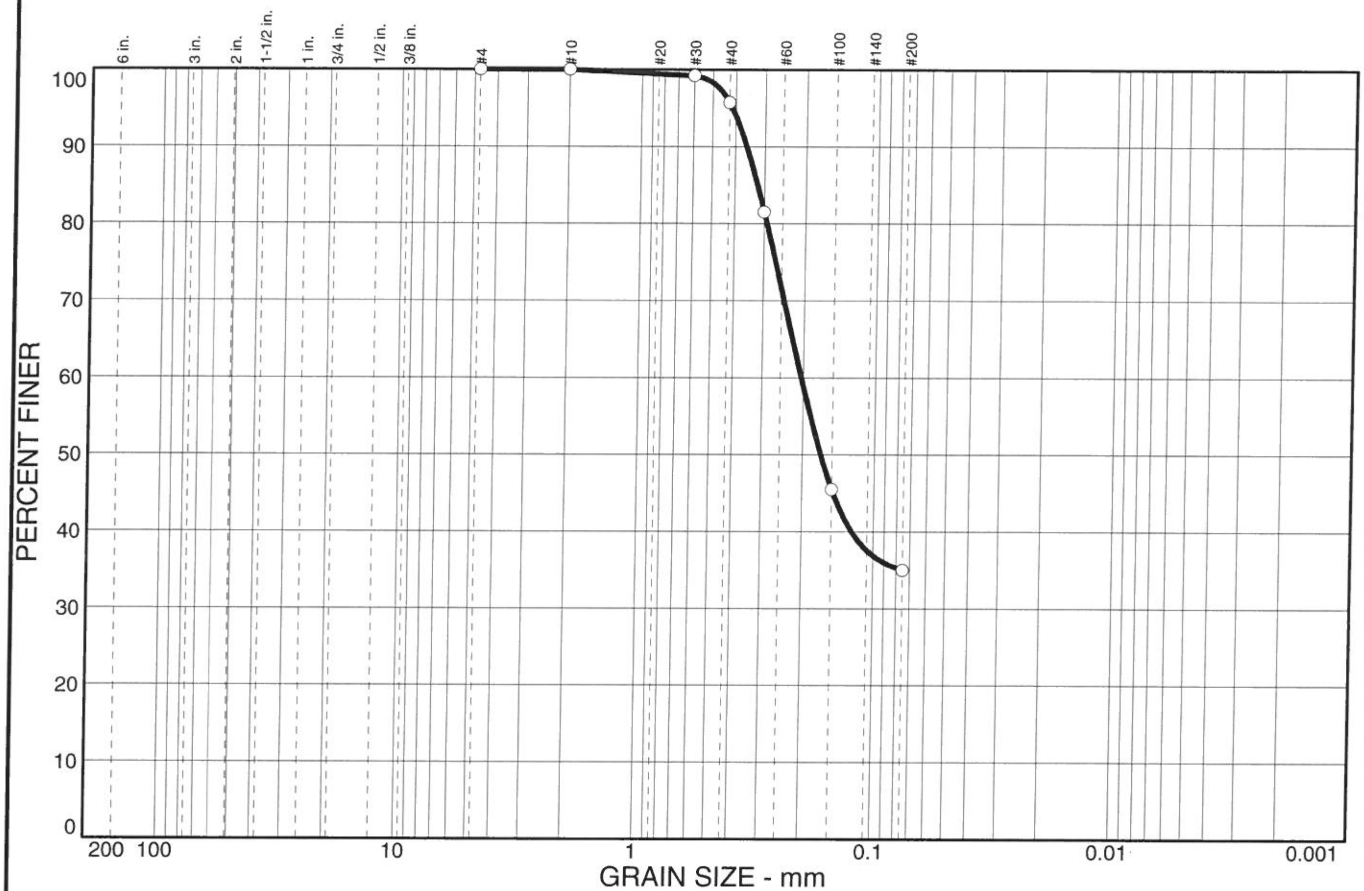
Client: Rutherford & Chekene

Project: Dominican Hospital Expansion - 2019-070G

Project No.: 335-201

Figure

Particle Size Distribution Report



	% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			65.0	35.0					

SIEVE inches size	PERCENT FINER ○		

	GRAIN SIZE		
D_{60}	0.204		
D_{30}			
D_{10}			

	COEFFICIENTS		
C_c			
C_u			

SIEVE number size	PERCENT FINER ○		
#4	100.0		
#10	100.0		
#30	99.2		
#40	95.7		
#50	81.5		
#100	45.5		
#200	35.0		

SOIL DESCRIPTION

○ Olive Brown Clayey SAND

REMARKS:

○

○ Source: PEB-4

Elev./Depth: 4.5-5'

COOPER TESTING LABORATORY

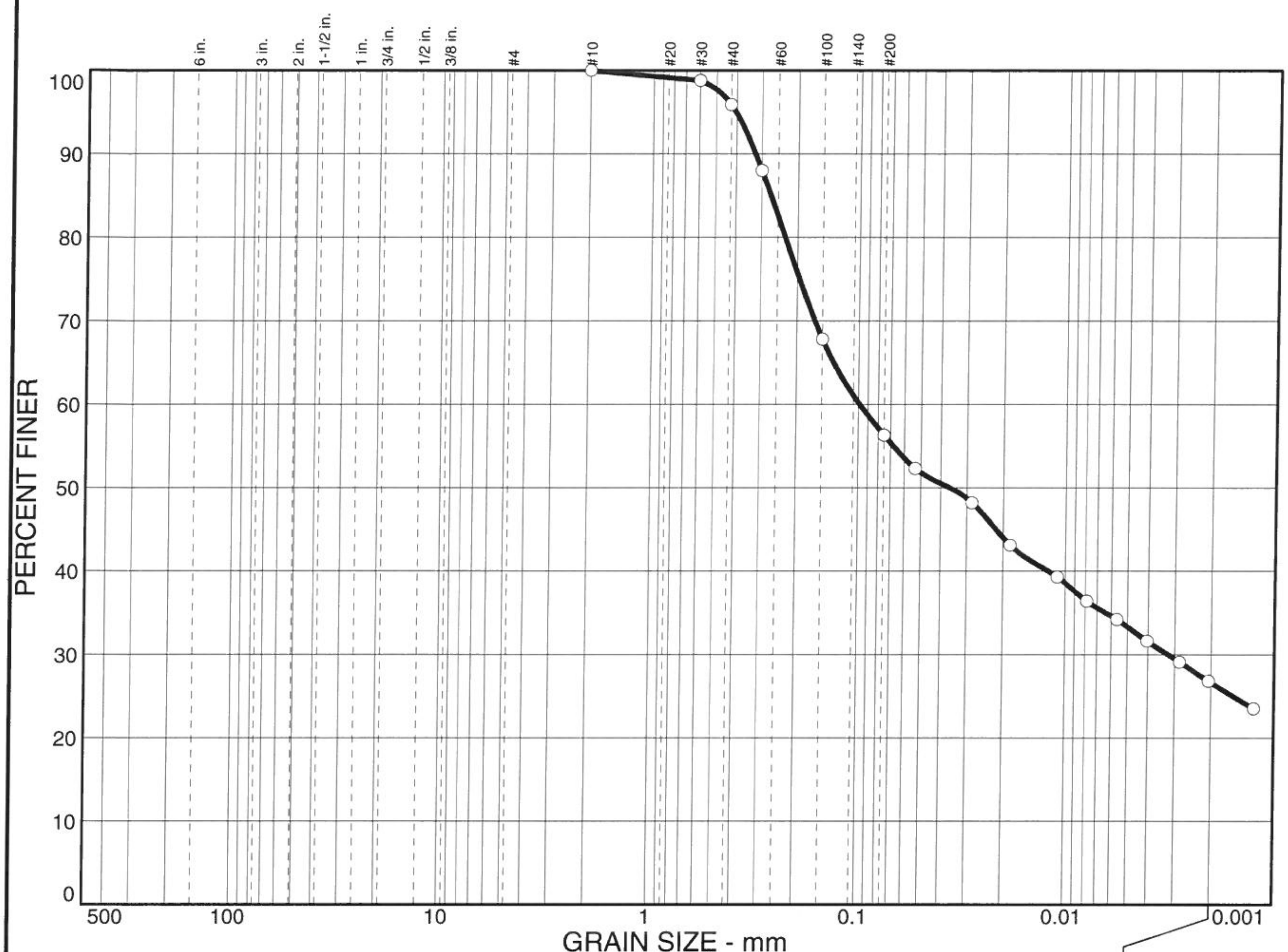
Client: Rutherford & Chekene

Project: Dominican Hospital Parking Structure - 2019-074G

Project No.: 335-202

Figure

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	43.7	29.7	26.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#30	98.8		
#40	95.9		
#50	88.0		
#100	67.8		
#200	56.3		
#270	52.3		
0.0282 mm.	48.2		
0.0185 mm.	43.1		
0.0109 mm.	39.3		
0.0079 mm.	36.4		
0.0056 mm.	34.2		
0.0040 mm.	31.6		
0.0028 mm.	29.1		
0.0021 mm.	26.8		
0.0012 mm.	23.5		

* (no specification provided)

Soil Description

Olive Brown Sandy CLAY

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.271 D_{60}= 0.0987 D_{50}= 0.0362

D_{30}= 0.0032 D_{15}= D_{10}=

C_u= C_c=

Classification

USCS= AASHTO=

Remarks

Sample No.: **Source of Sample:** EB-1 **Date:** 8/27/19

Location: **Elev./Depth:** 6-6.5'

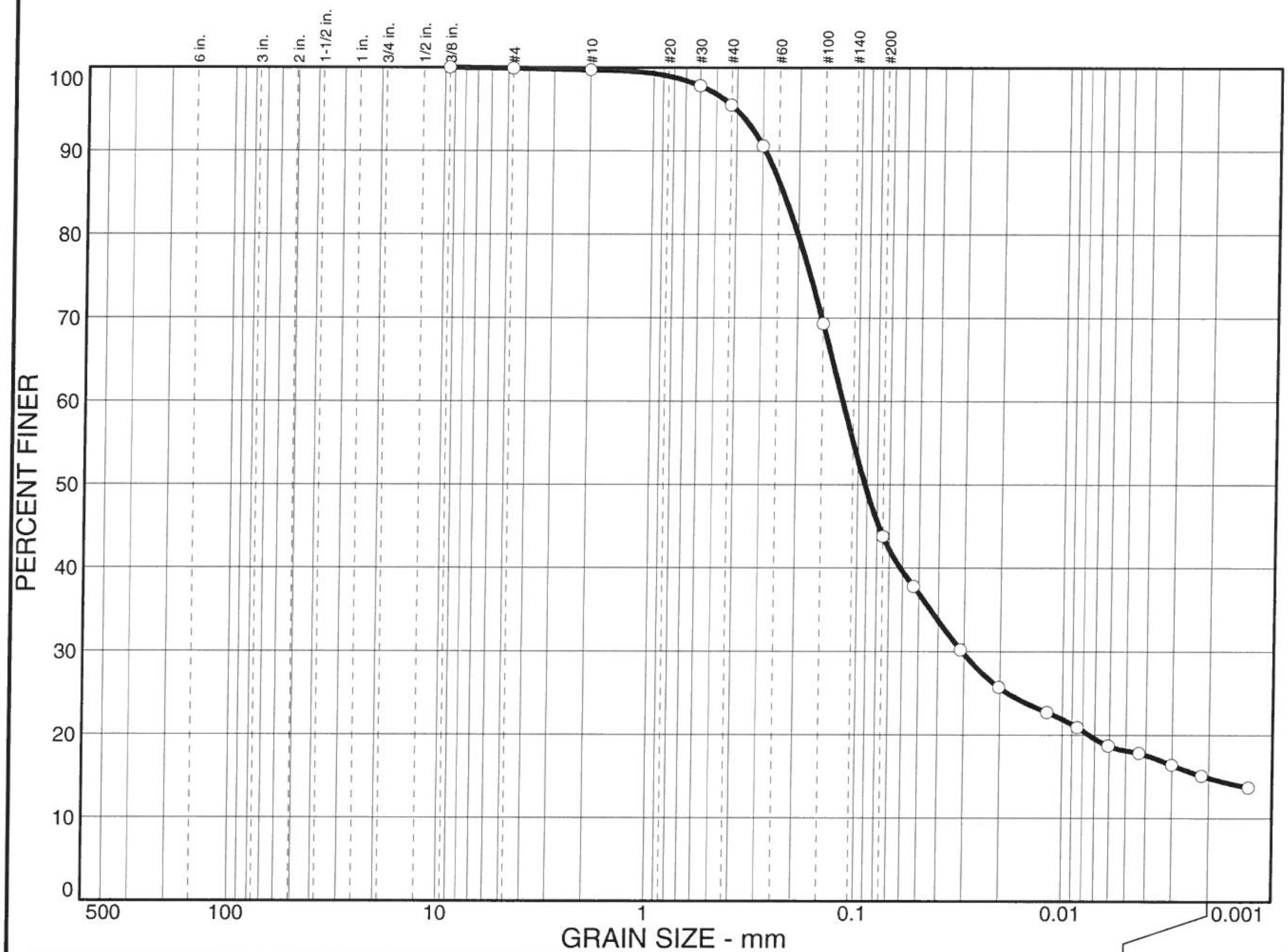
COOPER TESTING LABORATORY

Client: Rutherford & Chekene

Project: Dominican Hospital Expansion - 2019-070G

Project No: 335-201 **Figure**

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.1	56.1	29.0	14.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8 in.	100.0		
#4	99.9		
#10	99.7		
#30	97.8		
#40	95.5		
#50	90.6		
#100	69.3		
#200	43.8		
#270	37.8		
0.0312 mm.	30.2		
0.0203 mm.	25.7		
0.0119 mm.	22.7		
0.0085 mm.	20.9		
0.0061 mm.	18.7		
0.0043 mm.	17.8		
0.0030 mm.	16.4		
0.0022 mm.	15.1		
0.0013 mm.	13.7		

* (no specification provided)

Soil Description

Dark Olive Brown Clayey SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.237 D_{60}= 0.119 D_{50}= 0.0922
D_{30}= 0.0307 D_{15}= 0.0021 D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

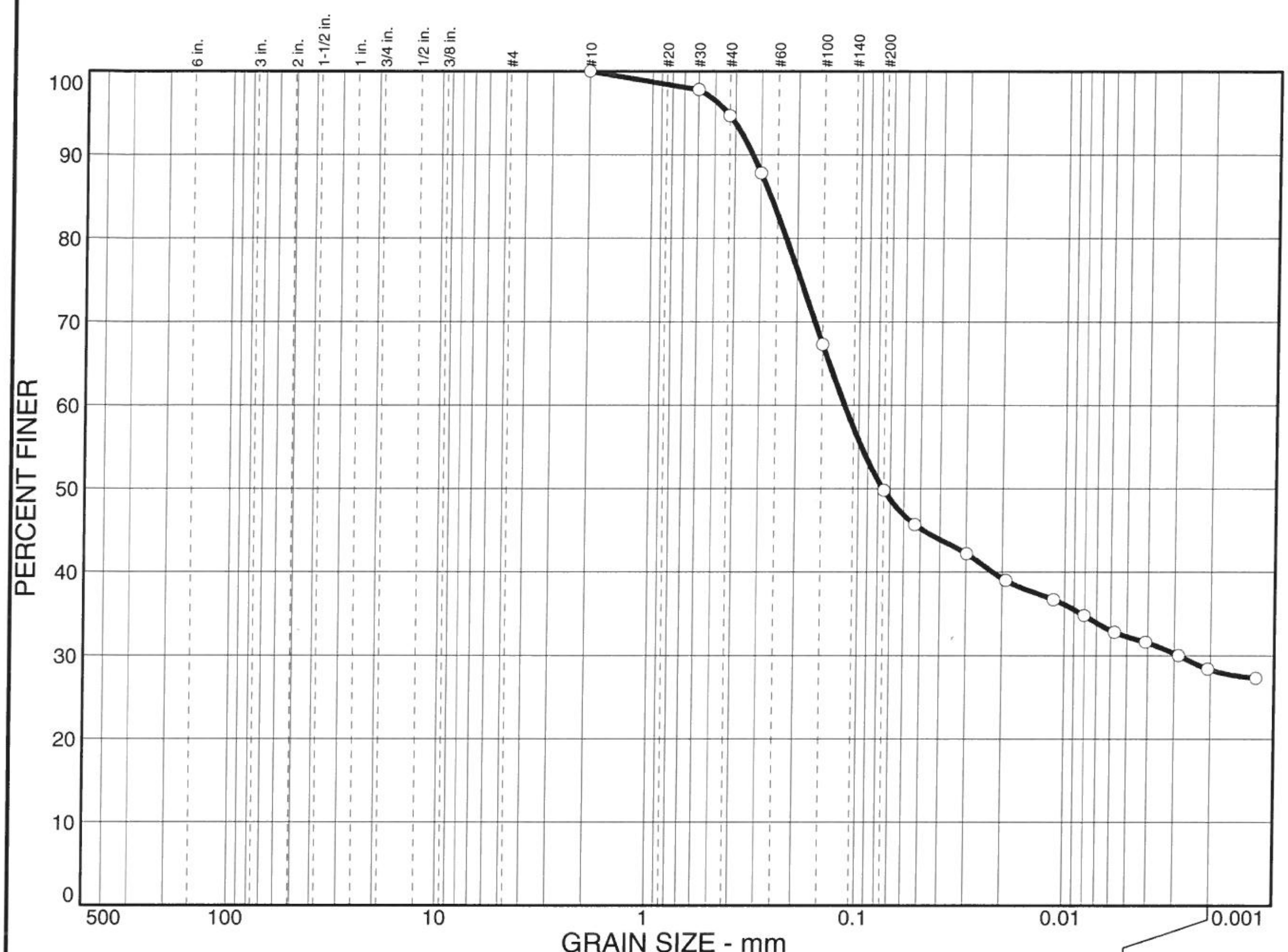
Remarks

Sample No.: **Source of Sample:** EB-2 **Date:** 8/27/19
Location: **Elev./Depth:** 5.5-6'

COOPER TESTING LABORATORY

Client: Rutherford & Chekene
Project: Dominican Hospital Expansion - 2019-070G
Project No: 335-201 **Figure**

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	50.2	21.5	28.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#30	97.8		
#40	94.7		
#50	87.8		
#100	67.3		
#200	49.8		
#270	45.7		
0.0298 mm.	42.2		
0.0192 mm.	39.0		
0.0113 mm.	36.7		
0.0080 mm.	34.8		
0.0058 mm.	32.8		
0.0041 mm.	31.6		
0.0029 mm.	30.0		
0.0021 mm.	28.4		
0.0012 mm.	27.3		

* (no specification provided)

Soil Description

Dark Olive Brown Clayey SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.269 D_{60}= 0.117 D_{50}= 0.0759
D_{30}= 0.0029 D_{15}= D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

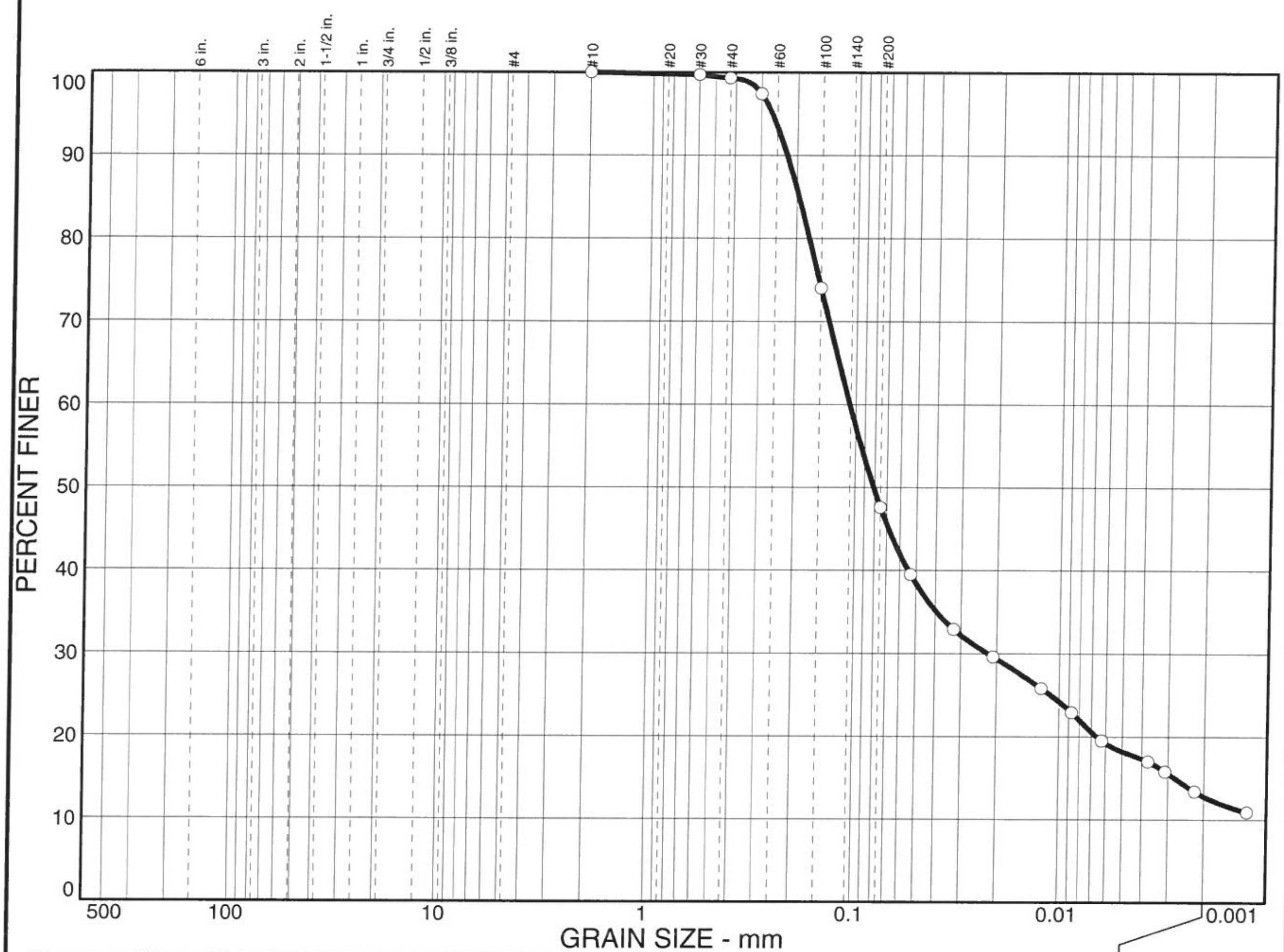
Remarks

Sample No.: **Source of Sample:** EB-3 **Date:** 8/27/19
Location: **Elev./Depth:** 5.5-6'

COOPER TESTING LABORATORY

Client: Rutherford & Chekene
Project: Dominican Hospital Expansion - 2019-070G
Project No: 335-201 **Figure**

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	52.4	34.8	12.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#30	99.7		
#40	99.3		
#50	97.4		
#100	74.0		
#200	47.6		
#270	39.5		
0.0325 mm.	32.9		
0.0208 mm.	29.6		
0.0122 mm.	25.8		
0.0087 mm.	22.9		
0.0063 mm.	19.5		
0.0037 mm.	17.0		
0.0031 mm.	15.8		
0.0022 mm.	13.4		
0.0012 mm.	10.9		

* (no specification provided)

Soil Description

Yellowish Brown Clayey SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.195 D_{60}= 0.107 D_{50}= 0.0811
D_{30}= 0.0221 D_{15}= 0.0028 D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

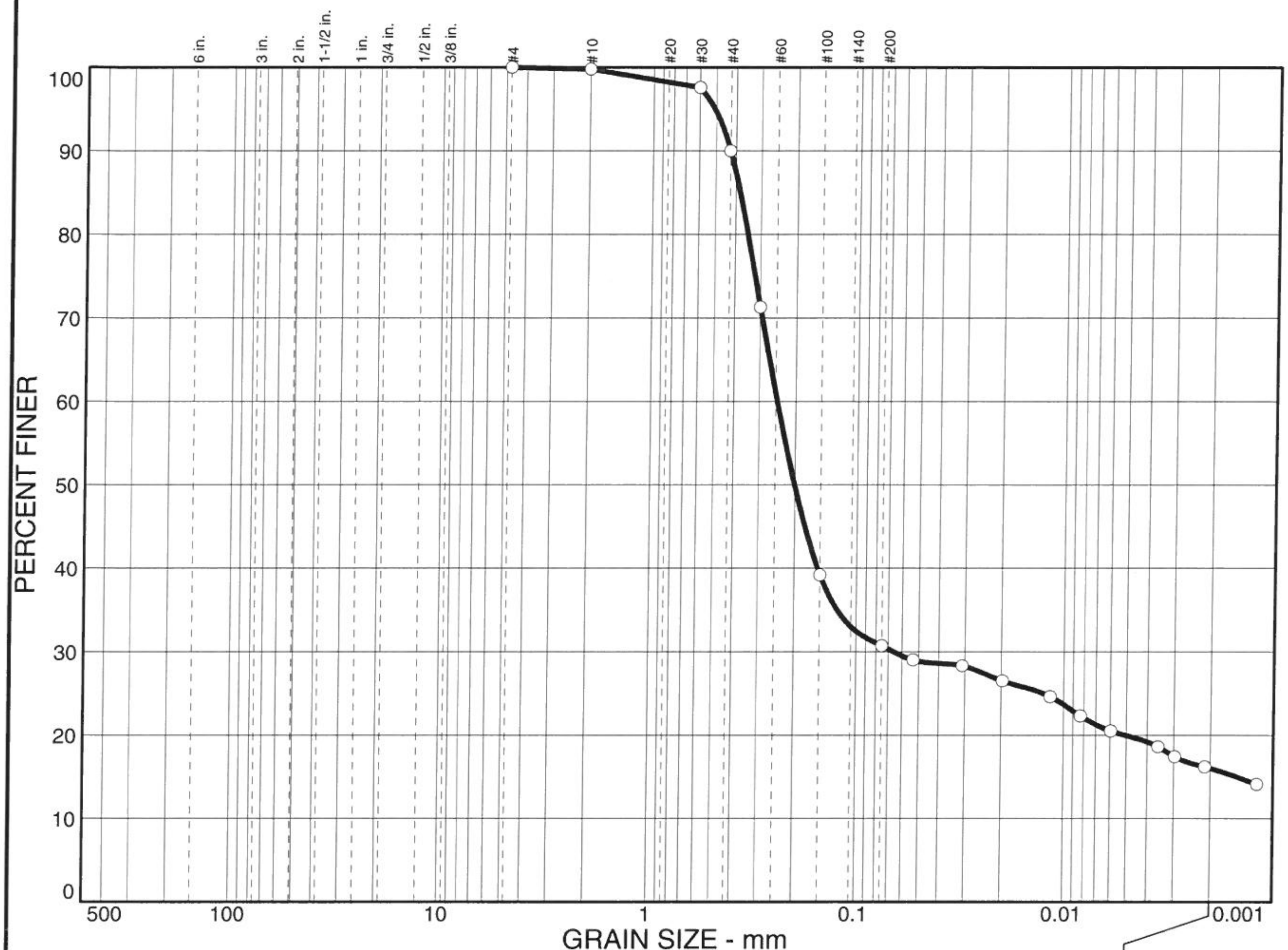
Remarks

Sample No.: **Source of Sample:** PEB-1 **Date:** 8/27/19
Location: **Elev./Depth:** 5.5-6'

COOPER TESTING LABORATORY

Client: Rutherford & Chekene
Project: Dominican Hospital Parking Structure - 2019-074G
Project No: 335-202 **Figure**

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.0	69.3	14.7	16.0

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.8		
#30	97.6		
#40	90.0		
#50	71.3		
#100	39.2		
#200	30.7		
#270	29.0		
0.0308 mm.	28.3		
0.0197 mm.	26.5		
0.0116 mm.	24.6		
0.0083 mm.	22.3		
0.0059 mm.	20.5		
0.0036 mm.	18.6		
0.0030 mm.	17.4		
0.0021 mm.	16.2		
0.0012 mm.	14.1		

* (no specification provided)

Soil Description

Olive Brown Clayey SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.381 D_{60}= 0.246 D_{50}= 0.201
D_{30}= 0.0660 D_{15}= 0.0015 D_{10}=
C_u= C_c=

Classification

USCS= AASHTO=

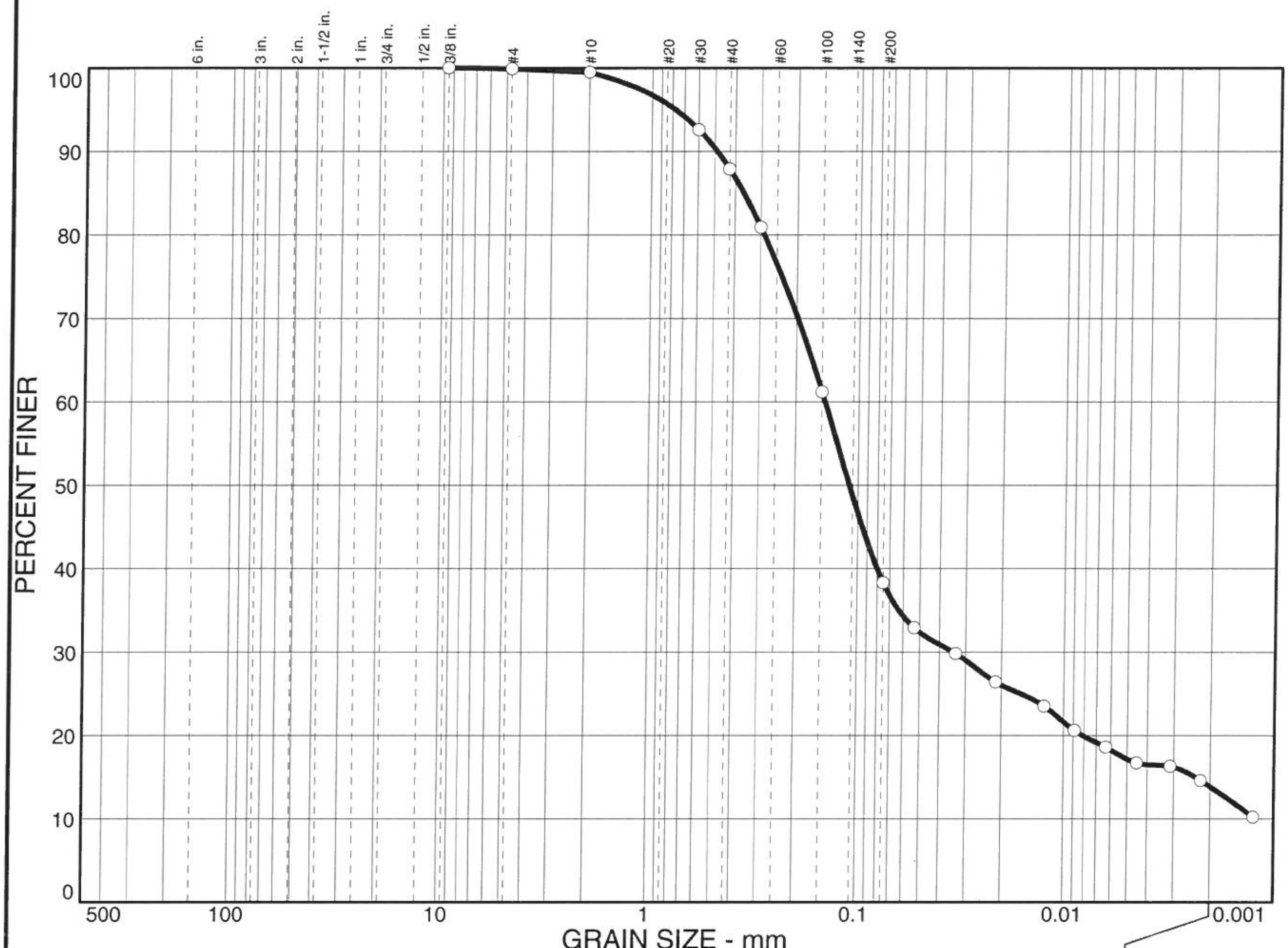
Remarks

Sample No.: **Source of Sample:** PEB-2 **Date:** 8/27/19
Location: **Elev./Depth:** 7-8.5'

COOPER TESTING LABORATORY

Client: Rutherford & Chekene
Project: Dominican Hospital Parking Structure - 2019-074G
Project No: 335-202 **Figure**

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY
0.0	0.1	61.6	24.5	13.8

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8 in.	100.0		
#4	99.9		
#10	99.5		
#30	92.6		
#40	87.9		
#50	80.9		
#100	61.2		
#200	38.3		
#270	32.9		
0.0334 mm.	29.8		
0.0213 mm.	26.4		
0.0125 mm.	23.5		
0.0089 mm.	20.6		
0.0063 mm.	18.6		
0.0045 mm.	16.7		
0.0031 mm.	16.3		
0.0022 mm.	14.6		
0.0013 mm.	10.2		

* (no specification provided)

Soil Description

Yellowish Brown Clayey SAND

Atterberg Limits

PL= LL= PI=

Coefficients

D_{85}= 0.363 D_{60}= 0.145 D_{50}= 0.110
D_{30}= 0.0344 D_{15}= 0.0024 D_{10}=
C_u= C_c=

Classification

USCS= SM AASHTO=

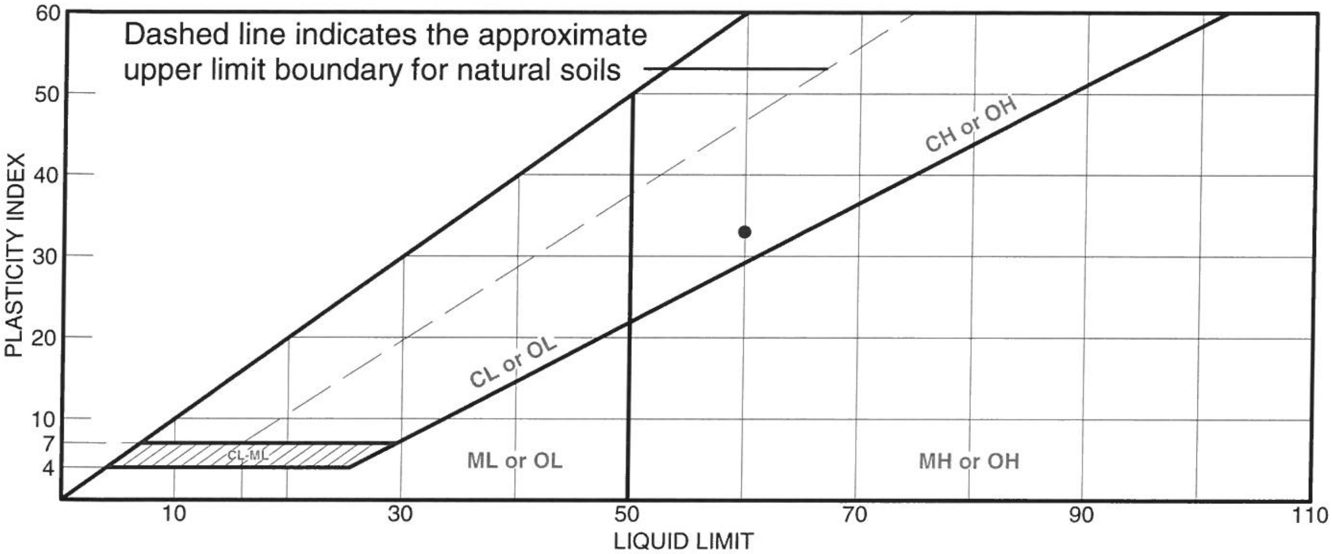
Remarks

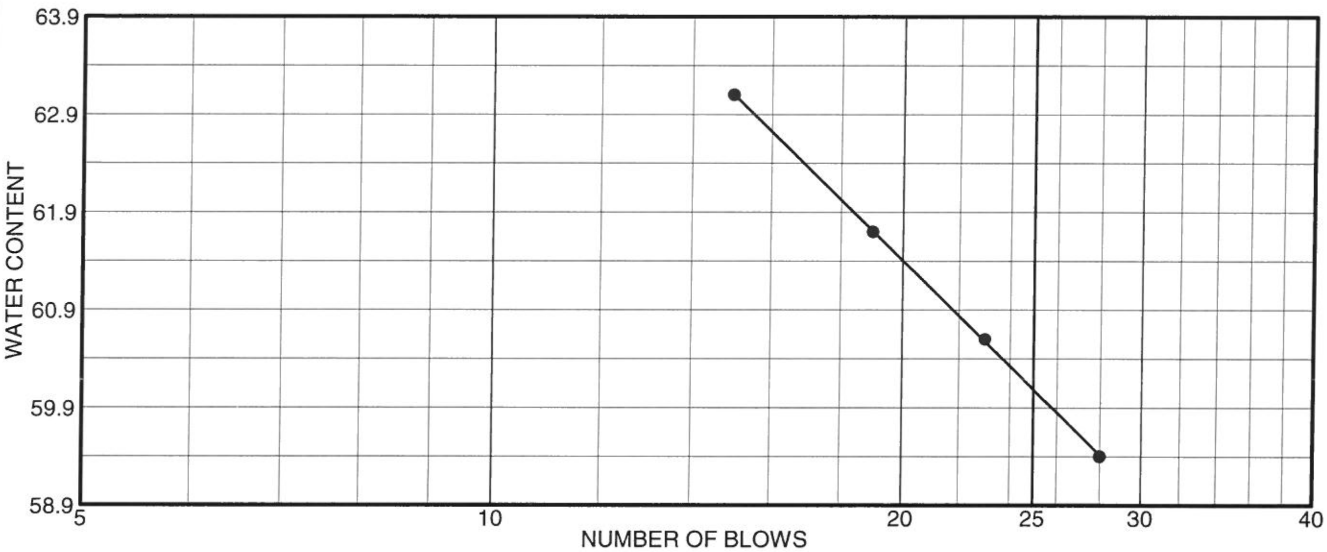
Sample No.: **Source of Sample:** PEB-5 **Date:** 8/27/19
Location: **Elev./Depth:** 5.5-6'

COOPER TESTING LABORATORY

Client: Rutherford & Chekene
Project: Dominican Hospital Parking Structure - 2019-074G
Project No: 335-202 **Figure**

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Olive Brown Sandy Fat CLAY	60	27	33			

Project No. 335-201 **Client:** Rutherford & Chekene

Project: Dominican Hospital Expansion - 2019-070G

● **Source:** EB-6 **Elev./Depth:** 5.5-6'

Remarks:

●

LIQUID AND PLASTIC LIMITS TEST REPORT

COOPER TESTING LABORATORY

Figure

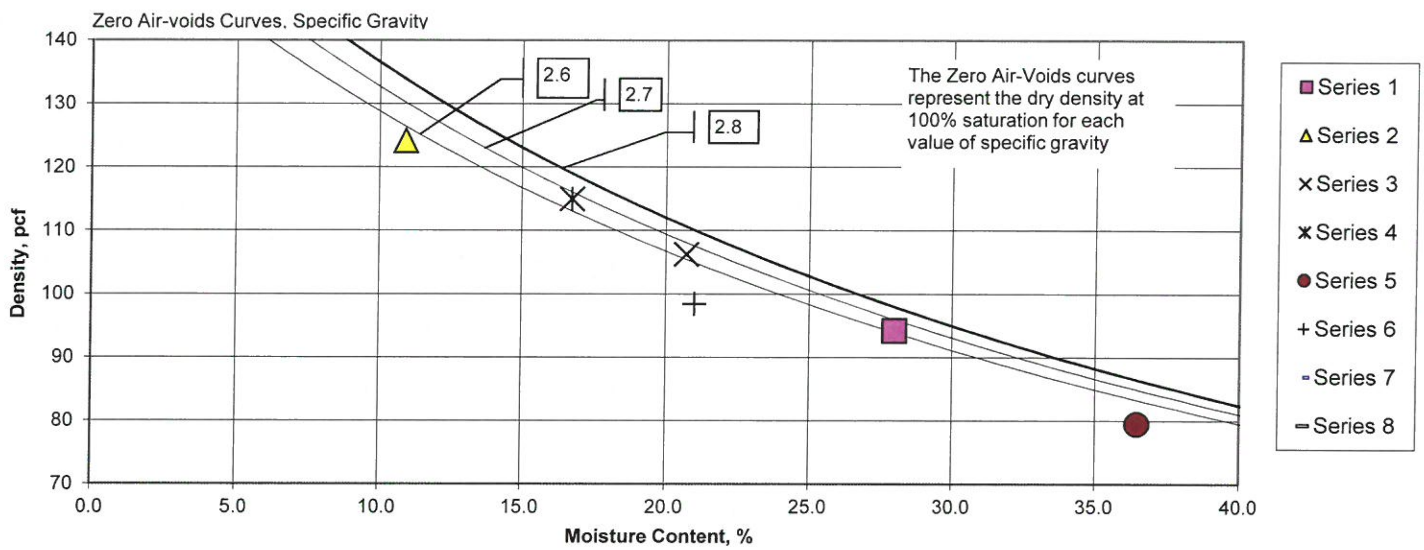
Moisture-Density-Porosity Report
Cooper Testing Labs, Inc. (ASTM D7263b)

CTL Job No:	335-201	**Project No.**	2019-070G	**By:**	RU
Client:	Rutherford & Chekene	**Date:**	08/21/19		
Project Name:	Dominican Hospital	**Remarks:**			

Boring:	EB-1	EB-2	EB-5	EB-5	EB-6	EB-6		
Sample:								
Depth, ft:	6-6.5	5.5-6	1.5-2	6-6.5	5.5-6	10.5-11		
Visual Description:	Olive Brown Sandy CLAY	Dark Olive Brown Clayey SAND	Dark Olive Brown Sandy CLAY	Dark Olive Brown Clayey SAND	Olive Brown Sandy Fat CLAY	Yellowish Brown Sandy CLAY		
Actual G_s								
Assumed G_s	2.70	2.70	2.70	2.70	2.70	2.70		
Moisture, %	28.0	10.9	20.7	16.7	36.4	21.0		
Wet Unit wt, pcf	120.5	137.7	128.2	134.2	108.4	119.0		
Dry Unit wt, pcf	94.2	124.1	106.2	115.0	79.5	98.4		
Dry Bulk Dens.pb, (g/cc)	1.51	1.99	1.70	1.84	1.27	1.58		
Saturation, %	95.5	82.1	95.1	96.7	87.7	79.4		
Total Porosity, %	44.2	26.4	37.0	31.8	52.9	41.7		
Volumetric Water Cont,Θw,%	42.2	21.7	35.2	30.8	46.4	33.1		
Volumetric Air Cont., Θa,%	2.0	4.7	1.8	1.0	6.5	8.6		
Void Ratio	0.79	0.36	0.59	0.47	1.12	0.71		
Series	1	2	3	4	5	6	7	8

Note: All reported parameters are from the as-received sample condition unless otherwise noted. If an assumed specific gravity (Gs) was used then the saturation, porosities, and void ratio should be considered approximate.

Moisture-Density



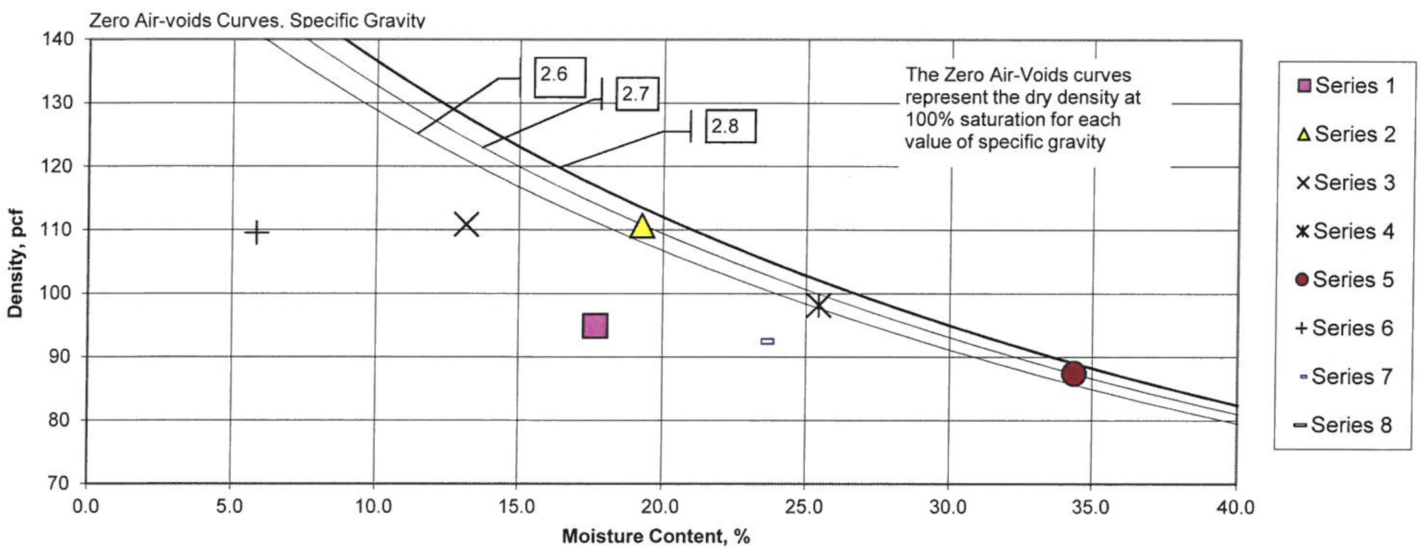
Moisture-Density-Porosity Report
Cooper Testing Labs, Inc. (ASTM D7263b)

CTL Job No:	335-202	**Project No.**	2019-074G	**By:**	RU
Client:	Rutherford & Chekene	**Date:**	08/23/19		
Project Name:	Dominican Hospital	**Remarks:**			

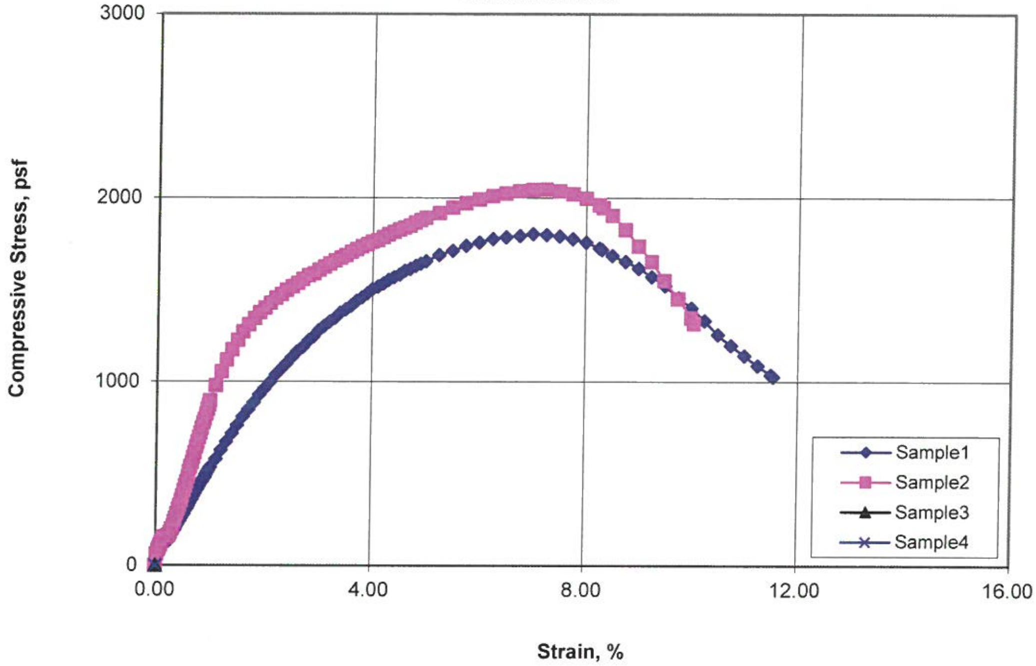
Boring:	PEB-1	PEB-2	PEB-3	PEB-4	PEB-4	PEB-4	PEB-5	
Sample:								
Depth, ft:	5.5-6	11-11.5	16-16.5	4.5-5	9.5-10	20.5-21	5.5-6	
Visual Description:	Yellowish Brown Clayey SAND	Yellowish Brown Clayey SAND	Olive Brown Clayey SAND	Olive Brown Clayey SAND	Olive Brown Sandy CLAY	Olive Brown SAND w/ Silt & Gravel	Yellowish Brown Clayey SAND	
Actual G_s								
Assumed G_s	2.70	2.70	2.70	2.70	2.70	2.70	2.70	
Moisture, %	17.7	19.3	13.1	25.4	34.4	5.8	23.5	
Wet Unit wt, pcf	111.7	132.0	125.4	123.1	117.5	115.9	114.1	
Dry Unit wt, pcf	94.9	110.6	110.9	98.1	87.4	109.5	92.4	
Dry Bulk Dens.ρb, (g/cc)	1.52	1.77	1.78	1.57	1.40	1.75	1.48	
Saturation, %	61.4	99.2	68.1	95.5	99.9	29.2	76.8	
Total Porosity, %	43.7	34.4	34.3	41.8	48.2	35.1	45.2	
Volumetric Water Cont,Θw,%	26.9	34.1	23.3	40.0	48.1	10.2	34.7	
Volumetric Air Cont., Θa,%	16.9	0.3	11.0	1.9	0.1	24.9	10.5	
Void Ratio	0.78	0.52	0.52	0.72	0.93	0.54	0.83	
Series	1	2	3	4	5	6	7	8

Note: All reported parameters are from the as-received sample condition unless otherwise noted. If an assumed specific gravity (Gs) was used then the saturation, porosities, and void ratio should be considered approximate.

Moisture-Density



Unconfined Compressive Strength
ASTM D2166

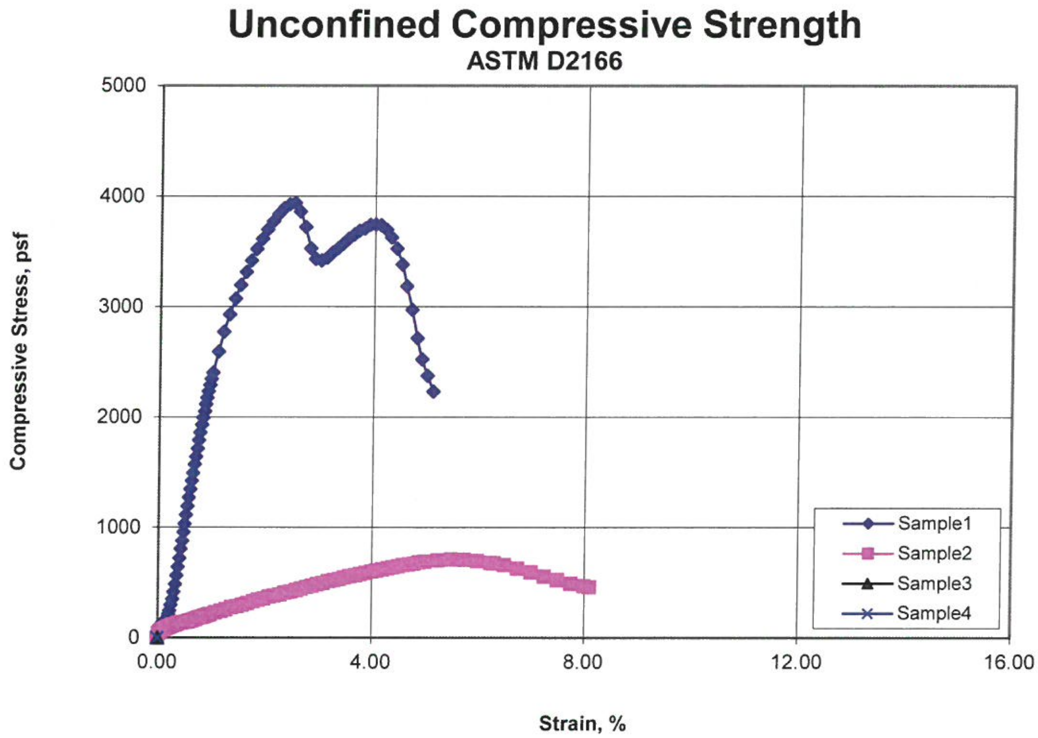


Sample No.:	1	2	3	4	
Unconfined Compressive Strength, psf	1804	2046			
Unconfined Compressive Strength, psi	12.5	14.2			
Undrained Shear Strength, psf	902	1023			
Failure Strain, %	7.0	7.2			
Strain Rate, % per minute	1.0	1.0			
Strain Rate, inches/minute	0.05	0.05			
Moisture Content, %	18.0	44.0			
Dry Density, pcf	111.7	74.7			
Saturation, %	95.7	94.7			
Void Ratio	0.509	1.256			
Specimen Diameter, inches	2.410	2.400			
Specimen Height, inches	4.95	4.99			
Height to Diameter Ratio	2.1	2.1			
Assumed Specific Gravity	2.70	2.70			

Sample Location				
	Boring	Sample	Depth, ft.	Soil Description
1	EB-3		5.5-6	Dark Olive Brown Sandy CLAY
2	EB-4		5.5	Yellowish Brown Sandy CLAY
3				
4				

Job No.:	335-201	Type of Sample	Undisturbed
Client:	Rutherford & Chekene		
Project:	2019-070G	Remarks:	
Date:	8/20/2019 By: MD/RU		

COOPER TESTING LABORATORY



Sample No.:	1	2	3	4	
Unconfined Compressive Strength, psf	3941	708			
Unconfined Compressive Strength, psi	27.4	4.9			
Undrained Shear Strength, psf	1970	354			
Failure Strain, %	2.5	5.5			
Strain Rate, % per minute	1.0	1.0			
Strain Rate, inches/minute	0.05	0.05			
Moisture Content, %	12.3	26.0			
Dry Density, pcf	115.3	93.7			
Saturation, %	71.8	88.0			
Void Ratio	0.461	0.798			
Specimen Diameter, inches	2.385	2.416			
Specimen Height, inches	5.02	5.01			
Height to Diameter Ratio	2.1	2.1			
Assumed Specific Gravity	2.70	2.70			

Sample Location				
	Boring	Sample	Depth, ft.	Soil Description
1	PEB-2		6-6.5	Olive Brown Clayey SAND
2	PEB-3		8-8.5	Yellowish Brown Clayey SAND
3				
4				

Job No.:	335-202	Type of Sample	Undisturbed
Client:	Rutherford & Chekene		
Project:	2019-074G	Remarks:	
Date:	8/20/2019 By: MD/RU		

COOPER
TESTING LABORATORY

COOPER TESTING LABORATORY

#200 Sieve Wash Analysis
ASTM D 1140

Job No.:	335-201	**Project No.:**		**Run By:**	MD
Client:	Rutherford & Chekene	**Date:**		**Checked By:**	DC
Project:	Dominican Hospital Expansion				

Boring:	EB-2							
Sample:								
Depth, ft.:	10-11.5							
Soil Type:	Sandy CLAY Dark Yellowish Brown							
Wt of Dish & Dry Soil, gm	503.3							
Weight of Dish, gm	171.8							
Weight of Dry Soil, gm	331.5							
Wt. Ret. on #4 Sieve, gm	0.0							
Wt. Ret. on #200 Sieve, gm	155.6							
% Gravel	**0.0**							
% Sand	**46.9**							
% Silt & Clay	**53.1**							

Remarks: As an added benefit to our clients, the gravel fraction may be included in this report. Whether or not it is included is dependent upon both the technician's time available and if there is a significant enough amount of gravel. The gravel is always included in the percent retained on the #200 sieve but may not be weighed separately to determine the percentage, especially if there is only a trace amount, (5% or less).

Color								
Additional Description	Dark Yellowish Brown							
Modifier	Sandy							
Main Descriptor	CLAY							
With								
And								
Final Description	Sandy CLAY Dark Yellowish Brown							

COOPER TESTING LABORATORY

#200 Sieve Wash Analysis
ASTM D 1140

Job No.: 335-202 **Project No.:** 2019-074G **Run By:** MD
Client: Rutherford & Chekene **Date:** 8/27/2019 **Checked By:** DC
Project: Dominican Hospital Parking Structure

Boring:	PEB-2	PEB-3	PEB-4	PEB-5				
Sample:								
Depth, ft.:	11-11.5	8-8.5	9.5-10	15-16.5				
Soil Type:	Yellowish Brown Clayey SAND	Yellowish Brown Clayey SAND	Olive Brown Sandy CLAY	Olive Brown Clayey SAND				
Wt of Dish & Dry Soil, gm	503.5	499.9	432.8	624.5				
Weight of Dish, gm	174.8	173.3	176.4	173.0				
Weight of Dry Soil, gm	328.8	326.6	256.4	451.5				
Wt. Ret. on #4 Sieve, gm	0.0	0.0	0.0	1.0				
Wt. Ret. on #200 Sieve, gm	228.6	232.7	102.0	298.3				
% Gravel	**0.0**	**0.0**	**0.0**	**0.2**				
% Sand	**69.5**	**71.2**	**39.8**	**65.8**				
% Silt & Clay	**30.5**	**28.8**	**60.2**	**33.9**				

Remarks: As an added benefit to our clients, the gravel fraction may be included in this report. Whether or not it is included is dependent upon both the technician's time available and if there is a significant enough amount of gravel. The gravel is always included in the percent retained on the #200 sieve but may not be weighed separately to determine the percentage, especially if there is only a trace amount, (5% or less).

Color	Yellowish Brown	Yellowish Brown	Olive Brown	Olive Brown				
Additional Description								
Modifier	Clayey	Clayey	Sandy	Clayey				
Main Descriptor	SAND	SAND	CLAY	SAND				
With								
And								
Final Description	Yellowish Brown Clayey SAND	Yellowish Brown Clayey SAND	Olive Brown Sandy CLAY	Olive Brown Clayey SAND				

Soils Report Review Letter

Application Number 191157

Attachment 6

COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT
701 OCEAN STREET, 4TH FLOOR, SANTA CRUZ, CA 95060
(831) 454-2580 FAX: (831) 454-2131 TDD: (831) 454-2123
KATHLEEN MOLLOY, PLANNING DIRECTOR

8 January 2020

Hamilton Land Planning
Attn: Deidre Hamilton
911 Center Street, Suite E
Santa Cruz, CA 95060

Subject: Review of the Preliminary Geotechnical Investigation Report for the Proposed Hospital Expansion and Parking Structure, Dominican Hospital, Santa Cruz County, CA dated 31 October 2019 by Rutherford + Chekene – Project No. 2019-070G

Project Site: 1555 Soquel Drive – Proposed Parking Garage
APN 025-481-01
Application No. REV191076

Dear Applicant:

The proposed project at 1555 Soquel Drive consists of an addition to the existing Dominican Hospital building and the construction of a detached multi-story parking garage structure. The hospital addition will be permitted by the California Office of Statewide Health Planning and Development (OSHPD). The parking structure will be permitted by the County of Santa Cruz. This geotechnical investigation report review is specific to the parking garage structure only.

The purpose of this letter is to inform you that the Planning Department has accepted the subject report for the construction of proposed parking garage. The following items shall be required:

1. All project design and construction shall comply with the recommendations of the report.

2. Final plans shall reference the subject report by title, author and date. Final Plans should also include a statement that the project shall conform to the report's recommendations.

3. After plans are prepared that are acceptable to all reviewing agencies, please submit a completed Soils (Geotechnical) Engineer Plan Review Form to Environmental Planning. The author of the soils report shall sign and stamp the completed form. Please note that the plan review form must reference the final plan set by last revision date.

   Any updates to report recommendations necessary to address conflicts between the report and plans must be provided via a separate addendum to the soils report.

Electronic copies of all forms required to be completed by the Geotechnical Engineer may be found on our website: www.sccoplanning.com, under "Environmental", "Geology & Soils", and "Assistance & Forms".

After building permit issuance the soils engineer *must remain involved with the project* during construction. Please review the Notice to Permits Holders (attached).

Our acceptance of the report is limited to its technical content. Other project issues such as zoning, fire safety, septic or sewer approval, etc. may require resolution by other agencies.

Please note that this determination may be appealed within 14 calendar days of the date of service. Additional information regarding the appeals process may be found online at: http://www.sccoplanning.com/PlanningHome/ZoningDevelopment/Appeals.aspx

If we can be of any further assistance, please contact the undersigned at (831) 454-3168 or rick.parks@santacruzcounty.us

Sincerely,

Rick

REGISTERED PROFESSIONAL ENGINEER
RICK L. PARKS
No. 2603
Exp. 8 Jan 2020
GEOTECHNICAL
STATE OF CALIFORNIA

Rick Parks, GE 2603
Civil Engineer – Environmental Planning

Cc: Rutherford + Chekene, Attn: Laurel Jing, GE
Environmental Planning, Attn: Leah MacCarter
Planning Dept: Nate MacBeth
Additional Contact: Ted Norris of Dignity Health

Attachments: Notice to Permit Holders

NOTICE TO PERMIT HOLDERS WHEN A SOILS REPORT HAS BEEN PREPARED, REVIEWED AND ACCEPTED FOR THE PROJECT

After issuance of the building permit, the County requires your soils engineer to be involved during construction. Several letters or reports are required to be submitted to the County at various times during construction. They are as follows:

1. **When a project has engineered fills and / or grading**, a letter from your soils engineer must be submitted to the Environmental Planning section of the Planning Department prior to foundations being excavated. This letter must state that the grading has been completed in conformance with the recommendations of the soils report. Compaction reports or a summary thereof must be submitted.

2. **Prior to placing concrete for foundations**, a letter from the soils engineer must be submitted to the building inspector and to Environmental Planning stating that the soils engineer has observed the foundation excavation and that it meets the recommendations of the soils report.

3. **At the completion of construction,** a *Soils (Geotechnical) Engineer Final Inspection Form* from your soils engineer is required to be submitted to Environmental Planning that includes copies of all observations and the tests the soils engineer has made during construction and is stamped and signed, certifying that the project was constructed in conformance with the recommendations of the soils report.

   If the *Final Inspection Form* identifies any portions of the project that were not observed by the soils engineer, you may be required to perform destructive testing in order for your permit to obtain a final inspection. The soils engineer then must complete and initial an *Exceptions Addendum Form* that certifies that the features not observed will not pose a life safety risk to occupants.

Water Will-Serve Letter

Application Number 191157

Attachment 7

Water Department

WATER SERVICE INFORMATION FORM

Surf City Saves
Water For Our Future

August 14, 2019

Owner: Osa Aimufua
Site Address: 1555 Soquel Dr, Live Oak
Site APN: 025-481-01
Project Description: Dominican Hospital Expansion & Parking G

Dear DIEDRE HAMILTON:

Your project is located within the City of Santa Cruz Water Service area.The subject parcel is currently a developed lot, with an existing water service, and is subject to the following conditions:

1. Please revise the utility plan (sheets C7.1 & C7.2) to note SCWD standards, details, and redlines. Once the corrections are made, resubmit the requested plans for another plan review.

   Please provide a complete list of proposed water fixtures (ex. toilets, lavatories, shower/tubs, kitchen sinks, washing machines, & outlet size to fill tanks, etc.) to confirm final domestic water meters sizes. The complete list of fixtures should include all areas of work. The domestic water service size will be determined once the fixture list is provided and fire and landscape requirements are specified.

2. Fire service as required by the Central Fire Protection District (CFPD). The size of all fire services shall be determined by CFPD. CFPD phone number: (831) 479-6843.

3. Relocate 8" PVC water main after entering into a water main extension agreement with the City of Santa Cruz Water Department.

4. A parcel map with the common area shown as a Public Utility Easement (PUE) will be required as part of the main extension agreement.

5. Dedicated irrigation service is required for residential and commercial landscaping measuring over 5,000 square feet in area. Irrigation sub-meter is required on commercial landscaping under 5,000 square feet. Irrigation service requirements determined by the Water Conservation Section.

6. Please see the attached customer handout, standard details, and list of certified water service installation contractors. All water permit fees are due prior to the issuance of the Water Service Installation Permit. All water service work must be completed for this project prior to signing off on the building permit final. The contractor shall confirm that the appropriate encroachment permit has been obtained prior to beginning work in non-City of Santa Cruz rights-of-way.

Mon 7/22/2019 2:48 PM

Yianni Charitou

RE: Water Department Questions - 1555 Soquel Dr

To 'deidre@hamiltonlandplanning.com'

Cc 'Dudley Campbell'

Dear Deidre,

Please address the following questions to better the Water Department's requirements for your proposed project at 1555 Soquel Dr.

1. Are any new water plumbing fixtures being added in the existing hospital area under renovation? If yes, can you please send me a set of floor plans that show all plumbing fixtures in the renovated areas so as to accurately size the domestic water service.
2. A fire service must be retired due to the abandoned portion of 8" water main. Will the relocated fire service proposed on the plans be the dedicated fire service for the existing hospital and for the expanded hospital or should two fire services be installed to serve the two different buildings?
3. Will the underground emergency water storage tank be used for domestic or fire service? Will the storage tank be filled once or actively drawn from?
4. Will the abandoned 8" water main be abandoned-in-place or abandoned and removed?
5. Are there any new water plumbing fixtures proposed for the new parking garage? If yes, can you please send me a set of floor plans that show all plumbing fixtures in the parking garage area. If no, a domestic water service will not be required for the parking garage and only a fire and irrigation service would be required.

Thank you for your help,

CITY OF SANTA CRUZ

Yianni Charitou
Engineering Technician
City of Santa Cruz Water Department
ycharitou@cityofsantacruz.com
Office: (831) 420-5217

Stormwater Analysis

Application Number 191157

Attachment 8

BW
BOWMAN & WILLIAMS
CONSULTING CIVIL ENGINEERS & LAND SURVEYORS
ESTABLISHED IN 1908, A CALIFORNIA CORPORATION SINCE 1974
3949 RESEARCH PARK COURT, SUITE 100 • SOQUEL, CA 95073-2049
PHONE (831) 426-3560 FAX (831) 426-9182 www.bowmanandwilliams.com

STORMWATER MANAGEMENT REPORT

For

Dignity Health
Dominican Hospital
1555 Soquel Drive
Santa Cruz, Ca 95065
APN 025-481-01 for New Surgery Center
(And APN 025-081-02 & -03 for Parking Garage)

November 18, 2019

B&W Job No. 27214
(Additions added for Calichi Design Group Project)

PROFESSIONAL ENGINEER
REGISTERED
JEFFREY R. NAESS
No. 42666
CIVIL
11/18/19
STATE OF CALIFORNIA
Jeff Naess

BASIS OF DESIGN:

1. **County of Santa Cruz Design Criteria**
2. **Improvement Plans by Bowman & Williams**

Table of Contents

1.0 PREAMBLE

The Dominican Hospital has proposed two projects designed by two separate civil engineers. Bowman and Williams prepared the design for the new hospital wing and Calichi Design Group designed the new parking garage. The following report has been prepared by Bowman and Williams with suggested modifications from Calichi Design Group to combine the two projects into one report.

**Bowman and Williams has not reviewed the Calichi design to ensure all report text is applicable to the Calichi design.

2.0 INTRODUCTION

This stormwater report has been prepared to analyze the impact of the proposed redevelopment of a portion of the Dominican Hospital Site at 1555 Soquel Drive, APN 025-481-01, 025-081-02, and 025-081-03. The 19-acre site consists of the main Hospital Building & Chapel, MRI Center, Behavior Health Building, Educational Center, Helicopter Pad and various parking lots

The project consists of adding a new Tower which will house the New Surgery Center. The new Tower will be constructed where the existing Emergency Department Parking Lot now sits. A new drop off entry and parking lot will be constructed to the east of the Tower where there is currently an existing parking lot. The new parking lot will have permeable concrete parking stalls. The project will also consist of a new 409 space parking garage with a parcel area of approximately 80,957 SF. The parking garage will be located in an existing parking area East of the main hospital building between the existing 2 clusters of medical office buildings centrally located on the East side of the campus.

The project will also be subject to treatment of runoff from impermeable surfaces. Due to the poor infiltration rates of the onsite soils for some areas, onsite runoff treatment will be obtained by utilizing onsite bio planters rather than retaining and infiltrating the 2 year 2 hour storm. Areas with sufficient infiltration capabilities shall also retain the 2 year 2 hour storm event.

The new surgical wing project will result in new and replaced impermeable surfaces totaling 71,161 square feet making it a "Large Project" per Santa Cruz County Design Criteria. The new surgical wing improvements will decrease the amount of existing permitted impermeable surface by 7,700 square feet. The parking lot garage will create and/or replace all 80,957 SF. The new improvements will decrease the impervious area by 13,842 SF. The new proposed impervious area will be 65,108 SF. Preliminary discussions with County Drainage Staff have determined that since the project is considered "Redevelopment" it will be required to provide detention for the 25 year storm while maintaining the 10 year pre development release rate. The pre-development release rate will be calculated as if the site has no impermeable surfaces on it. The detention volume will be provided utilizing the proposed onsite bio planters.

3.0 METHOD OF ANALYSIS

- The Rational Formula (shown below) is used to estimate peak runoff rates.

$$Q = C_a C i_a i A$$

Where:

Q= Estimated Peak Runoff from site (cfs)
C_a= Antecedent Moisture Factor (Unitless)
C= Runoff Coefficient (Unitless)
i_a= Rainfall Intensity Adjustment Factor (Unitless)
i =Rainfall Intensity (in/hr)
A= Area of Site (Acres)

- Infiltration testing for the new surgical wing site showed that the majority of bio planter areas had very low infiltration rates less than 0.60 in/hr. so retention and infiltration of the 2 year 2 hour storm were ruled out as a method of stormwater treatment. Bio planter 1 had an infiltration rate of 1.81 in/hr, so retention of the 2 year 2 hour storm was provided for this area. Taking stormwater from the surgery center site to the parking garage site for treatment was ruled out due to routing difficulties.

- The infiltration test results for the garage site had favorable infiltration rates, so infiltration of the 2 year 2 hour storm event shall be provided.

- Post Development Runoff Release Rates will be less than the Pre-Development Release Rate for the 10 yr. – 15 min storm.

- Precipitation data/runoff coefficients are obtained from the Santa Cruz County Design Criteria Manual. Precipitation intensity is based upon the P60 Isopleth for Santa Cruz County (see attached map).

- Due to the relatively small drainage area, the time of concentration (tc) used to determine the allowable runoff rate is assumed to be 15 minutes for pre and post development.

- The runoff values shown in the spreadsheets are calculated using the Rational Formula. Values for C are found in the County of Santa Cruz Design Criteria, a copy of these values is attached to this report.

- Antecedent Moisture factors (C_a) for the Rational Formula are found in The County of Santa Cruz Design Criteria, a copy of these values is attached to this report. C_a is 1.0 for the 2, 5, and 10-year events, and C_a is 1.1 for the 25-year event.

3.0 SYSTEM EVALUATION

- The project involves replacement and addition of more than 5,000 sf of impervious area, thus is considered a large project.

- The infiltration testing for the new surgical wing site had many areas with infiltration rates less than 0.6 in/hr. The parking garage area and the other area with favorable soils were upstream of the other areas with unfavorable infiltration rates. Due to the limited ability of these soils to percolate and the infeasibility of routing to a favorable area, we have assumed that the normal retention requirements are infeasible for those areas.

- Even though the project will decrease the existing impervious area by about 5,000 square feet, onsite detention for the 25 year storm with the 10 year pre development release rate will be required.

- The new sidewalk improvements to Dominican Way will be exempt from treatment requirements per County Design Criteria.

- The project shall incorporate site design and runoff reduction measures as follows:

  i. *Limit disturbance to creeks and natural drainage features* – The project doesn't involve disturbance to creeks or natural drainage features.

  ii. *Minimize compaction of soils.* – Compaction of soils is limited to the extent necessary to construct the proposed improvements.

  iii. *Limit clearing and grading of native vegetation at the site to the minimum area needed to build the project, allow access and provide fire protection.* – The site has been designed to maintain existing grades and limit clearing to the extent necessary to construct the proposed improvements.

iv. *Minimize impervious surfaces by concentrating improvements on the least sensitive portions of the site, while leaving the remaining land in a natural undisturbed state.* – The site has no identified sensitive regions, but the improvements are located near the existing concentration of buildings and roads in the south corner of the lot.

v. *Minimize stormwater runoff by implementing the following site design measures as feasible: (1) Direct roof, driveway, parking lot, sidewalk, walkway, patio and other impervious surfaces runoff onto vegetated areas safely away from building foundation and footing, consistent with the California Building Code. (2) Construct bike lanes, driveways, uncovered parking lots, sidewalks, walkways, patios and other hardscapes with permeable surfaces. (3) Direct roof runoff to cisterns or rain barrels for re-use.* – The proposed fire access road drains to vegetated swales to the extent possible. Due to the surface requirements of the fire access code and the accessibility code, the roadway and walkway areas are proposed conventional asphalt and concrete. Portions of the bioswale outlets will drain to the existing pond, matching the existing drainage pattern and continuing to allow reuse from the pond for agricultural uses if necessary.

- Pollutants are mitigated through the use of biofiltration treatment systems which have 6" of ponding, 24" of planting medium, and at least 12" of subsurface gravel storage. The system is sized for 4% of the impervious surface areas draining to it, reflecting the 5 inches per hour maximum surface loading rate and the 0.2 inches per hour design storm intensity. The planting medium sustains a minimum infiltration rate of 5 inches per hour and consists of a mixture of sand (60%-70%) meeting the specifications of American Society for Testing and Materials (ASTM) C33 and compost (30%-40%). Plant selection follows the Central Coast Plant Guidance for Bioretention from the Central Coast LID Initiative. No compaction of soils beneath the biofiltration facilities will be allowed. No liners or other barriers interfering with infiltration will be allowed. Due to the underlying soils which have low infiltration, a perforated pipe is proposed in the rock layer which conveys overflow to outlet control structures which then limit the release from the system to the 10 year pre-development runoff rate. This will allow the system to drain within the required 48-hour timeframe. The bioretention system will allow a minimal amount of infiltration into the underlying soil.

- Due to the required 4% treatment area, the bioswales are oversized for the 10-year detention volume requirement. Additional storage will be provided so that the volume from the 25 year storm will be detained while maintaining the 10 year pre development release rate.

- All storm drain inlets and catch basins will be marked, "No Dumping – Drains to Ocean.

- New surface parking lot spaces will be constructed with permeable concrete to reduce the amount of impervious surface and provide some retention and infiltration of storm water runoff.

4.0 SUMMARY

The tables below show summaries of areas, peak flows, and required volumes for the projects.

Treatment, Flow Rates, and Detention Volume For New Surgical Wing

Mitigation Requirement	
10 Year Pre Development Flow (CFS)*	0.87
10 Year Post Development Flow (CFS)**	2.58
Change in Runoff due to Development (CFS)	+1.71
Required 2 year - 2 hour Retention Volume (CF)	202
Provided 2 year - 2 hour Retention Volume (CF)	213
Required 25 yr Detention Volume 10 yr – 15 min (CF)	5,255
Provided 25 yr Detention Volume 10 yr – 15 min (CF)	5,709
Required Treatment Area	2,954
Provided Treatment Area	3,722

* Pre-development release rate is calculated assuming no buildings or impervious surfaces currently exist onsite.
** Post development runoff rates will be held to 10 year pre development levels

Treatment, Flow Rates, and Detention Volume For New Parking Garage

Mitigation Requirement	
10 Year Pre Development Flow (CFS)*	1.07
10 Year Post Development Flow (CFS)**	2.74
Change in Runoff due to Development (CFS)	+1.67
Required 2 year - 2 hour Retention Volume (CF)	2,981
Provided 2 year - 2 hour Retention Volume (CF)	3,060
Required 2 year - 2 hour Detention Volume (CF)	3,679
Provided 2 year - 2 hour Detention Volume (CF)	3,883
Required Treatment Area	2,791
Provided Treatment Area	2,876

* Pre-development release rate is calculated assuming no buildings or impervious surfaces currently exist onsite.
** Post development runoff rates will be held to 10 year pre development levels

5.0 CONCLUSIONS

Detention will be provided which will detain the 25-year storm while maintaining the 10 year pre development release rate. The pre-development rate will be determined as if no impervious surfaces currently exist on the site. Runoff from new or replaced impervious surfaces will be treated through the onsite bio planters. The proposed improvements will result in greatly reducing the amount of runoff currently leaving the site. It is our opinion that the mitigations for the proposed improvements will satisfy County requirements and will not cause adverse downstream effects.

6.0 DOWNSTREAM ANALYSIS

At the request of the County, Bowman and Williams has prepared a downstream analysis for the major portions of the Dominican Hospital property and the 30" RCP system starting in Soquel Drive and discharging to an open ditch in the landscaped area between Commercial Way and Highway 1. The analysis found that for the 10 year storm there is some flooding in the two catch basins along the North side of Soquel Drive. The downstream analysis is included at the end of this report.

The downstream system was videoed from the inlet on the eastern side of the hospital's westernmost entrance on Soquel Drive through the 94' section of 30" RCP to the inlet on the western side of the entrance and then through a 68' section of RCP to the inlet on the south side of Soquel Drive. The video analysis showed that the system is in good condition. The video report is included at the end of this report.

6.0 COUNTY DESIGN CRITERIA

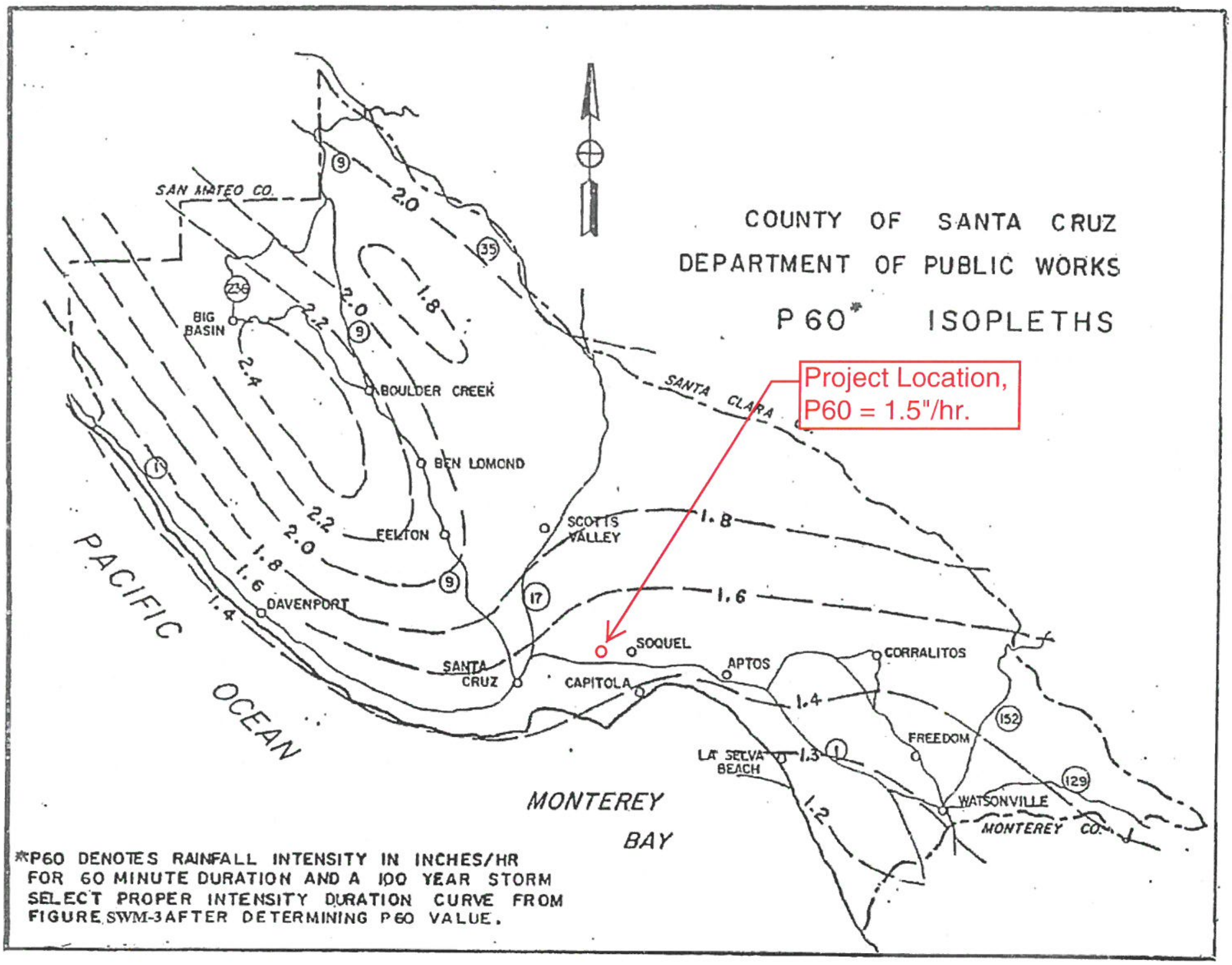
TYPE OF AREA	10- YEAR RUNOFF COEFFICIENTS
	Use C = 0.30
Rural, park, forested; agricultural	0.10 - 0.30
Low residential (Single family dwellings)	0.45 - 0.60
High residential (Multiple family dwellings)	0.65 - 0.75
Business and commercial	0.80
Industrial	0.70
	Use C = 0.90
Impervious	0.90

REQUIRED ANTECEDENT MOISTURE FACTORS (Ca) FOR THE RATIONAL METHOD*

Recurrence Interval (Years)	Ca
2 to 10	1.0
25	1.1
50	1.2
100	1.25

Note: Application of antecedent moisture factors (Ca) should not result in an adjusted runoff coefficient (C) exceeding a value of 1.00

*APWA Publication "Practices in Detention of Stormwater Runoff"



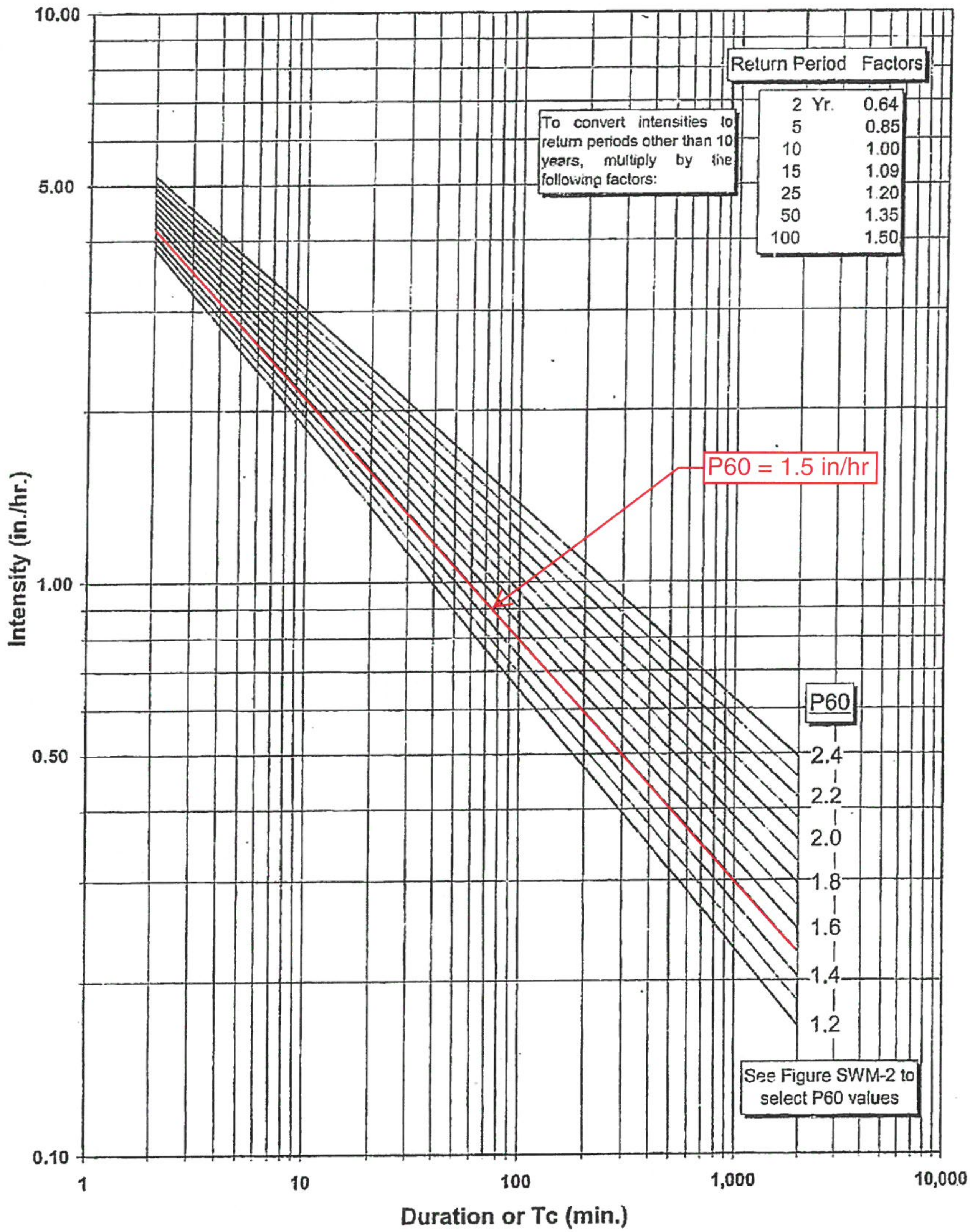
*P60 DENOTES RAINFALL INTENSITY IN INCHES/HR FOR 60 MINUTE DURATION AND A 100 YEAR STORM SELECT PROPER INTENSITY DURATION CURVE FROM FIGURE SWM-3 AFTER DETERMINING P60 VALUE.

12/05

FIG. SWM-2

Rainfall Intensity - Duration Curves
10 Yr. Return Period

((4.29112)*(1.1952)^P60_VALUE)/(DURATION^((0.60924)*(0.78522)^P60_VALUE))



Rev. 11-05

FIG. SWM-3

Figure SWM-1: 10-Year Runoff Coefficients

TYPE OF AREA	10- YEAR RUNOFF COEFFICIENTS
Rural, park, forested; agricultural	0.10 - 0.30
Low residential (Single family dwellings)	0.45 - 0.60
High residential (Multiple family dwellings)	0.65 - 0.75
Business and commercial	0.80
Industrial	0.70
Impervious	0.90

REQUIRED ANTECEDENT MOISTURE FACTORS (Ca) FOR THE RATIONAL METHOD*

Recurrence Interval (Years)	Ca
2 to 10	1.0
25	1.1
50	1.2
100	1.25

Note: Application of antecedent moisture factors (Ca) should not result in an adjusted runoff coefficient (C) exceeding a value of 1.00

*APWA Publication "Practices in Detention of Stormwater Runoff"

Figure SWM-5: Pipe and Channel Roughness Coefficients

TYPE OF CONDUIT OR CHANNEL	ROUGHNESS COEFFICIENT
Plastic (PVC, ABS, or HDPE)	0.010 to 0.012
Concrete gutters	0.015
Corrugated metal (annular corrugations)	0.024
Reinforced concrete pipe 300 to 525mm (12 to 21 in)	0.015
Reinforced concrete pipe 600 to 825mm (24 to 33 in)	0.013
Reinforced concrete pipe 900 mm (36 in) and larger	0.011
Lined channels	
Concrete	0.014
Air blown mortar	0.016
Bituminous	0.018
Sacked concrete	0.025

To determine roughness coefficients for natural channels, refer to "Handbook of Hydraulics," King & Brater; "Open-Channel Hydraulics," V.T. Chow; or "Street and Highway Drainage," Institute of Transportation, University of California.

7.0 DRAINAGE MAPS

7.1 B&W DRAINAGE MAPS

PRE-DEVELOPMENT AREAS

EXISTING BUILDINGS	167,062 SF	3.835 ACRES
EXISTING HARDSCAPE	434,060 SF	9.965 ACRES
TOTAL IMPERVIOUS AREA	601,122 SF	13.800 ACRES

GRAPHIC SCALE

100 0 50 100

(IN FEET)
1 inch = 100 ft.

BOWMAN & WILLIAMS
CONSULTING CIVIL ENGINEERS
AND LAND SURVEYORS
3949 RESEARCH PARK CT., STE. 100, SOQUEL, CA 95073
(831) 426-3560

SCALE 1" = 100'	JOB NO. 27214
DATE JUNE 5, 2019	DWG NAME PRE-DEV
DRAWN CMM	FILE NO. 27214

POST-DEVELOPMENT AREAS

EXISTING BUILDINGS	166,024 SF	3.811 ACRES
NEW BUILDING	31,921 SF	0.733 ACRES
IMPERVIOUS (HARDSCAPE)	393,432 SF	9.032 ACRES
SEMI-IMPERVIOUS (50% CREDIT)	2,050 SF	0.047 ACRES
TOTAL IMPERVIOUS AREA	593,427 SF	13.623 ACRES

GRAPHIC SCALE

100 0 50 100

(IN FEET)
1 inch = 100 ft.

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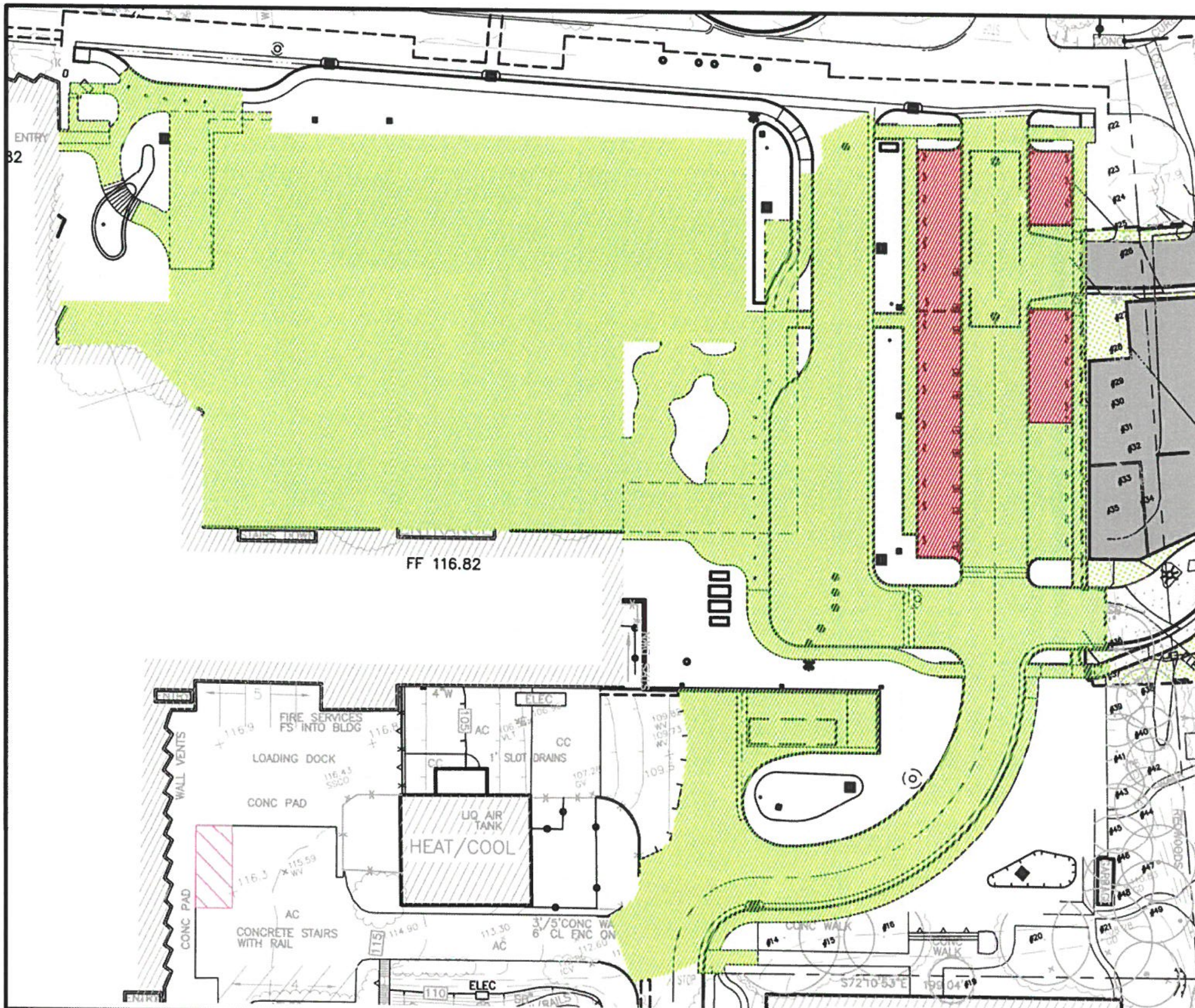
AND LAND SURVEYORS
3949 RESEARCH PARK CT., STE. 100, SOQUEL, CA 95073
(831) 426-3560

SCALE 1" = 100'	JOB NO. 27214
DATE JUNE 5, 2019	DWG NAME POST-DEV
DRAWN CMM	FILE NO. 27214



POST DEVELOPMENT

NEW IMPERVIOUS SURFACES = 69,111 SF

NEW SEMI PERVIOUS SURFACES = 4,100 SF

EQUIVALENT IMPERVIOUS SURFACE = 71,161 SF

GRAPHIC SCALE

40 0 20 40

(IN FEET)
1 inch = 40 ft.

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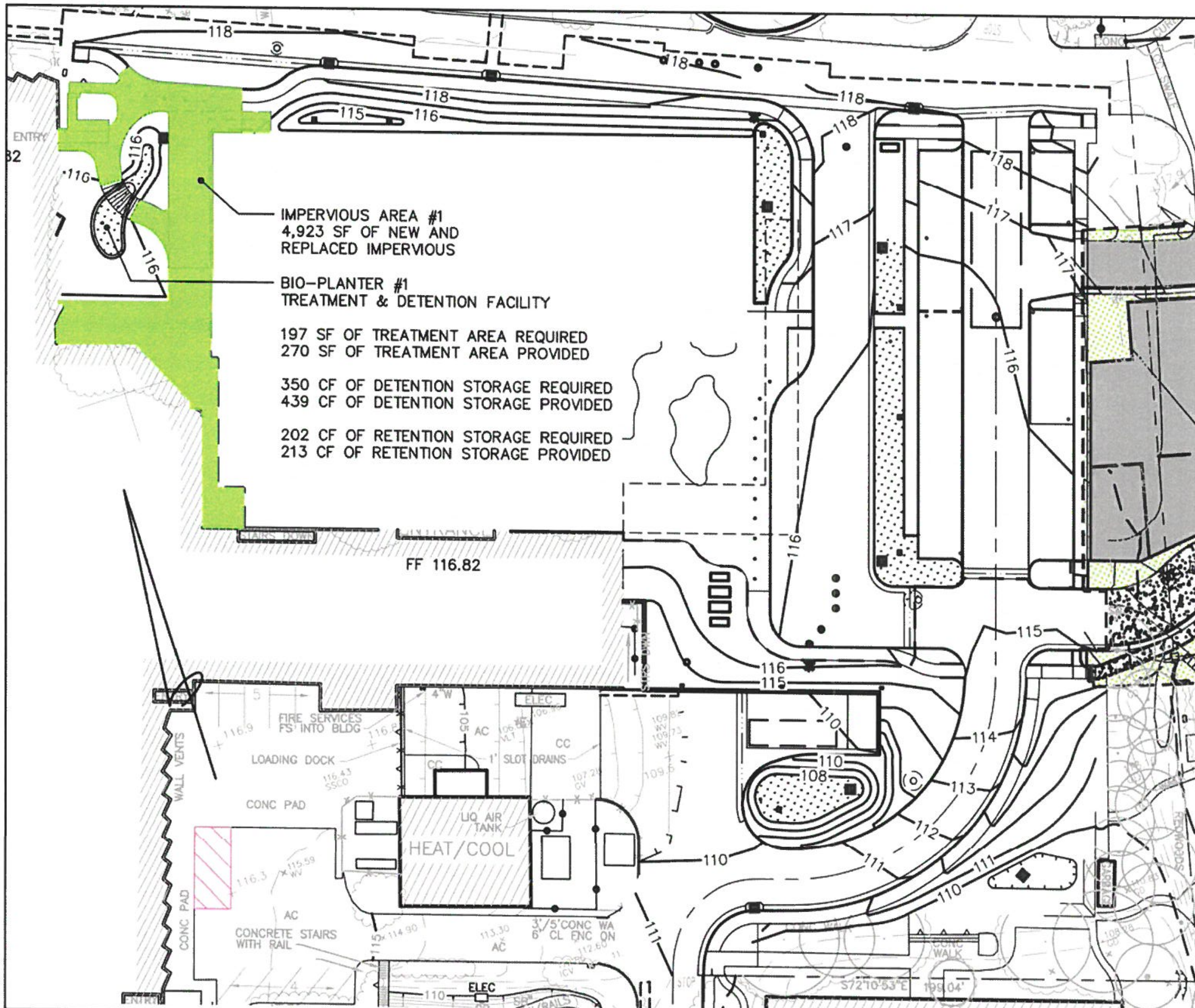
(831) 426-3560

SCALE 1" = 40'	JOB NO.
DATE	DWG NAME
DRAWN	FILE NO.



IMPERVIOUS AREA #1

4,923 SF   0.113 ACRES

TREATMENT AREA REQUIRED = (IMPERVIOUS SF)(.04) = (4,923 SF)(.04) = 197 SF

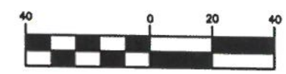
TREATMENT AREA PROVIDED = 270 SF

DETENTION REQUIRED = 350 CF

DETENTION PROVIDED = (BIOPLANTER SF)(DEPTH PONDING + DEPTH SOIL(.3) + DEPTH DRAINROCK(.35) =
(270 SF)(.5'+2'(.3)+1.5'(.35)= 439 CF

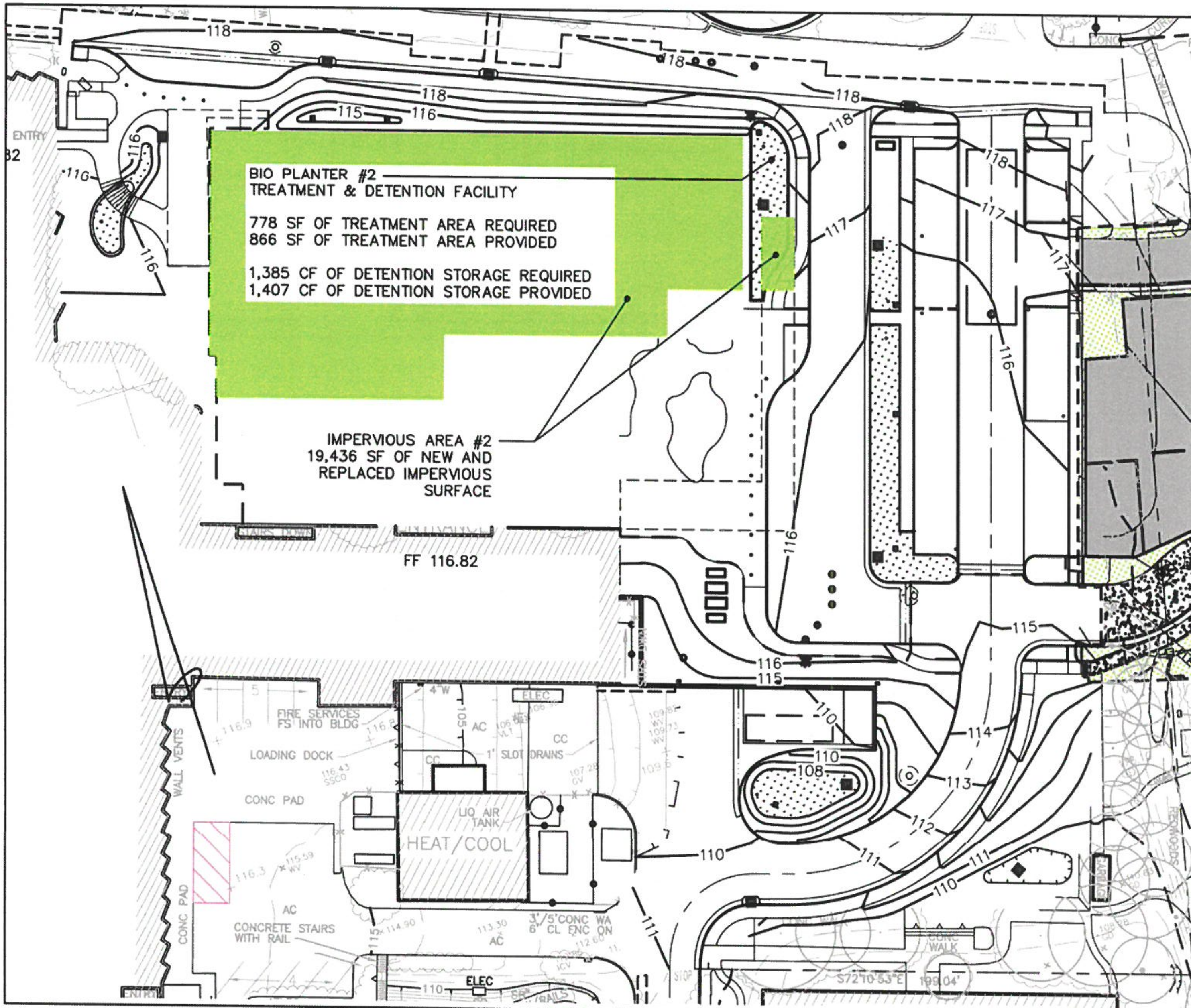
RETENTION REQUIRED = 202 CF

RETENTION PROVIDED = (BIOPLANTER SF)(DEPTH DRAINROCK(.35) =
(270 SF)(2.25'(.35)= 213 CF



BOWMAN & WILLIAMS
CONSULTING CIVIL ENGINEERS
AND LAND SURVEYORS
3949 RESEARCH PARK CT., STE. 100, SOQUEL, CA 95073
(831) 426-3560

SCALE 1" = 40'	JOB NO. 27214
DATE JUNE 5, 2019	DWG NAME DMA
DRAWN CMM	FILE NO. 27214



IMPERVIOUS AREA #2

19,436 SF 0.446 ACRES

TREATMENT AREA REQUIRED = (IMPERVIOUS SF)(.04) = (19,436)(.04) = 778 SF

TREATMENT AREA PROVIDED = 866 SF

DETENTION REQUIRED = 1,385 CF

DETENTION PROVIDED = (BIOPLANTER SF)(DEPTH PONDING + DEPTH SOIL(.3) + DEPTH DRAINROCK(.35) =
(866 SF)(.5'+2'(.3)+1.5'(.35)=1,407 CF

GRAPHIC SCALE

40 0 20 40

(IN FEET)
1 inch = 40 ft.

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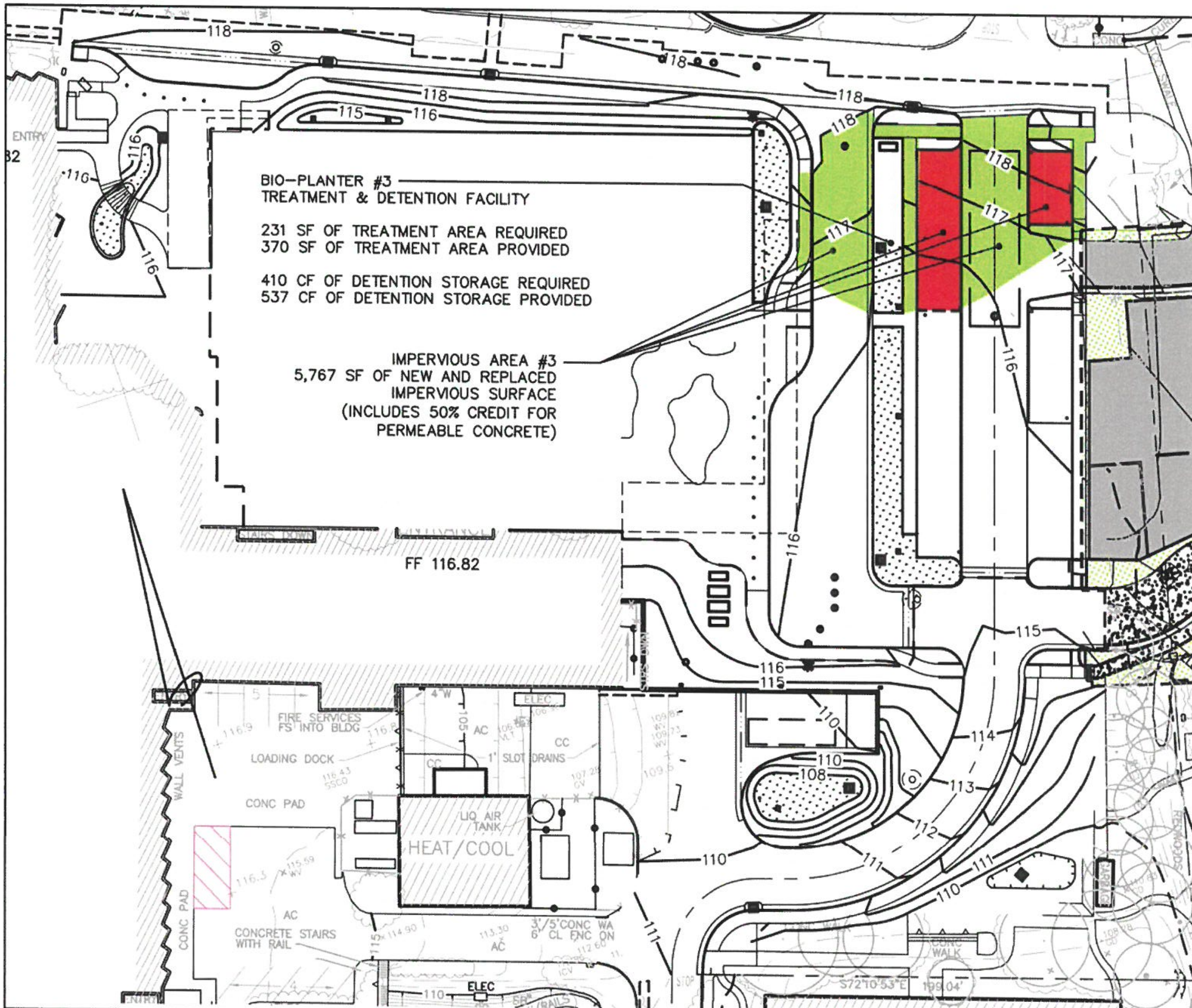
(831) 426-3560

SCALE 1" = 40'	JOB NO. 27214
DATE JUNE 5, 2019	DWG NAME DMA
DRAWN CMM	FILE NO. 27214



IMPERVIOUS AREA #3

IMPERVIOUS	4,954 SF	0.114 ACRES
SEMI-IMPERVIOUS	813 SF	0.019 ACRES
EQV. IMPERVIOUS	5,767 SF	0.130 ACRES

TREATMENT AREA REQUIRED = (IMPERVIOUS SF)(.04) = (5,767 SF)(.04) = 231 SF

TREATMENT AREA PROVIDED = 370 SF

DETENTION REQUIRED = 410 CF

DETENTION PROVIDED = (BIOPLANTER SF)(DEPTH PONDING + DEPTH SOIL(.3) + DEPTH DRAINROCK(.35) =
(370 SF)(.5'+2'(.3)+1.0'(.35)=537 CF

GRAPHIC SCALE

40 0 20 40

(IN FEET)
1 inch = 40 ft.

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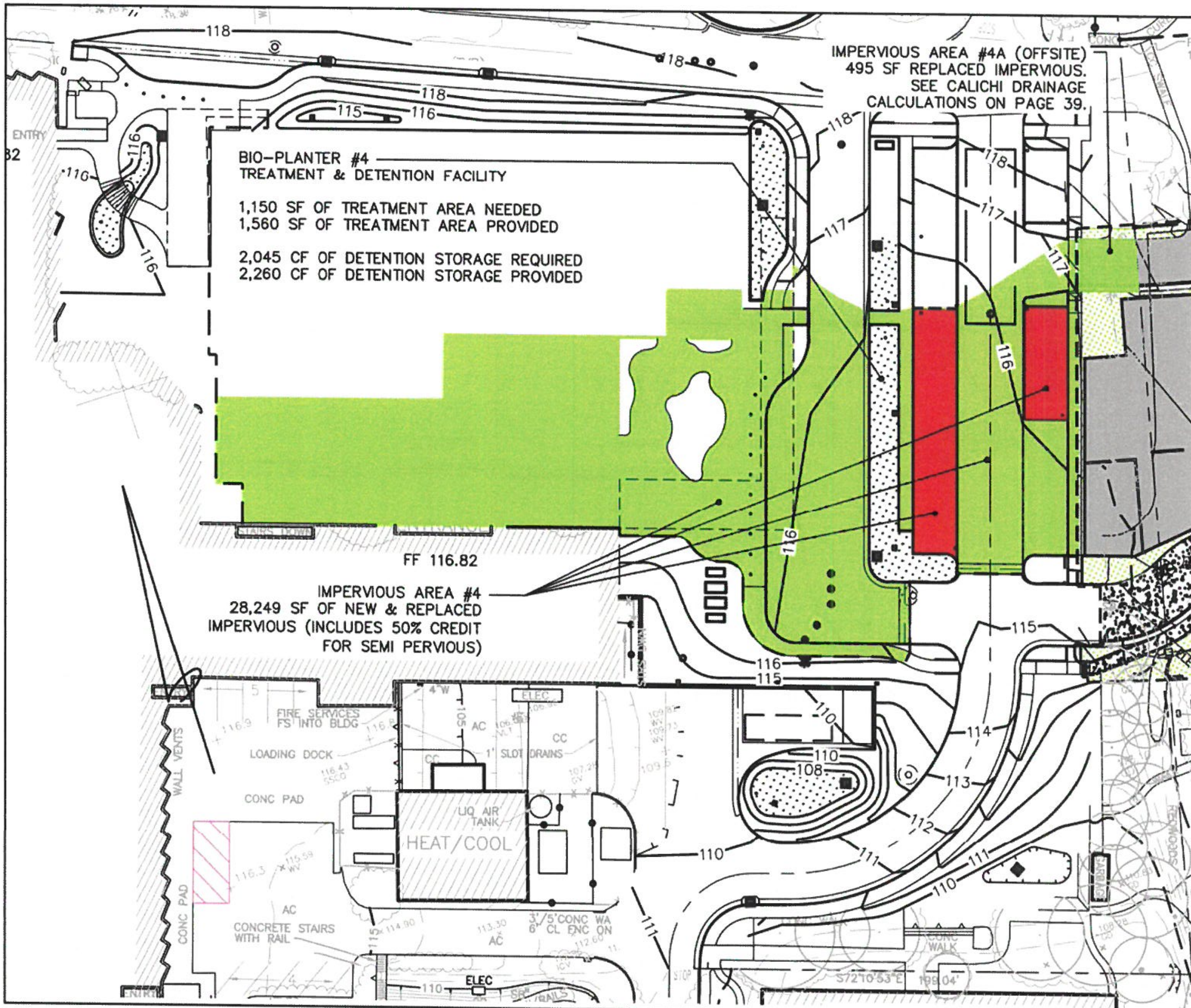
3949 RESEARCH PARK CT., STE. 100, SOQUEL, CA 95073
(831) 426-3560

SCALE 1" = 40'	JOB NO. 27214
DATE JUNE 5, 2019	DWG NAME DMA
DRAWN CMM	FILE NO. 27214



IMPERVIOUS AREA #4

IMPERVIOUS	26,963 SF	0.619 ACRES
SEMI-IMPERVIOUS	1,286 SF	0.029 ACRES
EQV. IMPERVIOUS	28,249 SF	0.648 ACRES

IMPERVIOUS AREA #4&4A

EQV. IMPERVIOUS	28,744 SF	0.660 ACRES

TREATMENT AREA REQUIRED = (IMPERVIOUS SF)(.04) = (28,744 SF)(.04) = 1,150 SF

TREATMENT AREA PROVIDED = 1,560 SF

DETENTION REQUIRED = 2,045 CF

DETENTION PROVIDED = (BIOPLANTER SF)(DEPTH PONDING + DEPTH SOIL(.3) + DEPTH DRAINROCK(.35) =
(1560 SF)(.5'+2'(.3)+1.0'(.35)=2,260 CF

GRAPHIC SCALE

40 0 20 40

(IN FEET)
1 inch = 40 ft.

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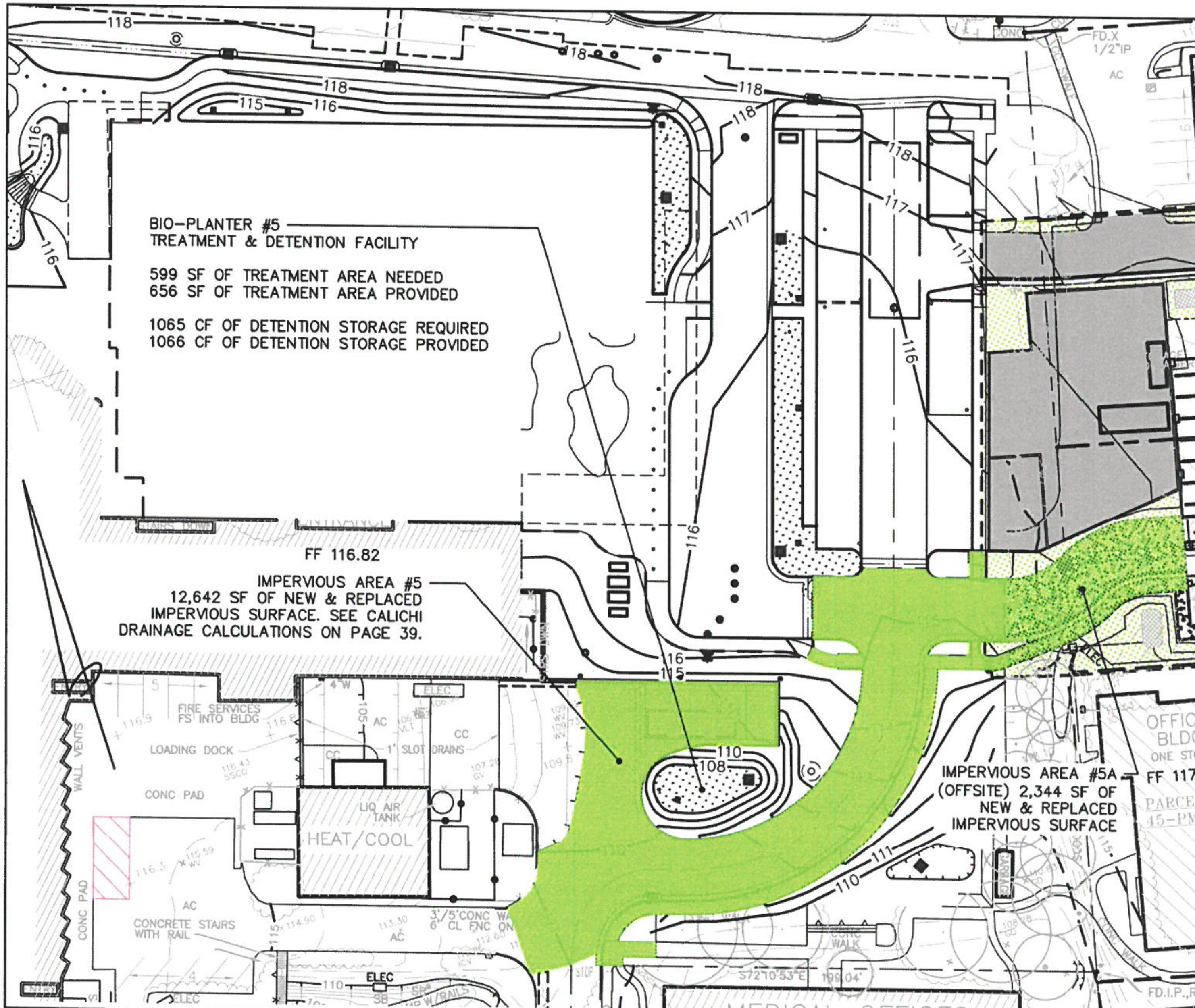
(831) 426-3560

SCALE 1" = 40'	JOB NO. 27214
DATE JUNE 5, 2019	DWG NAME DMA
DRAWN CMM	FILE NO. 27214



IMPERVIOUS AREA #5

14,986 SF 0.344 ACRES

TREATMENT AREA REQUIRED = (IMPERVIOUS SF)(.04) = (14,986SF)(.04) = 599 SF

TREATMENT AREA PROVIDED = 656 SF

DETENTION REQUIRED = 1065 CF

DETENTION PROVIDED = (BIOPLANTER SF)(DEPTH PONDING + DEPTH SOIL(.3) + DEPTH DRAINROCK(.35) = (656 SF)(.5'+2'(.3)+1.5'(.35)=1,066 CF

GRAPHIC SCALE

40 0 20 40

(IN FEET)
1 inch = 40 ft.

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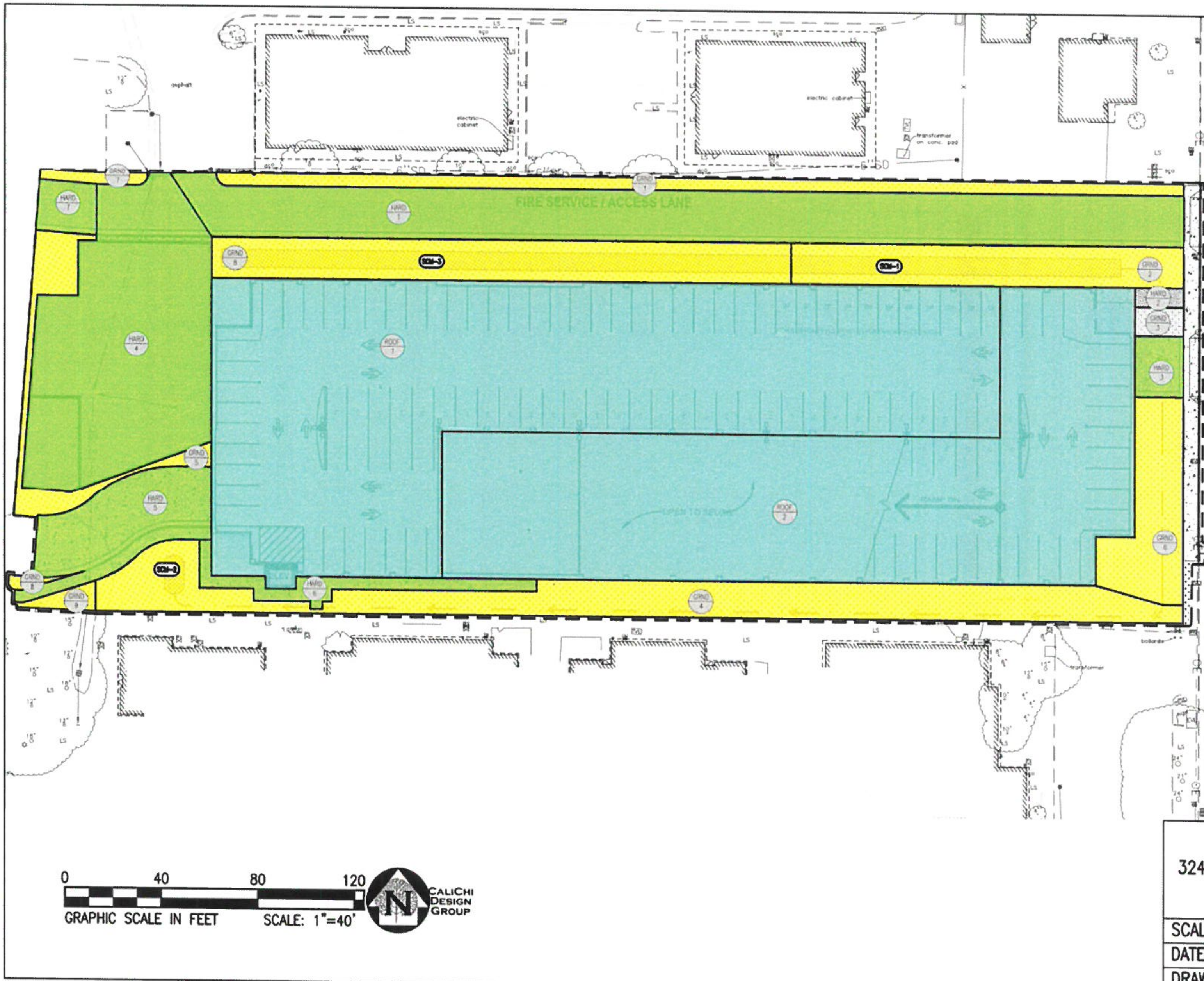
(831) 426-3560

SCALE 1" = 40'	JOB NO. 27214
DATE JUNE 5, 2019	DWG NAME DMA
DRAWN CMM	FILE NO. 27214

7.2 CALICHI DRAINAGE MAPS



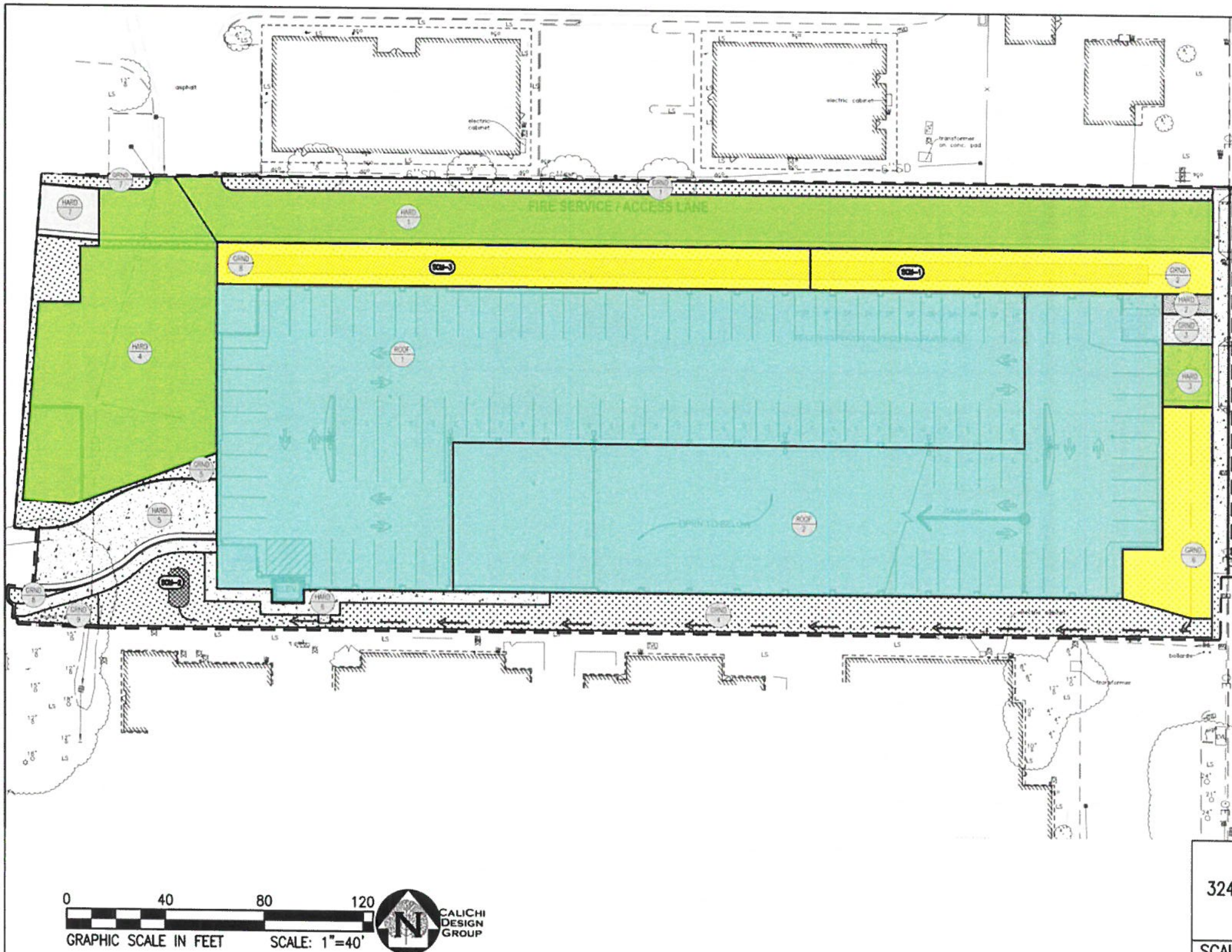
POST DEVELOPMENT

NEW IMPERVIOUS SURFACES	= 68,144 SF
NEW PERVIOUS SURFACES	= 18,812 SF
EQUIVALENT IMPERVIOUS SURFACES	= 76,147 SF

- NEW BUILDING
- IMPERVIOUS (HARDSCAPE)
- PERVIOUS AREA (30% CREDIT)

CALICHI DESIGN GROUP
3240 PERALTA STREET #3 OAKLAND, CA 94608
(510) 250-7877

SCALE 1"=40'	JOB NO.
DATE	DWG NAME
DRAWN	FILE NO.



TREATMENT:

SCM-1 AND SCM-3

IMPERVIOUS AREA TREATED = 64,355 SF
EQUIV. PERVIOUS AREA TREATED = 2,708 SF
TREATMENT AREA REQUIRED =
(BIOTREATMENT SF)(0.04) = (64,355+2,708)(0.04)
= 2,683 SF

TREATMENT AREA PROVIDED = 2,760 SF

DETENTION REQUIRED = 3,536

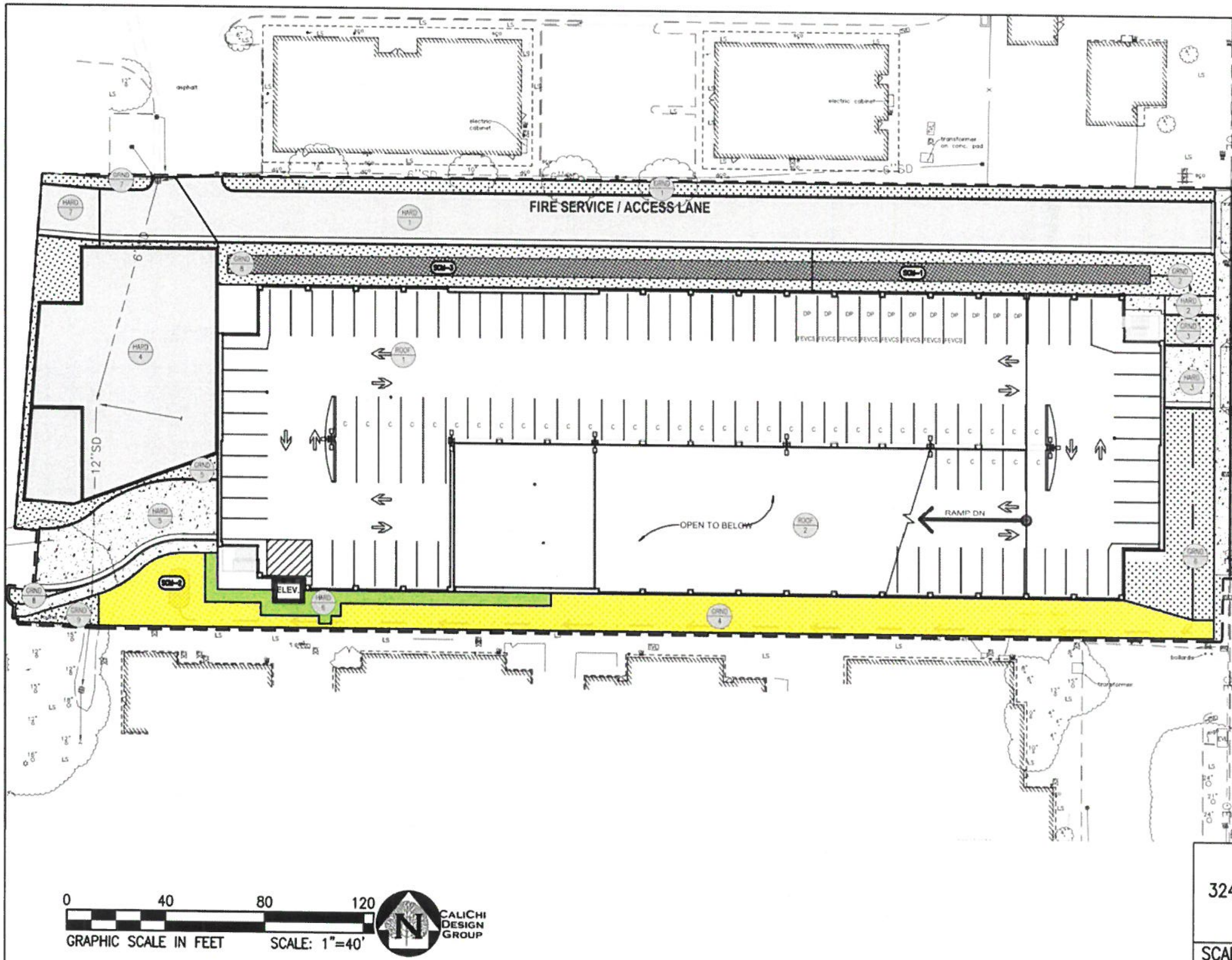
DETENTION PROVIDED = (BIOPLANTER SF)(DEPTH PONDING + DEPTH SOIL(.30) =
(2,760 SF)(.75'+2'(.30)) = 3,726 CF

RETENTION REQUIRED = 2,909 CF

RETENTION PROVIDED = (BIOPLANTER SF)(DEPTH DRAINROCK)(.35) =
(2,760 SF)(3.08')(.35) = 2,979 CF

CALICHI DESIGN GROUP
3240 PERALTA STREET #3 OAKLAND, CA 94608
(510) 250-7877

SCALE	1"=40'	JOB NO.
DATE		DWG NAME
DRAWN		FILE NO.



TREATMENT:
SCM-2

IMPERVIOUS AREA TREATED = 887 SF
EQUIV. PERVIOUS AREA TREATED = 1,830 SF
TREATMENT AREA REQUIRED =
(BIOTREATMENT SF)(0.04) = (2,432+2,080)(0.04)
= 109 SF

TREATMENT AREA PROVIDED = 116 SF

DETENTION REQUIRED = 143

DETENTION PROVIDED = (BIOPLANTER SF)(DEPTH PONDING + DEPTH SOIL(.30) =
(116 SF)(.75'+2'(.30)) = 157 CF

RETENTION REQUIRED = 72 CF

RETENTION PROVIDED = (BIOPLANTER SF)(DEPTH DRAINROCK)(.35) =
(116 SF)(2')(.35) = 81 CF

- NEW BUILDING
- IMPERVIOUS (HARDSCAPE)
- PERVIOUS AREA (30% CREDIT)

CALICHI DESIGN GROUP
3240 PERALTA STREET #3 OAKLAND, CA 94608
(510) 250-7877

SCALE	1"=40'	JOB NO.
DATE		DWG NAME
DRAWN		FILE NO.

8.0 DRAINAGE CALCULATIONS

8.1 B&W DRAINAGE CALCULATIONS

DRAINAGE CALCULATIONS FOR :
DIGNITY HEALTH - NEW SURGERY TOWER
1555 SOQUEL DRIVE, SANTA CRUZ CA 95065
BOWMAN & WILLIAMS FILE: 27214
October 30, 2019

Pre-Post Runoff Comparison (10 Year)

Pre-Development Runoff
(project is considered redevelopment, site is taken back to pre existing (no impervious surfaces)

Area Description*	Area (ft2)	Area (AC)	C	A*C
Semi-Impervious**	0	0.00	0.50	0.00
Pervious***	71161	1.63	0.30	0.49
Impervious****	0	0.00	0.90	0.00
	Total:	1.63		0.49

Return Period	I_a
2	0.64
5	0.85
10	1.00
15	1.09
25	1.20
50	1.35
100	1.50

Weighted Post Development C= 0.30

P60 Isopleth =	1.5	**(Based on Location - See County Map)**
Return Period =	10	Years
I_a =	1	**(Based on Return Period)**
C_a=	1	**(Based on Return Period)**
Tc =	15	min
Pre Development Runoff =	0.87	CFS (Based on 10 Year Storm & 15 minute time of concentration)

Post-Development Runoff (includes unpermitted structures, includes pond, excludes Hughes Rd)

Area Description*	Area (ft2)	Area (AC)	C	A*C
Semi-Impervious**	2050	0.05	0.50	0.02
Pervious***	0	0.00	0.30	0.00
Impervious****	69111	1.59	0.90	1.43
	Total:	1.63		1.45

Weighted Post Development C= 0.89

P60 Isopleth =	1.5	**(Based on Location - See County Map)**
Return Period =	10	Years
I_a =	1	**(Based on Return Period)**
C_a=	1	**(Based on Return Period)**
Tc =	15	min
Post Development Runoff =	2.58	CFS (Based on 10 Year Storm & 15 minute time of concentration)

Note: Detention for the 25 year storm with a 10 year pre development release is being required of the project therefore the post development runoff will not exceed the 10 year pre development rumoff for storms less than the 25 year occurrence.

DRAINAGE CALCULATIONS FOR :
DIGNITY HEALTH - NEW SURGERY TOWER
1555 SOQUEL DRIVE, SANTA CRUZ CA 95065
BOWMAN & WILLIAMS FILE: 27214
November 18, 2019

Drainage Mitigation-Treatment & Detention

Treatment

Area Description	Equiv. Impervious Area (SF)	4% Treatment Area (SF)	Treatment Area Provided (SF)
Area 1*	4,923	197	270
Area 2	19,436	777	866
Area 3	5,767	231	370
Area 4 & 4A	28,744	1,150	1,560
Area 5 & 5A	14,986	599	656
Total	73,856	2,954	3,722

Detention

Area Description	Equiv. Impervious Area (SF)	Detention Vol Calculated (CF)	Detention Vol Provided (CF)
Area 1	4,923	350	439
Area 2	19,436	1,385	1,407
Area 3	5,767	410	537
Area 4 & 4A	28,744	2,045	2,260
Area 5 & 5A	14,986	1,065	1,066
Total	73,856	5,255	5,709

* Area 1 has adequate infiltration rates so treatment will also be accomplished through retention.

DRAINAGE CALCULATIONS FOR :
DIGNITY HEALTH NEW SURGERY TOWER
SANTA CRUZ COUNTY, CA
BOWMAN & WILLIAMS FILE: 27214
October 30, 2019

BIOPLANTER #1 - Maintain 10 Year Pre Development Runoff Rate for a 25 Year Event

1. Basis of Calculation Based on County of Santa Cruz Design Criteria 2014, Page 85

A = Area in acres
Ia = Return Period Factor
Ca = Antecedent Moisture Factor
Cpre = Pre-developed runoff coefficient
Cpost = Post-developed runoff coefficient
t_c= Time of Concentration in minutes

Intensity (I) = ((4.29112)*(1.1952P60))/(tc^((0.60924)*(0.78522P60))*Ia
Pre Development Runoff (Q_{pre}) = Ca * Cpre * Ia * I * A / 43200
Post Development Runoff (Q_{post}) = Ca * Cpost * Ia * I * A / 43200
Required Storage Volume = (Qpost-Qpre) * Rainfall Duration * 60
Note: Maximum volume produced from a storm duration during a 24 hour event is selected for design.

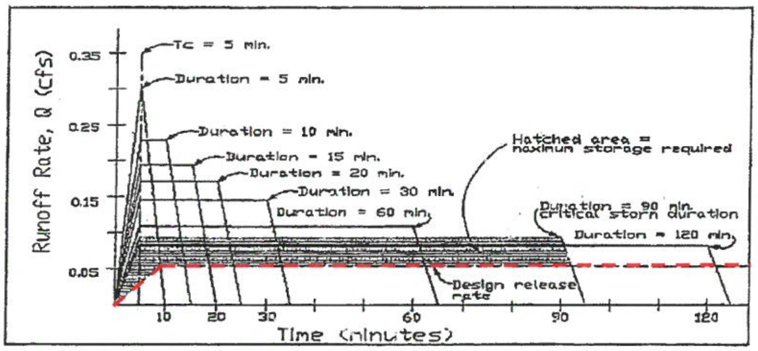


Figure 1: Sample Detention Hydrographs

2. Data

Design Rainfall Frequency =	25	Year
10 yr Pre-developed Runoff Coefficient (C_{pre}) =	0.30	(Fig. SWM-1 or from site estimate)
25 yr Post-developed Runoff Coefficient(C_{post}) =	0.99	(Fig. SWM-1 & SWM-3 or from site estimate)
Antecedent Moisture Content C_a =	1	(for 10 year storm per Fig. SWM-1)
P60 Isopleth =	1.5	(Fig. SWM-2 & SWM-3 of Design Criteria)
10 yr Detention Storm I_a =	1	(Fig. SWM-3)
25 yr Detention Storm I_a =	1.2	(Fig. SWM-3)
Pre-developed Time of Concentration =	15	minutes
Total New & Replaced Impervious Area =	4,923	sf
Factor of Safety =	1.25	

3. Detention Calculations

Maintain 10 Year Pre Development Rate for a 25 year Event				DETENTION @ 15 MIN.
Rainfall Duration (min)	10 Year Intensity (in/hr)	Pre-Development 10 year Q_{pre} (cfs)	Post-Development 25 year Q_{post} (cfs)	Require Storage Volume (cf)
1440	0.257	0.009	0.035	-2249
1200	0.278	0.009	0.038	-1673
960	0.305	0.010	0.041	-1124
720	0.345	0.012	0.047	-611
480	0.409	0.014	0.055	-155
360	0.462	0.016	0.063	39
240	0.549	0.019	0.074	195
120	0.737	0.025	0.100	**280**
90	0.832	0.028	0.113	280
60	0.988	0.034	0.134	263
45	1.117	0.038	0.151	244
30	1.326	0.045	0.180	214
20	1.575	0.054	0.213	183
15	1.779	**0.061**	0.241	162
10	2.113	0.072	0.286	135
5	2.834	0.097	0.384	97

Required Storage =	**280**
Required Storage With 1.25 Safety Factor =	**350**

DRAINAGE CALCULATIONS FOR :
DIGNITY HEALTH NEW SURGERY TOWER
SANTA CRUZ COUNTY, CA
BOWMAN & WILLIAMS FILE: 27214
October 30, 2019

BIOPLANTER #2 - Maintain 10 Year Pre Development Runoff Rate for a 25 Year Event

1. Basis of Calculation Based on County of Santa Cruz Design Criteria 2014, Page 85

A = Area in acres
Ia = Return Period Factor
Ca = Antecedent Moisture Factor
Cpre = Pre-developed runoff coefficient
Cpost = Post-developed runoff coefficient
t_c= Time of Concentration in minutes

Intensity (I) = ((4.29112)*(1.1952P60))/(tc^((0.60924)*(0.78522P60))*Ia
Pre Development Runoff (Q_{pre}) = Ca * Cpre * Ia * I * A / 43200
Post Development Runoff (Q_{post}) = Ca * Cpost * Ia * I * A / 43200
Required Storage Volume = (Qpost-Qpre) * Rainfall Duration * 60
Note: Maximum volume produced from a storm duration during a 24 hour event is selected for design.

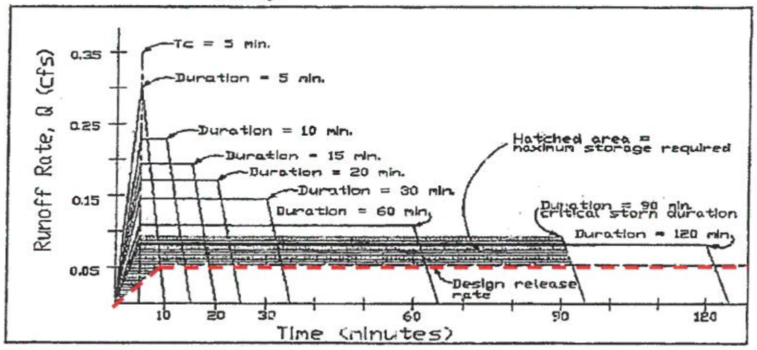


Figure 1: Sample Detention Hydrographs

2. Data

Design Rainfall Frequency =	25	Year
10 yr Pre-developed Runoff Coefficient (C_{pre}) =	0.30	(Fig. SWM-1 or from site estimate)
25 yr Post-developed Runoff Coefficient(C_{post}) =	0.99	(Fig. SWM-1 & SWM-3 or from site estimate)
Antecedent Moisture Content C_a =	1	(for 10 year storm per Fig. SWM-1)
P60 Isopleth =	1.5	(Fig. SWM-2 & SWM-3 of Design Criteria)
10 yr Detention Storm I_a =	1	(Fig. SWM-3)
25 yr Detention Storm I_a =	1.2	(Fig. SWM-3)
Pre-developed Time of Concentration =	15	minutes
Total New & Replaced Impervious Area =	19,436	sf
Factor of Safety =	1.25	

3. Detention Calculations

Maintain 10 Year Pre Development Rate for a 25 year Event				DETENTION @ 15 MIN.
Rainfall Duration (min)	10 Year Intensity (in/hr)	Pre-Development 10 year Q_{pre} (cfs)	Post-Development 25 year Q_{post} (cfs)	Require Storage Volume (cf)
1440	0.257	0.035	0.137	-8879
1200	0.278	0.037	0.148	-6605
960	0.305	0.041	0.163	-4436
720	0.345	0.047	0.184	-2413
480	0.409	0.055	0.219	-614
360	0.462	0.062	0.247	153
240	0.549	0.074	0.294	769
120	0.737	0.099	0.394	**1107**
90	0.832	0.112	0.445	1106
60	0.988	0.133	0.528	1038
45	1.117	0.151	0.597	963
30	1.326	0.179	0.709	844
20	1.575	0.213	0.842	722
15	1.779	**0.240**	0.951	640
10	2.113	0.285	1.129	533
5	2.834	0.383	1.515	382

Required Storage =	**1107**
Required Storage With 1.25 Safety Factor =	**1385**

DRAINAGE CALCULATIONS FOR :
DIGNITY HEALTH NEW SURGERY TOWER
SANTA CRUZ COUNTY, CA
BOWMAN & WILLIAMS FILE: 27214
October 30, 2019

BIOPLANTER #3 - Maintain 10 Year Pre Development Runoff Rate for a 25 Year Event

1. Basis of Calculation Based on County of Santa Cruz Design Criteria 2014, Page 85

A = Area in acres
Ia = Return Period Factor
Ca = Antecedent Moisture Factor
Cpre = Pre-developed runoff coefficient
Cpost = Post-developed runoff coefficient
t_c= Time of Concentration in minutes

Intensity (I) = ((4.29112)*(1.1952P60))/(tc^((0.60924)*(0.78522P60))*Ia
Pre Development Runoff (Q_{pre}) = Ca * Cpre * Ia * I * A / 43200
Post Development Runoff (Q_{post}) = Ca * Cpost * Ia * I * A / 43200
Required Storage Volume = (Qpost-Qpre) * Rainfall Duration * 60
Note: Maximum volume produced from a storm duration during a 24 hour event is selected for design.

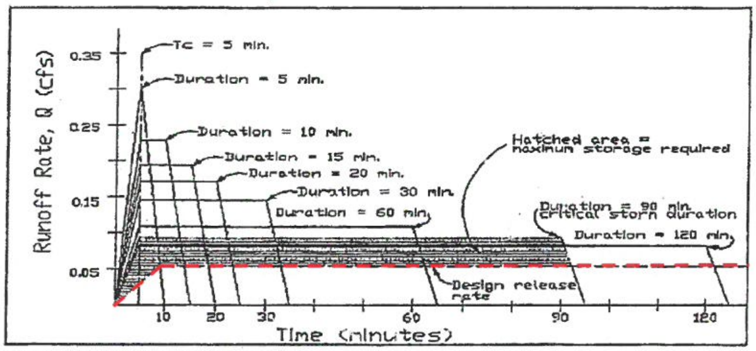


Figure 1: Sample Detention Hydrographs

2. Data

Design Rainfall Frequency =	25	Year
10 yr Pre-developed Runoff Coefficient (C_{pre}) =	0.30	(Fig. SWM-1 or from site estimate)
25 yr Post-developed Runoff Coefficient(C_{post}) =	0.99	(Fig. SWM-1 & SWM-3 or from site estimate)
Antecedent Moisture Content C_a =	1	(for 10 year storm per Fig. SWM-1)
P60 Isopleth =	1.5	(Fig. SWM-2 & SWM-3 of Design Criteria)
10 yr Detention Storm I_a =	1	(Fig. SWM-3)
25 yr Detention Storm I_a =	1.2	(Fig. SWM-3)
Pre-developed Time of Concentration =	15	minutes
Total New & Replaced Impervious Area =	5,767	sf
Factor of Safety =	1.25	
500		

3. Detention Calculations

Maintain 10 Year Pre Development Rate for a 25 year Event				DETENTION @ 15 MIN.
Rainfall Duration (min)	10 Year Intensity (in/hr)	Pre-Development 10 year Q_{pre} (cfs)	Post-Development 25 year Q_{post} (cfs)	Require Storage Volume (cf)
1440	0.257	0.010	0.041	-2635
1200	0.278	0.011	0.044	-1960
960	0.305	0.012	0.048	-1316
720	0.345	0.014	0.055	-716
480	0.409	0.016	0.065	-182
360	0.462	0.019	0.073	45
240	0.549	0.022	0.087	228
120	0.737	0.030	0.117	**328**
90	0.832	0.033	0.132	328
60	0.988	0.040	0.157	308
45	1.117	0.045	0.177	286
30	1.326	0.053	0.210	250
20	1.575	0.063	0.250	214
15	1.779	**0.071**	0.282	190
10	2.113	0.085	0.335	158
5	2.834	0.114	0.449	113

Required Storage =	**328**
Required Storage With 1.25 Safety Factor =	**410**

DRAINAGE CALCULATIONS FOR :
DIGNITY HEALTH NEW SURGERY TOWER
SANTA CRUZ COUNTY, CA
BOWMAN & WILLIAMS FILE: 27214
November 15, 2019

BIOPLANTER #4 - Maintain 10 Year Pre Development Runoff Rate for a 25 Year Event

1. Basis of Calculation Based on County of Santa Cruz Design Criteria 2014, Page 85

A = Area in acres
Ia = Return Period Factor
Ca = Antecedent Moisture Factor
Cpre = Pre-developed runoff coefficient
Cpost = Post-developed runoff coefficient
t_c= Time of Concentration in minutes

Intensity (I) = ((4.29112)*(1.1952P60))/(tc^((0.60924)*(0.78522P60))*Ia
Pre Development Runoff (Q_{pre}) = Ca * Cpre * Ia * I * A / 43200
Post Development Runoff (Q_{post}) = Ca * Cpost * Ia * I * A / 43200
Required Storage Volume = (Qpost-Qpre) * Rainfall Duration * 60
Note: Maximum volume produced from a storm duration during a 24 hour event is selected for design.

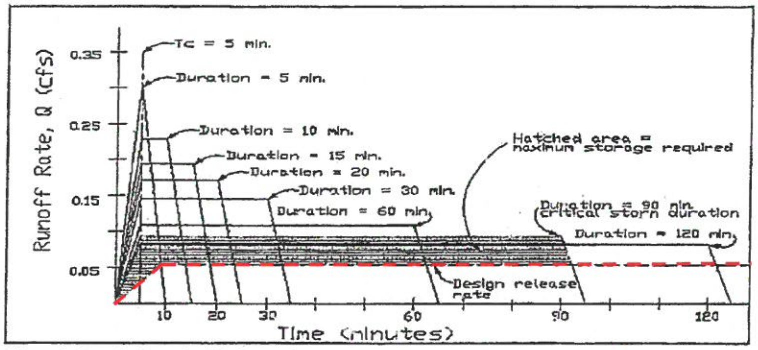


Figure 1: Sample Detention Hydrographs

2. Data

Design Rainfall Frequency =	25	Year
10 yr Pre-developed Runoff Coefficient (C_{pre}) =	0.30	(Fig. SWM-1 or from site estimate)
25 yr Post-developed Runoff Coefficient(C_{post}) =	0.99	(Fig. SWM-1 & SWM-3 or from site estimate)
Antecedent Moisture Content C_a =	1	(for 10 year storm per Fig. SWM-1)
P60 Isopleth =	1.5	(Fig. SWM-2 & SWM-3 of Design Criteria)
10 yr Detention Storm I_a =	1	(Fig. SWM-3)
25 yr Detention Storm I_a =	1.2	(Fig. SWM-3)
Pre-developed Time of Concentration =	15	minutes
Total New & Replaced Impervious Area =	28,744	sf
Factor of Safety =	1.25	

3. Detention Calculations

Maintain 10 Year Pre Development Rate for a 25 year Event				DETENTION @ 15 MIN.
Rainfall Duration (min)	10 Year Intensity (in/hr)	Pre-Development 10 year Q_{pre} (cfs)	Post-Development 25 year Q_{post} (cfs)	Require Storage Volume (cf)
1440	0.257	0.051	0.203	-13132
1200	0.278	0.055	0.219	-9768
960	0.305	0.061	0.241	-6560
720	0.345	0.069	0.272	-3569
480	0.409	0.082	0.324	-908
360	0.462	0.092	0.366	226
240	0.549	0.110	0.434	1138
120	0.737	0.147	0.582	**1637**
90	0.832	0.166	0.658	1635
60	0.988	0.197	0.781	1534
45	1.117	0.223	0.883	1424
30	1.326	0.265	1.048	1248
20	1.575	0.314	1.245	1068
15	1.779	**0.355**	1.406	946
10	2.113	0.422	1.670	789
5	2.834	0.566	2.240	566

Required Storage =	**1637**
Required Storage With 1.25 Safety Factor =	**2045**

DRAINAGE CALCULATIONS FOR :
DIGNITY HEALTH NEW SURGERY TOWER
SANTA CRUZ COUNTY, CA
BOWMAN & WILLIAMS FILE: 27214
October 30, 2019

BIOPLANTER #5 - Maintain 10 Year Pre Development Runoff Rate for a 25 Year Event

1. Basis of Calculation Based on County of Santa Cruz Design Criteria 2014, Page 85

A = Area in acres
Ia = Return Period Factor
Ca = Antecedent Moisture Factor
Cpre = Pre-developed runoff coefficient
Cpost = Post-developed runoff coefficient
t_c= Time of Concentration in minutes

Intensity (I) = ((4.29112)*(1.1952P60))/(tc^((0.60924)*(0.78522P60))*Ia
Pre Development Runoff (Q_{pre}) = Ca * Cpre * Ia * I * A / 43200
Post Development Runoff (Q_{post}) = Ca * Cpost * Ia * I * A / 43200
Required Storage Volume = (Qpost-Qpre) * Rainfall Duration * 60
Note: Maximum volume produced from a storm duration during a 24 hour event is selected for design.

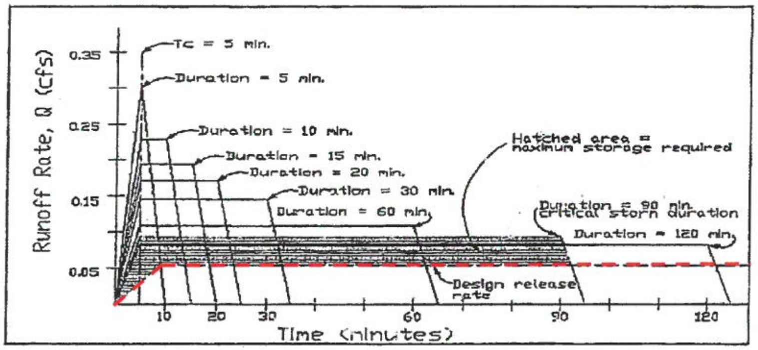


Figure 1: Sample Detention Hydrographs

2. Data

Design Rainfall Frequency =	25	Year
10 yr Pre-developed Runoff Coefficient (C_{pre}) =	0.30	(Fig. SWM-1 or from site estimate)
25 yr Post-developed Runoff Coefficient(C_{post}) =	0.99	(Fig. SWM-1 & SWM-3 or from site estimate)
Antecedent Moisture Content C_a =	1	(for 10 year storm per Fig. SWM-1)
P60 Isopleth =	1.5	(Fig. SWM-2 & SWM-3 of Design Criteria)
10 yr Detention Storm I_a =	1	(Fig. SWM-3)
25 yr Detention Storm I_a =	1.2	(Fig. SWM-3)
Pre-developed Time of Concentration =	15	minutes
Total New & Replaced Impervious Area =	14,986	sf
Factor of Safety =	1.25	

3. Detention Calculations

Maintain 10 Year Pre Development Rate for a 25 year Event				DETENTION @ 15 MIN.
Rainfall Duration (min)	10 Year Intensity (in/hr)	Pre-Development 10 year Q_{pre} (cfs)	Post-Development 25 year Q_{post} (cfs)	Require Storage Volume (cf)
1440	0.257	0.027	0.106	-6846
1200	0.278	0.029	0.114	-5093
960	0.305	0.032	0.126	-3420
720	0.345	0.036	0.142	-1861
480	0.409	0.043	0.169	-473
360	0.462	0.048	0.191	118
240	0.549	0.057	0.226	593
120	0.737	0.077	0.304	**853**
90	0.832	0.087	0.343	853
60	0.988	0.103	0.407	800
45	1.117	0.116	0.460	743
30	1.326	0.138	0.546	650
20	1.575	0.164	0.649	557
15	1.779	**0.185**	0.733	493
10	2.113	0.220	0.871	411
5	2.834	0.295	1.168	295

Required Storage =	**853**
Required Storage With 1.25 Safety Factor =	**1065**

PROJECT: BIOPLANTER 1 DIGNITY HEALTH NEW SURGERY TOWER - APN: 025-481-01 **Calc by:** KAB **Date:** 10/29/2019

RUNOFF RETENTION BY THE STORAGE PERCOLATION METHOD

Data Entry: PRESS TAB KEY & ENTER DESIGN VALUES

Site Location P60 Isopleth:	1.50	Fig. SWM-2
Rational Coefficients Cpre:	0.30	
Cpost:	0.99	
Impervious Area:	4923	ft^2
Saturated Soil Permeability:	1.81	in/hr

Notes & Limitations on Use:

SS Ver:1.0

Saturated soil permeability values may be used conservatively from the USDA-NRCS soil survey, or use actual test values.
Site selection and design shall give proper consideration to the path for excess flows downstream of the designated retention area.
Retention site location on, or immediately above, slopes exceeding 15% will require consulting a geotechnical engineer.
Gravel packed structures shall use washed, angular, uniformly graded aggregate providing not less than 35% void space.
Refer to the County of Santa Cruz Design Criteria, Stormwater Management - Section H, for complete method criteria.

2 - YEAR DESIGN STORM				RETENTION @ 120 MIN.		DETENTION @ 60 MIN.	
Storm Duration (min)	2 - Year Intensity (in/hr)	Qpre (cfs)	Qpost (cfs)	Retention Rate To Storage (cfs)	Specified Retained Volume (cf)	Detention Rate To Storage (cfs)	Specified Detained Volume (cf)
1440	0.16	0.006	0.019	0.002	-773	-0.003	-266
1200	0.18	0.006	0.020	0.004	-531	-0.002	-114
960	0.20	0.007	0.022	0.006	-304	0.000	23
720	0.22	0.008	0.025	0.009	-98	0.003	141
480	0.26	0.009	0.030	0.013	76	0.008	228
360	0.30	0.010	0.033	0.017	144	0.012	254
240	0.35	0.012	0.040	0.024	191	0.018	260
180	0.40	0.014	0.045	0.029	202	0.023	250
120	0.47	0.016	0.053	0.037	198	0.032	227
90	0.53	0.018	0.060	0.044	188	0.038	208
60	0.63	0.022	0.071	0.055	168	0.050	179
45	0.71	0.024	0.081	0.065	152	0.059	159
30	0.85	0.029	0.096	0.080	130	0.074	133
20	1.01	0.034	0.114	0.098	110	0.092	110
15	1.14	0.039	0.128	0.112	96	0.107	96
10	1.35	0.046	0.153	0.136	79	0.131	79
5	1.81	0.062	**0.205**	0.189	56	0.183	55

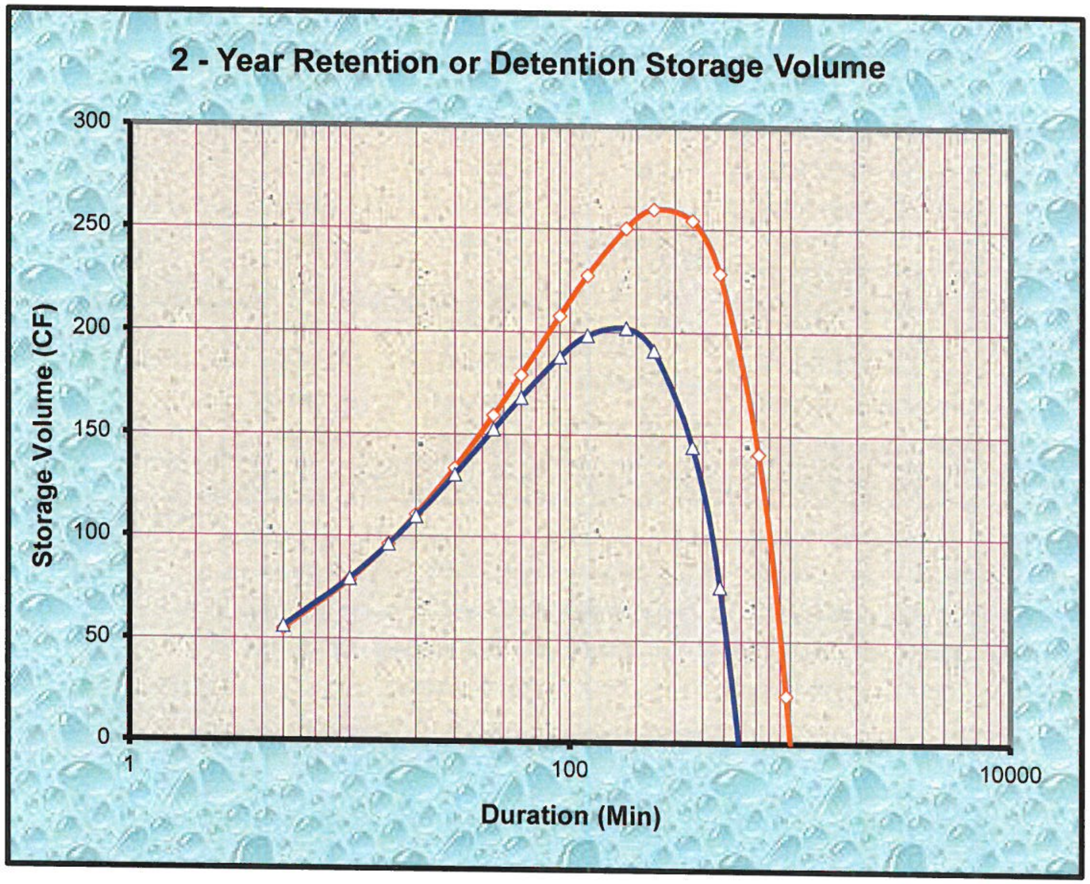
STRUCTURE DIMENSIONS FOR RETENTION

202	ft^3 storage volume calculated		
35	% void space assumed		
577	ft^3 excavated volume needed		
Structure	Length	Width*	Depth* #
Ratios	27.00	10.00	2.25
Dimen. (ft)	**26.54**	**9.83**	**2.21**
422	ft^2 internal surface area		
295	ft^2 effective surface area		
4.5	hrs estimated structure drainage time		

* For pipe, use the square root of the sectional area.
\# If cell values displayed are corrupted, enter zero for depth, then re-enter a positive numeric value within allowed range.

STRUCTURE DIMENSIONS FOR DETENTION

260	ft^3 storage volume calculated		
100	% void space assumed		
260	ft^3 excavated volume needed		
Structure	Length	Width*	Depth*
Ratios	27.00	10.00	1.00
Dimen. (ft)	**26.65**	**9.87**	**0.99**



2 - Year Retention or Detention Storage Volume
Storage Volume (CF)
300
250
200
150
100
50
0
1
100
10000
Duration (Min)

8.2 CALICHI DRAINAGE CALCULATIONS

DRAINAGE CALCULATIONS FOR:
DIGNITY HEALTH - DOMINICAN PARKING GARAGE
1555 SOQUEL DRIVE, SANTA CRUZ CA 95065
CALICHI DESIGN GROUP
November 06, 2019

Pre-Post Runoff Comparison (10 Year)

Pre Development Runoff

(Project is considered revdelopment, site is taken back to pre-existing (no impervious surfaces)

Area Description	Area (ft2)	Area (AC)	C	A*C
Semi-Impervious	0	0.00	0.5	0.00
Pervious	86956	2.00	0.3	0.60
Impervious	0	0.00	0.9	0.00
	Total:	2.00		0.60

Return Period	Ia
2	0.65
5	0.85
10	1
15	1.09
25	1.2
50	1.35
100	1.5

Weighted Post Development C = 0.3

P60 Isopleth =	1.5	**(Based on Location - See County Map)**
Return Period =	10	Years
Ia =	1	**(Based on Return Period)**
Ca =	1	**(Based on Return Period)**
Tc =	15	min
I =	1.78	in/hr at 15 minute time of concentration
Pre Development Runoff =	1.07	CFS (Based on 10 Year Storm & 15 minute time of concentration)

Post Development Runoff

Area Description	Area (ft2)	Area (AC)	C	A*C
Semi-Impervious	0	0.00	0.5	0.00
Pervious	18812	0.43	0.3	0.13
Impervious	68144	1.56	0.9	1.41
	Total:	2.00		1.54

Weighted Post Development C = 0.77

P60 Isopleth =	1.5	**(Based on Location - See County Map)**
Return Period =	10	Years
Ia =	1	**(Based on Return Period)**
Ca =	1	**(Based on Return Period)**
Tc =	15	min
I =	1.78	in/hr at 15 minute time of concentration
Post Development Runoff =	2.74	CFS (Based on 10 Year Storm & 15 minute time of concentration)

Note: Detention for the 25 year storm with a 10 year pre-development release is being required of the project therefor the post development runoff will not exceed the 10 year pre-development runoff for storms less than the 25 year occurrence.

DRAINAGE CALCULATIONS FOR:
DIGNITY HEALTH - DOMINICAN PARKING GARAGE
1555 SOQUEL DRIVE, SANTA CRUZ CA 95065
CALICHI DESIGN GROUP
November 06, 2019

Drainage Mitigation-Treatment and Retention/Detention

Treatment

Area Description	Equiv. Impervious Area (SF)	Pervious Area	Equiv. Pervious Area (30% Credit)	4% Treatment Area (SF)	Treament Facility
Roof-2	20343			814	SCM-1
Hardscape-2	158			6	SCM-1
Hardscape-3	501			20	SCM-1
Ground-2		3501	1050.3	42	SCM-1
Ground-3		235	70.5	3	SCM-1
Ground-6		2035	610.5	24	SCM-1
Hardscape-6	887			35	SCM-2
Ground-4		6101	1830.3	73	SCM-2
Roof-1	26022			1041	SCM-3
Hardscape-1	9595			384	SCM-3
Hardscape-4	7736			309	SCM-4
Ground-8		3257	977.1	39	SCM-3
Hardscape-5	2389			96	SEE B&W PLANS FOR TREATMENT OPTION
Hardscape-7	513			21	SEE B&W PLANS FOR TREATMENT OPTION
Ground-8		85	25.5	1	SEE B&W PLANS FOR TREATMENT OPTION
Ground-9		227	68.1	3	SEE B&W PLANS FOR TREATMENT OPTION
Ground-1		1936			Self-Treating
Ground-5		1223			Self-Treating
Ground-7		212			Self-Treating
Total	68144	18812	4632	2911	

DRAINAGE CALCULATIONS FOR:
DIGNITY HEALTH - DOMINICAN PARKING GARAGE
1555 SOQUEL DRIVE, SANTA CRUZ CA 95065
CALICHI DESIGN GROUP
November 06, 2019

Drainage Mitigation-Treatment and Retention/Detention

Treatment Area

Treatment Area Description	Area Entering in Treatment Area	BMP Area Required	BMP Area Provided
SCM-1	Roof-2, Hardscape-2, Hardscape-5, Hardscape-6, Ground-4, Ground-5	909	966
SCM-2	Hardscape-6, Ground-4	109	116
SCM-3	Roof-1, Hardscape-1, Hardscape-4, Ground-8	1773	1794
SEE B&W PLANS	Hardscape-5, Hardscape-7, Ground-8, Ground-9	120	SEE B&W PLANS
Ground-1 (Self-Treating)	Ground-1	1936	1936
Ground-5 (Self-Treating)	Ground-5	1223	1223
Ground-7 (Self-Treating)	Ground-7	212	212

DRAINAGE CALCULATIONS FOR:
DIGNITY HEALTH - DOMINICAN PARKING GARAGE
1555 SOQUEL DRIVE, SANTA CRUZ CA 95065
CALICHI DESIGN GROUP
November 06, 2019

Drainage Mitigation-Treatment and Retention/Detention, Cont.

Retention for BMP-1 and 3

	Cubic Feet	
Required Retention =	2909	**(Based on Santa Cruz County SWM24 Spreadsheet, See attached)**
Retention Provided in Biotreatment Planters =	2979	**Retention provided=** (Total Biotreatment Planter SF)(Depth Drainrock*0.35)

Depth of Drain Rock = 37 inches 3.08 feet

Detention for BMP-1 and 3

	Cubic Feet	
Required Detention =	3536	**(Based on Santa Cruz County SWM24 Spreadsheet, See attached)**
Detention Provided in Biotreatment Planters =	3726	**Detention provided=** (Total Biotreatment Planter SF)(Depth Ponding+Depth Soil*0.3)

Depth of Ponding = 9 inches 0.75 feet
Depth of Soil = 24 inches 2 feet

Retention for BMP-2

	Cubic Feet	
Required Retention =	72	**(Based on Santa Cruz County SWM24 Spreadsheet, See attached)**
Retention Provided in Biotreatment Planters =	81	**Retention provided=** (Total Biotreatment Planter SF)(Depth Drainrock*0.35)

Depth of Drain Rock = 24 inches 2 feet

Detention for BMP-2

	Cubic Feet	
Required Detention =	143	**(Based on Santa Cruz County SWM24 Spreadsheet, See attached)**
Detention Provided in Biotreatment Planters =	157	**Detention provided=** (Total Biotreatment Planter SF)(Depth Ponding+Depth Soil*0.3)

Depth of Ponding = 9 inches 0.75 feet
Depth of Soil = 24 inches 2 feet

PROJECT: Dominican Hospital Garage (BMP-1 and BMP-3) **Calc by:** KL **Date:** 11/4/2019

RUNOFF RETENTION BY THE STORAGE PERCOLATION METHOD

Data Entry: PRESS TAB KEY & ENTER DESIGN VALUES

Site Location P60 Isopleth:	1.50	Fig. SWM-2
Rational Coefficients Cpre:	0.30	
Cpost:	0.99	
Impervious Area:	67063	ft^2
Saturated Soil Permeability:	1.80	in/hr

Notes & Limitations on Use:

SS Ver:1.0

Saturated soil permeability values may be used conservatively from the USDA-NRCS soil survey, or use actual test values.
Site selection and design shall give proper consideration to the path for excess flows downstream of the designated retention area.
Retention site location on, or immediately above, slopes exceeding 15% will require consulting a geotechnical engineer.
Gravel packed structures shall use washed, angular, uniformly graded aggregate providing not less than 35% void space.
Refer to the County of Santa Cruz Design Criteria, Stormwater Management - Section H, for complete method criteria.

2 - YEAR DESIGN STORM				RETENTION @ 120 MIN.		DETENTION @ 60 MIN.	
Storm Duration (min)	2 - Year Intensity (in/hr)	Qpre (cfs)	Qpost (cfs)	Retention Rate To Storage (cfs)	Specified Retained Volume (cf)	Detention Rate To Storage (cfs)	Specified Detained Volume (cf)
1440	0.16	0.077	0.253	0.033	-8920	-0.042	-3618
1200	0.18	0.083	0.273	0.053	-5912	-0.022	-1552
960	0.20	0.091	0.300	0.081	-3105	0.006	318
720	0.22	0.103	0.339	0.119	-579	0.044	1921
480	0.26	0.122	0.403	0.183	1520	0.108	3112
360	0.30	0.138	0.455	0.235	2314	0.160	3462
240	0.35	0.164	0.540	0.321	2821	0.246	3536
180	0.40	0.185	0.610	0.391	2903	0.316	3409
120	0.47	0.220	0.725	0.505	2793	0.430	3097
90	0.53	0.248	0.819	0.599	2623	0.524	2830
60	0.63	0.295	0.972	0.753	2324	0.678	2439
45	0.71	0.333	1.098	0.879	2097	0.804	2170
30	0.85	0.395	1.304	1.085	1784	1.010	1817
20	1.01	0.469	1.549	1.329	1495	1.254	1505
15	1.14	0.530	1.750	1.530	1309	1.455	1310
10	1.35	0.630	2.078	1.858	1078	1.783	1070
5	1.81	0.845	2.788	2.568	760	2.493	748

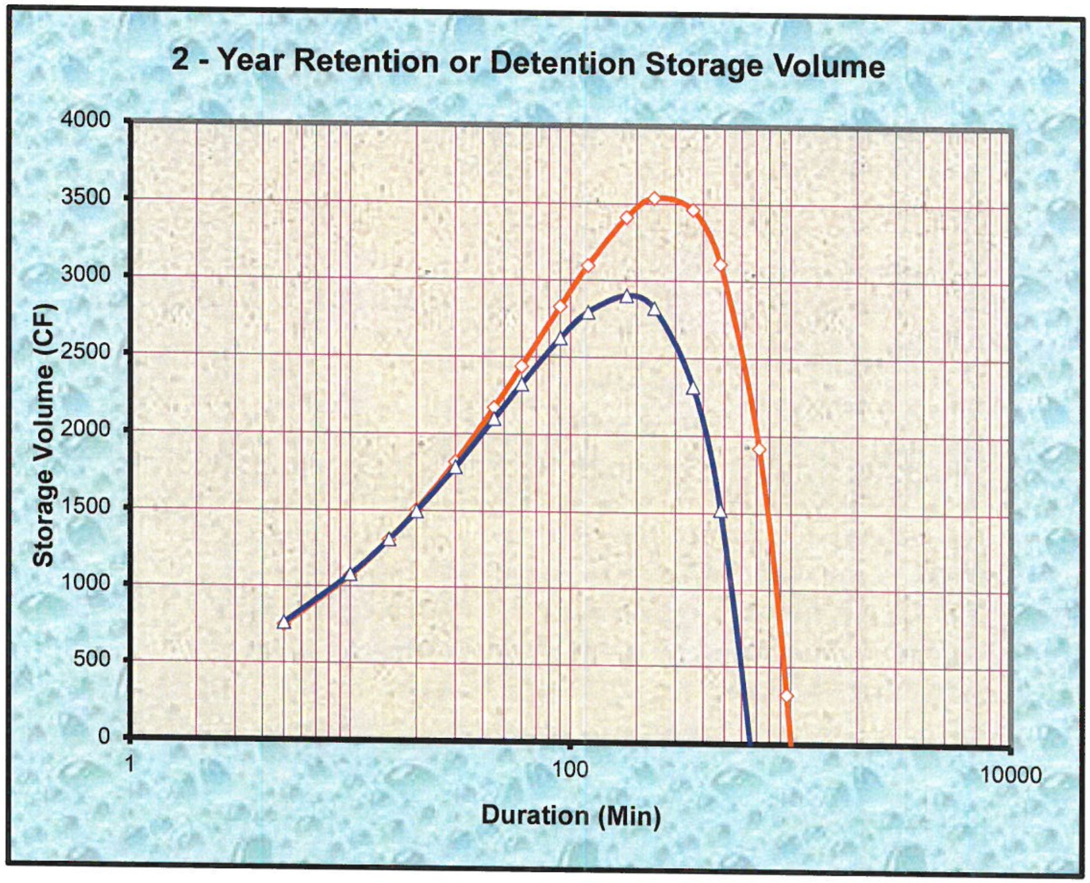
STRUCTURE DIMENSIONS FOR RETENTION

2903	ft^3 storage volume calculated		
35	% void space assumed		
8295	ft^3 excavated volume needed		
Structure	Length	Width*	Depth* #
Ratios	373.23	7.30	3.08
Dimen. (ft)	371.66	7.27	3.07
5028	ft^2 internal surface area		
3520	ft^2 effective surface area		
5.5	hrs estimated structure drainage time		

* For pipe, use the square root of the sectional area.
\# If cell values displayed are corrupted, enter zero for depth, then re-enter a positive numeric value within allowed range.

STRUCTURE DIMENSIONS FOR DETENTION

3536	ft^3 storage volume calculated		
100	% void space assumed		
3536	ft^3 excavated volume needed		
Structure	Length	Width*	Depth*
Ratios	373.23	7.30	1.00
Dimen. (ft)	407.12	7.96	1.09


2 - Year Retention or Detention Storage Volume
Storage Volume (CF)
4000
3500
3000
2500
2000
1500
1000
500
0
1
100
10000
Duration (Min)

PROJECT: Dominican Hospital Garage (BMP-2) **Calc by:** KL **Date:** 11/4/2019

RUNOFF RETENTION BY THE STORAGE PERCOLATION METHOD

Data Entry: PRESS TAB KEY & ENTER DESIGN VALUES

SS Ver:1.0

Site Location P60 Isopleth:	1.50	Fig. SWM-2
Rational Coefficients Cpre:	0.30	
Cpost:	0.99	
Impervious Area:	2717	ft^2
Saturated Soil Permeability:	3.90	in/hr

Notes & Limitations on Use:

Saturated soil permeability values may be used conservatively from the USDA-NRCS soil survey, or use actual test values.
Site selection and design shall give proper consideration to the path for excess flows downstream of the designated retention area.
Retention site location on, or immediately above, slopes exceeding 15% will require consulting a geotechnical engineer.
Gravel packed structures shall use washed, angular, uniformly graded aggregate providing not less than 35% void space.
Refer to the County of Santa Cruz Design Criteria, Stormwater Management - Section H, for complete method criteria.

2 - YEAR DESIGN STORM				RETENTION @ 120 MIN.		DETENTION @ 60 MIN.	
Storm Duration (min)	2 - Year Intensity (in/hr)	Qpre (cfs)	Qpost (cfs)	Retention Rate To Storage (cfs)	Specified Retained Volume (cf)	Detention Rate To Storage (cfs)	Specified Detained Volume (cf)
1440	0.16	0.003	0.010	0.001	-901	-0.002	-147
1200	0.18	0.003	0.011	0.002	-689	-0.001	-63
960	0.20	0.004	0.012	0.003	-486	0.000	13
720	0.22	0.004	0.014	0.005	-293	0.002	78
480	0.26	0.005	0.016	0.007	-118	0.004	126
360	0.30	0.006	0.018	0.010	-41	0.006	140
240	0.35	0.007	0.022	0.013	24	0.010	143
180	0.40	0.007	0.025	0.016	50	0.013	138
120	0.47	**0.009**	0.029	0.020	68	0.017	125
90	0.53	0.010	0.033	0.024	**72**	0.021	115
60	0.63	**0.012**	0.039	0.030	72	0.027	99
45	0.71	0.013	0.044	0.036	68	0.033	88
30	0.85	0.016	0.053	0.044	61	0.041	74
20	1.01	0.019	0.063	0.054	53	0.051	61
15	1.14	0.021	0.071	0.062	47	0.059	53
10	1.35	0.026	0.084	0.075	40	0.072	43
5	1.81	0.034	**0.113**	0.104	29	0.101	30

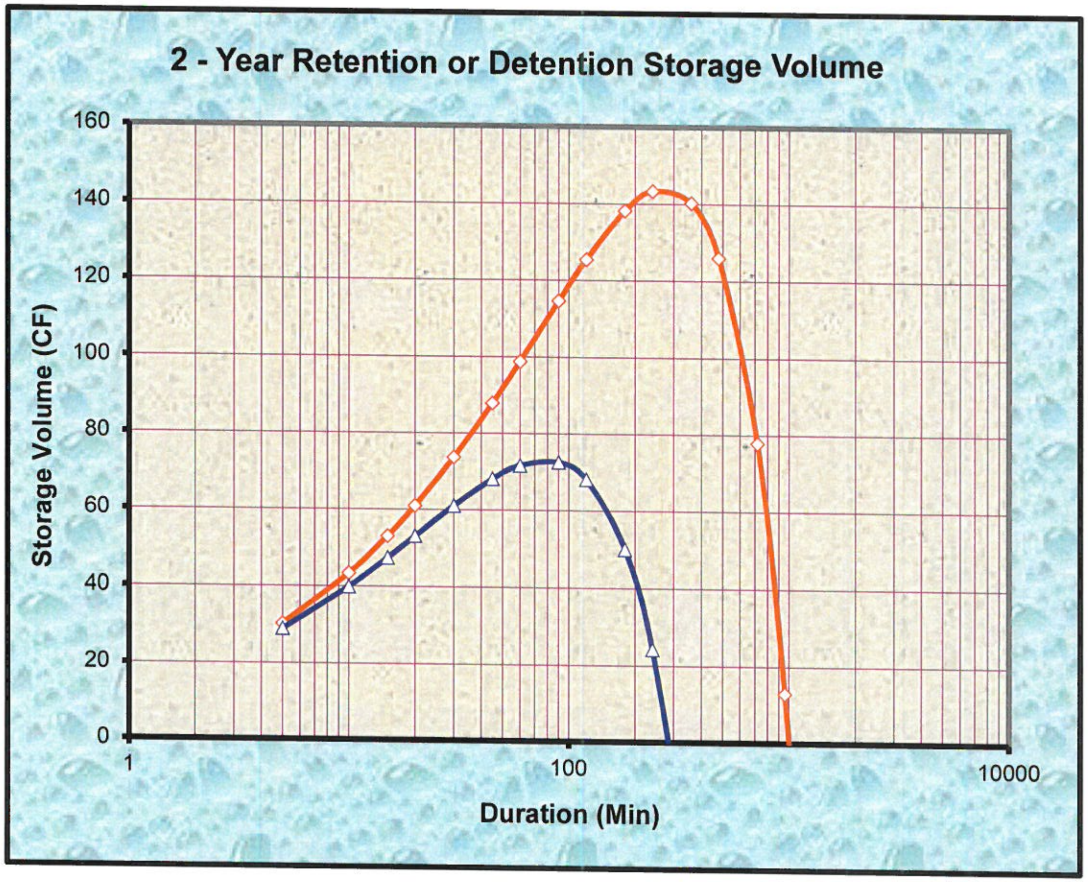
STRUCTURE DIMENSIONS FOR RETENTION

72	ft^3 storage volume calculated		
35	% void space assumed		
207	ft^3 excavated volume needed		
Structure	Length	Width*	Depth* #
Ratios	15.50	7.50	2.00
Dimen. (ft)	**14.91**	**7.22**	**1.92**
193	ft^2 internal surface area		
135	ft^2 effective surface area		
1.7	hrs estimated structure drainage time		

* For pipe, use the square root of the sectional area.
\# If cell values displayed are corrupted, enter zero for depth, then re-enter a positive numeric value within allowed range.

STRUCTURE DIMENSIONS FOR DETENTION

143	ft^3 storage volume calculated		
100	% void space assumed		
143	ft^3 excavated volume needed		
Structure	Length	Width*	Depth*
Ratios	15.50	7.50	0.50
Dimen. (ft)	**20.94**	**10.13**	**0.68**

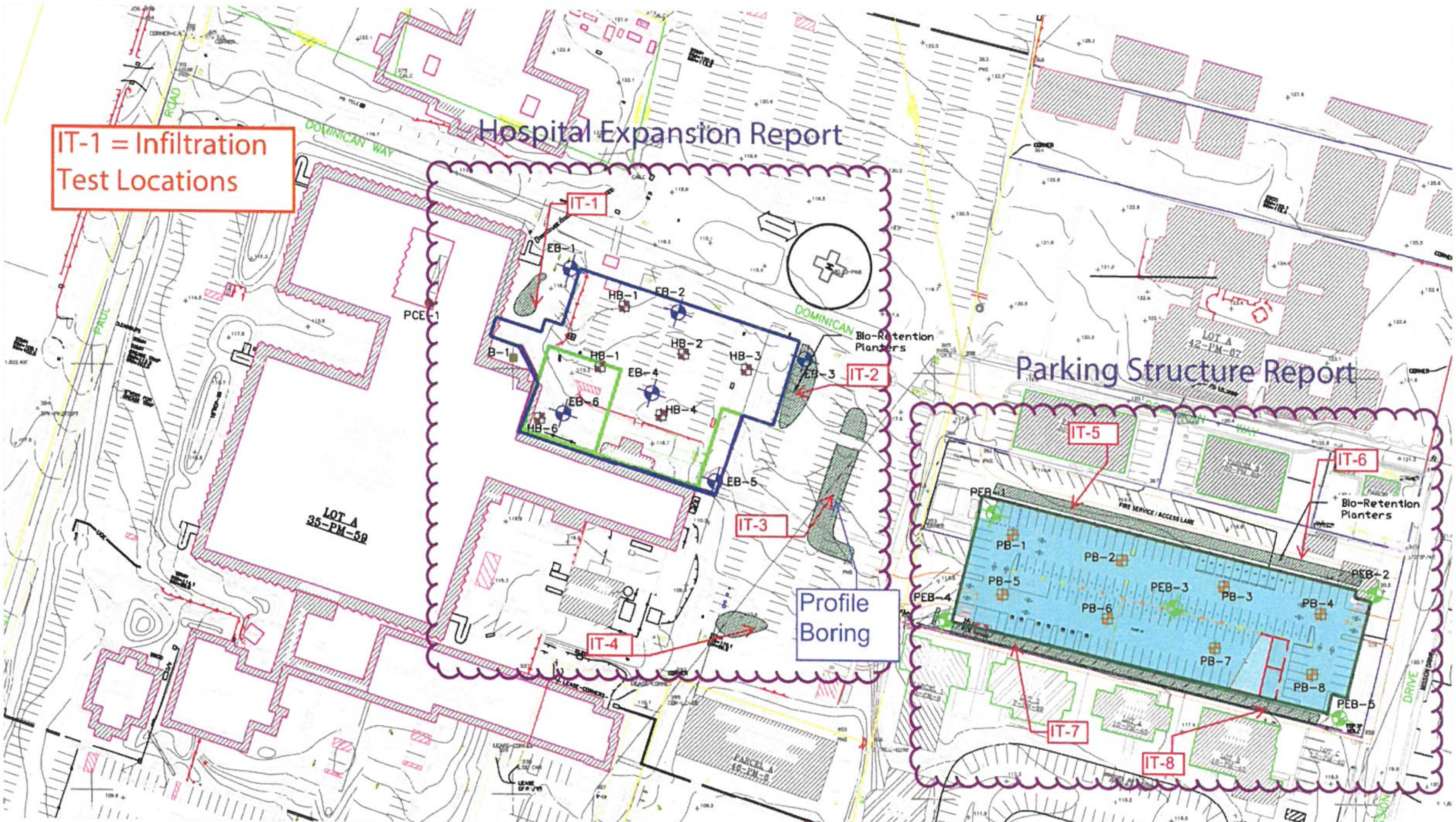

2 - Year Retention or Detention Storage Volume
Storage Volume (CF)
160
140
120
100
80
60
40
20
0
1
100
10000
Duration (Min)

Mitigation Requirements	
10 Year Pre Development Flow (CFS)*	1.07
10 Year Post Development Flow (CFS)**	**2.74**
Change in Runoff due to Development (CFS)	**+1.67**
Required 2 year - 2 hour Retention Volume (CF)	2,981
Provided 2 year - 2 hour Retention Volume (CF)	**3,060**
Required 2 year - 2 hour Detention Volume (CF)	3,679
Provided 2 year - 2 hour Detention Volume (CF)	**3,883**
Required Treatment Area	2,791
Provided Treatment Area	**2,876**

*Pre-development release rate is calculated assuming no buildings or impervious surfaces currently exist onsite.

** Post development runoff rates will be held to 10 year pre development levels

9.0 SUPPORTING DOCUMENTS



Legend

- EB-1 Proposed Hospital Boring Locations
- PEB-1 Proposed Parking Structure Boring Locations
- B-1 Boring by Pacific Crest Engineering (2007)
- Hospital Expansion Footprint
- Parking Structure Footprint
- Bio-Retention Planters

RUTHERFORD + CHEKENE

Structural | Geotechnical
375 Beale Street, Suite 310
San Francisco CA 94105
T 415 568 4400
F 415 618 0684
www.ruthchek.com

Proposed Boring Location Plan
Hospital Expansion
Dominican Hospital, Dignity Health
Santa Cruz, California

JOB No.: 2019-	DATE: 6/25/2019	FIGURE: -	PAGE: -

Summary of Infiltration Rates

Infiltration Test Locations	Infiltration Test Location I.D.	Infiltration Rate (inches/hour)
Hospital Expansion Site	IT-1	1.81
	IT-2	0.12
	IT-3	0.30
	IT-4	0.09
Parking Garage Site	IT-5	23.88
	IT-6	1.80
	IT-7	3.90
	IT-8	6.77

10.0 OPERATIONS & MAINTENANCE

Recording requested by:

Upon recording return to:

County of Santa Cruz,
DPW Stormwater
Management Section 701
Ocean Street, Room 410
Santa Cruz, CA 95060

(Space above this line for Recorder's use)
AGREEMENT regarding private stormwater management maintenance.

APN: 025-481-01
Application No. ____________________

______________________________________, being the owner of the real property located at 1555 Soquel Drive, California, APN 025-481-01, consents and agrees to inspect and to maintain annually "prior to the rainy season" and to maintain as necessary for ensuring proper performance of the Bioplanters, Pervious Concrete Pavement, onsite catch basins and storm drain lines (stormwater management facility) on the subject property as shown on the plans prepared by Bowman & Williams dated _________ per County Code 7.79 and to release, defend and indemnify the County from any and all claims or liability relating to my failure to perform this obligation. I understand that County staff may conduct inspections of the facility, and that as the property owner I may be assessed an annual service charge and/or re-inspection fee to cover the costs of inspection and oversight.

I have read the above agreement and understand it.

This agreement shall be binding on and shall inure to the benefit of the successors, heirs, executors, administrators, and assigns of owner. Owner ____
(Printed Name)

Owner____
(Signature)

Dated this________________________day of___________________, _______

PRIVATE STORMWATER MANAGEMENT MAINTENANCE AGREEMENT

(Note: The signature on this form must be notarized.)

REV 02/17 FIG. SWM-25A

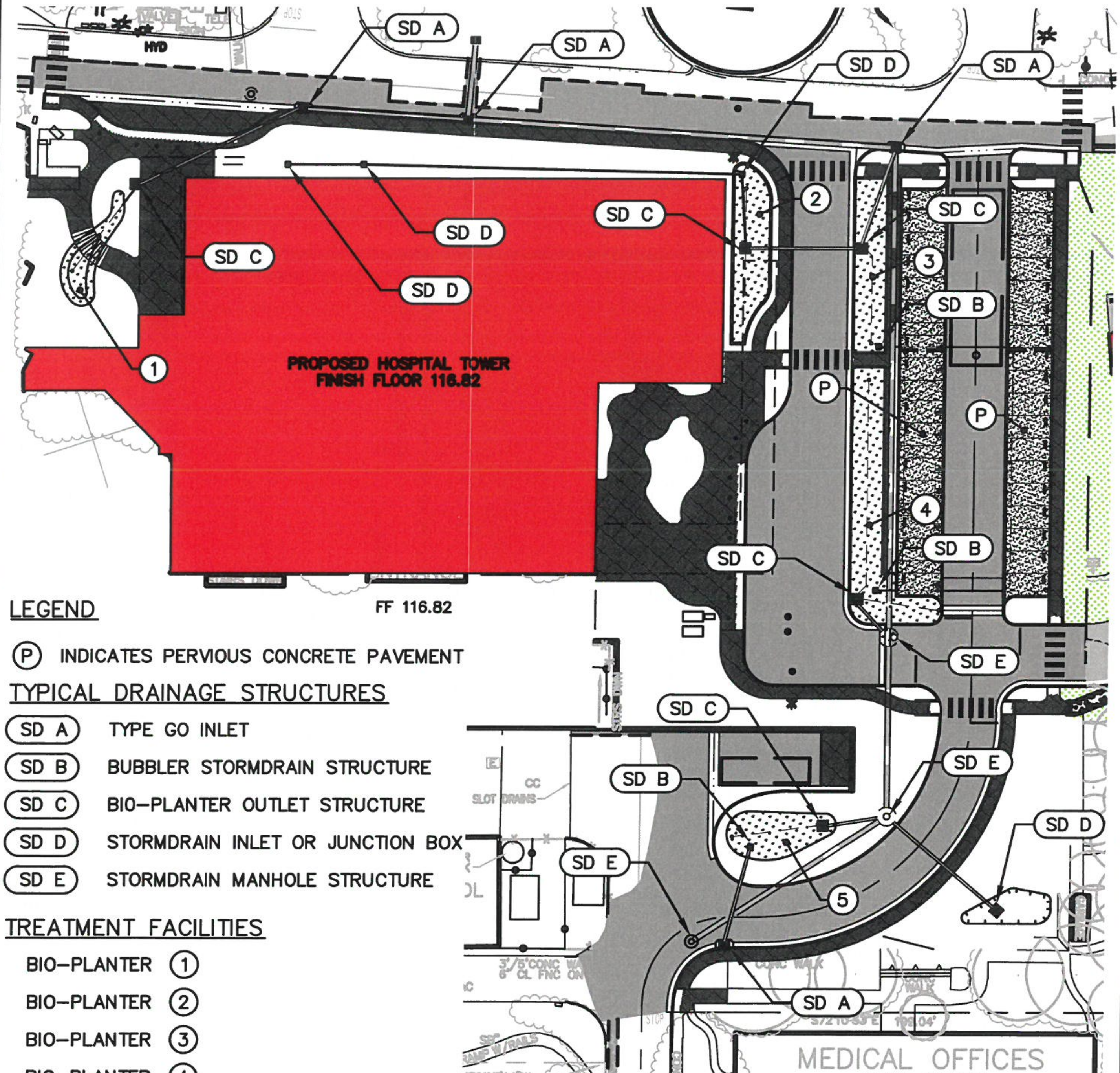
PERMANENT STORMWATER MANAGEMENT FACILITIES LOCATION PLAN

NOTES:

1. THE PROPERTY OWNER ACKNOWLEDGES THAT THE SITE DOES AND WILL CONTINUE TO RECEIVE RUNOFF FROM UPSTREAM/ADJACENT AREAS. THE COUNTY IS NOT RESPONSIBLE FOR THE UPSTREAM RUNOFF OR FOR THE MAINTENANCE OF THE DRAINAGE PATHWAY.

2. THE PROPERTY OWNER IS RESPONSIBLE FOR MAINTENANCE OF THE PROPOSED PERMEABLE PAVEMENT, BIOSWALES, AND ENERGY DISSIPATER.

3. THIS EXHIBIT SHALL BE RECORDED WITH THE PROJECT MAINTENANCE AGREEMENT.



LEGEND

(P) INDICATES PERVIOUS CONCRETE PAVEMENT

TYPICAL DRAINAGE STRUCTURES

SD A	TYPE GO INLET
SD B	BUBBLER STORMDRAIN STRUCTURE
SD C	BIO-PLANTER OUTLET STRUCTURE
SD D	STORMDRAIN INLET OR JUNCTION BOX
SD E	STORMDRAIN MANHOLE STRUCTURE

TREATMENT FACILITIES

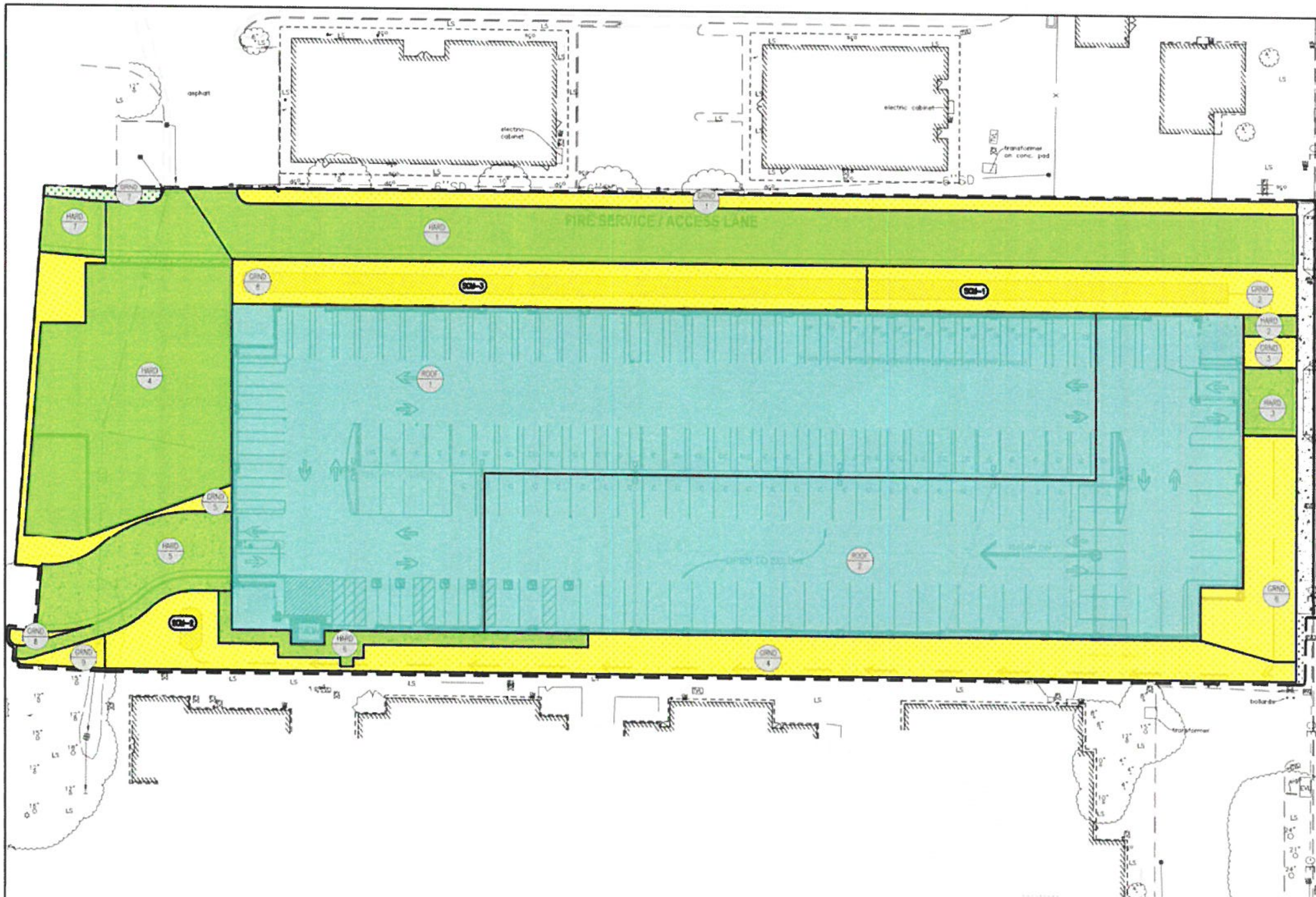
BIO-PLANTER (1)
BIO-PLANTER (2)
BIO-PLANTER (3)
BIO-PLANTER (4)
BIO-PLANTER (5)

PAGE 1 OF 2

BOWMAN & WILLIAMS CONSULTING CIVIL ENGINEERS AND LAND SURVEYORS 3949 RESEARCH PARK CT., STE. 100, SOQUEL, CA 95073 (831) 426-3560	SCALE 1" = 60'	JOB NO. 27214
	DATE JUNE 5, 2019	DWG NAME MAINTENANCE EXB
	DRAWN CMM	FILE NO. 27214

POST DEVELOPMENT

NEW IMPERVIOUS SURFACES	= 68,144 SF
NEW PERVIOUS SURFACES	= 18,812 SF
EQUIVALENT IMPERVIOUS SURFACES	= 76,147 SF



NEW BUILDING
IMPERVIOUS (HARDSCAPE)
PERVIOUS AREA (30% CREDIT)

0 40 80 120
GRAPHIC SCALE IN FEET SCALE: 1"=40'

CALICHI DESIGN GROUP

CALICHI DESIGN GROUP
3240 PERALTA STREET #3 OAKLAND, CA 94608
(510) 250-7877

SCALE	1"=40'	JOB NO.
DATE		DWG NAME
DRAWN		FILE NO.

EXHIBIT A
PERMANENT STORMWATER MANAGEMENT FACILITIES
INSPECTION & MAINTENANCE SCHEDULE & PROCEDURES

DRAIN INLETS AND SWALES

1. EVERY YEAR, THE OWNERS SHALL INSPECT ALL DRAINAGE STRUCTURES AT THE PROJECT SITE. AT MINIMUM, INSPECTIONS WILL BE CONDUCTED AS FOLLOWS:

   - ONCE BEFORE WINTER SEASON (SEPTEMBER)
   - ONCE AFTER THE WINTER SEASON (MAY)

   A. VISUALLY INSPECT FOR ANY SEDIMENT AND DEBRIS TRAPPED IN THE STRUCTURES AND SWALES.
   B. REMOVE COLLECTED DEBRIS AND SEDIMENT.
   C. SIGNS OF SYSTEM FAILURE OF DRAIN INLETS, STORM DRAINAGE PIPING, AND SWALES.

2. THE OWNER(S) SHALL RECORD ALL INSPECTIONS, MAINTENANCE AND REPAIRS PERFORMED.

PERMEABLE PAVEMENT

3. INSPECT PERVIOUS CONCRETE PAVEMENT DAILY/WEEKLY SURFACE FOR STANDING WATER, SEDIMENT, TRASH, AND DEBRIS.

4. INSPECT DRAIN CONTROL INLETS AT PERVIOUS PAVEMENT ONCE DURING THE WINTER SEASON AFTER A LARGE STORM EVENT PRODUCING OVER 0.5-IN OF RAINFALL TO CONFIRM THE FACILITY DRAINS WITHIN 72 HOURS.

5. REGENERATIVE VACUUM SWEEP PAVEMENT SURFACE ON ANNUAL OR SEMIANNUAL BASIS.

6. WHERE PERMEABILITY OF PAVEMENT IMPACTED USE POWER BLOWING AND PRESSURE WASHING METHODS TO REMOVE CLOGGING.

BIOSWALE

7. SOIL: INSPECT AND REPAIR EROSION VISUALLY MONTHLY.

8. ORGANIC LAYER: RE-MULCH ANY VOID AREA BY HAND AS NEEDED.

9. PLANTS: REMOVAL AND REPLACEMENT OF ALL DEAD AND DISEASED VEGETATION CONSIDERED BEYOND TREATMENT TWICE A YEAR.

10. PLANTS: TREAT ALL DISEASED TREES AND OTHER INVASIVE SHRUBS BY HAND OR MECHANICALLY.

11. PLANTS: REMOVAL OF CATTAILS AND OTHER INVASIVE SPECIES BY HAND OR THROUGH HAND APPLICATION OF HERBICIDE AS NEEDED.

BUILDING AND GROUND MAINTENANCE

12. DURING THE BUILDING AND GROUND MAINTENANCE, CARE MUST BE TAKEN TO PREVENT SEDIMENT AND DEBRIS FROM RUNNING INTO THE DRAIN INLETS, SWALE AREAS AND PERMEABLE PAVEMENT.

13. BUILDING AND GREEN WASTE MATERIAL GENERATED FROM THE OPERATION SHALL BE STORED SEPARATELY AT THE WASTE DISPOSAL LOCATION AWAY FROM THE DRAIN INLETS AND SWALE AREAS.

VECTOR CONTROL

14. INSPECT ALL DRAIN INLETS 48 HOURS AFTER RAIN EVENTS TO ASSESS WATER PONDING FOR VECTOR CONTROL.

15. IF PROLONGED WATER PONDING IS IDENTIFIED IN EXCESS OF 48 HOURS, THE OWNER SHALL IMPLEMENT VECTOR CONTROL TO SUPPRESS/PREVENT VECTOR PRODUCTION PER THE LOCAL AGENCY GUIDELINES.

BOWMAN & WILLIAMS CONSULTING CIVIL ENGINEERS AND LAND SURVEYORS 3949 RESEARCH PARK CT., STE. 100, SOQUEL, CA 95073 (831) 426-3560	SCALE 1" = 60'	JOB NO. 27214
	DATE JUNE 5, 2019	DWG NAME MAINTENANCE EXB
	DRAWN CMM	FILE NO. 27214

Stormwater Operation & Maintenance Requirements

This Operation & Maintenance Agreement was prepared for the proposed improvements at the Dominican Hospital Site. The stormwater report for this project has been prepared to analyze the impact of the proposed redevelopment of the hospital campus at APN 025-481-01 and APN 025-081-02 &-03, located at 1555 Soquel Drive, Santa Cruz, CA. The approximately 19 acre site for APN 025-481-01 consists of the main Hospital Building & Chapel, MRI Center, Behavior Health Building, Educational Center, Helicopter Pad and various parking lots and a new surgical tower revised parking areas with permeable parking areas, a biorentention areas and bioplanters. The 1.86 acre site for APN 025-081-02 & -03 will be completely redeveloped to include a new 409 space parking garage and access driveways with bioretention areas

The principal maintenance objectives for site drainage are to prevent sediment buildup and to maintain the proposed bioretention areas and bioplanters and to maintain the standard storm drain system elements. The owner shall inspect the site drainage system and provide maintenance quarterly, once prior to the Winter season (October 15) and once after the Winter season (April 15) at minimum. At all times, vehicle cleaning, repair, maintenance or any activity which has the potential to direct non-stormwater related discharges to the stormwater system are not allowed on the property.

This report and attached Inspection and Maintenance Checklist are used to record the inspection and maintenance required from the property owner by the County of Santa Cruz. Inspections and Maintenance must be performed on identified stormwater treatment measure(s) subject to the Maintenance Agreement between the County of Santa Cruz and the property owner during the agreed upon reporting period.

Post Construction Stormwater Management System

General Information

General Information		
1	Property APN(s):	025-481-01 and 025-081-02 & -03
2	Project Address(es):	1555 Soquel Drive, Santa Cruz, CA 95065
3	Owner:	Dignity Health
4	Address:	
5	Phone:	
6	Email:	
Stormwater Management System Information		
7	Designer:	Jeff Naess, PE
8	Company/Firm:	Bowman & Williams Consulting Civil Engineers
9	Address:	3949 Research Park Ct, Suite 100, Soquel CA 95073
10	Phone:	(831) 426-3560
11	Email:	jeff@bowmanandwilliams.com

Best Management Practices (BMP)

Component: **Bioretention Areas and Bioplanters**

1. Purpose of component:	Treats surface runoff before it leaves the site.	
2. Component category:	■ Water Treatment	
3. Description & Location of component	The bioretention areas and bioplanters are designed to filter runoff through plant roots and a biologically active soil mix. A layer of drain rock aggregate beneath the soil mix provides a storm water reservoir to promote natural runoff infiltration into the native soil. The bioretention planters will also be used as detention storage There are three bioretention areas and four bioplanters on the project sites.	
4. BMP:	Date of Installation:	
	Short Term Required Maintenance (describe or attach plan):	• Remove grass cuttings after mowing grass. • Invasive vegetation contributing up to 25% of vegetation of all species shall be removed and replaced. Fallen leaves and debris from deciduous plant foliage shall be removed. • Vegetation, large shrubs or trees that interfere with landscape swales operation shall be pruned. • Remove obstructions, debris and trash from bioretention area and dispose of properly. • If ponded water does not drain within 2-3 days, till and replace the surface soil and replant. • Clear obstructions and remove sediment from control, outlet, and overflow structures.
	Long Term Required Maintenance (describe or attach plan):	• Proper maintenance includes mowing, weed control, removal of trash and debris, watering during the dry season, and reseeding of non-vegetated areas. • Maintain vegetation and irrigation system. Prune and weed to keep bioretention area neat and orderly in appearance. • Debris in quantities that inhibit operation shall be removed routinely (no less than quarterly), or upon discovery. Sediments shall be removed when depths exceed 3 inches. • Side slopes shall be maintained to prevent erosion that introduces sediment into the retention basin. • Insects and rodents shall not be harbored in the retention basin. Pest control measures shall be taken when insects/rodents are found to be present. • If sprays are considered, then a mosquito larvicide, such as bacillus thurendensis or altoside formulations may be applied only if absolutely necessary, with written approval by the County, and applied by an appropriately licensed individual or contractor. • Annual report including completed inspection log and maintenance log, with photos as needed.

Best Management Practices (BMP)

Component: **Permeable Pavement**

<table>
<tr><td>1. Purpose(s) of SCM (check all that apply):</td><td colspan="3">Collecting Rain and runoff water and transporting it to on site SCMs</td></tr>
<tr><td>2. Type(s) of SCM Installed:</td><td>■ Water Collection</td><td>■ Retention/Infiltration Basin</td><td>■ Detention Basin</td></tr>
<tr><td>3. Description & Location of SCM</td><td colspan="3">The pervious pavement and the associated perforated pipe underdrain serve to collect runoff. The pavement’s gravel subbase and the basin’s associated control box serve to detain/retain runoff in excess of pre-development conditions.</td></tr>
<tr><td rowspan="3">4. BMP</td><td>Date of Installation:</td><td colspan="2"></td></tr>
<tr><td>Short Term Required Maintenance (describe or attach plan):</td><td colspan="2">• Conduct an evaluation once per year of the pavement condition by inspecting the permeable pavement surfaces for settlement, deformation or cracking.
• Conduct an evaluation once per year of the surface infiltration by inspecting the permeable pavement surfaces for sedimentation or evidence of ponding.
• Conduct an evaluation once per year of the drainage by inspecting the permeable pavement catch basins 72 hours after a rain event of 0.5 inches or greater to verify that the aggregate storage reservoir is draining down effectively.
• Conduct an evaluation once per year of the Outfalls by inspecting the underdrain outfall locations for obstructions and erosion
• Conduct an evaluation once per year of the run-on areas by inspecting the run-on areas for adequate cover and stability.
• Avoid temporary or permanent stockpiling of soil or other material that can potentially cause or contribute to clogging.
• Avoid the application of pavement seal-coating.</td></tr>
<tr><td>Long Term Required Maintenance (describe or attach plan):</td><td colspan="2">• Replace Pavement if pavement fails.</td></tr>
</table>

Best Management Practices (BMP)

Component : **Storm Drain System**

1. Purpose of component:	To manage site surface runoff and direct it to specific locations	
2. Component category:	■ Water Collection	
3. Description & Location of component	The storm drain system consists of the drain pipes, storm drain inlets, and the signage for all the storm water collection on site. There are also control structures for detention in each bioretention planter that will need to be inspected and maintained.	
4. BMP:	Date of Installation:	
	Short Term Required Maintenance (describe or attach plan):	• Quarterly visual inspection of all drainage structures to identify any sediment and debris trapped or inhibiting the flow to and in the system. • There should be no sign of system failure at the drain inlets or piping. • Signage shall be photographed and debris cleaned off of any signage.
	Long Term Required Maintenance (describe or attach plan):	• Repaint any signage that becomes illegible. • Annual report including complete inspection log and maintenance log with photos as needed to demonstrate that the drains and inlets are in working condition. • Record all inspections of the system and repairs performed.

Inspection Log

Inspected by (Print Name, Initials): *If multiple, list all.*		Report Year:	

Inspection Items	Date Inspected	Inspectors Initials	Maintenance Needed? (Yes/No)	Comments/Description
Bioretention Pond				
Pervious Pavement				
Inlets, drains, signage				

MAINTENANCE LOG

For Storm Water Structural or Treatment Control Best Management Practices (BMPs)

per the County's Maintenance Agreement

INSPECTION DATE	NOTES OR OBSERVATIONS

***Please attach receipts for any maintenance, service, or repairs conducted by a hired company or contractor.**

Property Address____

Property APN #____

Owner Name____

Owner Mailing Address____

Owner Phone____

Owner Email____

Please provide an updated copy of this log and supporting receipts with your annual letter providing proof of inspection and maintenance. Thank you for maintaining the storm water BMPs on your property!

11.0 PROJECT INFORMATION & THRESHOLD DETERMINATION FORM

Appendix A - Project Information & Threshold Determination Form

COUNTY OF SANTA CRUZ DEPARTMENT OF Public WORKS

STORMWATER CONTROL PLAN (SWP) - Project Information & Threshold Determination Form

Completion of this form shall be used as guidance by the applicant

All projects shall maintain pre-development runoff rates & patterns

For any questions on this form, please contact DPW Stormwater Management at 831-454-2160.

PROJECT & CONTACT INFORMATION

1555 Soquel Drive *Project Street Address*	Discretionary App # 191157 *Building Permit No. / Discretionary Application*
Osa Aimufua *Property Owner's/Representative Name*	Surgical Wing and Parking Garage *Project Name (Alias)*
025-481-01, -02 & -03 *Assessor's Parcel No (APN)*	Dignity Health *Property Owner/Representative's Firm*
Jeff Naess *Applicant's Name (i.e. design professional)*	916-631-3318 *Property Owner/Representative's Phone No.*
Zone 5 *Flood Control District (if applicable):*	Bowman and Williams *Applicant's Firm Name*
	831-426-3560 *Applicant's Phone No.*

PROJECT DESCRIPTION

Lot Coverage (measured in square feet)	Actual (sq. ft.)	Adjusted (sq. ft.)*
A. Total lot size:	894,460	
B. Existing Permitted Impervious Area:	680,072	
C. Replaced permitted impervious area:	656,485	
D. Replaced permitted semi-impervious area*:		0
D. Proposed new self-treating area:		
E. Proposed new impervious area:		
F. Proposed new semi-impervious area*:	4,100	2,050

If 660,585 **is > than** 680,072**, project shall will be required to mitigate the entire site.****

Total replaced impervious & semi-pervious area: 656,485 sq.ft.

Total proposed impervious & semi-impervious area: 2,050 sq.ft.

Project Threshold Classification

- ☐ **Small Project** (less than 500 sq.ft. created and/or replaced) - Use *Appendix B 'Small Project Submittal Requirements'* for submittal requirement guidance.
- ☐ **Medium Project** (500 sq.ft. but less than 5,000 sq.ft. created and/or replaced) - Use *Appendix C 'Medium Project Submittal Requirements'* for submittal requirement guidance.
- ☑ **Large Project** (5,000 sq.ft. or more created and/or replaced **OR** 50% increase in permitted impervious area**) - Use *Appendix D 'Large Project Submittal Requirements'* for submittal requirement guidance.

Application is part of a phased project OR master plan?	*Yes* ☑ *No* ☐
Application will maintain pre-development runoff patterns?	*Yes* ☑ *No* ☐
Application is unable to comply with Part 3 of the Design Criteria requirements & is electing to request a waiver(s) Please provide a brief description (below):	*Yes* ☑ *No* ☐

The soil survey for the site indicated that the saturated hydraulic conductivity for the site was 0.24 in/hr which is below the level at which infiltration is deemed feasible per the County's required 0.6 in/hr minimum.

Form will apply a 50% credit for semi-impervious areas as final count. Applicant shall not apply the credit.

*** Projects that add more than 50% impervious area coverage are required to mitigate the entire site.*

****Disclaimer: Permit review is based the information provided, additional clarification may be required for undisclosed/unidentified areas. Unaccounted areas may reclassify the project threshold.*

12.0 DOWNSTREAM DRAINAGE ANALYSIS

1.0 INTRODUCTION

The County of Santa Cruz has indicated that their Drainage Master Plan analysis prepared by Schaaf & Wheeler Consulting Civil Engineers has shown that the stormwater system directly downstream of the Dominican Hospital site has capacity issues. As part of the County's Development Permit Review of the Dominican Hospital Expansion and Renovation Project, they have asked for an updated analysis of the downstream system.

The downstream drainage system from the hospital site consists of sections of 30" reinforced concrete pipe (RCP). Runoff from the site first enters an inlet on the eastern side of the hospital's westernmost entrance from Soquel Drive. From there runoff enters an 86' section of 30" RCP and travels to an inlet on the western side of the entrance. From that point runoff enters a 72' section of RCP and travels in a southerly direction to an inlet on the south side of Soquel Drive. From that point runoff enters a 160' section of RCP and travels southerly in a 10' easement along the eastern side of APN 025-071-19 (76 Gas Station Parcel) to a manhole at the southeastern corner of the parcel. From that point runoff enters a 83' section of 30" RCP and travels southerly to a buried junction structure located in the Caltrans Commercial Way Right of Way. From that point runoff enters a 124' long section of 30" RCP and travels southerly across Commercial Way where it outlets to an open ditch in the landscaped area between Commercial Way and Highway 1.

Bowman and Williams has utilized a 2001 topographic map, GIS data, other drainage reports and site visits to determine the tributary drainage areas and drainage systems contributing to the Downstream System.

2.0 METHOD OF ANALYSIS

- The Rational Formula (shown below) is used to estimate peak runoff rates.

  $$Q = C_a C i_a i A$$

  Where:

  Q= Estimated Peak Runoff from site (cfs)
  C_a= Antecedent Moisture Factor (Unitless)
  C= Runoff Coefficient (Unitless)
  i_a= Rainfall Intensity Adjustment Factor (Unitless)
  i= Rainfall Intensity (in/hr)
  A= Area of Site (Acres)

- Precipitation data/runoff coefficients are obtained from the Santa Cruz County Design Criteria Manual. Precipitation intensity is based upon the P60 Isopleth for Santa Cruz County (see attached map).

- The County's Drainage System Calculation (SWM6) methodology was used to determine the water surface elevations throughout a portion of the County's system and upstream area.

3.0 SYSTEM EVALUATION

- Historically, several projects within the upstream area were designed to provide detention for the 10 year storm event and convey the 10 year predevelopment runoff. For those areas there was an assigned the C value of 0.3. In addition, the proposed projects for the new surgery tower and for the parking garage will provide detention, holding to 10 year pre development runoff levels for up to the 25 year storm event.

- The drainage area was broken out into 12 Tributary Drainage Areas, and the drainage system was analyzed and reduced to the 17 major junctions, of which the last 5 are offsite.

- The water surface elevation at the outlet of the system was unknown, therefore it was assumed that the water surface elevation would be at the system's outlet top of pipe elevation (flowing full).

4.0 SUMMARY

The B&W model using the County's Drainage System Calculation (SWM6) worksheet found that the existing system floods during the 10 year storm by 1.14 ft.

10 Year Storm Existing

Junction Designation	Outlet Control W.S. Elev	Inlet Control W.S. Elev	Top of Rim T.G. Elev	Invert Elev.	Freeboard
Z5-CB-294	99.44	~~97.80~~	98.30	94.60	-1.14
Z5-CB-295	98.25	~~96.76~~	97.90	93.50	-0.35
Z5-IL-1155	97.04	95.52	97.60	91.70	0.56
Z5-MH-3726	~~93.40~~	93.93	100.96	90.06	7.03
Z5-MH-5169	~~87.99~~	91.07	98.82	86.97	7.75
OUTLET	84.74				

5.0 EXISTING DRAINAGE STUDIES

The County of Santa Cruz had their entire drainage system modeled in 2014 by Schaaf & Wheeler. The Schaaf & Wheeler model was based on the GIS data and other available sources. The datum used for the study differed from the B&W topo datum, however the Schaaf & Wheeler drainage study found that the same catch basins would flood, but in greater quantities.

Node ID*	County Grid #	Ground El. (ft)	Invert El. (ft)	Max HGL (ft)			
				5Yr	10Yr	25Yr	100Yr
Z5_CB_294	G3	102.00	98.33	105.87	108.40	111.93	117.59
Z5_CB_295	G3	102.00	97.63	102.42	104.22	106.41	110.04
Z5_IL_1155	G3	102.00	96.17	100.53	102.14	104.15	107.10
Z5_MH_3735	G3	102.00	96.31	101.15	102.82	104.88	108.01
Z5_MH_3726	H3	102.00	92.61	97.29	98.86	100.37	102.57
Z5_MH_5169	H3	101.85	91.08	95.71	97.31	98.49	100.55
Z5_OF_5057	H3	98.12	88.85	93.35	94.73	96.09	97.94

6.0 MITIGATION AND CONCLUSION

The B&W model has somewhat improved upon the GIS based model by utilizing available topographic data. The B&W model results found that both inlet and outlet controls will dictate the water surface elevations. The B&W model found that the two inlets near the Dominican Hospital Western Entrance (Z5-CB-294 & Z5-CB-295) will have a HGL above the inlet grates of 1.14' and 0.35' respectively.

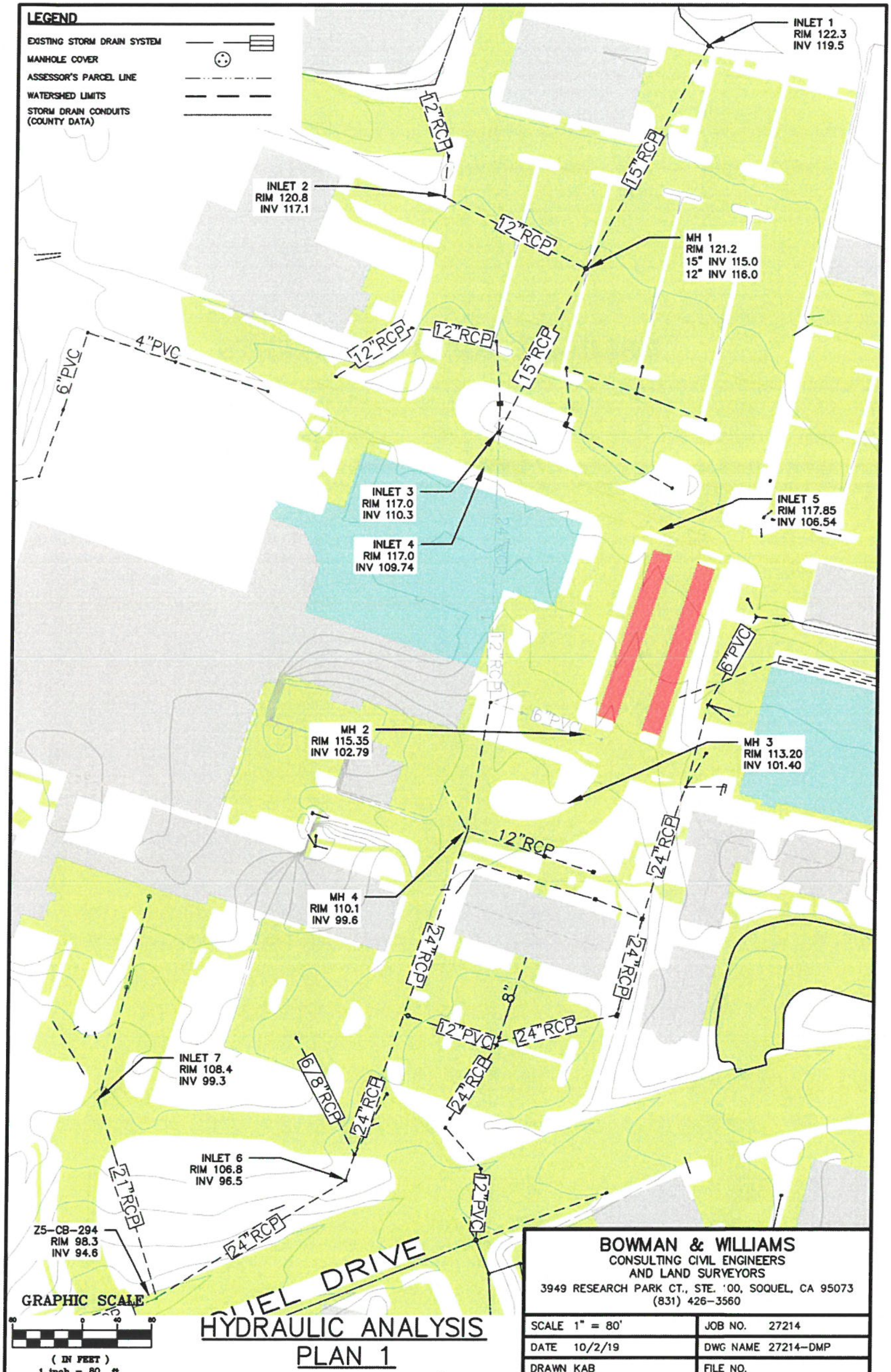
7.0 CONTRIBUTING DRAINAGE AREAS

To determine the proportionate allocation the Dominican Hospital has on the downstream drainage system in Soquel Drive, we added up the sum of the areas multiplied by their respective weighted Runoff Coefficients "C" values. We determined that the hospital makes up 43% of the total contributing runoff, the County area makes up 9% of the total contributing runoff and other properties make up the remaining 48%.

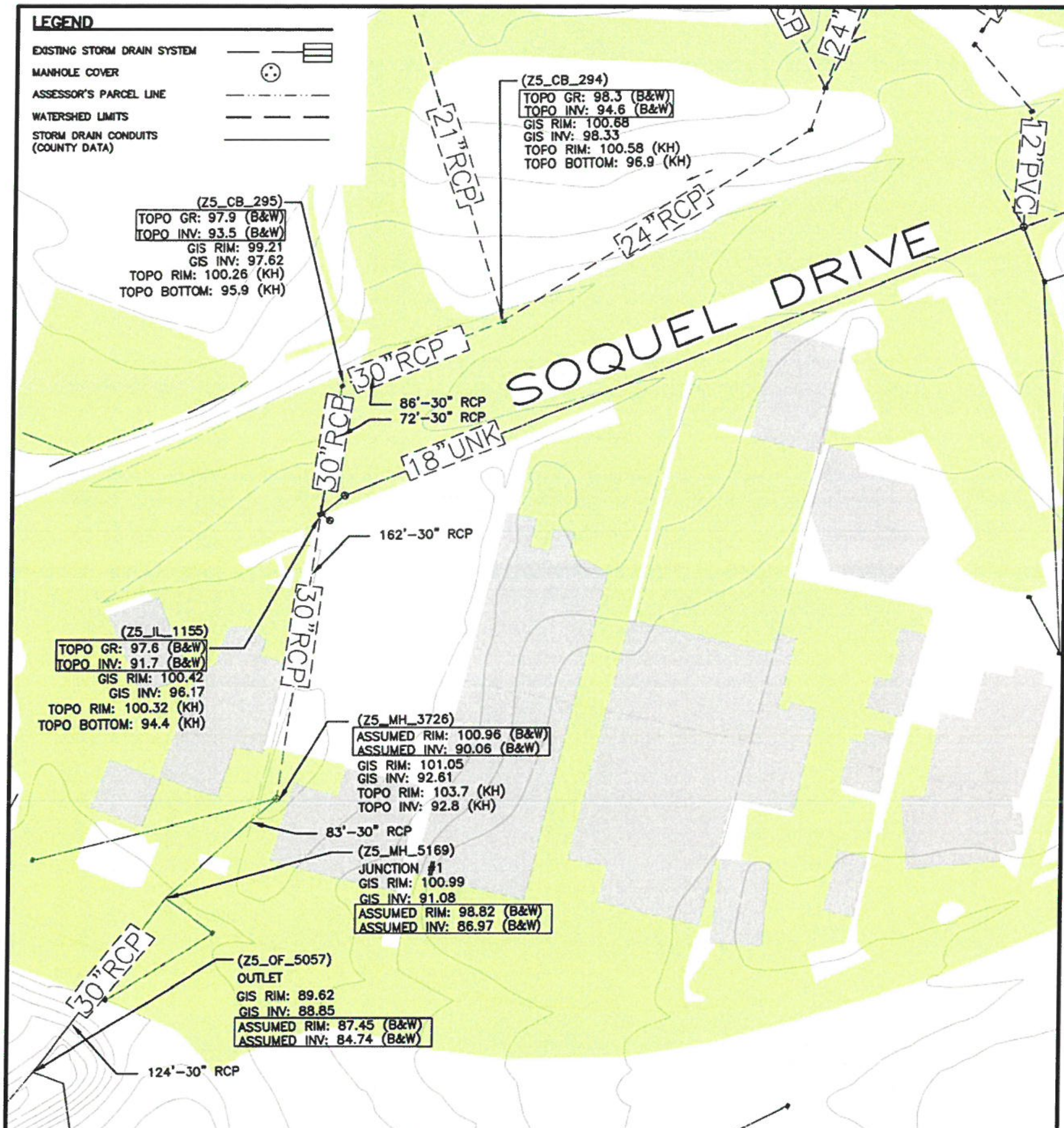
UPSTREAM TRIBUTARY DRAINAGE AREAS

LEGEND
EXISTING STORM DRAIN SYSTEM
MANHOLE COVER
ASSESSOR'S PARCEL LINE
WATERSHED LIMITS
STORM DRAIN CONDUITS (COUNTY DATA)
AREA DRAINING TO DETENTION
1 PG&E, HOUTS DR AND PATTERSON LN
2 DOMINICAN OAKS AREA
3 DOMINICAN WAY HELIPAD AND PARKING AREA
4 DOMINICAN WAY MEDICAL OFFICE BUILDING AREA
5 FUTURE PARKING GARAGE AREA
6 MAIN HOSPITAL AREA
7 ANNEX AREA
8 SOQUEL DRIVE AND ENTRY AREA 1
9 SOQUEL DRIVE AND ENTRY AREA 2
10 COMMERCIAL CROSSING AREA
11 76 GAS STATION AREA
12 STATE HWY 1 COMMERCIAL WAY AND PARKING LOT AREA
SOQUEL DRIVE
STATE HWY 1
24"RCP
GRAPHIC SCALE
200 0 100 200
(IN FEET)
1 inch = 200 ft.
DRAINAGE MANAGEMENT AREAS
BOWMAN & WILLIAMS
CONSULTING CIVIL ENGINEERS AND LAND SURVEYORS
3949 RESEARCH PARK CT., STE. '00, SOQUEL, CA 95073
(831) 426-3560
SCALE 1" = 200'
JOB NO. 27214
DATE 10/2/19
DWG NAME 27214- DMP
DRAWN KAB
FILE NO.

DRAINAGE ANALYSIS EXHIBITS



LEGEND
EXISTING STORM DRAIN SYSTEM
MANHOLE COVER
ASSESSOR'S PARCEL LINE
WATERSHED LIMITS
STORM DRAIN CONDUITS (COUNTY DATA)
INLET 1
RIM 122.3
INV 119.5
12"RCP
15"RCP
INLET 2
RIM 120.8
INV 117.1
12"RCP
MH 1
RIM 121.2
15" INV 115.0
12" INV 116.0
4"PVC
6"PVC
12"RCP
12"RCP
15"RCP
INLET 3
RIM 117.0
INV 110.3
INLET 4
RIM 117.0
INV 109.74
INLET 5
RIM 117.85
INV 106.54
6"PVC
6"PVC
MH 2
RIM 115.35
INV 102.79
MH 3
RIM 113.20
INV 101.40
12"RCP
MH 4
RIM 110.1
INV 99.6
24"RCP
24"RCP
24"RCP
8"
12"PVC
24"RCP
INLET 7
RIM 108.4
INV 99.3
6/8"RCP
24"RCP
24"RCP
INLET 6
RIM 106.8
INV 96.5
21"RCP
12"PVC
24"RCP
Z5-CB-294
RIM 98.3
INV 94.6
DRIVE
GRAPHIC SCALE
80 0 40 80
(IN FEET)
1 inch = 80 ft.
HYDRAULIC ANALYSIS
PLAN 1
BOWMAN & WILLIAMS
CONSULTING CIVIL ENGINEERS
AND LAND SURVEYORS
3949 RESEARCH PARK CT., STE. '00, SOQUEL, CA 95073
(831) 426-3560
SCALE 1" = 80'
JOB NO. 27214
DATE 10/2/19
DWG NAME 27214-DMP
DRAWN KAB
FILE NO.



COUNTY OF SANTA CRUZ MASTER PLAN DATA

Node ID*	County Grid #	Ground El. (ft)	Invert El. (ft)	Max HGL (ft) 5Yr	10Yr	25Yr	100Yr
Z5_CB_294	G3	102.00	98.33	105.87	108.46	111.93	117.59
Z5_CB_295	G3	102.00	97.63	102.42	104.22	106.41	110.04
Z5_IL_1155	G3	102.00	96.17	100.53	102.14	104.15	107.10
Z5_MH_3735	G3	102.00	96.31	101.15	102.82	104.88	108.01
Z5_MH_3726	H3	102.00	92.61	97.29	98.86	100.37	102.57
Z5_MH_5169	H3	101.85	91.08	95.71	97.31	98.49	100.55
Z5_OF_5057	H3	98.12	88.85	93.35	94.73	96.09	97.94

NOTE: DATA REFERED TO AS (KH) WERE OBTAINED FROM "STORMWATER RUNOFF CONTROL SYSTEM ANALYSIS, CVS COMMERCIAL WAY, SANA CRUZ, CA APN 025-071-05 &-20" PREPARED BY C2G/CIVIL CONSULTANTS GROUP, INC., DATED AUGUST 19, 2019.

GRAPHIC SCALE

60 0 30 60

(IN FEET)
1 inch = 60 ft.

HYDRAULIC ANALYSIS PLAN 2

BOWMAN & WILLIAMS
CONSULTING CIVIL ENGINEERS AND LAND SURVEYORS
3949 RESEARCH PARK CT., STE. '00, SOQUEL, CA 95073
(831) 426-3560

SCALE 1" = 80'	JOB NO. 27214
DATE 10/2/19	DWG NAME 27214-DMP
DRAWN KAB	FILE NO.

TRIBUTARY DRAINAGE AREA SUMMARIES

DRAINAGE CALCULATIONS FOR :
DIGNITY HEALTH - NEW SURGERY TOWER
1555 SOQUEL DRIVE, SANTA CRUZ CA 95065
BOWMAN & WILLIAMS FILE: 27214
October 16, 2019

DMA AREA	DESCRIPTION	SIZE (SF)	SIZE (Acre)	IMPERVIOUS AREA	SEMI IMPERVIOUS AREA	PERVIOUS AREA	C	Flow Length	Δ Height	Tc (min)
1	PG&E, HOUTS DR AND PATTERSON LN	418,959	9.618	2.255	1.633	5.729	0.47	1173	176	4
2	DOMINICAN OAKS AREA	146,436	3.362	2.277	0.000	1.085	0.71	737	48	4
	DOMINCAN OAKS W/ DETENTION	*146,436*	3.362	0.000	0.000	3.362	0.30			
	NON-DETENTION AREA #2	*0*	0.000				0.00			
	TOTAL #2	**146,436**	**3.362**				**0.30**			
3	DOMINICAN WAY HELIPAD AND PARKING AREA	200,236	4.597	3.617	0.000	0.980	0.77	727	6	8.5
	HELIPAD AREA W/ DETENTION	*137,487*	3.156	0.000	0.000	3.156	0.30			
	NON-DETENTION AREA #3	*62,749*	1.441	1.038	0.000	0.403	0.73			
	TOTAL #3	**200,236**	**4.597**			**4.597**	**0.44**			
4	DOMINICAN WAY MEDICAL OFFICE BUILDING AREA	140,249	3.220	2.569	0.000	0.651	0.78	560	8	6
5	FUTURE PARKING GARAGE AREA	102,766	2.359	1.679	0.000	0.680	0.73	530	4	6
	PARKING GARAGE W/ DETENTION	*102,766*	2.359	0.000	0.000	2.359	0.30			
	NON-DETENTION AREA #5	*0*	0.000			0.000	0.00			
	TOTAL #5	**102,766**	**2.359**			**2.359**	**0.30**			
6	MAIN HOSPITAL AREA	217,270	4.988	3.910	0.129	0.949	0.78	500	6	5.5
	HOSPITAL AREA W/ DETENTION	*100,879*	2.316	0.000	0.000	2.316	0.30			
	NON-DETENTION AREA #6	*116,391*	2.672	2.252	0.000	0.420	0.81			
	TOTAL #6	**217,270**	**4.988**			**4.988**	**0.57**			
7	ANNEX AREA	80,842	1.856	1.119	0.000	0.737	0.66	620	8	6.5
8	SOQUEL DRIVE & ENTRY AREA 1	130,604	2.998	1.799	0.000	1.200	0.66	430	16	3.5
9	SOQUEL DRIVE & ENTRY AREA 2	49,646	1.140	0.859	0.000	0.281	0.75	459	6	5
10	COMMERCIAL CROSSING AREA	322,562	7.405	5.885	0.000	1.520	0.78	712	14	6
11	76 GAS STATION	38,041	0.873	0.759	0.000	0.114	0.82	253	1	4
12	STATE HWY 1 COMMERCIAL WAY AND PARKING LOT AREA	112,776	2.589	2.091	0.000	0.498	0.78	624	13	5.5

DRAINAGE SYSTEM CALCULATIONS

DIGNITY HEALTH
DOWNSTREAM SYSTEM DRAINAGE CALCULATIONS
B&W JOB NO. 27214

P60 = 1.50
INTENSITY FROM "COUNTY OF SANTA CRUZ, DESIGN CRITERIA, RAINFALL INTENSITY DURATION CURVES.

10 YEAR DESIGN STORM -EXISTING SYSTEM

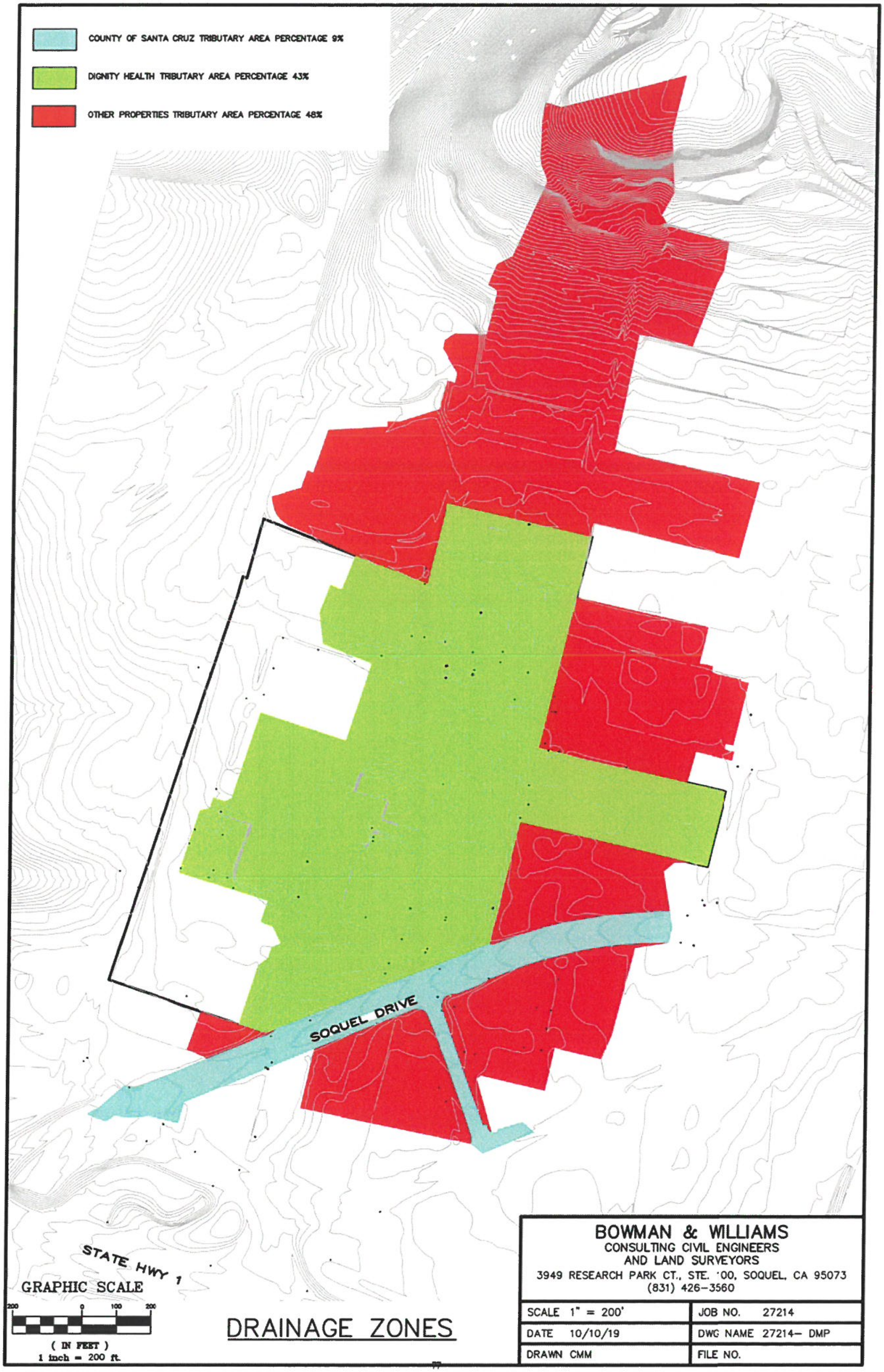
Denotes Controlling Water Surface

Inlet or Junction Structure													Pipe Properties								Losses							
Area Desig-nation	Area A (ac)	C	A*C	Tc (min)	I (in/hr)	Q (cfs)	Junction Desig-nation	Summ. A*C	Summ. Tc (min)	DELTA Tc (min)	I (in/hr)	Q (cfs)	LNGTH. (ft)	DIA. (in)	TYPE	Pipe Area (sf)	Mannings n	V (fps)	HGL Slope Sn	Fric. Loss L*Sn (ft)	Ent. Loss Hi (ft)	Sum of Head Loss (ft)	Outlet Control W.S. Elev	Inlet Control W.S. Elev	Top of Rim T.G. Elev	Invert Elev.	COMMENTS
AREA 1	9.618	0.47	4.52	10.00	2.11	9.55	INLET 1	4.52	10.00	0.49	2.11	9.55	231	15	RCP	1.2272	0.015	7.78	0.0290	6.6908	1.0344	7.7252	131.62	121.78	122.30	119.50	FLOODED
							MH1																123.90	117.74	121.20	115.00	FLOODED
AREA 2	3.362	0.30	1.01	10.00	2.11	2.13	INLET 2	1.01	10.00	0.89	2.11	2.13	145	12	RCP	0.7854	0.015	2.71	0.0047	0.6874	0.1257	0.8131	124.71	118.23	120.80	117.10	10 YR Detention
							MH 1	5.53	10.49	0.30	2.07	11.44	169	15	RCP	1.2272	0.015	9.33	0.0416	7.0292	1.4854	8.5146	123.90	118.74	121.20	116.00	FLOODED
							INLET 3	5.53	10.80	0.13	2.05	11.31	29	24	RCP	3.1416	0.013	3.60	0.0025	0.0721	0.2213	0.2934	115.38	112.52	117.00	110.30	
AREA 3	4.597	0.44	2.02	10.00	2.11	4.27	INLET 4	7.55	10.93	0.57	2.03	15.36	166	24	RCP	3.1416	0.013	4.89	0.0046	0.7618	0.4085	1.1703	115.09	112.15	117.00	109.74	10 YR Detention
AREA 4	3.220	0.78	2.51	10.00	2.11	5.31	INLET 5	10.06	11.50	0.50	1.99	20.04	191	24	RCP	3.1416	0.013	6.38	0.0078	1.4914	0.6950	2.1863	113.92	109.23	117.85	106.54	
AREA 5	2.359	0.30	0.71	10.00	2.11	1.50	MH2	10.77	12.00	0.16	1.96	21.07	65	24	RCP	3.1416	0.013	6.71	0.0086	0.5609	0.7680	1.3288	111.73	105.56	115.35	102.79	10 YR Detention
							MH3	10.77	12.16	0.21	1.94	20.95	86	24	RCP	3.1416	0.013	6.67	0.0085	0.7337	0.7593	1.4930	110.41	104.16	113.20	101.40	
AREA 6	4.988	0.57	2.84	10.00	2.11	6.01	MH4	13.61	12.37	0.68	1.93	26.28	340	24	RCP	3.1416	0.013	8.37	0.0134	4.5657	1.1952	5.7609	108.91	102.80	110.10	99.60	Detention
							INLET 6	13.61	13.05	0.41	1.89	25.69	200	24	RCP	3.1416	0.013	8.18	0.0128	2.5670	1.1424	3.7094	103.15	99.64	106.80	96.50	
							Z5-CB-294																99.44	97.80	98.30	94.60	
AREA 7	1.856	0.66	1.22	10.00	2.11	2.59	INLET 7	1.22	10.00	2.97	2.11	2.59	192	21	RCP	2.4053	0.015	1.08	0.0004	0.0679	0.0198	0.0876	99.53	101.07	108.40	99.30	
AREA 8	3.000	0.66	1.98	10.00	2.11	4.18	Z5-CB-294	16.82	13.46	0.22	1.86	31.33	86	30	RCP	4.9088	0.013	6.38	0.0058	0.4992	0.6958	1.1950	99.44	97.80	98.30	94.60	
AREA 9	1.140	0.75	0.86	10.00	2.11	1.81	Z5-CB-295	17.67	13.68	0.18	1.85	32.69	72	30	RCP	4.9088	0.013	6.66	0.0063	0.4551	0.7576	1.2127	98.25	96.76	97.90	93.50	
AREA 10	7.400	0.78	5.77	10.00	2.11	12.19	Z5-IL-1155	23.45	13.86	0.31	1.84	43.13	162	30	RCP	4.9088	0.013	8.79	0.0110	1.7820	1.3186	3.1006	97.04	95.52	97.60	91.70	
AREA 11	0.873	0.82	0.72	10.00	2.11	1.51	Z5-MH-3726	24.16	14.17	0.15	1.82	44.03	83	30	RCP	4.9088	0.013	8.97	0.0115	0.9518	1.3745	2.3263	93.40	93.93	100.96	90.06	LinerLinerLinerLiner
AREA 12	2.589	0.78	2.02	10.00	2.11	4.27	Z5-MH-5169	26.18	14.32	0.21	1.81	47.50	124	30	RCP	4.9088	0.013	9.68	0.0133	1.6543	1.5991	3.2534	87.99	91.07	98.82	86.97	
							OUTLET																84.74				OUTLET

CONTRIBUTING DRAINAGE AREAS

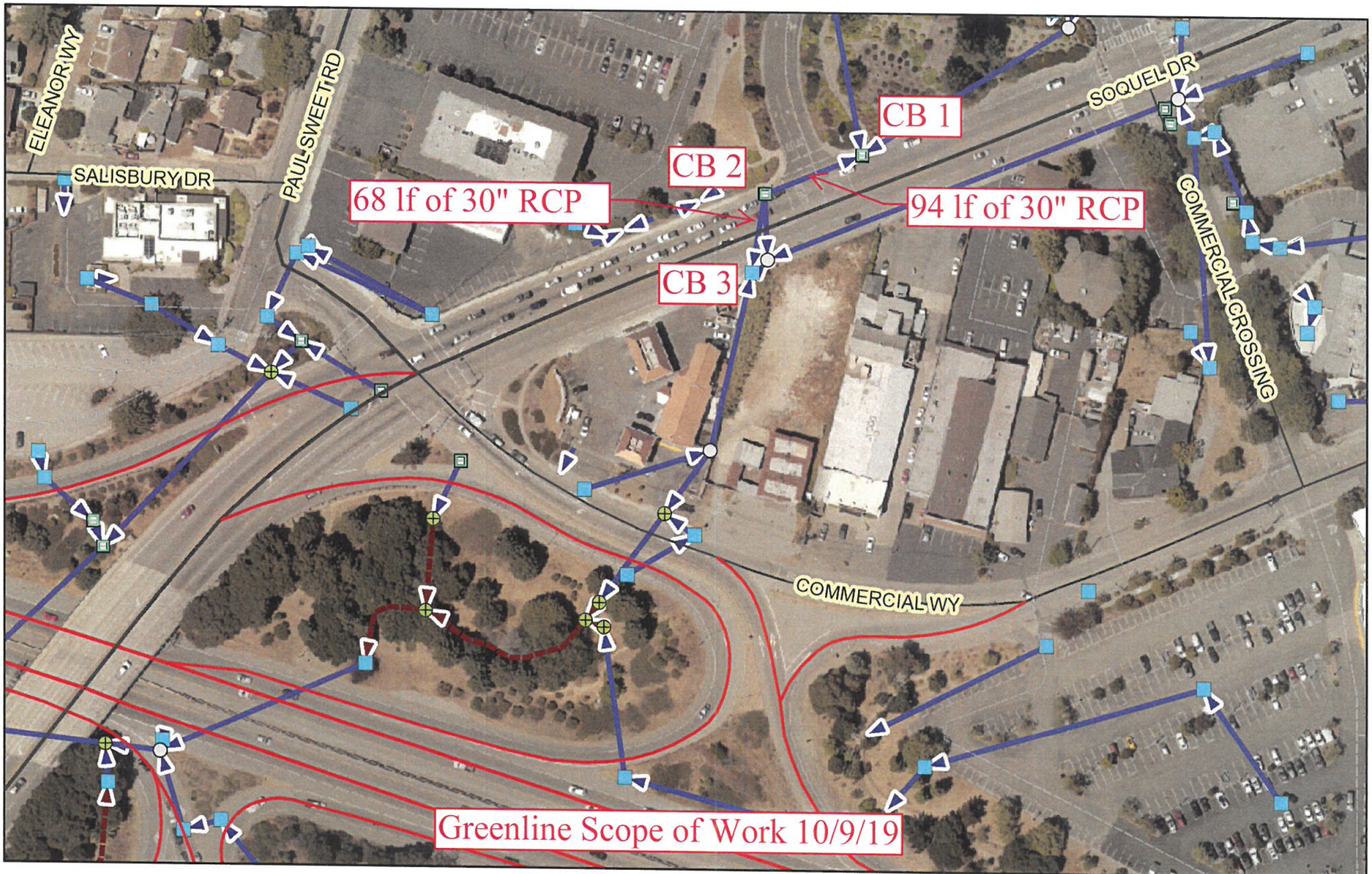
DIGNITY HEALTH
DRAINAGE ZONE CALCULATIONS
B&W JOB NO. 27214

	AREA (SQUARE FEET)	AREA (ACRES)	C VALUE	WIEGHTED C VALUE	PERCENT
COUNTY OF SANTA CRUZ DRAINAGE AREA	122,255	2.81		0.88	**9.0%**
PERVIOUS	3,344	0.08	0.30		
IMPERVIOUS	118,911	2.73	0.90		
DIGNITY HEALTH DRAINAGE AREA	715,760	16.43		0.73	**43.0%**
PERVIOUS	197,974	4.54	0.30		
IMPERVIOUS	512,157	11.76	0.90		
SEMI-IMPERVIOUS	5,629	0.13	0.50		
OTHERS DRAINAGE AREA	971,083	22.29		0.61	**48.0%**
PERVIOUS	421,595	9.68	0.30		
IMPERVIOUS	478,335	10.98	0.90		
SEMI-IMPERVIOUS	71,153	1.63	0.50		


COUNTY OF SANTA CRUZ TRIBUTARY AREA PERCENTAGE 9%
DIGNITY HEALTH TRIBUTARY AREA PERCENTAGE 43%
OTHER PROPERTIES TRIBUTARY AREA PERCENTAGE 48%
SOQUEL DRIVE
STATE HWY 1
GRAPHIC SCALE
200 0 100 200
(IN FEET)
1 inch = 200 ft.
DRAINAGE ZONES
BOWMAN & WILLIAMS
CONSULTING CIVIL ENGINEERS
AND LAND SURVEYORS
3949 RESEARCH PARK CT., STE. '00, SOQUEL, CA 95073
(831) 426-3560
SCALE 1" = 200'
JOB NO. 27214
DATE 10/10/19
DWG NAME 27214- DMP
DRAWN CMM
FILE NO.

DOWNSTREAM VIDEO INSPECTION

Dignity Health Downstream Storm Drain Syst



August 6, 2019

Storm Drain Junctions

Catch Basin
City Structure
Detention
Flood Control Pump
Inlet
Junction
Manhole
Open Pipe
Outfall
Trash Capture
UKN

1:1,528

0 70 140 280 ft

0 20 40 80 m

County of Santa Cruz

GREENLINE

Tel:
Fax:
E-mail:

Inspection Report

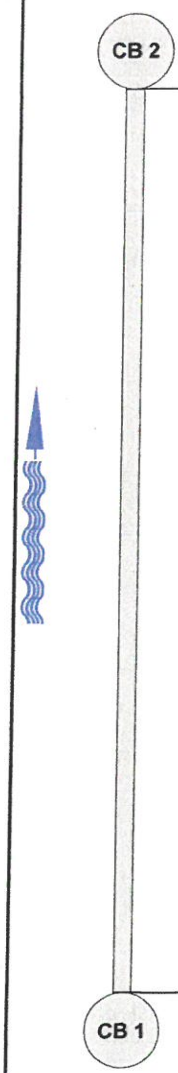
Date	P/O. No.	Weather	Surveyor's Name	Pipe Segment Reference	Section No.
11/1/2019		**Dry**	**TOM**		**1**
Certificate No.	Survey Customer	System Owner	Date Cleaned	Pre-Cleaning	Sewer Category
U 904 1562				**No Pre-Cleaning**	

Street123	**SOQUEL DR**	Use of Sewer		Upstream MH	**CB 1**
City	**SANTA CRUZ**	Drainage Area		Dowstream MH	**CB 2**
Loc. details		Flow Control	**Not Controlled**	Dir. of Survey	**Upstream**
Location Code		Length surveyed	**93.54 ft**	Section Length	**93.54 ft**

Purpose of Survey		Joint Length	
Year Laid		Dia./Height	**30 inch**
Year Rehabilitated		Material	**Reinforced Concrete Pipe**
Tape / Media No.		Lining Method	

Add. Information :

1:238 **Position** **Observation** **Photo**



Position	Observation
0.00	Catch Basin
93.54	Catch Basin

QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	**0000**	**0**	**0**	**0**	**0**	**0**	**0**

City : SANTA CRUZ

GREENLINE

Tel:
Fax:
E-mail:

Inspection Report

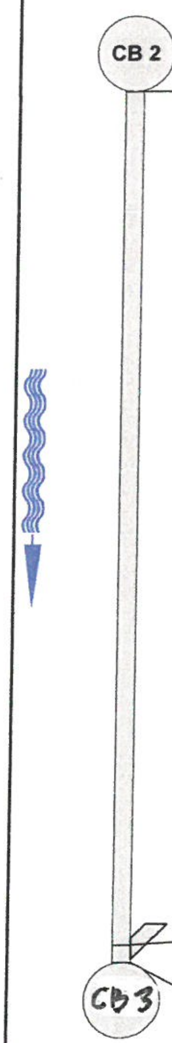
Date	P/O. No.	Weather	Surveyor's Name	Pipe Segment Reference	Section No.
11/1/2019			TOM		2
Certificate No.	Survey Customer	System Owner	Date Cleaned	Pre-Cleaning	Sewer Category
U 904 1562				No Pre-Cleaning	

Street123	SOQUEL DR	Use of Sewer	Stormwater	Upstream MH	CB 2
City	SANTA CRUZ	Drainage Area		Dowstream MH	CB3
Loc. details		Flow Control	Not Controlled	Dir. of Survey	Downstream
Location Code		Length surveyed	68.85 ft	Section Length	68.85 ft

Purpose of Survey		Joint Length	
Year Laid		Dia./Height	30 inch
Year Rehabilitated		Material	Reinforced Concrete Pipe
Tape / Media No.		Lining Method	

Add. Information :

1:182	Position	Observation	Photo
	0.00	Catch Basin	
	67.46	Tap Break-In, at 09 o'clock, -, within 8 inches of joint: YES, 12"	
	68.85	Catch Basin	



QSR	QMR	SPR	MPR	OPR	SPRI	MPRI	OPRI
0000	0000	0	0	0	0	0	0