Contract Package 2 (CP2) Specific Construction Transportation Management Plan (CTMP) for West Portal Early Works

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KIEWIT SHEA TRAYLOR JV
CP2 TUNNEL AND TRACK

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APPROVALS:

As the KSTJV Design Manager for the BSVII Tunnel and Track Contract, I certify this submittal is in accordance with applicable clauses of the contract.

Eric Halvorson, Design Manager Kiewit/Shea/Traylor Joint Venture	Date
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ACRONYMS AND ABBREVIATIONS

ABBREVIATION	DEFINITION
BART	San Francisco Bay Area Rapid Transit
BMP	Best Management Practice
BSV	BART Silicon Valley
CP	Contract Package
CTMP	Construction Transportation Management Plan
CTMP1	Construction Transportation Management Plan for West Portal Early Works
EAT	External Affairs Team
ESCP	Emergency Services Coordination Plan
KST	Kiewit/Shea/Traylor
LOS	Level of Service
MMRP	Mitigation Monitoring and Reporting Program
SEIS / SEIR	Supplemental Environmental Impact Statement / Subsequent Environmental Impact Report
SOE	Support of Excavation
SWPPP	Storm Water Pollution Prevention Plan
TBM	Tunnel Boring Machine
TCP	Traffic Control Plan
UPRR	Union Pacific Railroad
VTA	Santa Clara Valley Transportation Authority

1.0 INTRODUCTION

Kiewit Shea Traylor Joint Venture (KST) is the design-build contractor for the VTA BART Silicon Valley II Extension Project, Contract Package 2 (BSVII CP2). KST has prepared this CP2 West Portal Early Works specific Construction Transportation Management Plan (CTMP1) for the construction activities described herein.

1.1 PROJECT LOCATION

The project site is referred to as “West Portal” or “Newhall Yard” and is located in the Cities of San José and Santa Clara. The site is bounded by I-880 to the east, Brokaw Road to the west, Union Pacific Railroad (UPRR) tracks to the south, and Champions Way, Newhall Drive and existing developments to the north.

The site will be utilized as the launch site for the tunnel boring machine (TBM) and staging area during construction. Once construction is complete, the site will be utilized as BART storage and maintenance facility.

Figure 1 - Vicinity Map

1.2 PROJECT TEAM

Owner: Valley Transportation Authority (VTA)

Design-Build Contractor: Kiewit Shea Traylor Joint Venture (KST)

Traffic Design Lead: KST and JMA Civil, Inc.

1.3 BSVII FINAL CTMP

This CTMP1 for CP2 West Portal Early Works is based on the program-wide Draft CTMP for BSVII, dated 9/10/2021, and covers all requirements set in the BSVII Draft CTMP. See **Table 1** below for a summary of contents in the BSVII Draft CTMP and corresponding contents in this CTMP1.

This CTMP1 pertains to the Early Works, which consists of establishing construction support facilities and work prior to the launch of the TBM, such as site grading, temporary utility installation, and construction of temporary field office buildings, precast concrete plant and grout plant.

As agreed in prior coordination meetings, KST will handle Early Site Preparation activities outside of CTMP1 due to the low expected construction traffic volumes (less than 50 trucks a day, operating during standard City work hours). These activities include clearing and grubbing, minor demolition, fence installation and portion of lime treatment. KST will closely coordinate all work with the Cities and obtain any necessary permits.

Also agreed in prior coordination meetings, this CTMP1 applies for construction works at West Portal, except for during events at PayPal Park; a separate "Event Management Plan" addressing hauling during PayPal event ingress/egress will be developed in the coming months in coordination with VTA, the Cities of San José and Santa Clara, and PayPal Park.

In addition, subsequent work after the launch of the TBM, such as tunnel boring and hauling of excavated materials (Muck), will be addressed in a subsequent CTMP.

Table 1 - Summary CTMP Contents

No.	BSVII Draft CTMP	CP2 Early Works Specific CTMP
1	Chapter 2 – Construction Sequencing	Chapter 2.0 - Construction Sequencing and Staging Plan
2	Section 3.1.1.1 – Vehicle, Bicycle and Pedestrian Traffic	N/A as no impact is anticipated. See Section 2.3
3	Section 3.1.1.2 – Allowed Road Closures and Lane Closure Requirements	N/A as no impact is anticipated. See Section 2.3
4	Section 3.1.1.3 – Private Property Access Requirements	N/A as no impact is anticipated. See Chapter 5.0 - Maintenance of Property Access and Appendix C - Access to Businesses and Properties
5	Section 3.1.1.4 – Detour Routes	N/A as no impact is anticipated. See Section 2.3
6	Section 3.1.1.5 – Public Transit / Bus Operations Impacts	N/A as no impact is anticipated. See Chapter 4.0 - Public Operation and Bus Operations
7	Section 3.1.2.1 – Construction Staging	Section 2.1 - Construction Sequencing and Staging
8	Section 3.1.2.2 – Concurrent Construction	Section 2.11 - Concurrent Construction
9	Section 3.1.2.3 – City Ordinances / Work Hours	Section 2.12 - Time of Construction

No.	BSVII Draft CTMP	CP2 Early Works Specific CTMP
10	Section 3.1.2.4 – Haul Routes	Section 2.5 - Haul Routes
11	Section 3.1.2.5 – Emergency Response	Chapter 7.0 - Emergency Access and Response
12	Section 3.1.2.6 – School Zone Safety	Chapter 6.0 - School Zone Safety Plan
13	Section 3.1.2.7 – Construction Parking	Section 2.1 - Construction Sequencing and Staging
14	Section 3.1.3 – Operational Requirements	N/A as no public roadway impact is anticipated. See Section 2.3 and 2.4
15	Section 3.1.4 – Contingency Plan	Chapter 7.0 - Emergency Access and Response
16	Section 3.1.5 – City of San José General Requirements	Work Hours – See Section 2.12 Haul Routes – See Section 2.5 Special Events – See Section 2.7 Downtown San José Requirements – N/A Required Permits – See Chapter 8.0
17	Section 3.1.6 – City of Santa Clara General Requirements	Work Hours – See Section 2.12 Haul Routes – See Section 2.5 Special Events – See Section 2.7 Required Permits – See Chapter 8.0
18	Section 3.2.7 – West Tunnel Portal Specific Requirements	Transit Routes – See Chapter 4.0 Haul Routes – See Section 2.5 PayPal Park Coordination – See Section 2.9; Separate “Event Management Plan” Private Property Access – See Chapter 5.0
19	Appendix A – Emergency Services Coordination Plan	Chapter 7.0 - Emergency Access and Response
20	Appendix B – Summary of Access and Service Needs Memorandum	Appendix C - Access to Businesses and Properties
21	Appendix C – San José Better Bike Plan 2025	N/A as no impact is anticipated. See Section 2.3
22	Appendix D – List of Ongoing and Planned Construction Projects	Section 2.11 - Concurrent Construction
23	Appendix E – San José Draft Activity Work Hours	Section 2.12 - Time of Construction
24	Appendix F – List of Events	N/A as no special events are impacted. See Section 2.7
25	Appendix G – Downtown Construction Guidelines	N/A as West Portal is outside of Downtown area
26	Appendix H – San José Permit requirements	Appendix E – City Permit Requirements

No.	BSVII Draft CTMP	CP2 Early Works Specific CTMP
27	Appendix I – Santa Clara Draft Activity Work Hours	Section 2.12 - Time of Construction
28	Appendix J – Santa Clara Permit Requirements	Appendix E – City Permit Requirements
29	Appendix K – San José Arena Transportation & Parking Management Plan	N/A as West Portal is outside of San José Arena area
30	Appendix L – Earthquakes Stadium Transportation & Parking Management Plan	Section 2.9 - Impact on Local Business

2.0 CONSTRUCTION SEQUENCING AND STAGING PLAN

This section summarizes construction sequencing and staging, and transportation impacts anticipated during the West Portal early works activities.

2.1 CONSTRUCTION SEQUENCING AND STAGING

The West Portal Early Works consists of establishing the construction yard for West Portal and is planned to begin in summer 2023 and last until winter 2024 to early 2025. Sequencing and staging for the Early Works is summarized below. An overall site layout plan is included in **Appendix A**.

See **Table 2** below for a summary of construction sequencing. As agreed in prior coordination meetings, KST will handle Early Site Preparation activities outside of CTMP1 due to the low expected construction traffic volumes (less than 50 trucks a day, operating during standard City work hours). These activities include clearing and grubbing, minor demolition, fence installation and portion of lime treatment. KST will closely coordinate all work with the Cities and obtain any necessary permits. In addition, work after Stage 4, such as tunnel mining and muck hauling, will be addressed in a subsequent CTMP.

Table 2 - Construction Sequencing

No.	Construction Activity	Period of Construction
Stage 1	Site Grading	Beginning Summer 2023 [1] for 5 Months
Stage 2	Site Development	Beginning Summer 2023 [1] for 9 Months
Stage 3	Precast Plant and TBM Segment Storage Area	Beginning 2023 [1] for 13 Months
Stage 4	TBM Shaft and Muck Bin Excavation	Beginning Fall 2023 for 17 Months

Notes:

1. Stage 1-3 to begin immediately after the approval of the CTMP and associated permits.

Average and peak truck volumes per day for each month of construction are summarized in **Table 3** below. The estimated number of "Peak Days", defined as greater than 250 trucks per day, is 5 days per month on average. KST will give the City of San Jose (traffic.signals@sanjoseca.gov) notice two days prior to anticipated peak truck volume days.

Table 3 - Truck Volumes by Month

Date	Average Daily Truck Volume (Trucks/Day)					Peak Truck Volume (Typical 5 days/month) (Trucks/Day)				
	Stage 1	Stage 2	Stage 3	Stage 4	Total	Stage 1	Stage 2	Stage 3	Stage 4	Total
Month 1	73	8	1	0	**82**	200	20	40	0	**260**
Month 2	73	8	1	0	**82**	200	20	40	0	**260**
Month 3	73	8	37	21	**139**	200	20	80	40	**340**
Month 4	73	0	37	21	**131**	200	0	100	40	**340**
Month 5	73	2	37	21	**133**	200	10	90	40	**340**
Month 6	73	2	37	0	**112**	200	10	130	0	**340**
Month 7	0	2	27	0	**29**	0	50	170	0	**220**
Month 8	0	2	27	79	**108**	0	50	170	120	**340**
Month 9	0	2	27	82	**111**	0	10	100	230	**340**
Month 10	0	0	27	113	**140**	0	0	100	240	**340**
Month 11	0	0	27	113	**140**	0	0	100	240	**340**
Month 12	0	0	27	113	**140**	0	0	100	240	**340**
Month 13	0	0	27	113	**140**	0	0	100	240	**340**
Month 14	0	0	0	32	**32**	0	0	0	60	**60**
Month 15	0	0	0	32	**32**	0	0	0	65	**65**
Month 16	0	0	0	32	**32**	0	0	0	65	**65**
Month 17	0	0	0	32	**32**	0	0	0	65	**65**
Month 18	0	0	0	32	**32**	0	0	0	65	**65**
Month 19	0	0	0	32	**32**	0	0	0	65	**65**

Notes:

Truck volumes include excavation and off-haul for site grading, imported fill material, deliveries of raw materials such as cement and aggregate, and deliveries of equipment, etc.

2.1.1 Stage 1 – Site Grading

In this stage, KST will establish main site entrance off Newhall Drive, and continue lime treatment and grading, generally from the southeast to the northwest. Key construction activities are summarized below; plans showing the site grading is included in **Appendix A**.

- Relocation of a storm drain inlet, a sanitary sewer manhole and a backflow preventer near Newhall Drive.
- Establishment of construction entrances off Newhall Street, Newhall Drive and Brokaw Road.
- Approximately 34,000 cubic yards of excavation and off-haul.
- Approximately 85,000 cubic yards of imported fill.
- Remainder of lime treatment not performed during Early Site Preparation.
- Compaction of the subgrade.
- Installation of temporary utilities.

The 34,000 cubic yards of off-haul and 85,000 cubic yards of imported fill require approximately 12,000 total truck trips.

Due to the level of site preparation required at the site, KST plans to distribute 75 percent of construction hauling vehicles through the main entrance on Newhall Drive; the rest will enter through the entrance on Brokaw Road. The entrance off Brokaw Road is required to minimize truck queuing at the Newhall Drive entrance. Both the Newhall Drive access and the Brokaw Road access are required access points for construction activities. However, each provides a point of ingress and egress in case one of the entrances is blocked due to unforeseen circumstances.

On Peak days Brokaw handles 85 trucks a day, which is 25 percent of 340 peak day trucks. If unforeseen circumstances do occur on Newhall to render it restricted or unusable, trucks would be queued onsite such that Brokaw would not see more than the typical peak of 85 trucks a day. The distribution between the Newhall Drive and Brokaw Road entrances is estimated based on the site layout and construction activity, but Brokaw will be limited to 85 trucks per day as a peak as a maximum for any stage of Early Works Construction.

Conversely, on peak days Newhall handles 255 trucks a day, which is 75 percent of 340 peak day trucks. If unforeseen circumstances block Brokaw, trucks would be queued or reduced such that Newhall would not see more than the typical peak of 255 trucks per day.

The anticipated maximums for average daily trucks is 73 and for peak daily trucks is 200 for stage 1.

The trucking operations will be managed by the KST Truck Boss and as described in section 2.5.2 for all stages.

Construction entrance/exit, vehicle wash out area and other storm water pollution prevention BMPs will be in place. All queuing and stockpile locations will be contained within the construction site; see **Appendix A** for additional details. Average and peak truck volumes per day for each month of construction are shown in **Table 3**. The grading activity is estimated to require up to 200 trucks per day during peak days.

2.1.2 Stage 2 – Site Development

In this stage, KST will finish the development of the site, generally from the southeast to the northwest. Key construction activities are summarized below; plans showing the site development is included in **Appendix A**.

- Construction of additional site roads and parking.
- Installation of temporary office trailers.
- Installation of temporary utilities and connecting to offices.

Approximately 75 percent of construction vehicles will enter through the main entrance on Newhall Drive; the rest will enter though the entrance on Brokaw Road. All queuing and stockpile locations will be contained within the construction site; see **Appendix A** for additional details. Average and peak truck volumes per day for each month of construction are shown in **Table 3** .

The anticipated maximum for average daily trucks is 8 and for the peak daily trucks is 50 for stage 2.

2.1.3 Stage 3 – Precast Plant and TBM Segment Storage Area

In this stage, KST will construct the precast plant and storage area for the TBM segments. Key construction activities are summarized below; plans showing the construction of precast plant and TBM segment storage area is included in **Appendix A**.

- Surcharging precast plant and TBM segment storage area.
- Installation of precast plant utilities.
- Construction of plant, gantry crane and storage area foundations and slabs.
- Installation of plant building and equipment.
- Test production of the precast plant.

Approximately 75 percent of construction vehicles will enter through the main entrance on Newhall Drive; the rest will enter though the entrance on Brokaw Road. All queuing and stockpile locations will be contained within the construction site; see **Appendix A** for additional details. Average and peak truck volumes per day for each month of construction are shown in **Table 3** .

The anticipated maximums for average daily trucks is 37 and for the peak daily trucks is 170 for stage 3.

2.1.4 Stage 4 – TBM Shaft and Muck Bin Excavation

In this stage, KST will excavate the tunnel boring machine (TBM) shaft and muck bin and assemble the TBM. Key construction activities are summarized below; plans showing the TBM shaft and muck bin excavation, and TBM assembly are included in **Appendix A**.

- Construction of interior concrete build-out area and grout plant.
- Muck bin excavation (soldier piles, excavation and construction of MSE wall and liner).

- Construction of SOE starter wall.
- Construction of Support of Excavation (SOE) slurry walls (confinement walls, TBM shaft walls, and ramp walls).
- TBM shaft and ramp excavation (Caterpillar beams and excavation).
- Construction of TBM shaft concrete.
- Construction of TBM crane pad.
- Construction of TBM supporting facilities.
- Assemble the TBM.

Approximately 75 percent of construction vehicles will enter through the main entrance on Newhall Drive; the rest will enter though the entrance on Brokaw Road. All queuing and stockpile locations will be contained within the construction site; see **Appendix A** for additional details. Average and peak truck volumes per day for each month of construction are shown in **Table 3**. The excavation of the TBM shaft and ramp is estimated to require up to 200 trucks per day during peak days.

The anticipated maximums for average daily trucks is 113 and for the peak daily trucks is 240 for stage 4.

The subsequent tunnel excavation and muck hauling is not part of the Early Works and will be discussed in a separate CTMP

2.2 CONSTRUCTION EQUIPMENT AND MATERIAL LAYOUT

This section summarizes the construction equipment and material layout once the West Portal construction yard has been established. See **Table 4** below for a summary of key site facilities and equipment. See **Appendix A** for site layout plan.

Table 4 - Key Site Facilities and Equipment

No.	Site Facility/Equipment	Stage of Construction
1	Field Offices and Parking	Stage 2 – Site Development
2	Interior Concrete Build-out Area	Stage 4 – TBM Shaft and Muck Bin Excavation
3	Precast Plant and TBM Segment Storage	Stage 3 – Precast Plant and TBM Segment Storage Area
4	Grout Plant	Stage 4 – TBM Shaft and Muck Bin Excavation
5	Shaft Support of Excavation (SOE) and Muck Bin	Stage 4 – TBM Shaft and Muck Bin Excavation

2.2.1 Field Offices and Parking

Employee parking will be provided at the southeast end of the site with approximately 300 parking stalls. Vehicles will enter and exit through two entrances on Newhall Street.

Field office trailers will be installed north of the employee parking area. There will be approximately 20,000 square feet of office space and 7 dry houses measuring 12'x40' each. Temporary utility services, including portable water, sanitary sewer, electrical and communications will be provided to the office trailers.

At the peak for Early Works construction, there will be approximately 120 craft employees and approximately 100 staff. Craft workers in the day shift typically arrive at 5:30 – 6:00 AM and leave from 4:00 to 4:30 PM. Craft workers in the night shift typically arrive from 4:00 to 4:30 PM and leave 4:00 to 4:30 AM. Staff workers typically arrive from 5:00 to 7:30 AM and leave from 3:30 to 6:30 PM.

The Early Works construction activities will require approximately 220 parking stalls, compared to the 300 parking stalls provided. The parking stalls will remain for major construction (such as tunnel mining and muck hauling), when approximately 300 parking stalls will be required. Major construction activities are addressed in a separate CTMP.

2.2.2 Interior Concrete Build-out Area

The interior concrete build-out area is located at the northeast edge of the site, measuring approximately 125'x400'. The area is used to store materials for the tunnel construction, such as rails. Small mechanical shop, electrical shop, warehouse and drums are also located adjacent to the concrete build-out area.

When materials are received they will be unloaded and stockpiled at the interior concrete build-out area. The site roads are designed so that truck queuing and loading/unloading along the interior concrete build-out area will not impact traffic circulation within the site. No material stockpiling or truck queuing will take place outside the construction yard.

2.2.3 Precast Plant and TBM Segment Storage

The precast plant is located at the northeast edge of the site, north of the interior concrete build-out area. When in full production the precast plant will have a capacity of 10 tunnel liner rings/day. The precast tunnel segments will then be transferred to the TBM segment storage area, located between the interior build-out area and the precast plant, measuring approximately 120'x1,020'. The TBM segments will be stacked on strip footing and loaded/unloaded by a gantry crane.

All processes relating to the precast plant production will be fully contained within the construction yard.

2.2.4 Grout Plant

The grout plant is located at the southwest edge of the site across the site road from the precast plant. When in full production the grout plant will have a capacity of 50 cubic yards per hour. The grout will be loaded/unloaded at designated areas adjacent to the plant. There are also small storage containers and other equipment in this area.

All processes relating to the grout plant production will be fully contained within the construction yard.

2.2.5 Shaft Support of Excavation (SOE) and Muck Bin

The TBM Shaft is located at the southwest edge of the site, south of the grout plant and across the site road from the interior build-out area. When in operation excavated material (muck) will be carried out by a conveyor system and stored in the muck bin, located between the shaft and the grout plant. Muck will be loaded to truck around the muck bin perimeter and hauled off site. The muck hauling and other construction activities when the construction yard is in full operation will be covered in a separate CTMP as this CTMP is applicable to the Early Works only.

2.3 DETOUR ROUTES AND ALTERNATE ROUTES

Detour routes and alternate routes are not anticipated for West Portal Early Works at this time as no long-term lane closures are anticipated, since all construction activities, queuing and staging will be within the West Portal site. The traffic operational analysis presented in **Section 3.0** shows minimal effects on LOS due to construction traffic at the existing signalized intersections.

All pedestrian, bicycle and vehicular facilities will be maintained throughout the construction; no sidewalk, shoulder or lane closures are currently anticipated.

2.4 TRAFFIC CONTROL PLANS

Long-term traffic control plans are not anticipated for West Portal Early Works at this time as no sidewalk, shoulder or lane closures are currently anticipated. Installation of temporary utilities may require temporary lane closures which lasts a few hours to a couple of days; traffic control plans will be provided accordingly once construction plan for temporary utilities have been established.

2.5 HAUL ROUTES

The Haul routes applicable to West Portal are shown in **Figure 2**, which were established in the Draft CTMP. Approximately 75% of construction vehicles will enter the site via Newhall Drive; the remainder will enter via Brokaw Road. The entrance off Brokaw Road is required to minimize truck queuing at the Newhall Drive entrance.

Both the Newhall Drive access and the Brokaw Road access provide required points of ingress and egress for the construction traffic. In case one of the entrances is blocked due to unforeseen circumstances the other can act as the sole point of entry to the site. On Peak days Brokaw handles 85 trucks a day, which is 25 percent of 340 peak day trucks.

If unforeseen circumstances occur on Newhall to render it restricted or unusable, trucks would be queued onsite or some hauling might be halted, such that Brokaw would not see more than the typical peak of 85 trucks a day. The distribution between the Newhall Drive and Brokaw Road entrances is estimated based on the site layout and construction activity, but Brokaw will be limited to 85 trucks per day as a peak as a maximum.

Similarly should an unforeseen event render Brokaw unusable, trucks will queue onsite and be directed to Newhall while maintaining the peak truck traffic of 255 trucks (which is 75 percent of 340 peak daily trucks).

KST also proposes to develop a “traffic contingency plan” with the City of Santa Clara and the City of San Jose that details the lines of communication and processes that would be followed in case

either the intersection at Brokaw or at Newhall Drive are blocked due to unforeseen circumstances. This plan would be coordinated and developed prior to peak traffic operations.

All trucks will originate or leave from I-880 via Coleman Ave.

KST has conducted Pre Construction Surveys in accordance with the VTA Contract.

The proposed hauling hours are discussed in **Section 2.5.3**.

Hauling during PayPal events will be addressed in separate "Event Management Plan".

2.5.1 Holiday Work

There will be no hauling on major holidays (Day Before Thanksgiving, Thanksgiving Day, Christmas Eve, Christmas Day, New Year's Eve, New Year's Day, Memorial Day, Independence Day and Labor Day) as no construction work is anticipated on those days, unless emergency work is required on-site.

2.5.2 Trucker Management Plan

KST will develop and implement a plan to manage the truck drivers using the approved haul routes related to completing the construction of this project. A summary of the plan will include:

- Truck Boss to manage trucking activities
- Trucker Pre Construction Meetings
- Signage at all exits to the site directing the trucks to I-880
- Active Management by KST during construction
- Trucker Flash Cards to be referred to in cab to reinforce haul routes

KST will monitor the truck volumes on days of peak truck traffic, change of construction activities, and major holidays and events to ensure that truck volumes do not exceed the expected volumes. This will ensure desired split between Newhall Drive and Brokaw Road is achieved. KST control processes to validate truck volumes and provide information that trucks are using the proper entrances will be shared with the City upon request.

2.5.3 Haul Hours

For most of the construction activities the haul hours will match work hours; see **Table 6**. Typical single-shift construction hauling activity lasts from 6AM to 4PM, for 10 hours, and 6 days a week (Monday to Saturday).

Certain construction activities will be double shift to meet the construction schedule. Among these double shift activities, TBM assembly and starting production of the precast plant only require hauling during the day shift, from 6AM to 4PM. Materials will be double-handled, which require that the materials for the night shift be delivered during the day and stockpiled on-site.

KST expects the TBM Shaft and Ramp Excavation to require hauling during both day and night shifts, from 6AM to 4AM. The Support of Excavation – Slurry Walls construction activity will also require hauling during both shifts during times of heightened construction periods.

The Synchro analysis completed as a part of this CTMP does not indicate an impact to morning AM traffic due to hauling, but KST will work closely with trucking companies to determine if there is a potential to reduce hauling between the 7 AM and 9 AM rush hour traffic period.

Approval of this CTMP by the City of San José and the City of Santa Clara and any revisions thereafter shall also constitute approval of the work and haul hours as presented in **Table 6.**

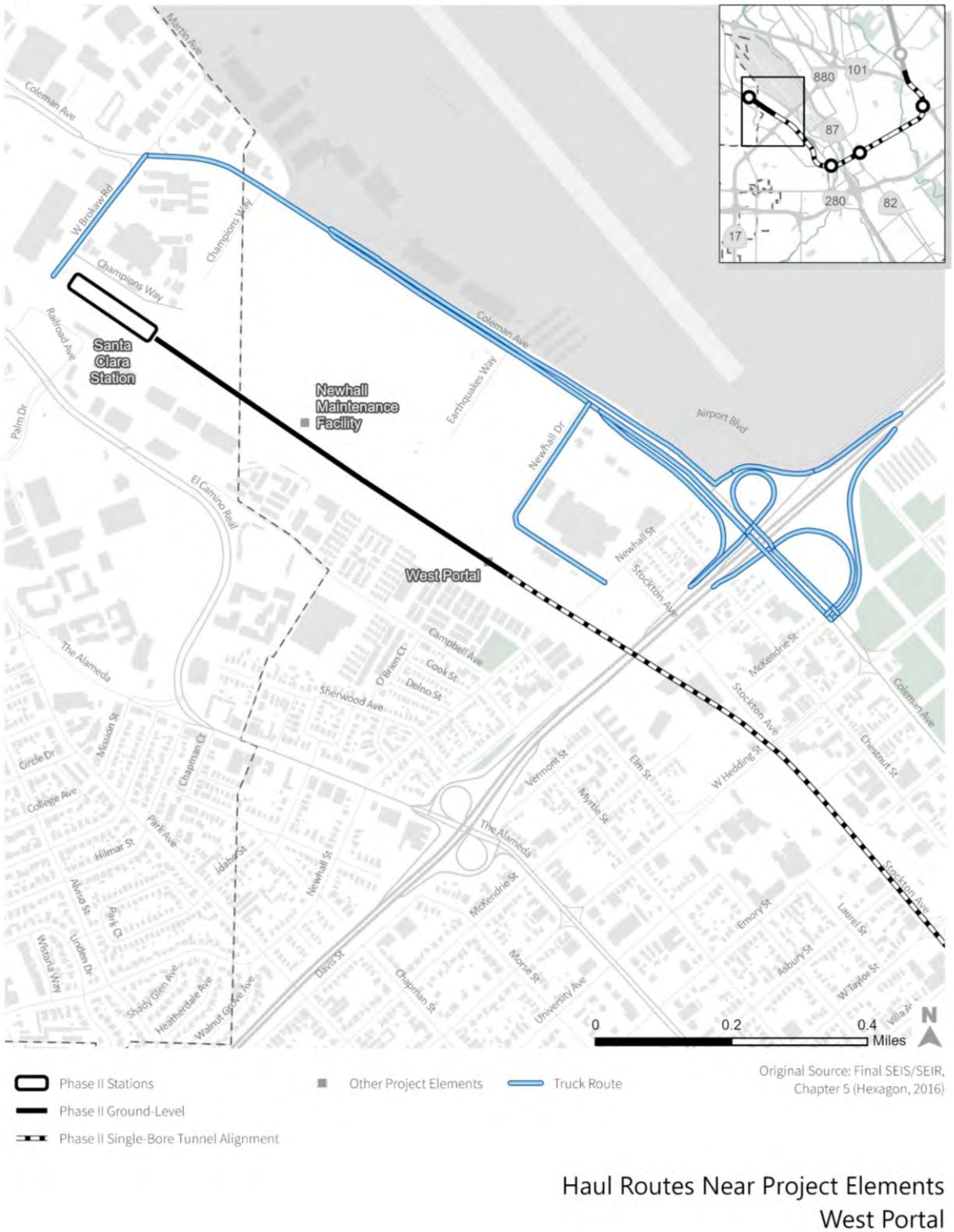


Figure 2 - Haul Routes

2.6 WARNING DEVICES

C44 (CA) “TRUCKS ENTERING EXITING” warning sign will be placed at key locations; see **Appendix B** for plans. Other warning devices or signs are not anticipated at this time due to no traffic control plans (TCP) being currently identified, as detour routes or alternate routes are not anticipated. When additional TCP and warning devices are identified, they will be provided in **Appendix B**.

2.7 MAJOR SPECIAL EVENTS

KST has reviewed major special events listed in the Draft CTMP Appendix F and identified no City events (such as marathons) that will be impacted by the West Portal Early Works construction. KST will continue to coordinate with VTA, City of San José and City of Santa Clara to minimize potential impacts from construction activities.

2.8 INCLEMENT WEATHER

KST will continuously monitor the weather condition and identify potential inclement weather at least one week in advance. KST will identify responses to inclement weather that has the potential to impact construction activities.

A Construction Storm Water Pollution Prevention Plan (SWPPP) is prepared by KST separately from this CTMP, where Best Management Practices (BMPs) will be specified to prevent pollution or erosion due to rain events; it also specifies detailed monitoring requirements and rainfall action plans.

2.9 IMPACT ON LOCAL BUSINESS AND RESIDENTS

KST has reviewed the list of local businesses in the Draft CTMP Appendix B. Impact on local businesses is not anticipated from West Portal Early Works.

A list of local businesses in the vicinity of the West Portal site interviewed by VTA in 2021 is included in **Appendix C**. KST also included an exhibit showing the driveway locations of nearby properties. No driveways are anticipated to be impacted by West Portal Early Works. KST recognizes that Newhall Drive is the only ingress/egress route for the residential area near the south end of the project site. No impacts to the residents are expected as Newhall Drive and Newhall Street will remain open at all times during construction.

2.9.1 Paypal Events Management Plan

In addition, KST will continuously monitor events at PayPal Park through coordination facilitated by VTA and minimize potential impacts from construction activities. KST will generate a Paypal Events Management Plan to determine trucking activity in relation to events to mitigate, as best as possible, the impacts to both the event and the project.

KST has reviewed the Earthquakes Stadium (now PayPal Park) Transportation and Parking Management Plan and does not anticipate any conflicts between the construction traffic and the plan.

2.10 NOISE AND VIBRATION ABATEMENT

KST has completed a pre-construction noise assessment to establish ambient noise conditions around the site. A Noise and Vibration Control Plan is currently being prepared, separate from this CTMP, to specify noise reduction and mitigation measures to ensure that surrounding land uses will not be impacted by construction noise. Noise will be monitored in the community during construction continuously to demonstrate compliance with the project noise thresholds.

KST will coordinate with City of San José and City of Santa Clara for nighttime work variances. Nighttime construction is expected to be within City of San José only and nighttime hauling is expected to be within both cities. See **Table 6** for construction activities requiring nighttime work and hauling.

2.11 CONCURRENT CONSTRUCTION

KST has reviewed the concurrent constructions listed in Draft CTMP Appendix D and identified projects in the vicinity of the West Portal site, and confirmed with the Cities that this is a complete list of concurrent constructions known to date. KST will continue to coordinate with the Cities on any additional future concurrent construction activities.

A list of concurrent constructions is included in **Table 5**.

Table 5 - Concurrent Constructions

No.	Planned Construction Date	Project	Location	Notes
1	-	California High Speed Rail	Southwest of Newhall Yard (Caltrain Tracks)	No impact expected. Per San José to Merced Final EIR/EIS certified by the CA High Speed Rail Authority in April 2022, Alternative 4 - Blended at-grade is selected, which includes no construction near West Portal. The San Francisco - Central Valley segment is expected to be in operation in 2031 Per Authority's 2022 business plan. No construction date has been confirmed but it is likely after West Portal construction activities.
2	-	Caltrain Electrification Project (CalMod)	Southwest of Newhall Yard (Caltrain Tracks)	No impact expected. The Caltrain Electrification project is expected to be limited to within the existing Caltrain corridor.
3	-	Diridon Integrated Station Concept (DISC) Plan	Diridon Station, San José	No impact expected. The DISC is expected to be applicable to Diridon Station only.

No.	Planned Construction Date	Project	Location	Notes
4	2027	Airport Connector	San José Mineta International Airport to Diridon Station	No impact expected.
5	2023	Aviation Ave Repaving	Aviation Ave from Coleman Ave to North End	The repaving may affect the intersection of Aviation Ave and Coleman Ave.
6	2023	Martin Ave Repaving	Martin Ave from Brokaw Rd to Reed St	Trucks for the repaving may enter and exit at the intersection of Coleman Ave and Brokaw Rd.
7	Under Construction	Gateway Crossings	1205 Coleman Avenue, Santa Clara	No impact expected. Bounded by Brokaw Rd, Coleman Ave and Champions Way.
8	2023	Coleman Highline	1125 Coleman Avenue, San José	No impact expected. Bounded by driveway to 1199 Coleman Ave, Coleman Ave and Aviation Ave.

2.12 TIME OF CONSTRUCTION

KST has reviewed the potential work hours listed in Draft CTMP Appendix E and proposes the following work and haul hours as summarized in **Table 6**. The approval of this CTMP by the City of San José and the City of Santa Clara shall also serve as approval of the work and haul hours stated within this document or any accepted revision thereafter.

Typically, work that requires concrete pours are double shifted including hauling hours to match so that concrete can be delivered continuously during the pour. Once a concrete pour begins it must continue until the pour is completed and cannot stop midway into the activity.

Table 6 - Proposed Work and Haul Hours

Early Work Activities	Single Shift	Double Shift	Work Hours	Haul Hours
Stage 1 – Site Grading (Beginning Summer 2023, 6 Months)				
Site grading	X		6AM – 6PM	6AM – 4PM
Stage 2 – Site Development (Beginning Summer 2023, 9 Months)				
Construction of site roads	X		6AM – 6PM	6AM – 4PM
Installation of site offices	X		6AM – 6PM	6AM – 4PM
Stage 3 – Precast Plant and TBM Segment Storage Area (Beginning Summer 2023, 13 Months)				
Construction of precast plant	X		6AM – 6PM	6AM – 4PM
Stage 4 – TBM Shaft and Muck Bin Excavation (Beginning Fall 2023, 17 Months)				
Muck bin excavation	X		6AM – 6PM	6AM – 4PM
Support of excavation – slurry walls		X	6AM – 4AM	6AM – 4AM
TBM shaft and ramp excavation		X	6AM – 4AM	6AM – 4AM
TBM shaft concrete pour		X	6AM – 4AM	6AM – 4AM
TBM supporting facilities	X		6AM – 6PM	6AM – 4PM
TBM assembly		X	6AM – 4AM	6AM – 4PM
Start production of the precast plant		X	6AM – 11PM	6AM – 4PM
Construction of interior concrete build-out area and equipment foundations	X		6AM – 6PM	6AM – 4PM
Construction of grout plant	X		6AM – 6PM	6AM – 4PM

Notes:

1. Construction activities will be 6 days a week.

2.13 PUBLIC INFORMATION REQUIREMENTS

Locations of the signs are presented in **Appendix B**. Additional Project identification will be provided once requirements are developed by VTA.

3.0 TRAFFIC IMPROVEMENTS AND OPERATIONAL ANALYSIS

This section summarizes the general construction transportation management requirements for both the Cities of San José and Santa Clara to ensure the traffic generated by construction does not negatively impact the project area corridors and surrounding communities.

3.1 INTRODUCTION

Traffic data and signal timing databases were collected to develop project Synchro models – year 2023 existing conditions, year 2023 average truck traffic, year 2023 peak truck traffic, year 2024

background, year 2024 average truck traffic, and year 2024 peak truck traffic. These models were developed using assumptions and information as presented in other sections of this document, as well as information from relevant nearby developments scheduled to implement prior to this project (Gateway Crossings and Coleman Highline).

Measures of effectiveness (MOEs) such as intersection level of service (LOS), intersection delay, and queuing were extracted to determine future operations of the project area's signalized intersections and to develop mitigation measures as needed to ensure minimal impact and disruption to the transportation network in the project area. See **Table 8** for delay and LOS results; see **Appendix D** for overall detailed delay, LOS, and queuing results, a queuing analysis related to PayPal Park events, as well as traffic volumes and supporting documentation.Project staff will make periodic observations at the project area intersections, both signalized and unsignalized, to ensure acceptable operations continue.

3.2 EXISTING CONDITIONS

Traffic turning movement counts were field collected Thursday November 3, 2022 for both the AM and PM peak periods, Tuesday March 7, 2023 for the Mid-day peak period, and Saturday March 4, 2023 for the weekend peak period at the intersections listed in **Table 7** below. Growth rates were used to adjust the volumes in the models accordingly based on the year collected as discussed under Background Conditions. Additional locations were also collected at the same time to better understand traffic patterns in the project area but were not specifically used in the traffic operations analysis. KST has reviewed the peak hour movements in the field to verify them.

Table 7 - Project Intersections

No.	Primary	Secondary
A1	Coleman Ave.	Brokaw Rd.
A2	Coleman Ave.	Champions Way
A3	Coleman Ave.	Aviation Ave.
A4	Coleman Ave.	Earthquakes Way
A5	Coleman Ave.	Newhall Dr.
A6	Coleman Ave.	Airport Blvd.
A7	Coleman Ave.	I-880 SB Ramp
A8	Coleman Ave.	I-880 NB Ramp / McKendrie St.
A9	Coleman Ave.	Hedding St.
A10	Brokaw Rd.	Costco

Current intersection traffic turning movement counts were compared to pre-COVID historical counts provided by the local agencies. The counts were somewhat comparable, with the exception of the

morning peak direction along Coleman Ave. This can be attributable to factors such as an increase in work-from-home and changes in travel patterns. Traffic volumes are not anticipated to return to pre-COVID levels within the timeframe of this Early Works operation.

Current traffic signal timing data was downloaded from the controllers by the Cities of San José and Santa Clara and provided to the KST team. At the intersections listed above, the morning peak is running a 140 second cycle length, and the PM peak is running a 130 second cycle length. The project area intersections run a free operation during the Mid-day peak and on Saturday, except that the intersection of Coleman Ave. & Brokaw Rd. runs a 110 second cycle length during the weekday Mid-day. The project area signalized intersections are running a traffic adaptive system, except at the intersections of Coleman Ave. & Champions Way and Coleman Ave. & Brokaw Rd. (Brokaw Rd. & Costco Driveway will be signalized by others no later than mid-2024, which will also not be an adaptive system), so cycle lengths, offsets, and splits may ultimately vary.

Field intersection and corridor information was gathered through various sources such as online aerials, street views (verified to be recent), and project personnel who frequent the area.

The traffic counts, traffic signal timing information, and field characteristics were used to develop an existing conditions traffic model using the software package Synchro/SimTraffic v11. Models were developed for the AM, Mid-day, PM, and Saturday Mid-day peak periods as determined by the traffic count data. Model outputs for existing conditions were calibrated and validated with field observations. Measures of Effectiveness (MOEs) gathered from the model output include the intersection levels of service (LOS), intersection delay (in seconds), individual approach LOS and delay, and 95th-percentile queue lengths. Results from the existing conditions analysis can be found in Section 3.4 Project Conditions, with supporting documentation in **Appendix D**.

3.3 BACKGROUND CONDITIONS

Background models were developed for the AM, Mid-day. PM, and Saturday Mid-day peak periods using the existing conditions models as a base, and then inputting a 1.02 or 1.04 growth factor (2% per year growth rate) to develop future year 2024 volumes and operational MOEs. Projected traffic volumes generated by nearby developments (Gateway Crossings and Coleman Highline) have been included in the year 2024 background and project conditions. Various significant mitigation elements associated with these developments have been included in the modeling, such as the widening of Coleman Ave. just south of Brokaw Rd., the widening of Brokaw Rd. west of Coleman Ave., intersection and traffic signal improvements at Coleman Ave. & Brokaw Rd., and a new traffic signal installation at Brokaw Rd. & Costco driveway. See **Appendix D** for additional information on the traffic generated by these nearby developments that was included in this modeling.

The year 2024 is expected to see the height of the Early Works site work. Signal timing (splits and offsets) was adjusted at the City of San Jose intersections for the year 2024 background and project conditions models to minimize delay and queuing. Signal timing at City of Santa Clara intersections remained relatively unchanged, with only the Brokaw Rd. splits having been adjusted due to the new split phase setup planned as part of the Gateway Crossings development mitigation

efforts. The variability in delay and LOS shown in Table 8 is partially due to these signal timing changes, as well as included external project mitigation.

Results from the background conditions analysis can be found in Section 3.4 Project Conditions, with supporting documentation in **Appendix D**.

3.4 PROJECT CONDITIONS

Project conditions were analyzed using the year 2023 existing and 2024 background models as a base and developing separate year 2023 and 2024 average and peak truck traffic models. Average and Peak project truck volumes as shown in Table 3 (140 trucks and 340 trucks per day, respectively) were distributed through the network (at an hourly scale). Truck volumes were spread uniformly across the hauling hours to determine average and peak truck volumes. These volumes were used to represent a worst-case condition. Brokaw Road was assigned 25% of the truck traffic and Newhall Dr. was assigned 75% of the truck traffic. The 10% non-PayPal 2023 and 2024 Average Trucks operation for the weekend mid-day was also checked. Intersections in between and along the haul route were assigned increases in truck traffic to their respective through and left turn movements. **Appendix D** contains additional information regarding the truck traffic distribution and assignment.

A queuing analysis was completed for the Coleman Ave. & Newhall Dr. intersection to show what impacts, if any, may happen if truck hauling occurs during a weekday evening (Wednesday) or weekend evening (Saturday) PayPal Park event. The intersection was modeled in Trafficware's Synchro software using current intersection geometrics, event signal timing patterns, and typical event volumes as collected by the City of San José. This analysis looked at potential effects to queuing at the intersection, particularly the northbound left and eastbound right turns, during the ingress and egress conditions. Based on the queue analysis, it is concluded that the addition of project trucks does not lead to a significant increase in queuing over normal PayPal Park operations during the weekday or weekend ingress or egress events. The detailed analysis, including assumptions and results, are included in **Appendix D**.

Traffic volumes due to staff and craft workers arriving and leaving the site are also included in the analysis with the following assumptions:

1. Staff and Craft volumes were added to the four PM Peak Synchro project models (2023 Average and Peak Trucks, 2024 Average and Peak Trucks).
2. The Staff and Craft volumes used were the CTMP1 Early Works 120 Craft and 100 Staff (reduced to 33% or 33 vehicles due to dispersed staff release) for a total of 153 vehicles.
3. Since the PM peak period includes a shift change, the revised models include the Staff and Craft leaving as well as the Craft arriving utilizing Newhall Dr.
4. The volume distribution used was the same as the Coleman Highline development report, with 33% going to the north and 67% going to the south (the same as in Figure D-12 in the CTMP1 Appendix).
5. The signal timing for the CSC intersections remained unchanged.
6. Both CSC intersections' LOS and delay are reported in HCM 2000 format.

Table 8 below shows a summary of the year 2023 existing conditions, year 2023 average and peak trucks conditions, year 2024 background conditions, year 2024 average truck traffic conditions, and year 2024 peak truck traffic conditions. Brief discussions for each intersection follow the table, which highlight potential project impacts based on the operational LOS and delay results and possible mitigation measures. Supporting documentation, including results on queuing, can be found in **Appendix D**.

Table 8 - Project Operational Analysis

Intersection and Scenario	AM Peak		Weekday Mid-day		PM Peak		Weekend Mid-day	
	Int. Delay (Sec)	HCM Int. LOS	Int. Delay (Sec)	HCM Int. LOS	Int. Delay (Sec)	HCM Int. LOS	Int. Delay (Sec)	HCM Int. LOS
A1 – Coleman Ave. & Brokaw Rd.[1]								
Existing 2023	26.1	C	60.2	E	116.7	F	39.2	D
Avg Trucks 2023 (10%)	-	-	-	-	-	-	39.5	D
Avg Trucks 2023 (25%)	26.3	C	60.0	E	126.0	F	39.4	D
Peak Trucks 2023	26.5	C	60.3	E	128.1	F	40.3	D
Background 2024	27.3	C	27.5	C	52.8	D	40.7	D
Avg Trucks 2024 (10%)	-	-	-	-	-	-	41.8	D
Avg Trucks 2024 (25%)	25.6	C	27.4	C	56.5	E	42.2	D
Avg Trucks 2024 (Opt.)	-	-	-	-	50.8	D	-	-
Peak Trucks 2024	27.8	C	28.0	C	55.2	E	45.0	D
Peak Trucks 2024 (Opt.)	-	-	-	-	55.0	D	-	-
A2 – Coleman Ave. & Champions Way[1]								
Existing 2023	0.7	A	-	-	0.6	A	3.4	A
Average Trucks 2023	0.7	A	-	-	0.6	A	3.4	A
Peak Trucks 2023	0.7	A	-	-	0.6	A	3.4	A
Background 2024	11.2	B	-	-	8.1	A	2.9	A
Average Trucks 2024	12.9	B	-	-	8.4	A	2.9	A
Peak Trucks 2024	7.2	A	-	-	8.4	A	2.9	A
A3 – Coleman Ave. & Aviation Ave.								
Existing 2023	16.0	B	-	-	10.6	B	7.1	A
Average Trucks 2023	16.1	B	-	-	10.4	B	7.2	A
Peak Trucks 2023	16.2	B	-	-	10.3	B	7.2	A
Background 2024	23.8	C	-	-	20.6	C	17.1	B
Average Trucks 2024	22.4	C	-	-	19.2	B	17.1	B
Peak Trucks 2024	15.7	B	-	-	21.9	C	17.1	B

Intersection and Scenario	AM Peak		Weekday Mid-day		PM Peak		Weekend Mid-day	
	Int. Delay (Sec)	HCM Int. LOS	Int. Delay (Sec)	HCM Int. LOS	Int. Delay (Sec)	HCM Int. LOS	Int. Delay (Sec)	HCM Int. LOS
A4 – Coleman Ave. & Earthquakes Way								
Existing 2023	4.7	A	-	-	8.4	A	4.2	A
Average Trucks 2023	4.7	A	-	-	8.3	A	4.3	A
Peak Trucks 2023	4.7	A	-	-	8.3	A	4.3	A
Background 2024	4.3	A	-	-	3.7	A	5.3	A
Average Trucks 2024	3.1	A	-	-	5.0	A	5.3	A
Peak Trucks 2024	4.9	A	-	-	10.6	B	5.3	A
A5 – Coleman Ave. & Newhall Dr.								
Existing 2023	15.5	B	26.5	C	19.5	B	28.3	C
Average Trucks 2023	15.8	B	28.0	C	24.3	C	26.0	C
Peak Trucks 2023	16.2	B	27.1	C	29.6	C	25.0	C
Background 2024	13.7	B	22.7	C	17.2	B	21.2	C
Average Trucks 2024	13.0	B	23.6	C	57.5	E	23.0	C
Peak Trucks 2024	16.6	B	23.4	C	80.5	F	22.2	C
A6 – Coleman Ave. & Airport Blvd.								
Existing 2023	18.3	B	-	-	14.7	B	8.1	A
Average Trucks 2023	18.2	B	-	-	15.3	B	8.1	A
Peak Trucks 2023	18.2	B	-	-	15.4	B	8.1	A
Background 2024	8.0	A	-	-	7.6	A	8.9	A
Average Trucks 2024	6.4	A	-	-	7.7	A	9.0	A
Peak Trucks 2024	7.1	A	-	-	7.6	A	9.0	A
A7 – Coleman Ave. & I-880 SB Ramp								
Existing 2023	12.2	B	-	-	19.8	B	8.6	A
Average Trucks 2023	12.5	B	-	-	27.3	C	9.0	A
Peak Trucks 2023	13.1	B	-	-	21.8	C	9.6	A
Background 2024	19.9	B	-	-	11.1	B	16.3	B
Average Trucks 2024	10.7	B	-	-	11.8	B	17.4	B
Peak Trucks 2024	10.9	B	-	-	9.7	A	19.2	B
A8 – Coleman Ave. & I-880 NB Ramp / McKendrie St.								
Existing 2023	25.7	C	-	-	21.1	C	14.2	B
Average Trucks 2023	26.0	C	-	-	21.8	C	14.5	B
Peak Trucks 2023	26.5	C	-	-	22.0	C	15.1	B

Intersection and Scenario	AM Peak		Weekday Mid-day		PM Peak		Weekend Mid-day	
	Int. Delay (Sec)	HCM Int. LOS	Int. Delay (Sec)	HCM Int. LOS	Int. Delay (Sec)	HCM Int. LOS	Int. Delay (Sec)	HCM Int. LOS
Background 2024	25.9	C	-	-	24.8	C	16.3	B
Average Trucks 2024	25.1	C	-	-	26.0	C	17.2	B
Peak Trucks 2024	26.5	C	-	-	24.0	C	18.4	B
A9 – Coleman Ave. & Hedding St.								
Existing 2023	37.0	D	-	-	28.5	C	22.2	C
Average Trucks 2023	37.0	D	-	-	29.0	C	22.2	C
Peak Trucks 2023	37.0	D	-	-	28.4	C	22.2	C
Background 2024	45.2	D	-	-	44.7	D	23.1	C
Average Trucks 2024	36.6	D	-	-	45.0	D	23.1	C
Peak Trucks 2024	41.2	D	-	-	29.0	C	23.1	C
A10 (New) – Costco Driveway & Brokaw Rd.[1]								
Existing 2023 (Unsig)	4.6	A	9.7	A	9.8	A	11.1	A
Avg Trucks 2023 (10%)	-	-	-	-	-	-	11.2	A
Avg Trucks 2023 (25%)	4.6	A	9.8	A	9.9	A	11.3	A
Peak Trucks 2023	4.5	A	10.0	A	10.1	A	11.7	A
Background 2024 (Sig)	19.5	B	22.0	C	28.0	C	30.2	C
Avg Trucks 2024 (10%)	-	-	-	-	-	-	30.5	C
Avg Trucks 2024 (25%)	27.8	C	22.1	C	28.7	C	30.9	C
Peak Trucks 2024	21.5	C	22.3	C	28.7	C	32.2	C

Notes:

1. No adaptive system at this intersection.

See **Appendix D** for detailed delay, LOS, and queuing results, as well as traffic volumes and supporting documentation.

A1 - Brokaw Rd. – For both the average and peak truck traffic conditions, the northbound left and eastbound right movements will see increased truck traffic. The project plans to assign 25 percent of the truck traffic to this intersection. The existing LOS varies and is expected to remain or slightly improve to C/D/E once the Gateway Crossings mitigation improvements are implemented by mid-2024.

An operational check was made to see if any short-term year 2023 improvements could help ease congestion at the intersection prior to the Gateway Crossings mitigation. Various elements were adjusted in a representative model to attempt to mitigate intersection delay. The cycle length, timing splits, split phasing, and even restriping eastbound Brokaw Rd. was looked at to see if the delay could be improved. Even with these changes, the LOS and delay was not projected to

significantly improve. One other possibility may be for the City of Santa Clara to implement their traffic responsive system at this intersection to further fine-tune the signal timing until the Gateway Crossings developer mitigation is in place. Also, the results shown in the table generally reflect the 25% truck traffic scenario.

A check of the 10% non-PayPal 2023 and 2024 Average Trucks operation for the weekend mid-day shows a slightly better LOS and delay than the 25% condition. The 10% Peak Trucks analysis was similar to the 25% Average Trucks condition.

A2 – Champions Way – This intersection will only see a slight increase in truck traffic for the north/south movements. The LOS is currently at a level A and is projected to remain at LOS A/B.

A3 – Aviation Ave. – This intersection will only see a slight increase in truck traffic for the north/south movements. The LOS is currently at a level A/B and is projected to remain at LOS B/C.

A4 – Earthquakes Way – This intersection will only see a slight increase in truck traffic for the north/south movements. The LOS is currently at a level A and is projected to remain at LOS A/B.

A5 – Newhall Dr. – For both the average and peak truck traffic conditions, the northbound through and left and the southbound through and eastbound right movements will see increased truck traffic. The project plans to assign 75 percent of the truck traffic to this intersection. The LOS is currently at a level B/C and is projected to remain at those levels with the exception of the PM peak with LOS B/E/F. This analysis assumed that a pedestrian call would be activated across Coleman Ave. every cycle, but actual operations should be better since that's usually not the case. The side street splits will be best applied as determined by the adaptive system.

A6 – Airport Blvd. – This intersection will only see a slight increase in truck traffic for the north/south movements. The LOS is currently at a level A/B and is projected to remain acceptable.

A7 – I-880 SB Ramp – This intersection will see a slight increase in truck traffic for the southbound through and westbound right movements. The westbound right is projected to see a slight increase in delay and queuing, which should be manageable by either making slight signal timing split adjustments, or by ensuring the traffic adaptive system makes appropriate automatic adjustments. The City of San José can make signal timing split adjustments upon request. The Gateway Crossings traffic report also recommended striping changes at this intersection, which may further help mitigate the increase in delay and queuing. The LOS is currently at a level A/B/C and is projected to remain at an acceptable LOS A/B.

A8 – I-880 NB Ramp / McKendrie St. – This intersection will only see a slight increase in truck traffic for the southbound left movement. The LOS is currently at a level B/C and is projected to remain at LOS B/C.

A9 – Hedding St. – This intersection is outside of the proposed haul route, but was included due to its proximity and the effects that upstream operations may have on this intersection. The intersection LOS currently operates at level C/D and is projected to continue at those levels. The modeled signal timing was slightly adjusted for the 2024 conditions at this and other project intersections, and due to the increase in truck traffic in the southbound direction along Coleman

Ave. there was a slight improvement in delay realized due to an increase in provided green time to accommodate the trucks. No impact is expected due to project hauling operations.

A10 – Costco & Brokaw – This intersection is currently stop controlled and operates at a LOS A. As part of the Gateway Crossings project mitigation, a traffic signal is planned to be installed and activated no later than mid- 2024. This intersection will only see a slight increase in truck traffic for the east and westbound movements. Although the modeling results show a degradation in operations with the traffic signal, future unknown signal timing settings were assumed and could be different resulting in improved operations based on field observations.

The results shown in the table generally reflect the 25% truck traffic scenario. A check of the 10% non-PayPal 2023 and 2024 Average Trucks operation for the weekend mid-day shows a slightly better LOS and delay than the 25% condition. The 10% Peak Trucks was similar to the 25% Average Trucks condition. KST will monitor the intersection due to project truck traffic and will work with the City of Santa Clara to maintain satisfactory operations. One other possibility may be for the City of Santa Clara to implement their traffic responsive system at this intersection to further fine-tune the signal timing.

All of the detailed analysis information can be found in **Appendix D** – Traffic Operation Data and Analysis.

3.5 CONCLUSIONS

Based on traffic operational analysis of the year 2023 and 2024 average and peak Early Works truck traffic, it is projected that there will be minimal impacts to the project area's signalized intersections. Project signalized and unsignalized intersections may need to be observed on occasion, particularly during peak truck traffic times to ensure the existing signal timing can handle the added truck volume.

The intersections within City of San José should be able to accommodate the added truck volume since an adaptive traffic signal system is in operation. For intersections within City of Santa Clara (Coleman Ave & Brokaw Road and future signalized Brokaw Road & Costco Driveway), no adaptive system is in operation and the signal timing can be adjusted, if needed, to accommodate the truck volumes as demonstrated in this report.

Project staff will make periodic observations at the project area intersections, both signalized and unsignalized, to ensure acceptable operations continue. KST will schedule the observations before construction begins and will continue the observations approximately once every month and/or during peak truck volumes. KST will reach out to the cities' staff a week before each observation so that the cities can participate in the observation, if desired.

4.0 PUBLIC OPERATION AND BUS OPERATIONS

The existing transit services are shown in **Figure 3**.

4.1 BUS OPERATIONS

The existing bus route along the haul route is summarized in **Table 9**.

Table 9 - Existing Bus Route

Bus Route	Route Description	Nearest Stop	Headway [1]
Local Route 60	Milpitas BART to Winchester Station via SJC Airport	Coleman/Brokaw; Coleman/Earthquakes; Coleman/Newhall	10 – 15 min

Notes:

1. Approximate headways during peak commute hours.

The existing bus operation is provided by VTA. The proposed construction activities are not expected to impact the existing bus operation. No rerouting is anticipated for the operation. No lane closures are anticipated on the bus route and a 12' minimum lane width will be maintained at all times. There is no rapid bus service or Transit Signal Priority (TSP) on Coleman Ave. Services on El Camino Real or any other street in vicinity of the site will not be impacted.

4.2 RAIL TRANSIT OPERATIONS

Caltrain, Capitol Corridor and Altamont Corridor Express (ACE) operate rail transit services at existing Santa Clara Station. The existing transit operations will not be impacted by the construction. There is an existing pedestrian underpass connecting Santa Clara Station and Brokaw Road. The underpass and sidewalk will remain open during construction.

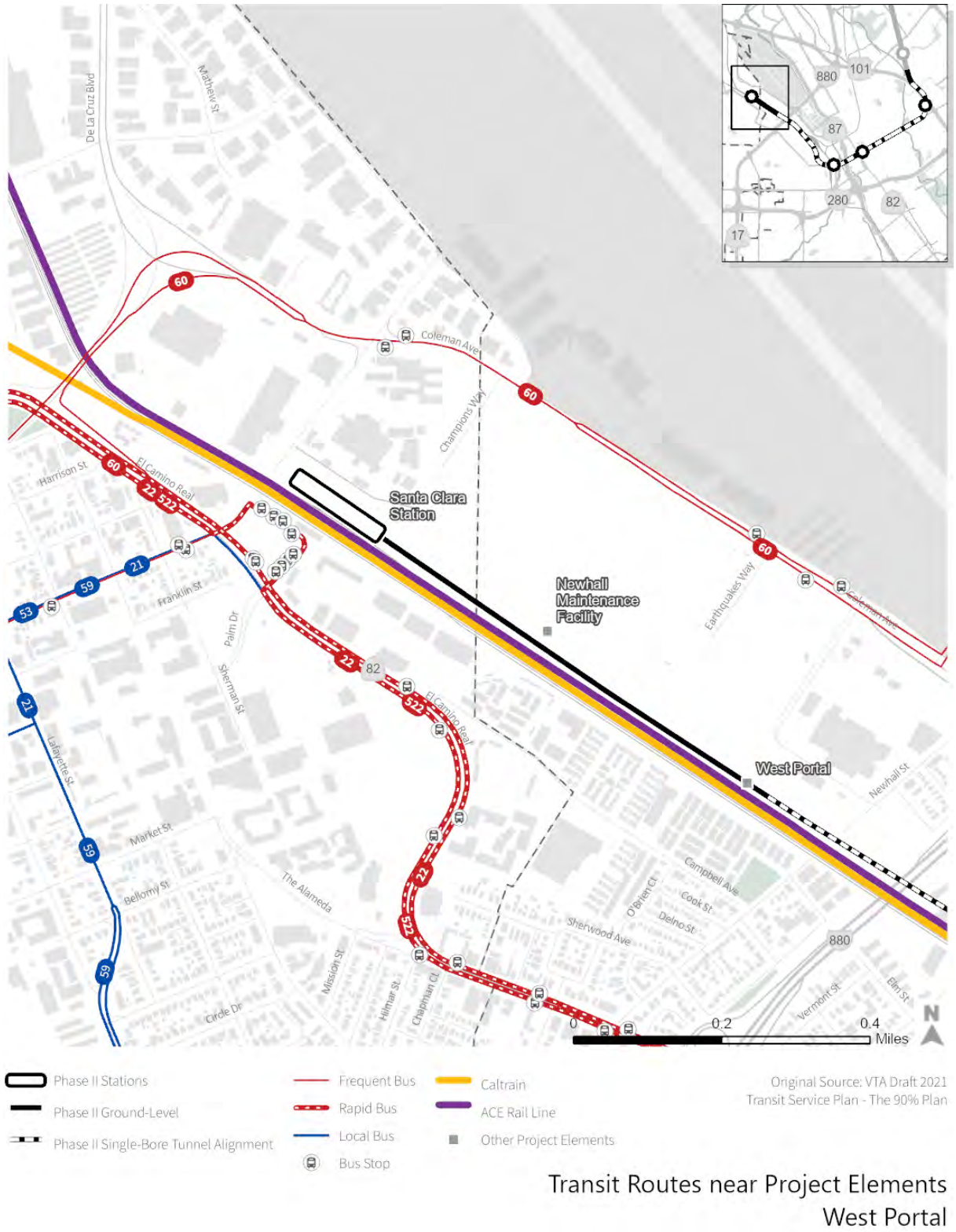


Figure 3 - Existing Transit Operations

5.0 MAINTENANCE OF PROPERTY ACCESS

No property access is anticipated to be impacted at this time. There will be no lane closures or driveway closures and no truck queuing or staging outside of the West Portal site that impedes property access. The traffic operational analysis presented in **Chapter 3.0** shows minimal impacts to the existing traffic. Special events and routine operations will be coordinated as described in **Section 2.7 and 2.9**.

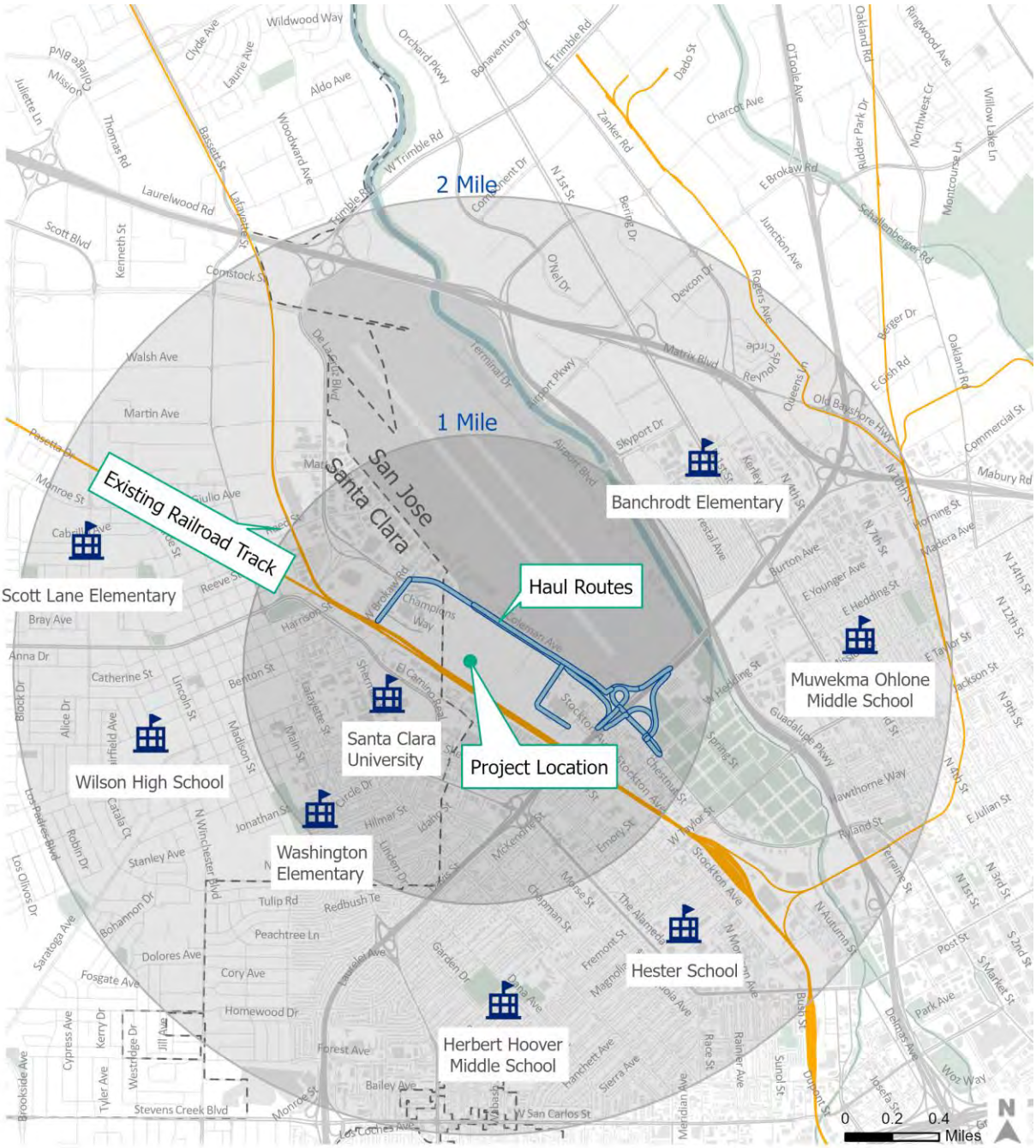
Exhibit showing access to adjacent properties and their business hours, access for employees and customers, delivery and city services, and additional information, for those that were interviewed by VTA in 2021, is included in **Appendix C**. Also included is an exhibit showing driveway locations to all nearby properties; none of which will be impacted by the West Portal construction.

6.0 SCHOOL ZONE SAFETY PLAN

There are no existing school zones near the West Portal site and no impact is anticipated at this time. Adjacent schools include:

- Santa Clara University: 0.6 mi
- Scott Lane Elementary School: 1.7 mi
- Washington Elementary School: 0.9 mi
- Wilson High School: 1.5 mi
- Herbert Hoover Middle School: 1.3 mi
- Hester School: 1.4 mi
- Muwekma Ohlone Middle School: 1.6 mi
- Banchrodt Elementary School: 1.2 mi

All distances are measured from approximate center of the schools to the approximate center of the West Portal Site, and are straight line distances. None of the schools or school zones are located on the haul routes. See **Figure 4** for the location of nearby schools.



School Zone Near Project Elements
West Portal

Figure 4 - Nearby Schools

7.0 EMERGENCY ACCESS AND RESPONSE

KST will comply with the Emergency Services Coordination Plan (ESCP), included as Appendix A of the Draft CTMP. Based on the ESCP, KST prepared the Emergency Vehicle Access Plan (EVAP) and Emergency Vehicle Response Plan (EVRP).

7.1 EMERGENCY VEHICLE ACCESS PLAN

Emergency vehicle access to all businesses and residences adjacent to the construction site will be maintained. Emergency service vehicles include:

- Emergency medical vehicles
- Utility maintenance vehicles for emergency purposes
- Fire protection vehicles
- Police vehicles

Table 10 below is KST's emergency contact available 24 hours a day along with the 24-hour emergency hotline. The 24-hour hotline will be managed at all times. Once construction begins a safety representative will be on-site during construction hours.

Table 10 - KST Emergency Contact

Name	Title	Phone No.	Email
Dennis Leonard	Project Safety Manager	(925) 809-4804	Dennis.leonard@kstjv.com
Staffed	24-hr Emergency Hotline	(408) 321-2345	

No traffic lane reductions or detours are necessary for West Portal Early Works; if they become necessary, KST will update this plan and submit to VTA for approval at least 30 days prior to the lane reduction or detour.

Once construction begins, weekly updates will be provided to local emergency service providers in writing by Friday noon regarding emergency vehicle access through, around, and into the construction site for the following week; a copy of this weekly written information will also be provided to VTA prior to Friday noon every week. A kick-off meeting will be held with the emergency service providers, KST and VTA, and as necessary, monthly meetings will be held to ensure emergency service providers are made aware of any changes. A list of emergency service providers covering the West Portal site is included in **Table 11**; KST will request the emergency service providers to verify this information every week in the Friday update to ensure that they are up to date. See **Figure 5** for emergency service areas.

Table 11 - List of Emergency Contacts as of December 2022

No.	Department	Contact Name	Phone	Email
1	San José Police	Captain Jaime Jimenez	(408) 472-7747	jaime.jimenez@sanjoseca.gov
2	San José Fire	Chief James Dobson (Main Contact)	(408) 535-7794	james.dobson@sanjoseca.gov
3	San José Fire	Captain Greg Tuyor	(408) 535-7670	gregory.tuyor@sanjoseca.gov
4	San José Fire Station 7 (West Portal Coverage)	Station Captain	(408) 794-6907	N/A
5	Santa Clara Police	Lieutenant Cuong Phan	(408) 615-4767	cphan@santaclaraca.gov
6	Santa Clara Fire	Fire Marshal Jake Tomlin (Main Contact)	(408) 615-4970	jtomlin@santaclaraca.gov
7	Santa Clara Fire	Deputy Fire Chief Jeremy Ray	(408) 615-4953	jray@santaclaraca.gov
8	Santa Clara Fire Station 1 (West Portal Coverage)	Fire Chief Ruben Torres	(408) 615-4900	
9	Santa Clara County Sheriff	Captain David Lera	(408) 321-7153	david.lera@vta.org
10	Regional Medical Center		(408) 259-5000	
11	Santa Clara County Emergency Medical Services (EMS)	Michael Cabano	(408) 316-6682	michael.cabano@ems.sccgov.org
12	American Medical Response (AMR)	Mario Vargas	(209) 420-4206	mario.vargas@gmr.net
13	Royal Ambulance		(877) 995-6161	
14	O'Connor Hospital		(408) 947-2500	

7.1.1 Protocol for Unanticipated Changes

During unanticipated changes, such as detours due to emergency utility work, the change shall be immediately communicated to KST's safety manager, who will communicate the change to local emergency providers. If required, flaggers will be positioned at the begin and end points of the detour route to communicate the change to emergency responders.

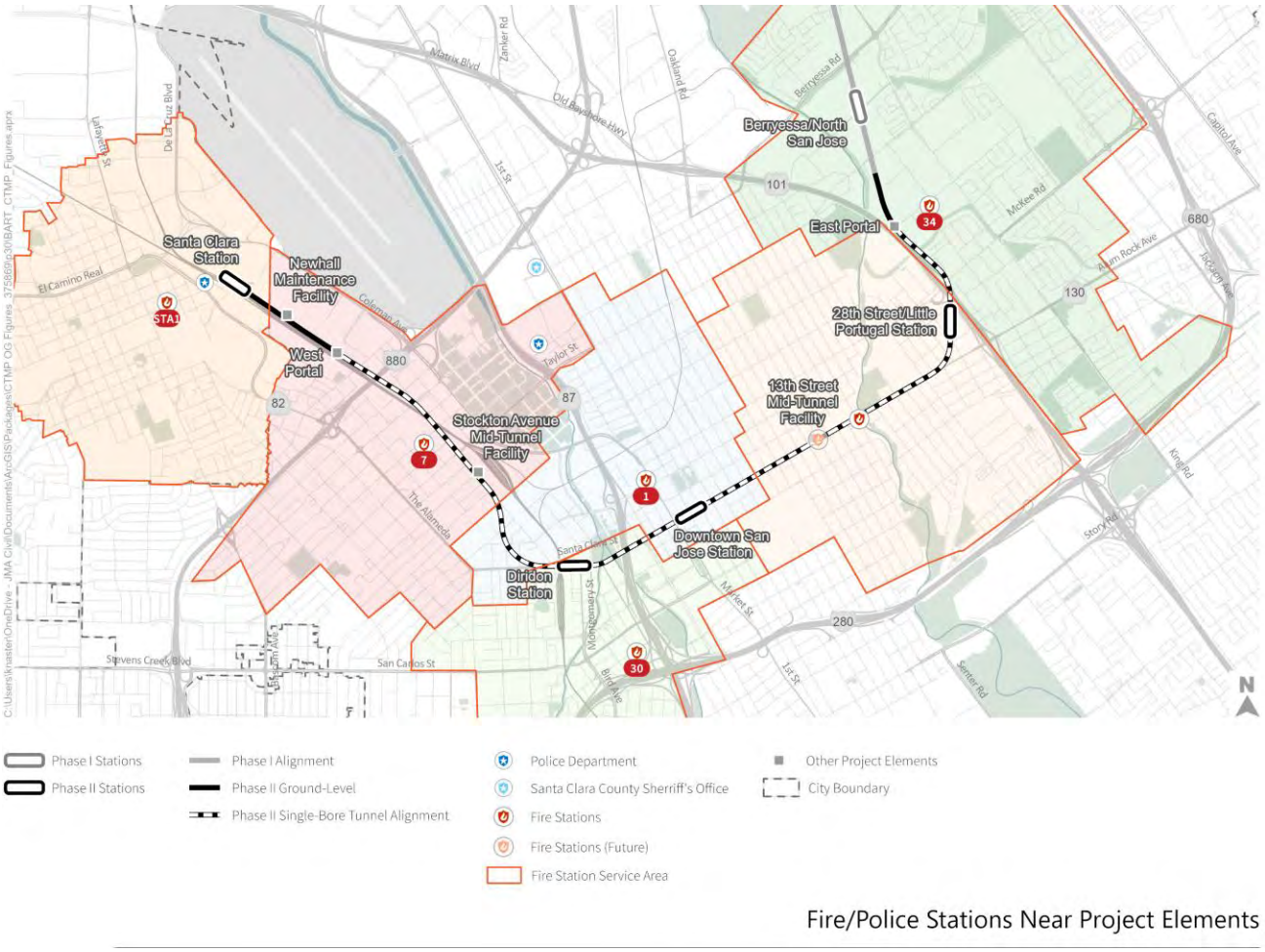


Figure 5 - Emergency Service Area

7.2 EMERGENCY VEHICLE RESPONSE PLAN

Emergency access to the construction site will be maintained at all times. KST's designated point of contact listed in **Table 10** will be available 24 hours a day and responsible for communicating the location and type of incident to emergency responders and the Construction Safety and Security Manager.

Possible incidents include:

- Inadvertent traffic stoppages or delays
- Traffic accidents
- On-site emergencies
- Emergencies requiring police or emergency vehicles

For on-site emergencies, KST's designated point of contact will notify local emergency provider depending on the type of incident. Individual KST employee or contractor is allowed to dial 9-1-1 in an emergency. They will be instructed to also notify KST's designated point of contact after the 9-1-

1 call. KST's designated point of contact will then follow up with local emergency providers and coordinate with other KST employee or contractor, such as guard posts at gates, to ensure emergency access.

All site roads are fire roads and will be suitable for emergency vehicle access. KST's designated point of contact will coordinate with other KST parties to ensure that emergency access is not impeded during an emergency. Emergency vehicles will have the right-of-way on all site roads during an emergency.

8.0 CITY PERMIT REQUIREMENTS

BSVII Draft CTMP Appendix H and J contains permit requirements for City of San José and City of Santa Clara, respectively. KST has identified permits that pertains to the West Portal Early Works construction, which are highlighted in yellow and included in **Appendix E** of this CTMP.

9.0 LIST OF APPENDICES

Appendix A – Site Layout, Sequencing and Staging Plan

Appendix B – Traffic Control Plans

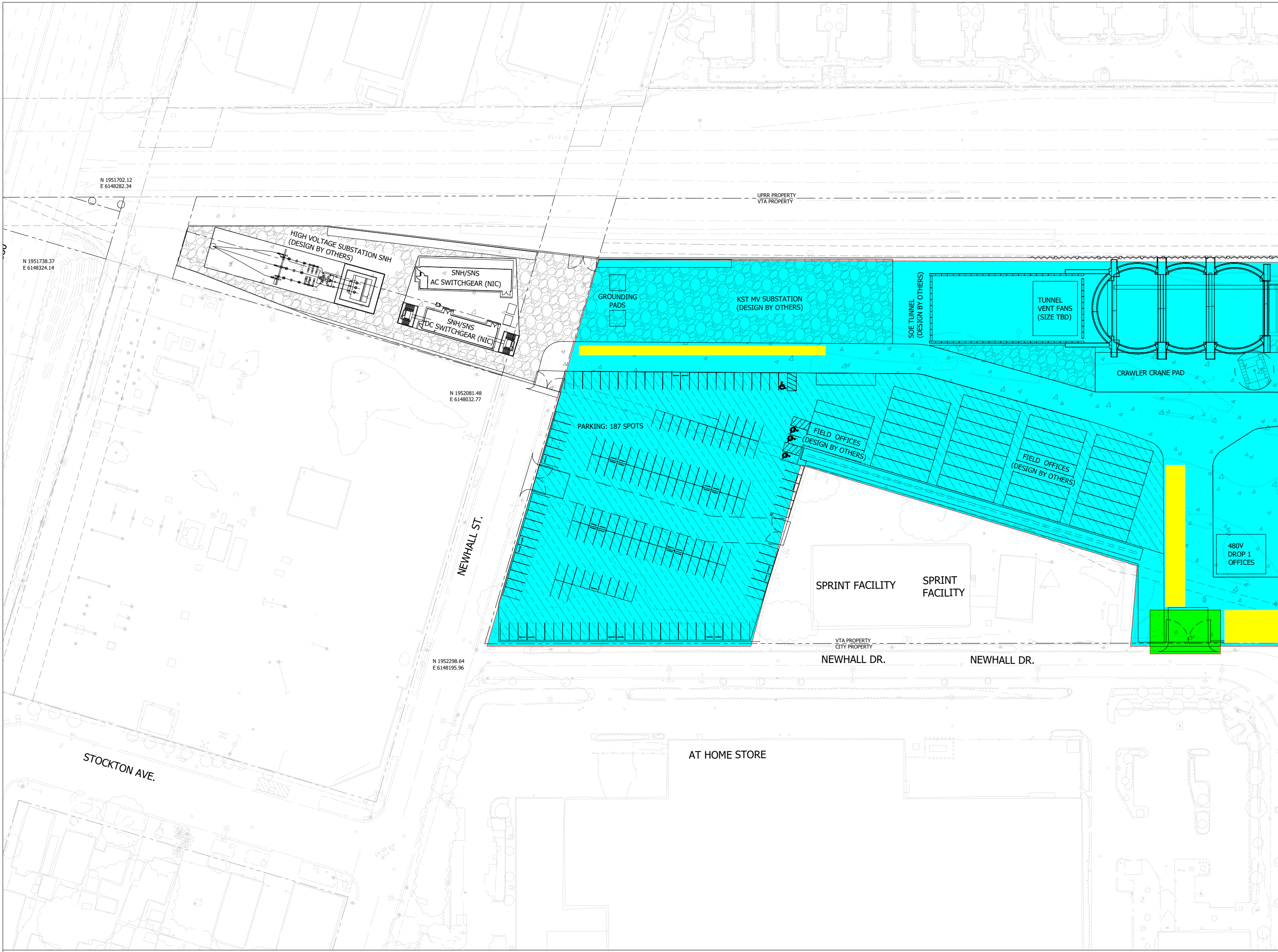
Appendix C – Access to Businesses and Properties

Appendix D – Traffic Operation Data and Analysis

Appendix E – City Permit Requirements

APPENDIX A

SITE LAYOUT, SEQUENCING AND STAGING PLAN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SNH/SNS
AC SWITCHGEAR (NIC)
SNH/SNS
DC SWITCHGEAR (NIC)
GROUNDING
PADS
KST MV SUBSTATION
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CRAWLER CRANE PAD
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480V
DROP 1
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SPRINT FACILITY
SPRINT
FACILITY
VTA PROPERTY
CITY PROPERTY
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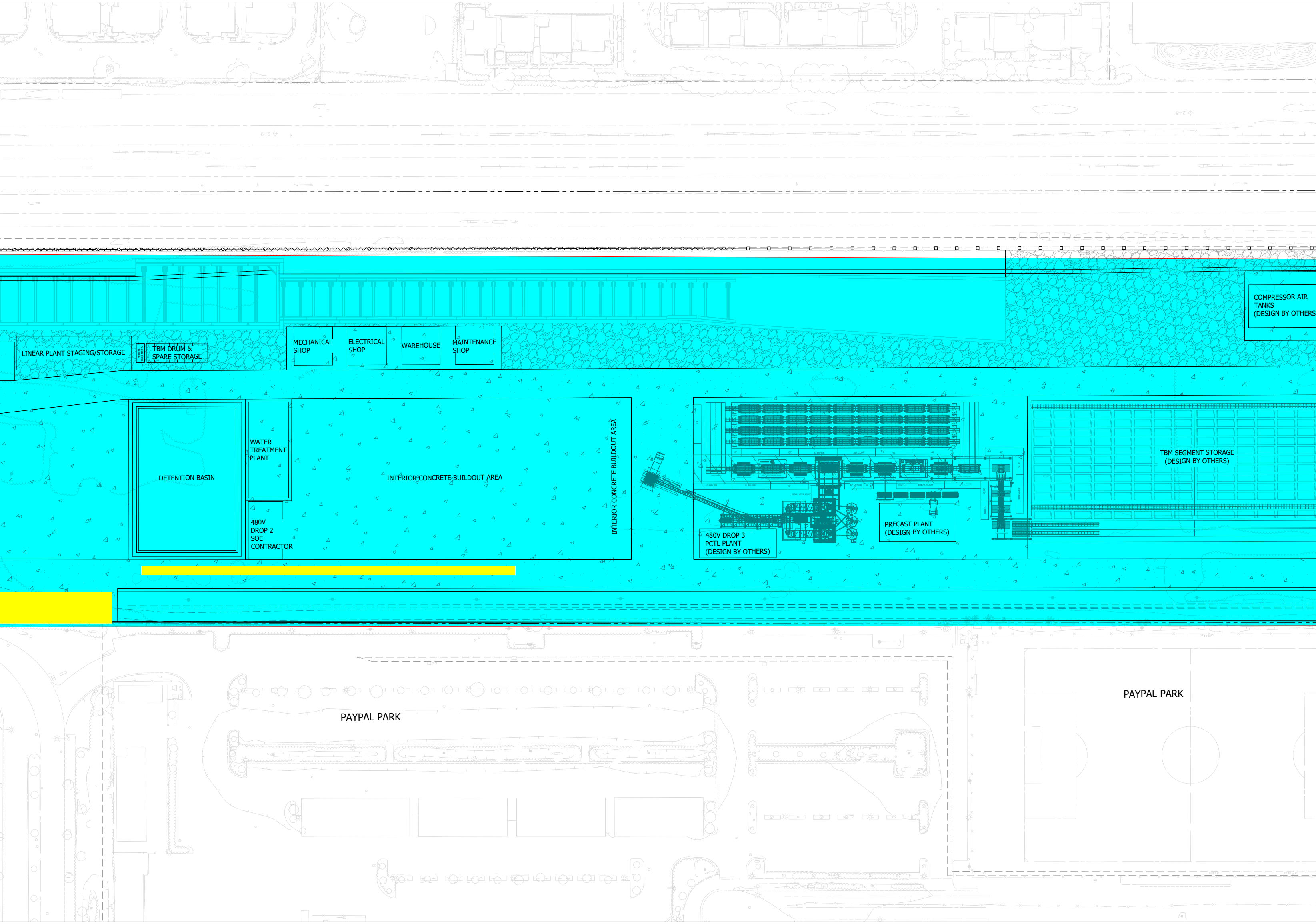
STOCKTON AVE.
AT HOME STORE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TBM DRUM & SPARE STORAGE
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ELECTRICAL SHOP
WAREHOUSE
MAINTENANCE SHOP
DETENTION BASIN
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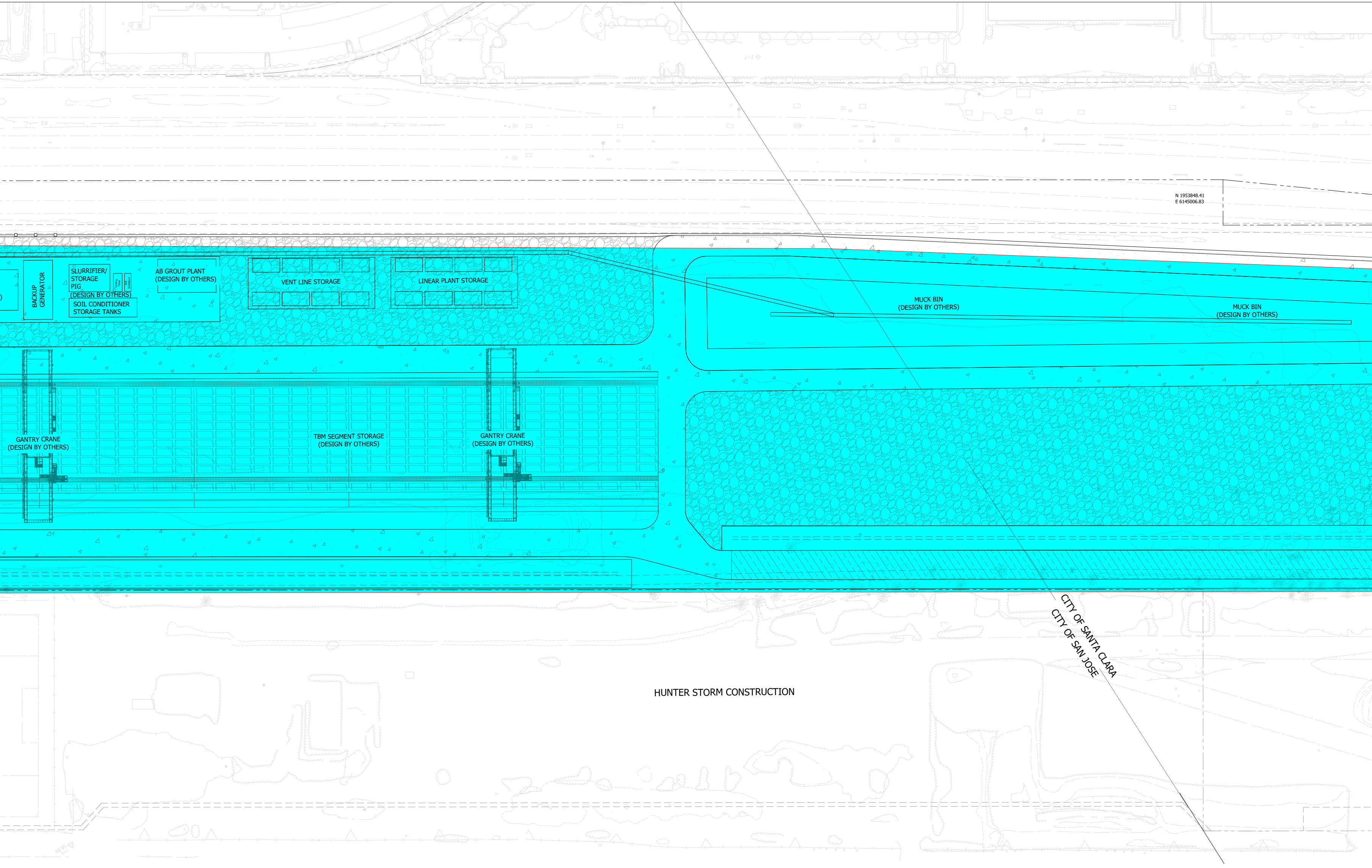
PAYPAL PARK



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Cooling Tower
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CITY OF SANTA CLARA
CITY OF SAN JOSE
HUNTER STORM CONSTRUCTION

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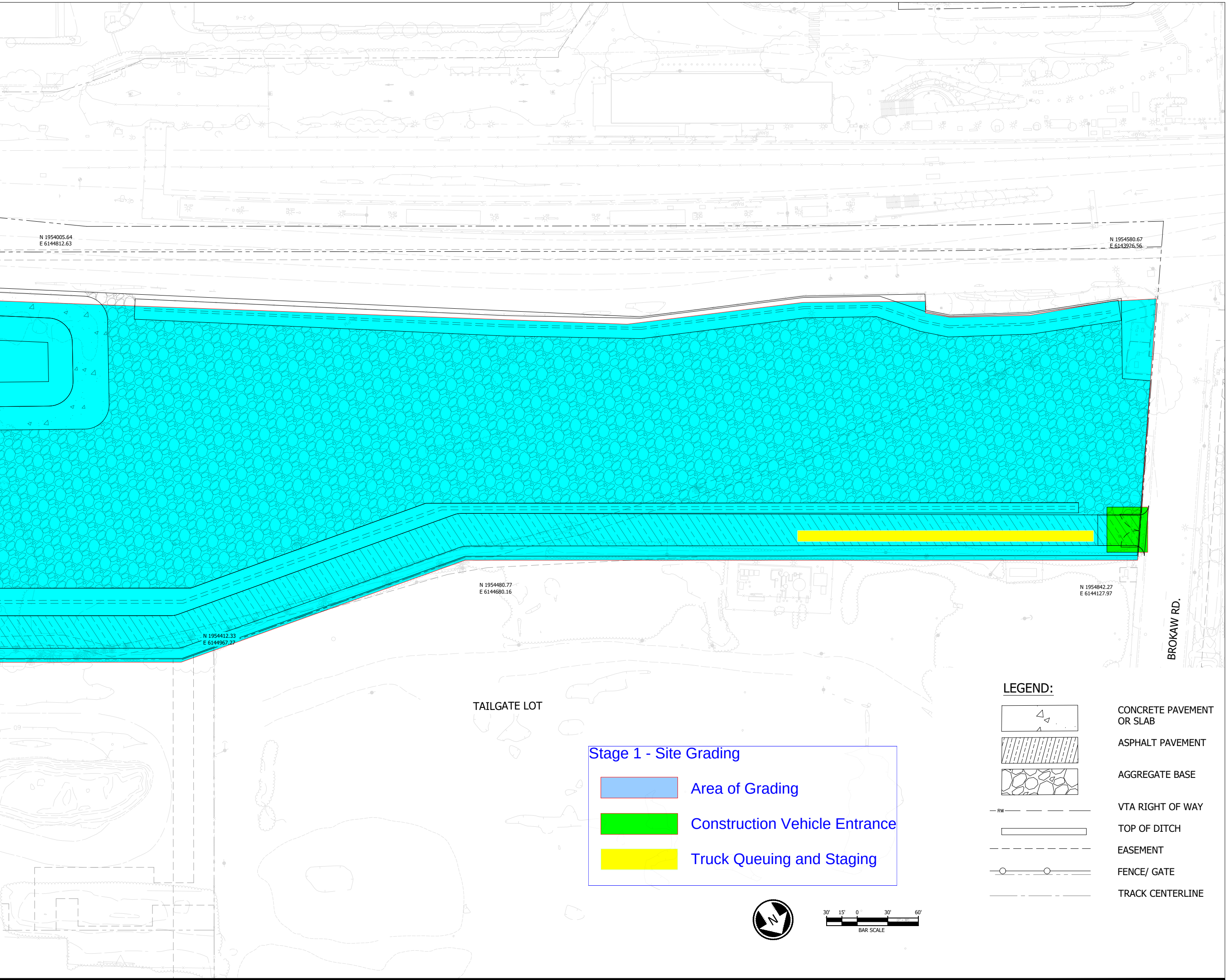
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BROKAW RD.
TAILGATE LOT
N
30' 15' 0 30' 60'
BAR SCALE

Stage 1 - Site Grading

🟦	Area of Grading
🟩	Construction Vehicle Entrance
🟨	Truck Queuing and Staging

LEGEND:

△	CONCRETE PAVEMENT OR SLAB
▨	ASPHALT PAVEMENT
▦	AGGREGATE BASE
— RW — — —	VTA RIGHT OF WAY
▭	TOP OF DITCH
— — — —	EASEMENT
—○—○—	FENCE/ GATE
— - — -	TRACK CENTERLINE

KIEWIT SHEA TAYLOR JV

APPROVED ____________________

JMA CIVIL INC.

APPROVED ____________________

KIEWIT SHEA TRAYLOR JOINT VENTURE

Santa Clara Valley Transportation Authority

VTA'S BART SILICON VALLEY PHASE II EXTENSION PROJECT
WEST PORTAL

SITE LAYOUT

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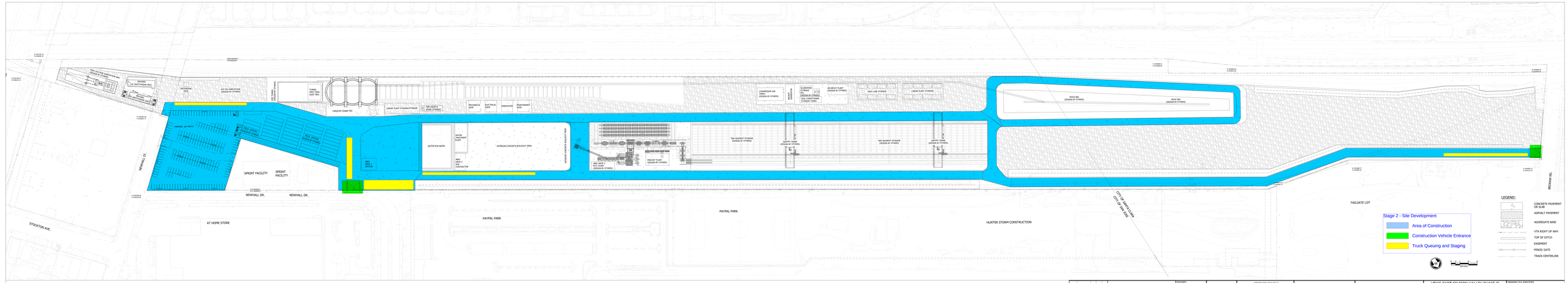

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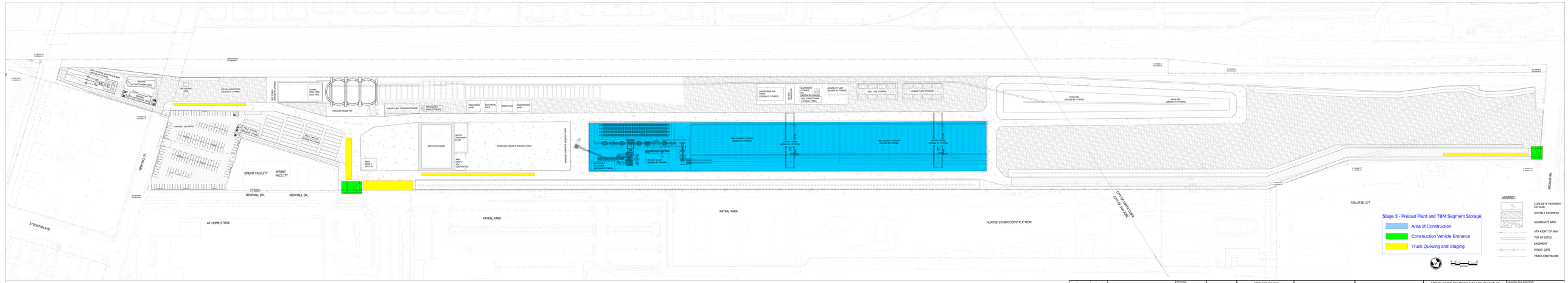

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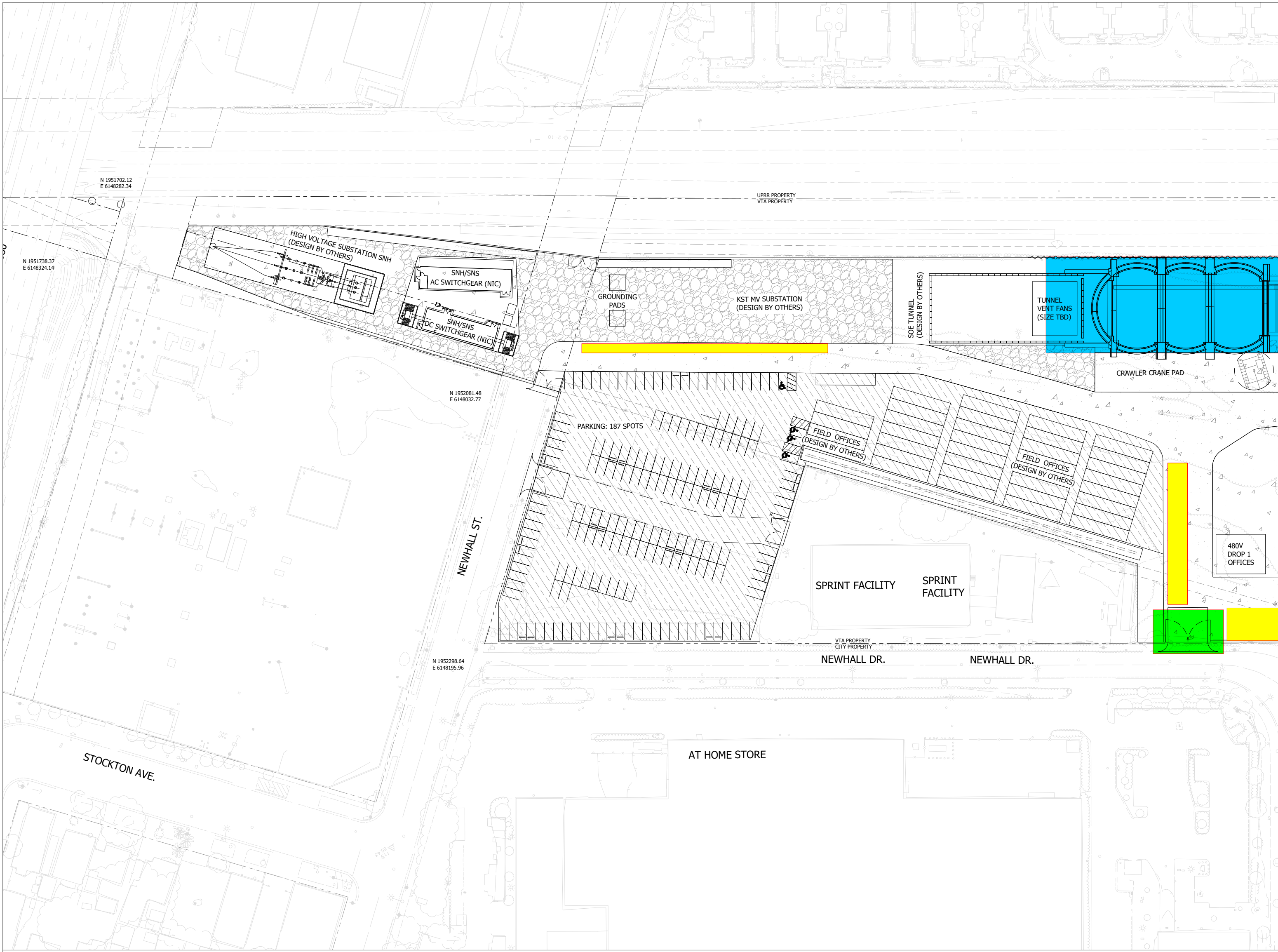
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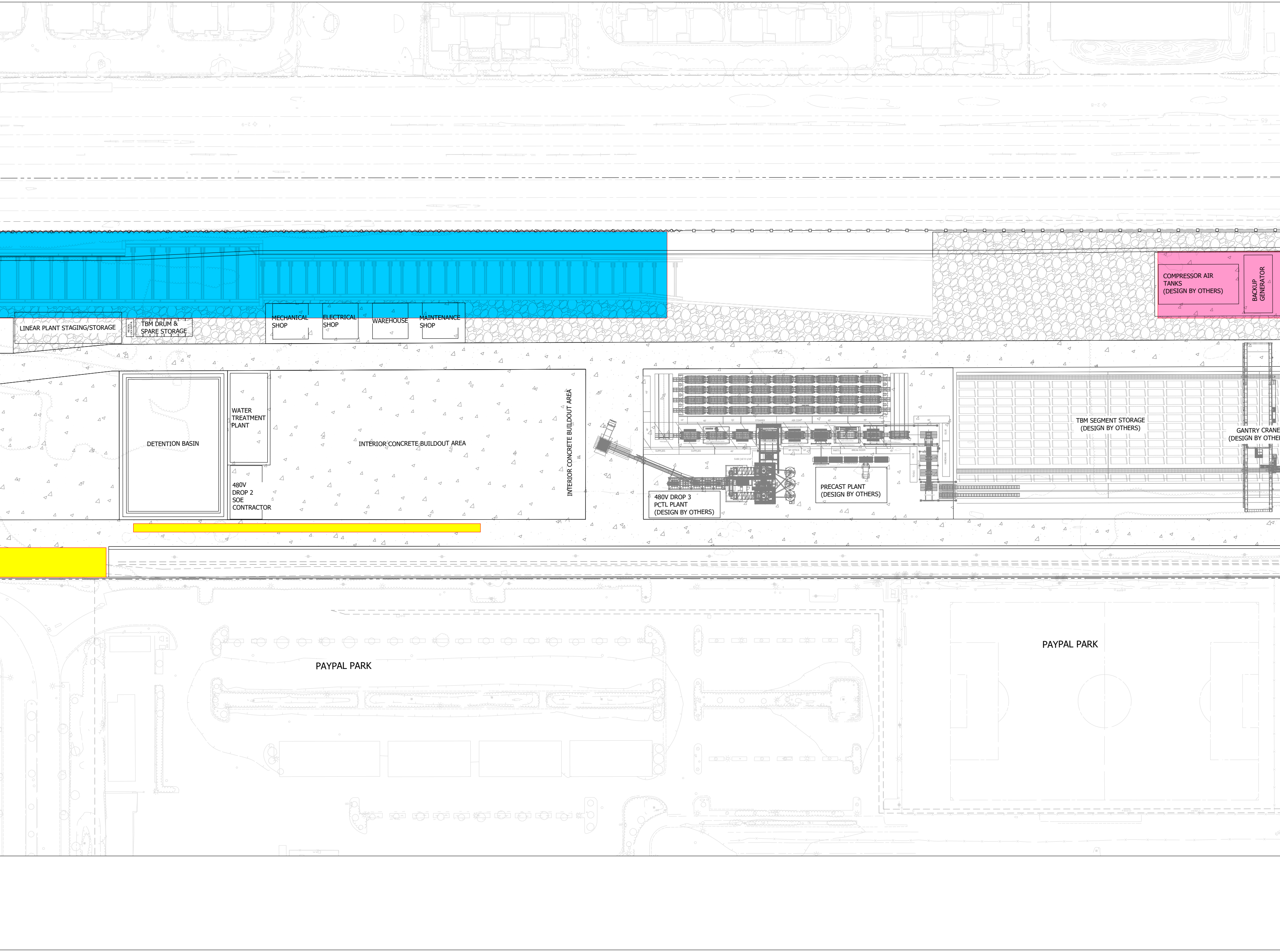
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AIR COMP
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BP OFFICE
PARTS
BREAK ROOM
GLUE
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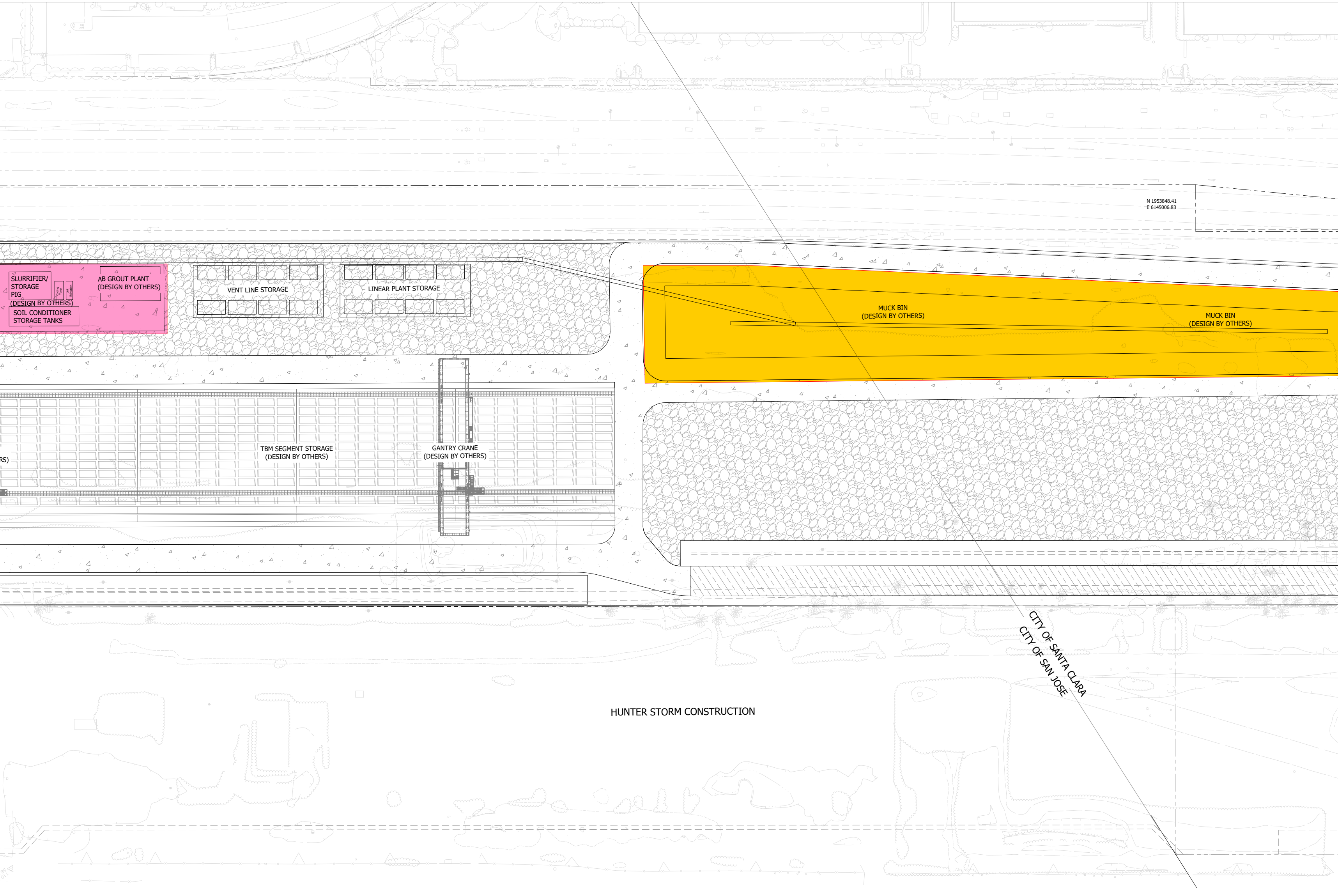
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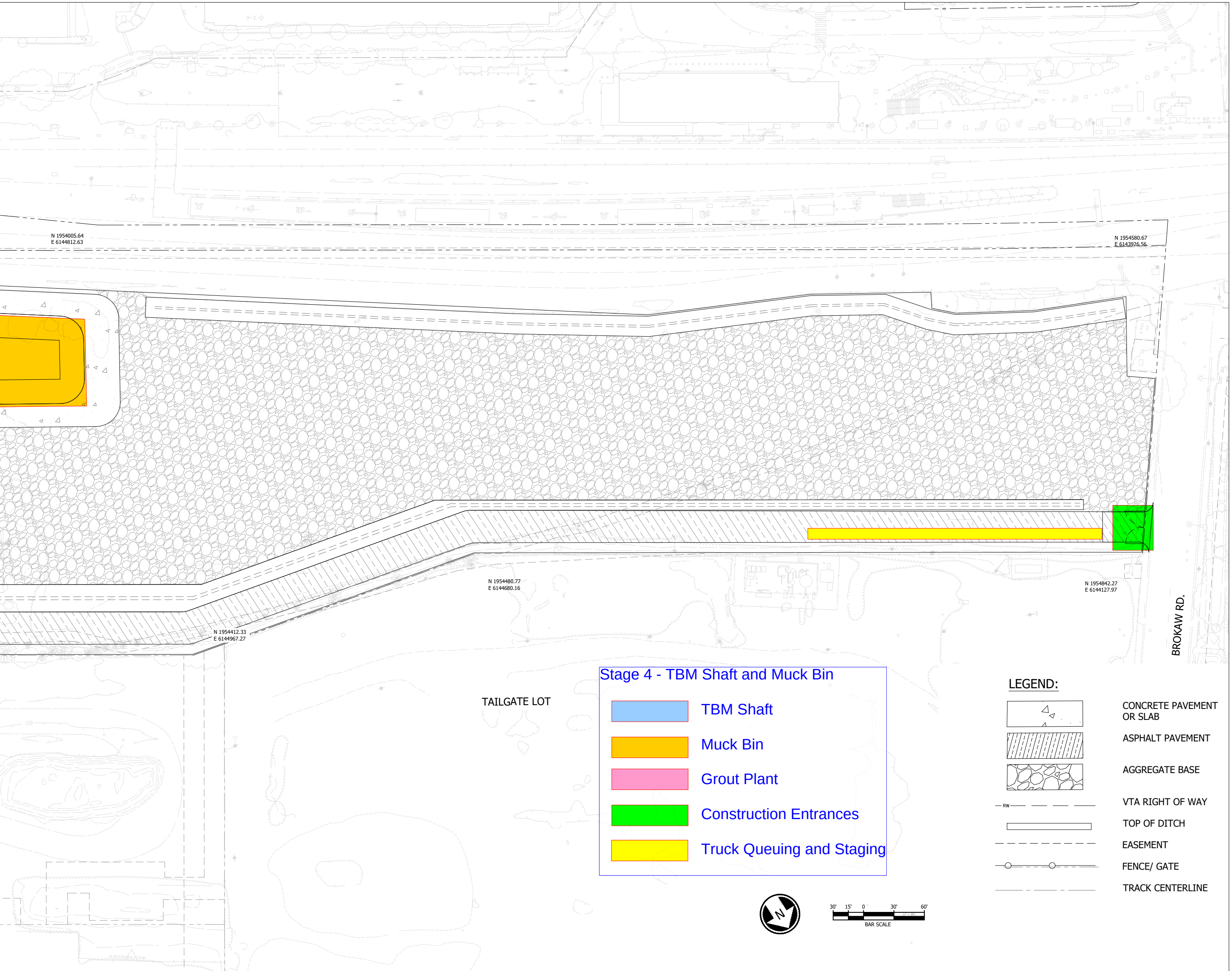
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APPROVED ____________________

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Santa Clara Valley Transportation Authority

VTA'S BART SILICON VALLEY PHASE II
EXTENSION PROJECT
WEST PORTAL

SITE LAYOUT

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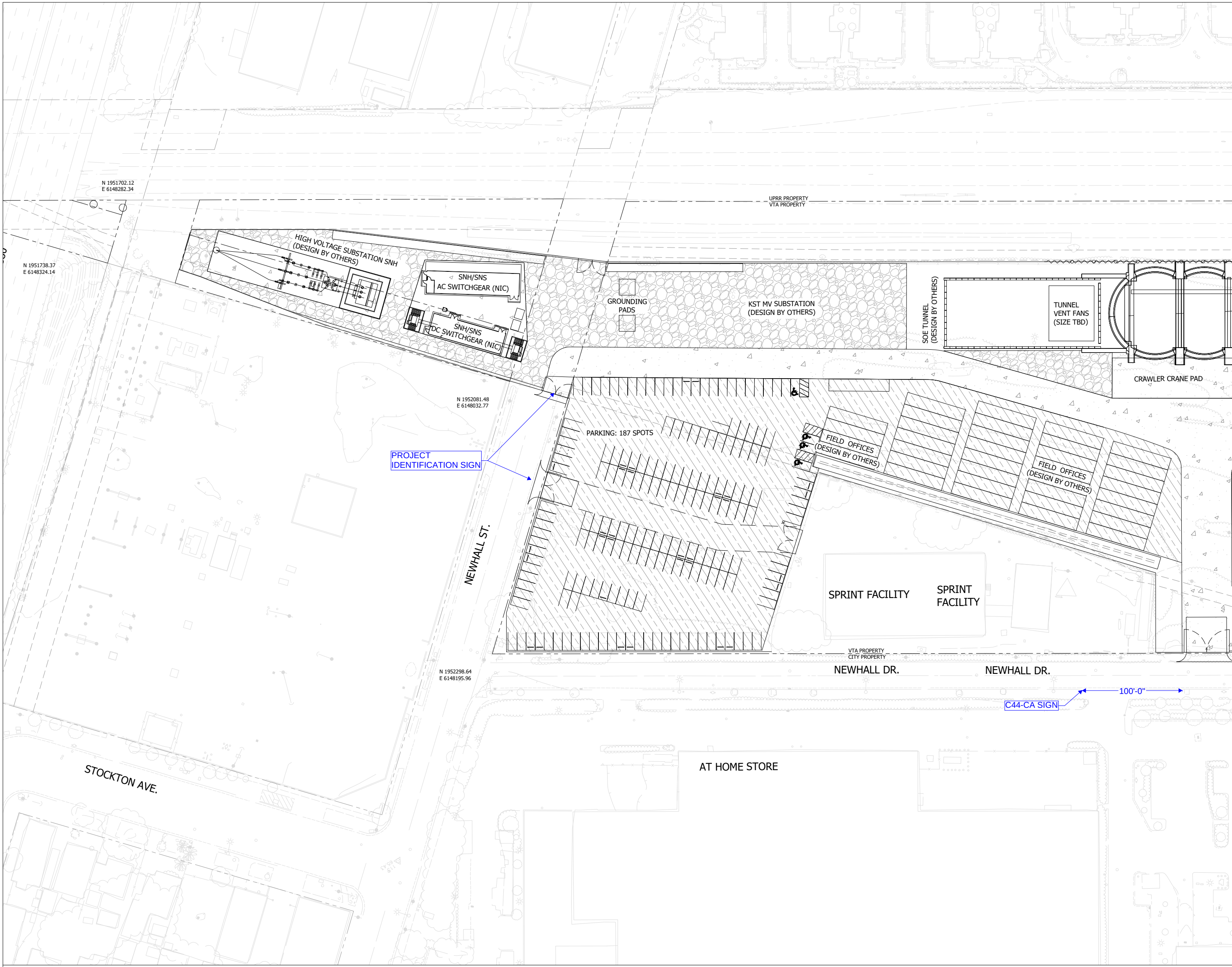
APPENDIX B

TRAFFIC CONTROL PLANS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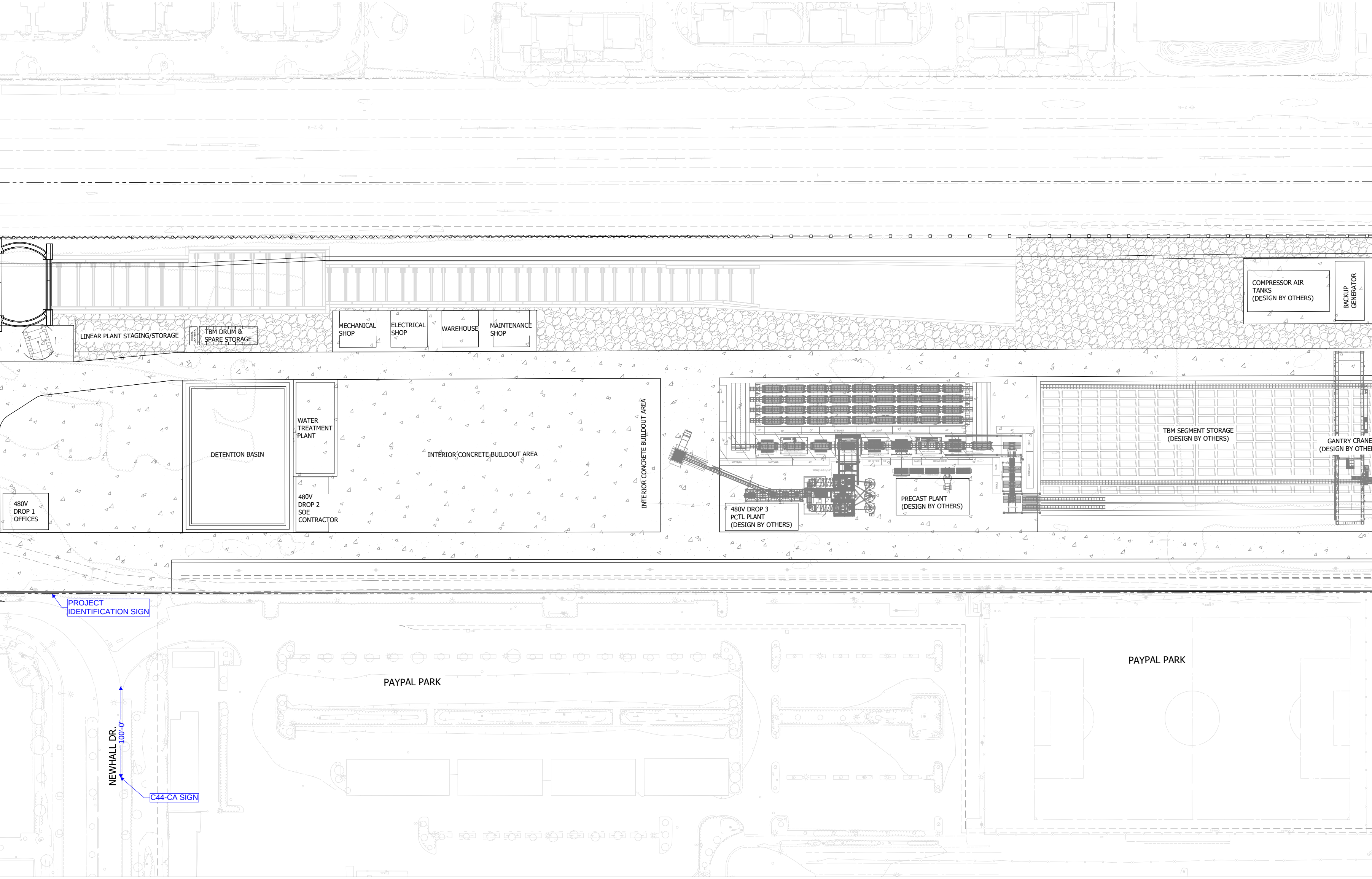
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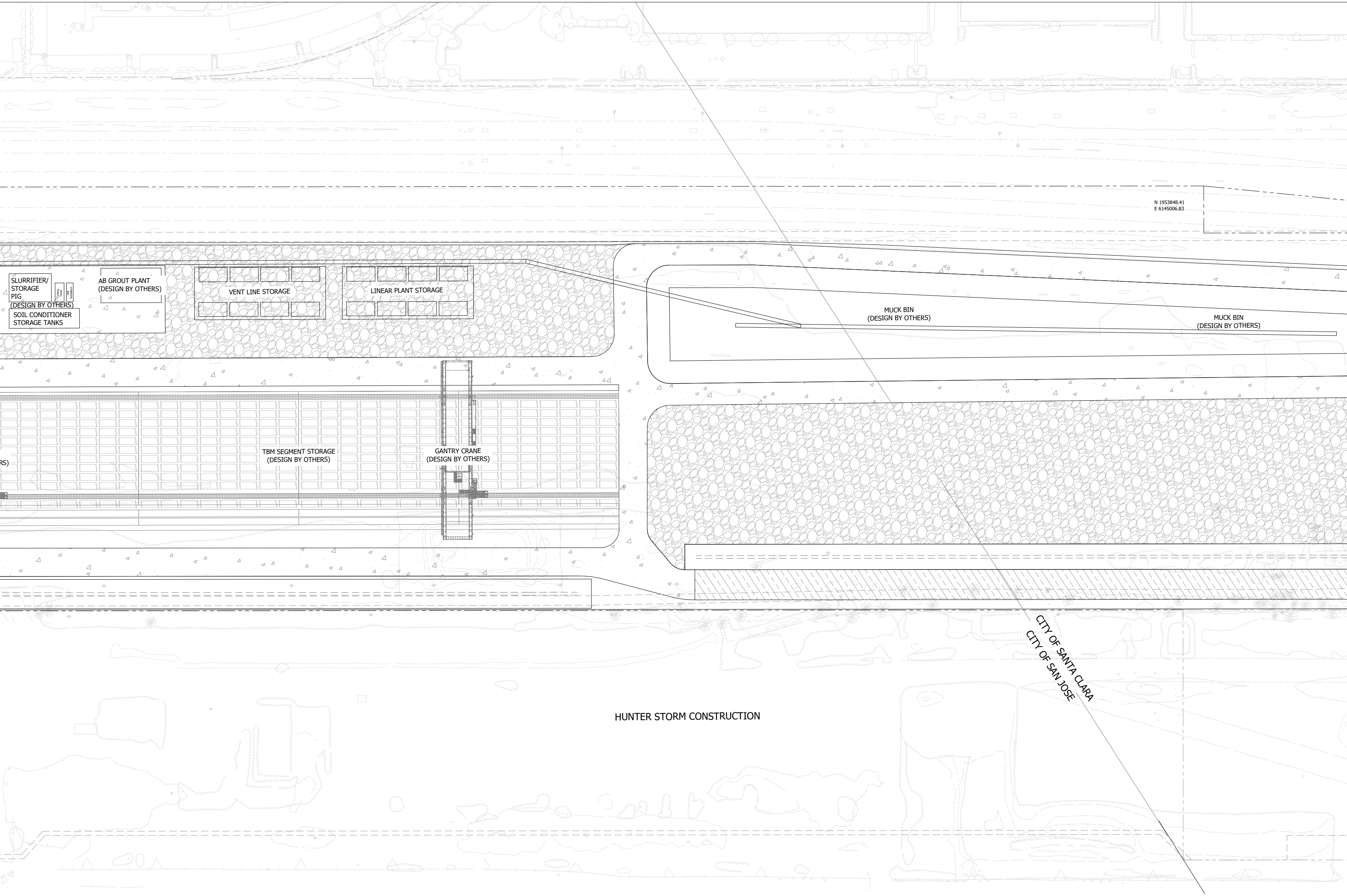
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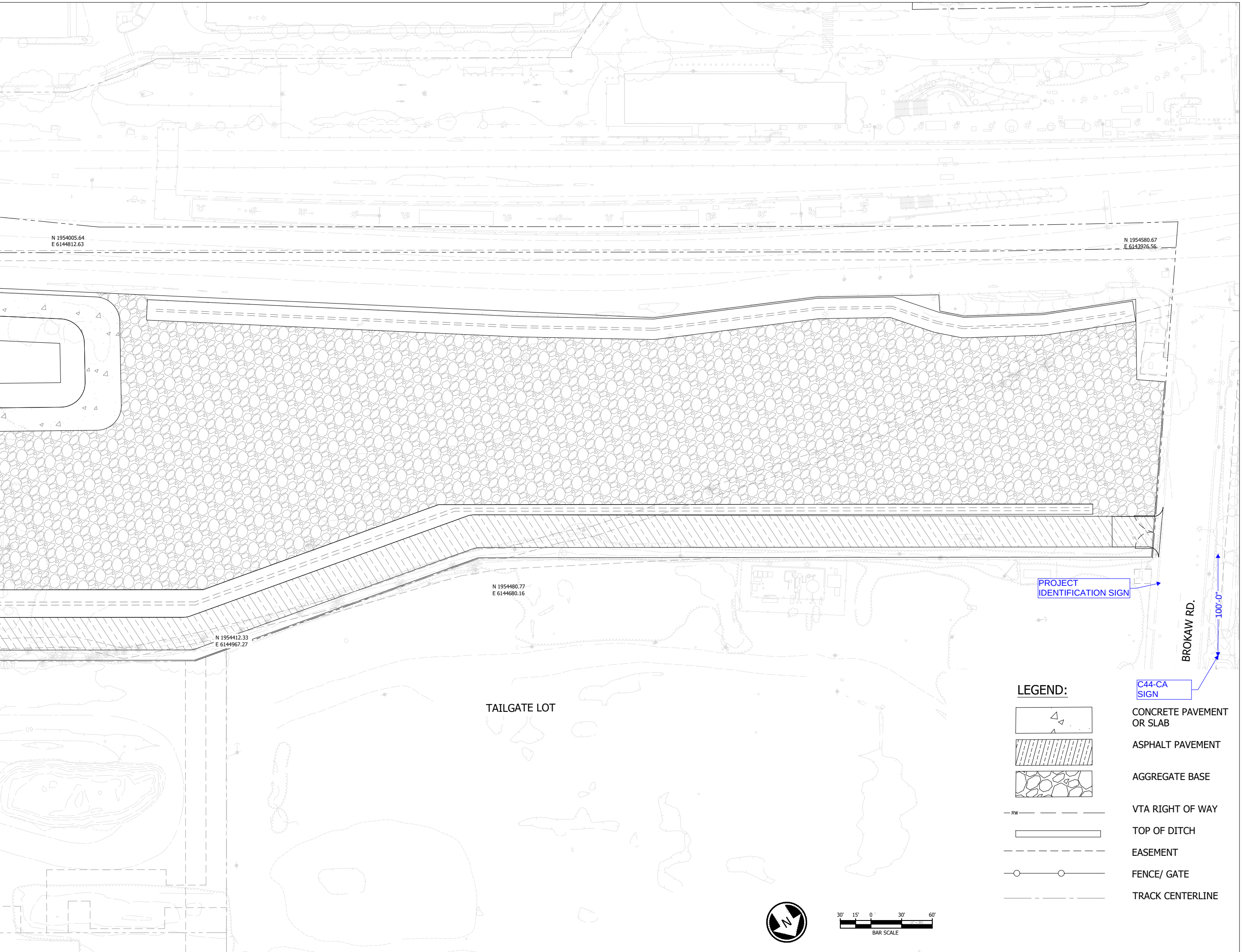
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TOP OF DITCH
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TRACK CENTERLINE
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30'
15'
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(1" = 30')
BAR SCALE

KIEWIT SHEA TAYLOR JV

APPROVED ______________________

JMA CIVIL INC.

APPROVED ______________________

KIEWIT SHEA TAYLOR
JOINT VENTURE

Santa Clara Valley
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VTA'S BART SILICON VALLEY PHASE II EXTENSION PROJECT

WEST PORTAL

SITE LAYOUT

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APPENDIX C

ACCESS TO BUSINESSES AND PROPERTIES

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1.0 INTRODUCTION

This attachment summarizes local business information and access needs by topic, specifically for the area of West Portal. The information is extracted from the BSVII Draft CTMP Appendix B – Summary of Access and Service Needs Memorandum, dated 12/15/2020 and 1/21/2021, with additional verification and supplementation from December 2022.

This attachment only summarizes key businesses and facilities near the West Portal site and is not an exhaustive list. However, KST has reviewed all property access near the site, as presented in the attached Property Access Exhibit, and will ensure that no property access is impacted for the Early Works, even if the property is not included in this appendix. See the table below for a summary of key businesses and facilities included in this appendix.

Table 1 - Key Businesses and Facilities

No.	Name	Type	Impact	Business Hours	Address	Contact	Phone	Email
1	Apple	Research and Development	N	6 am to 6 pm	335 Brokaw Road, Santa Clara, CA 95050	John Rickard III	650-208-4081	jrickard@apple.com
2	New Eden Spa	Salon/Personal Services	N	10 am to 9 pm	1335 Coleman Avenue, Santa Clara, CA 95050	Antion Zhu	408-320-2878	antionzhu@gmail.com
3	PayPal Park	Stadium	N	8 am to 9 pm	1123 Coleman Avenue, San José, CA 95110	Luke De Vogelaere	408-556-7742 650-804-9031	ldevogelaere @sjearthquakes.com
4	Santa Clara University	School	N	6 am to 9 pm (Weekday) Residents remaining on campus through the weekend	500 El Camino Real, Santa Clara, CA 95053	Chris Shay	408-551-1606	cshay@scu.edu
5	Costco Wholesale	Retailer	N	9 am to 8:30 pm (Weekday) 9 am to 7 pm (Weekend)	1601 Coleman Avenue, Santa Clara, CA 95050	Javier Zuniga	408-567-9000 Ext. 1	N/A
6	Coleman Highline	Office Development	N	7 am to 6 pm (Weekday) Mostly closed on weekends	West of Coleman Ave between Champions Way and Earthquakes Way	Todd Trekell	408-200-8904	todd @hunterproperties.com

2.0 GENERAL INFORMATION

2.1 HOURS OF OPERATIONS

Below are the hours of operations for local businesses and facilities as of December 2022.

- Apple: 6 a.m. to 6 p.m.
- New Eden Spa: 10 a.m. to 9 p.m.
- Costco Wholesale:
  - Weekday: 9 a.m. to 8:30 p.m.
  - Weekend: 9 a.m. to 7 p.m.
- PayPal Park:
  - 8 a.m. to 9 p.m.
  - Pre-event setup approximately 8 to 10 hours
  - Attendees' arrival is 4 to 5 hours prior to start time
- Coleman Highline:
  - Weekday: 7 a.m. to 6 p.m. for the majority of the facility
- Santa Clara University (14,000 students and 2,000 staff/faculty):
  - Weekday: 6 a.m. to 9 p.m.
  - Residents remaining on campus through the weekend

2.2 BUSIEST TIME OF DAY

Below are the busiest times of day for local businesses and facilities.

- Apple: Weekday morning before 12 p.m.
- New Eden Spa: Weekday afternoon between 12 p.m. and 5 p.m.
- Costco Wholesale: Busy all-day
- PayPal Park:
  - Weekday: Evening after 5 p.m. kick-off time
  - Weekend: Afternoon kick-off at 12 p.m. and evening after 5 p.m.
- Coleman Highline: Weekday morning from 9 a.m. to 12 p.m.

2.3 WRITTEN AND SPOKEN LANGUAGES AND ACCOMMODATIONS NEEDED

Below are written and spoken languages commonly used by the local businesses' employees and customers besides English, and any special accommodations needed.

- New Eden Spa: Mandarin
- Costco Wholesale: Spanish
- PayPal Park: Spanish

2.4 NUMBER OF EMPLOYEES AND VISITOR

- Coleman Highline: At least 2,900 employees when the Verizon construction is completed in December 2021; approximately 100 to 150 daily visitors

2.5 RENOVATIONS AND EXPANSIONS

Below are businesses that might conduct renovations/expansions in the next 2 to 10 years.

- PayPal Park: Plan to conduct major renovation in conjunction with the Coleman Highline construction
- Coleman Highline: Additional construction of the development through December 2021 (Verizon); Phase 4 (between Verizon and Aviation Ave) 300,000 SF to be completed once a tenant is obtained with estimated construction start of 2023.

3.0 ACCESS FOR EMPLOYEES AND CUSTOMERS

3.1 ACCESS FOR EMPLOYEES AND CUSTOMERS

Businesses near the West Portal area noted that most of their employees and customers will access the properties by driving. The majority will park in the businesses' owned parking lot or a shared parking lot, including PayPal Park. Downtown locations are more likely to have parking on the street nearby or parking garages.

For schools, there are no schools currently using school buses. At least half of the staff and faculty regularly drive, most parking in on-site school parking lots. Santa Clara University provides residential parking lots and commuter parking garages for staff, faculty and students. Most students live on or near campus and can walk to classes.

3.2 ARRIVAL TIMES – WEEKDAYS

At most locations, employees and customers tends to arrive before 12 p.m. on weekdays. See below for additional details.

- PayPal Park: 8 to 10 hours in advance of events, as early as 9 a.m.
- Coleman Highline: 7 a.m. to 9 a.m.
- Santa Clara University:
  - Staff/students arrive 7 a.m. to 9 a.m.
  - Staff/students leave 3:30 p.m. to 5 p.m.
  - Graduate students arrive 4 p.m. to 6 p.m. for night classes

3.3 ARRIVAL TIMES – WEEKENDS

At most locations, facilities will be closed on weekends with no arrivals. Notable businesses open on weekends near West Portal include PayPal Park and Costco Wholesale. See below for additional details.

- PayPal Park: 8 to 10 hours in advance of events, as early as 9 a.m.

4.0 SPECIAL EVENTS AND ROUTINE OPERATION

PayPal Park will host events throughout the year, which will be considered and coordinated as routine operation.

5.0 DELIVERY AND CITY SERVICES

5.1 TRASH

- Costco Wholesale: Everyday between 6 a.m. and 7 a.m.

- PayPal Park: Based on events; no regular hours
- Coleman Highline: Early mornings; specific days are unknown

5.2 MAIL

- Coleman Highline: 8 a.m. to 12 p.m.

5.3 DELIVERIES

- Costco Wholesale: 3 to 4 trucks from 3 a.m. to 6 a.m., 2 trucks from 8 a.m. to 10 a.m., and 2 trucks from 4 p.m. to 6 p.m.

5.4 LOADING AND UNLOADING

- Apple: Several times a week, a loading dock
- New Eden Spa: Not required, FedEx/UPS Deliveries in the parking lot take 1 to 10 minutes each
- Costco Wholesale: Multiple times a day from 8 a.m. to 12 p.m., has a loading dock, 1 to 10 minutes per delivery
- PayPal Park: Has a loading dock behind the stadium and passenger pick up and drop off is currently at the intersection at Coleman with post COVID plans to reevaluate location. No deliveries take place during events but do receive bulk deliveries several times a week and smaller FedEx/UPS deliveries daily from 8 a.m. to 3 p.m.
- Coleman Highline: Multiple times a day, typically from 8 a.m. to 12 p.m. with a varied time per delivery. Loading docks are available in Buildings 1, 2 (Brandley), 3, and 4 (Aviation Ave). Depending on direction of arrival, the delivery vehicles would need to make a left turn into the main campus, but not directly to the loading dock
- Santa Clara University: Once a day in the shipping & receiving area loading dock at the dinning hall (opposite side of campus from transit center)

6.0 ADDITIONAL INFORMATION PROVIDED

- Apple: Testing lab on site. Apple will internally confirm whether they will be impacted by vibrations due to the tunnel boring machine, but it is unlikely as the West Portal is far from the Apple site.
- PayPal Park: Requested that the TPMP be reviewed and continue to coordinate with the Coleman Highline development.
- Santa Clara University: Expressed concerns about the main gate at El Camino Real and Palm Drive. The West Portal Early Works will not affect the main entrance as trucks will not be routed through El Camino Real.

7.0 INDIVIDUAL INTERVIEW DOCUMENTATION

Individual interview documentation and applicable attachments from the BSVII Draft CTMP Appendix B – Summary of Access and Service Needs Memorandum, dated 12/15/2020 and 1/21/2021, for businesses and facilities near the West Portal site, are attached to this appendix.

8.0 SPRINT FACILITY ACCESS

There is an existing Sprint fiber optics facility, located at 801 Newhall Drive, as well as an existing fiber optic line at the West Portal site operated by Sprint. The existing fiber optic line is proposed to be relocated, but remaining within the West Portal site. KST has been noted that Sprint has an easement for

accessing their facilities and fiber optic lines through the VTA-owned West Portal site. KST is in coordination with VTA and Sprint to ensure that their access will not be impacted by the construction activities at West Portal.

UNIMPACTED DRIVEWAY LOCATION

PROJECT SITE

JMA CIVIL
383 4th Street, Ste. 201
Oakland, CA 94607
T: 925.400.4356
www.jmacivil.com

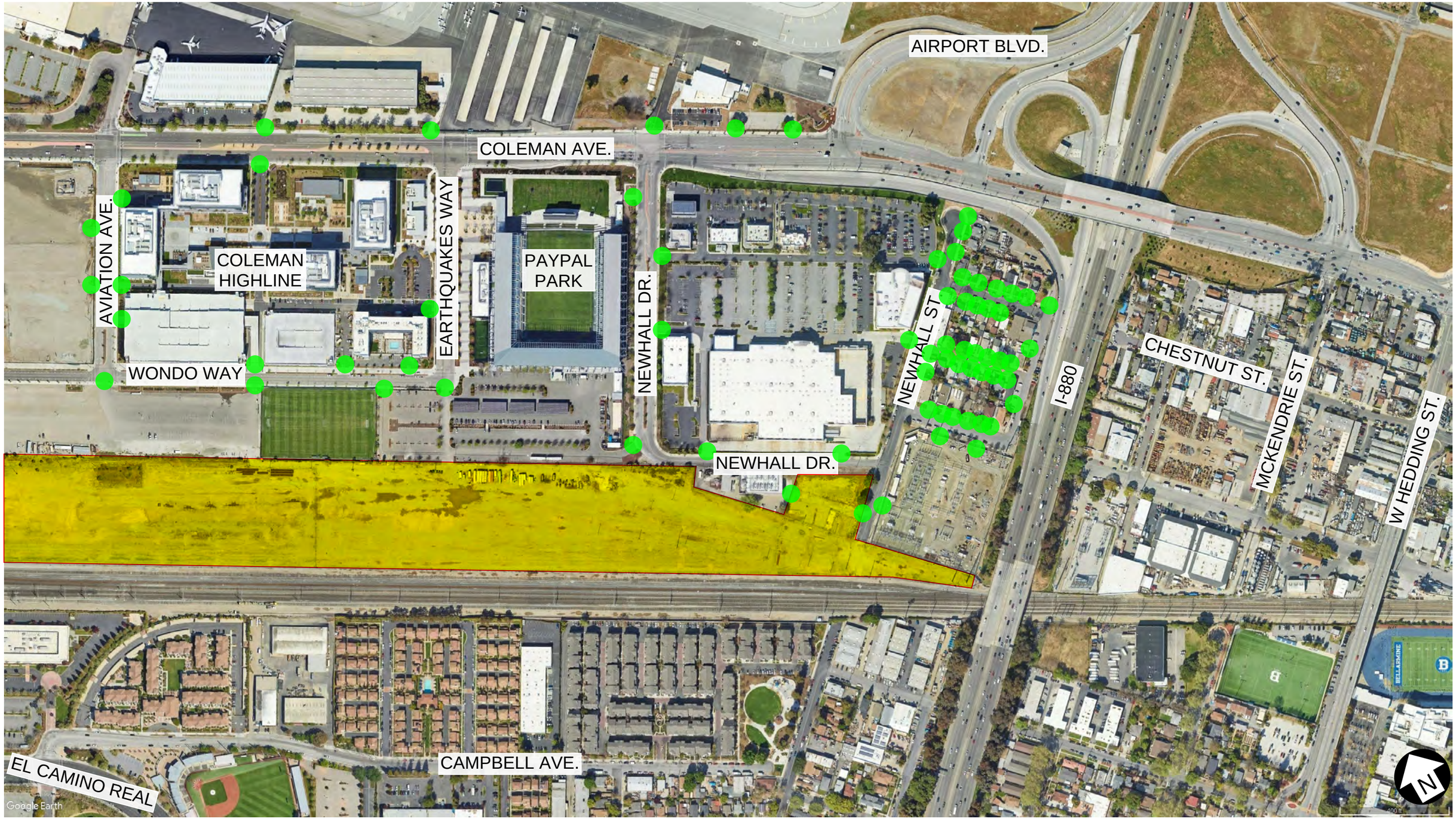
KIEWIT SHEA TRAYLOR JOINT VENTURE

NEWHALL YARD

Cities of San Jose and Santa Clara

ATTACHMENT C
PROPERTY ACCESS EXHIBIT

SCALE: AS NOTED
DATE: 12/05/2022



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KIEWIT SHEA TRAYLOR JOINT VENTURE

NEWHALL YARD

Cities of San Jose and Santa Clara

ATTACHMENT C
PROPERTY ACCESS EXHIBIT

SCALE: AS NOTED
DATE: 12/05/2022

Date:	11/30/20 @ 15:52pm
Organization:	Apple
Type of Organization:	Research and Development
Attendees:	Rod Diridon, John Rickard III, Monica F., Erica R.
Project Area:	Santa Clara
Address:	335 Brokaw Road, Santa Clara, CA 95050

Main Point of Contact	
Name:	John Rickard III
Phone Number:	650-208-4081
Email Address:	jrickard@apple.com

Question	Letter Answer	Comments
1. Are you this business or organization's owner or manager? a. Yes b. No	A	
2. Has your business, organization, or institution made any operational or access changes due to Santa Clara County Public Health orders due to COVID-19 (e.g. offer outdoor seating, outdoor retail or services, added a virtual storefront, created pick-up area, increased customer delivery)? If yes, please describe.. a. Yes [comment box] b. No c. Not sure / Prefer not to answer / Not applicable	C	
3. What are your hours of operation? (i.e. M-F 8 am – 5 pm)		6am to 6 pm
4. Please select your typically busiest times: a. Weekday Morning (before 12 Noon) b. Weekday Afternoon (between 12 Noon and 5 p.m.) c. Weekday Evening (after 5 p.m.) d. Weekend Morning (before 12 Noon) e. Weekend Afternoon (between 12 Noon and 5 p.m.) f. Weekend Evening (after 5 p.m.) g. Not sure / Prefer not to answer / Not applicable		Weekday Morning (before 12 Noon) 8:30 am to 10 am

Question	Letter Answer	Comments
5. What language(s) is(are) spoken and/or written by you, your employees, and your customers (including advertising and reading technical documents, such as legal or financial documents)? a. English b. Spanish / Español c. Portuguese / Português d. Mandarin / 漢語 e. Cantonese / 粵語 f. Vietnamese / Tiếng Việt g. Tagalog h. Other (please specify)	A	
6. Approximately how many employees or volunteers do you have? a. 1 b. 2-9 c. 10-35 d. 36-50 e. 51+	O	Average 60
7. Approximately how many people a day typically visit your business or organization? a. Fewer than 50 b. 50-99 c. 100-249 d. 250 or more e. Not sure / Prefer not to answer / Not applicable	A	5 people a week as vendors; landscaping and building services
8. Do you intend to move premises within the next two years? a. Yes b. No	B	

The following questions are about how your employees, volunteers, customers, students, and visitors access your business, organization, or institution.

Question	Letter Answer	Comments
9. Do they have access to transit, such as buses or light rail, at your location? a. Yes b. No c. Not sure / Prefer not to answer	A	

Question	Letter Answer	Comments
10. How many of them regularly drive to your business, organization, or institution? a. None b. Few than half c. About half d. More than half e. All f. Not sure / Prefer not to answer / Not applicable	D	
11. If they drive, where do they typically park? a. Owned parking lot b. Shared parking lot c. Street parking nearby d. Street parking in surrounding neighborhood e. Not sure/ Prefer not to answer / Not applicable	A	There is the option to have an Apple shuttle from a campus, but not typical for this site. Owned parking lot
12. If applicable, please provide the address or approximate location of any shared parking lot or garage.		No response
13. What time of day do they typically arrive? (Check all that apply) a. Weekday Morning (before 12 Noon) b. Weekday Afternoon (between 12 Noon and 5 p.m.) c. Weekday Evening (after 5 p.m.) d. Weekend Morning (before 12 Noon) e. Weekend Afternoon (between 12 Noon and 5 p.m.) f. Weekend Evening (after 5 p.m.) g. Not sure / Prefer not to answer / Not applicable	A	
14. Does your business, organization, or institution host regular or occasional special events? Examples include promoted sales and cultural holidays. If yes, please describe the dates, times, size, and any other relevant event information. a. Yes [comment box] b. No c. Not sure / Prefer not to answer / Not applicable	B	

Question	Letter Answer	Comments
15. Please describe or list your approximate delivery, mail, and trash schedules. (e.g. deliveries on Mondays at 7:00 am and trash pick-ups on Thursdays at 9:00 am).		Follow up in progress
16. Does your business, organization, or institution require passenger and/or goods loading and unloading? a. Yes b. No	A	
17. Does your business, organization, or institution use or have access to any of the following? a. Yellow curb (delivery) b. White curb (passenger drop-off) c. Loading dock d. None of the above e. Not sure / Prefer not to say / Not applicable	C	
18. If yes, provide the address or approximate location of your loading areas (yellow curb and/or loading dock).		Follow up in progress
19. How often does your business, organization, or institution require bulk loading and/or unloading? a. Once per day b. Multiple times per day c. Several times per week d. Several times per month e. Several times per year f. None g. Not sure / Prefer not to answer	C	Follow up in progress
20. Do delivery vehicles need to make a left turn to enter your loading area? a. Yes b. No c. Not sure / Prefer not to answer / Not applicable	B	
21. What is the busiest time for loading and unloading deliveries at your business, organization, or institution? a. 8:00 am – Noon b. Noon – 3:00 PM c. 3:00 – 6:00 PM d. 6:00 PM – 8:00 AM (next day) e. Not sure / Prefer not to answer / Not applicable		Follow up in progress

Question	Letter Answer	Comments
22. How long does a typical delivery loading or unloading take? a. 1-10 minutes b. 11-30 minutes c. 31-60 minutes d. More than 60 minutes e. It varies f. Not sure / Prefer not to answer / Not applicable		Follow up in progress
23. Does your business, organization, or institution require any other accommodations to access information or services (e.g. printed media in an alternate format, sign language interpreter, assistive listening devices, video captioning)? a. Yes [comment box] b. No c. Not sure / Prefer not to answer	B	
24. Is there anything else about your business, organization, or institution you would like to tell VTA? [comment box]		There is a testing lab on site and Apple wants to confirm internally that they are not affected by vibrations but should not be a problem as the TBM will be daylighting at the south end of Newhall yard, not adjacent to Apple.

Date:	11/24/20 @ 14:41pm
Organization:	Avaya Stadium
Type of Organization:	Stadium
Attendees:	Luke De Vogelaere, Gina N., Dennis K.
Project Area:	Santa Clara Station
Address:	1123 Coleman Avenue, San José, CA 95110

Main Point of Contact	
Name:	Luke De Vogelaere
Phone Number:	408-556-7742, 650-804-9031
Email Address:	ldevogelaere@sjearthquakes.com

Question	Letter Answer	Comments
1. Are you this business or organization's owner or manager? a. Yes b. No		Director of events: parking and traffic
2. Has your business, organization, or institution made any operational or access changes due to Santa Clara County Public Health orders due to COVID-19 (e.g. offer outdoor seating, outdoor retail or services, added a virtual storefront, created pick-up area, increased customer delivery)? If yes, please describe.. a. Yes [comment box] b. No c. Not sure / Prefer not to answer / Not applicable		Operating, private gym rented stadium location for classes, stadium is open for small events. No large event.
3. What are your hours of operation? (i.e. M-F 8 am – 5 pm)		MLS match setup the day before, staff arrive 8-10 hours prior. Fans arrive 4.5 hours to kick-off.

Question	Letter Answer	Comments
4. Please select your typically busiest times: a. Weekday Morning (before 12 Noon) b. Weekday Afternoon (between 12 Noon and 5 p.m.) c. Weekday Evening (after 5 p.m.) d. Weekend Morning (before 12 Noon) e. Weekend Afternoon (between 12 Noon and 5 p.m.) f. Weekend Evening (after 5 p.m.) g. Not sure / Prefer not to answer / Not applicable	C F	MLS matches 7-7:30pm kick-off game. Sunday & Saturday. Some 12pm kick-off.
5. What language(s) is(are) spoken and/or written by you, your employees, and your customers (including advertising and reading technical documents, such as legal or financial documents)? a. English b. Spanish / Español c. Portuguese / Português d. Mandarin / 漢語 e. Cantonese / 粵語 f. Vietnamese / Tiếng Việt g. Tagalog h. Other (please specify)	A B	Information is provided in both English and Spanish.
6. Approximately how many employees or volunteers do you have? a. 1 b. 2-9 c. 10-35 d. 36-50 e. 51+	E	
7. Approximately how many people a day typically visit your business or organization? a. Fewer than 50 b. 50-99 c. 100-249 d. 250 or more e. Not sure / Prefer not to answer / Not applicable	D	
8. Do you intend to move premises within the next two years? a. Yes b. No	B	

The following questions are about how your employees, volunteers, customers, students, and visitors access your business, organization, or institution.

Question	Letter Answer	Comments
9. Do they have access to transit, such as buses or light rail, at your location? a. Yes b. No c. Not sure / Prefer not to answer	A	Route #10 turn to Route #237. In 2017, the transit supplemental service directly go into the stadium got reduced. No bus stops on Coleman Ave or off streets near stadium.
10. How many of them regularly drive to your business, organization, or institution? a. None b. Few than half c. About half d. More than half e. All f. Not sure / Prefer not to answer / Not applicable	D	
11. If they drive, where do they typically park? a. Owned parking lot b. Shared parking lot c. Street parking nearby d. Street parking in surrounding neighborhood e. Not sure/ Prefer not to answer / Not applicable	A	
12. If applicable, please provide the address or approximate location of any shared parking lot or garage.		1123 Coleman Avenue
13. What time of day do they typically arrive? (Check all that apply) a. Weekday Morning (before 12 Noon) b. Weekday Afternoon (between 12 Noon and 5 p.m.) c. Weekday Evening (after 5 p.m.) d. Weekend Morning (before 12 Noon) e. Weekend Afternoon (between 12 Noon and 5 p.m.) f. Weekend Evening (after 5 p.m.) g. Not sure / Prefer not to answer / Not applicable	A D	8-10 hours prior, as early as 9am

Question	Letter Answer	Comments
14. Does your business, organization, or institution host regular or occasional special events? Examples include promoted sales and cultural holidays. If yes, please describe the dates, times, size, and any other relevant event information. a. Yes [comment box] b. No c. Not sure / Prefer not to answer / Not applicable	A	Attendees number depends on the type of events. Lacrosse, etc. Soccer season is from late February to early October, with 17 home games typically
15. Please describe or list your approximate delivery, mail, and trash schedules. (e.g. deliveries on Mondays at 7:00 am and trash pick-ups on Thursdays at 9:00 am).		Trash: odd hours and on event-base No deliveries during event time. Small deliveries (FEDEX, UPS) come daily.
16. Does your business, organization, or institution require passenger and/or goods loading and unloading? a. Yes b. No	A	
17. Does your business, organization, or institution use or have access to any of the following? a. Yellow curb (delivery) b. White curb (passenger drop-off) c. Loading dock d. None of the above e. Not sure / Prefer not to say / Not applicable	C	
18. If yes, provide the address or approximate location of your loading areas (yellow curb and/or loading dock).		Behind the stadium Pick-up & Drop-off at surface lot at intersection at Coleman. Future re-evaluation for PU-DO location for resume service post-COVID.
19. How often does your business, organization, or institution require bulk loading and/or unloading? a. Once per day b. Multiple times per day c. Several times per week d. Several times per month e. Several times per year f. None g. Not sure / Prefer not to answer	C	No deliveries during event time. Small deliveries (FEDEX, UPS) come daily.

Question	Letter Answer	Comments
20. Do delivery vehicles need to make a left turn to enter your loading area? a. Yes b. No c. Not sure / Prefer not to answer / Not applicable	B	
21. What is the busiest time for loading and unloading deliveries at your business, organization, or institution? a. 8:00 am – Noon b. Noon – 3:00 PM c. 3:00 – 6:00 PM d. 6:00 PM – 8:00 AM (next day) e. Not sure / Prefer not to answer / Not applicable	A B	During normal operating hours
22. How long does a typical delivery loading or unloading take? a. 1-10 minutes b. 11-30 minutes c. 31-60 minutes d. More than 60 minutes e. It varies f. Not sure / Prefer not to answer / Not applicable	E	
23. Does your business, organization, or institution require any other accommodations to access information or services (e.g. printed media in an alternate format, sign language interpreter, assistive listening devices, video captioning)? a. Yes [comment box] b. No c. Not sure / Prefer not to answer	B	
24. Is there anything else about your business, organization, or institution you would like to tell VTA? [comment box]		Review TPMP and coordinate with Coleman Highline

Questions for larger business, organization, or institution:

Question	Letter Answer	Comments
25. Does your business, organization, or institution have a Transportation Management Plan? a. Yes b. No	A	

26. Does your business, organization, or institution have an events calendar over the next 10 years? a. Yes b. No	A	
27. Does your business, organization, or institution have any upcoming expansions and renovations? a. Yes b. No	A	Plan to conduct major renovation in conjunction with the Coleman Highline construction. Share vendors and share project construction.
28. VTA recognizes that large construction projects can impact businesses. To assist us with preparing our Small Business Resource Study, what kinds of assistance may be helpful for your business or organization? a. Support in creating budgeting, business, staff or marketing plans b. Help understanding business or labor regulations c. More information on small business grants, loans or programs d. Guidance on new business software, such as QuickBooks, Square, or Resy e. Assistance with negotiating a rental lease agreement or relocating your business f. Creating advertising campaigns, including radio, television, print and social media g. Showcasing local businesses through fliers, posters, sidewalk displays and wayfinding signage h. Sponsoring local events i. Not Applicable / Not sure / Prefer not to answer j. Other		No response
29. If your business or organization were asked for administrative or financial records in order to qualify for the types of assistance programs discussed above, would you be able and willing to produce employee, financial and tax records for the previous two calendar years? a. Yes b. No	B	

30. Do you have any final comments or suggestions?		Need to identify truck routes and back facility maintenance back lot. There are significant amount of traffic accessing Coleman Avenue for stores.

Date:	11/17/20 @ 14:29pm
Organization:	Costco Wholesale
Type of Organization:	Retailer
Attendees:	Javier Zuniga, Dennis K., Gina N.
Project Area:	Santa Clara
Address:	1601 Coleman Avenue, Santa Clara, CA 95050

Main Point of Contact	
Name:	Javier Zuniga
Phone Number:	408-567-9000 Ext. 1
Email Address:	N/A

Question	Letter Answer	Comments
1. Are you this business or organization's owner or manager? a. Yes b. No	A	
2. Has your business, organization, or institution made any operational or access changes due to Santa Clara County Public Health orders due to COVID-19 (e.g. offer outdoor seating, outdoor retail or services, added a virtual storefront, created pick-up area, increased customer delivery)? If yes, please describe.. a. Yes [comment box] b. No c. Not sure / Prefer not to answer / Not applicable		Limiting people that come in/out
3. What are your hours of operation? (i.e. M-F 8 am – 5 pm)		mon-fri 9-830a, sat sun 9a-7pm
4. Please select your typically busiest times: a. Weekday Morning (before 12 Noon) b. Weekday Afternoon (between 12 Noon and 5 p.m.) c. Weekday Evening (after 5 p.m.) d. Weekend Morning (before 12 Noon) e. Weekend Afternoon (between 12 Noon and 5 p.m.) f. Weekend Evening (after 5 p.m.) g. Not sure / Prefer not to answer / Not applicable	A B C D E F	Busy due to COVID, morning 10-12, afternoon 5-630

Question	Letter Answer	Comments
5. What language(s) is(are) spoken and/or written by you, your employees, and your customers (including advertising and reading technical documents, such as legal or financial documents)? a. English b. Spanish / Español c. Portuguese / Português d. Mandarin / 漢語 e. Cantonese / 粵語 f. Vietnamese / Tiếng Việt g. Tagalog h. Other (please specify)	A B	
6. Approximately how many employees or volunteers do you have? a. 1 b. 2-9 c. 10-35 d. 36-50 e. 51+		No response
7. Approximately how many people a day typically visit your business or organization? a. Fewer than 50 b. 50-99 c. 100-249 d. 250 or more e. Not sure / Prefer not to answer / Not applicable	D	4,000 per a day
8. Do you intend to move premises within the next two years? a. Yes b. No	B	

The following questions are about how your employees, volunteers, customers, students, and visitors access your business, organization, or institution.

Question	Letter Answer	Comments
9. Do they have access to transit, such as buses or light rail, at your location? a. Yes b. No c. Not sure / Prefer not to answer	A	Near Santa Clara Caltrain Station; bus stop across the street on Coleman

Question	Letter Answer	Comments
10. How many of them regularly drive to your business, organization, or institution? a. None b. Few than half c. About half d. More than half e. All f. Not sure / Prefer not to answer / Not applicable	D	95% drive; 5% public transit
11. If they drive, where do they typically park? a. Owned parking lot b. Shared parking lot c. Street parking nearby d. Street parking in surrounding neighborhood e. Not sure/ Prefer not to answer / Not applicable	A	
12. If applicable, please provide the address or approximate location of any shared parking lot or garage.		In front of business
13. What time of day do they typically arrive? (Check all that apply) a. Weekday Morning (before 12 Noon) b. Weekday Afternoon (between 12 Noon and 5 p.m.) c. Weekday Evening (after 5 p.m.) d. Weekend Morning (before 12 Noon) e. Weekend Afternoon (between 12 Noon and 5 p.m.) f. Weekend Evening (after 5 p.m.) g. Not sure / Prefer not to answer / Not applicable	A B	Earliest arrival is at 3am, latest arrival is 6pm
14. Does your business, organization, or institution host regular or occasional special events? Examples include promoted sales and cultural holidays. If yes, please describe the dates, times, size, and any other relevant event information. a. Yes [comment box] b. No c. Not sure / Prefer not to answer / Not applicable	B	Open all day regularly. Close 1-hour early Christmas. Open regular hour for Black Friday.

Question	Letter Answer	Comments
15. Please describe or list your approximate delivery, mail, and trash schedules. (e.g. deliveries on Mondays at 7:00 am and trash pick-ups on Thursdays at 9:00 am).		Trash pickup - everyday 6-7am, delivery truck 3am-6am (3 or 4 truck load) , 2 more 8-10a, 4pm-6pm
16. Does your business, organization, or institution require passenger and/or goods loading and unloading? a. Yes b. No	A	
17. Does your business, organization, or institution use or have access to any of the following? a. Yellow curb (delivery) b. White curb (passenger drop-off) c. Loading dock d. None of the above e. Not sure / Prefer not to say / Not applicable	C	
18. If yes, provide the address or approximate location of your loading areas (yellow curb and/or loading dock).		No response
19. How often does your business, organization, or institution require bulk loading and/or unloading? a. Once per day b. Multiple times per day c. Several times per week d. Several times per month e. Several times per year f. None g. Not sure / Prefer not to answer	B	
20. Do delivery vehicles need to make a left turn to enter your loading area? a. Yes b. No c. Not sure / Prefer not to answer / Not applicable	C	
21. What is the busiest time for loading and unloading deliveries at your business, organization, or institution? a. 8:00 am – Noon b. Noon – 3:00 PM c. 3:00 – 6:00 PM d. 6:00 PM – 8:00 AM (next day) e. Not sure / Prefer not to answer / Not applicable	A	

Question	Letter Answer	Comments
22. How long does a typical delivery loading or unloading take? a. 1-10 minutes b. 11-30 minutes c. 31-60 minutes d. More than 60 minutes e. It varies f. Not sure / Prefer not to answer / Not applicable	B	10 to 15 minutes
23. Does your business, organization, or institution require any other accommodations to access information or services (e.g. printed media in an alternate format, sign language interpreter, assistive listening devices, video captioning)? a. Yes [comment box] b. No c. Not sure / Prefer not to answer	A	Have hearing impaired employee
24. Is there anything else about your business, organization, or institution you would like to tell VTA? [comment box]		No response

Questions for larger business, organization, or institution:

Question	Letter Answer	Comments
25. Does your business, organization, or institution have a Transportation Management Plan? a. Yes b. No	B	had TMP before redesign of the parking lot and transit service
26. Does your business, organization, or institution have an events calendar over the next 10 years? a. Yes b. No	B	Non-COVID has one year out
27. Does your business, organization, or institution have any upcoming expansions and renovations? a. Yes b. No	B	

Date:	11/25/20 @ 11:15am
Organization:	New Eden Spa
Type of Organization:	Salon/Personal Services
Attendees:	Antion Zhu, Dennis K., Monica F.
Project Area:	Santa Clara
Address:	1335 Coleman Avenue, Santa Clara, CA 95050

Main Point of Contact	
Name:	Antion Zhu
Phone Number:	408-320-2878
Email Address:	antionzhu@gmail.com

Question	Letter Answer	Comments
1. Are you this business or organization's owner or manager? a. Yes b. No	A	
2. Has your business, organization, or institution made any operational or access changes due to Santa Clara County Public Health orders due to COVID-19 (e.g. offer outdoor seating, outdoor retail or services, added a virtual storefront, created pick-up area, increased customer delivery)? If yes, please describe.. a. Yes [comment box] b. No c. Not sure / Prefer not to answer / Not applicable		Have been closed for 5-6 months; weren't able to open; then only outdoor; now reduced capacity inside (have been slow since pandemic) ; most is appointment only now
3. What are your hours of operation? (i.e. M-F 8 am – 5 pm)		10 am - 9 pm; (have been slow since pandemic); most is appointment only now
4. Please select your typically busiest times: a. Weekday Morning (before 12 Noon) b. Weekday Afternoon (between 12 Noon and 5 p.m.) c. Weekday Evening (after 5 p.m.) d. Weekend Morning (before 12 Noon) e. Weekend Afternoon (between 12 Noon and 5 p.m.) f. Weekend Evening (after 5 p.m.) g. Not sure / Prefer not to answer / Not applicable	B	Office people coming mid-day

Question	Letter Answer	Comments
5. What language(s) is(are) spoken and/or written by you, your employees, and your customers (including advertising and reading technical documents, such as legal or financial documents)? a. English b. Spanish / Español c. Portuguese / Português d. Mandarin / 漢語 e. Cantonese / 粵語 f. Vietnamese / Tiếng Việt g. Tagalog h. Other (please specify)	A D	
6. Approximately how many employees or volunteers do you have? a. 1 b. 2-9 c. 10-35 d. 36-50 e. 51+	B	7 to 8
7. Approximately how many people a day typically visit your business or organization? a. Fewer than 50 b. 50-99 c. 100-249 d. 250 or more e. Not sure / Prefer not to answer / Not applicable	A	
8. Do you intend to move premises within the next two years? a. Yes b. No	A	Doesn't know how long they can stay there with COVID impacts.

The following questions are about how your employees, volunteers, customers, students, and visitors access your business, organization, or institution.

Question	Letter Answer	Comments
9. Do they have access to transit, such as buses or light rail, at your location? a. Yes b. No c. Not sure / Prefer not to answer	A	2 bus stops on Coleman

Question	Letter Answer	Comments
10. How many of them regularly drive to your business, organization, or institution? a. None b. Few than half c. About half d. More than half e. All f. Not sure / Prefer not to answer / Not applicable	D	More than half
11. If they drive, where do they typically park? a. Owned parking lot b. Shared parking lot c. Street parking nearby d. Street parking in surrounding neighborhood e. Not sure/ Prefer not to answer / Not applicable	B	
12. If applicable, please provide the address or approximate location of any shared parking lot or garage.		In front of shop
13. What time of day do they typically arrive? (Check all that apply) a. Weekday Morning (before 12 Noon) b. Weekday Afternoon (between 12 Noon and 5 p.m.) c. Weekday Evening (after 5 p.m.) d. Weekend Morning (before 12 Noon) e. Weekend Afternoon (between 12 Noon and 5 p.m.) f. Weekend Evening (after 5 p.m.) g. Not sure / Prefer not to answer / Not applicable	A	Between 10-11am
14. Does your business, organization, or institution host regular or occasional special events? Examples include promoted sales and cultural holidays. If yes, please describe the dates, times, size, and any other relevant event information. a. Yes [comment box] b. No c. Not sure / Prefer not to answer / Not applicable	B	

Question	Letter Answer	Comments
15. Please describe or list your approximate delivery, mail, and trash schedules. (e.g. deliveries on Mondays at 7:00 am and trash pick-ups on Thursdays at 9:00 am).		Trash pick-up - Thinks in morning, don't see it though; Deliveries usually 11 am -12 pm; Mail between 10 am - 12 pm
16. Does your business, organization, or institution require passenger and/or goods loading and unloading? a. Yes b. No	B	
17. Does your business, organization, or institution use or have access to any of the following? a. Yellow curb (delivery) b. White curb (passenger drop-off) c. Loading dock d. None of the above e. Not sure / Prefer not to say / Not applicable	D	
18. If yes, provide the address or approximate location of your loading areas (yellow curb and/or loading dock).		No response
19. How often does your business, organization, or institution require bulk loading and/or unloading? a. Once per day b. Multiple times per day c. Several times per week d. Several times per month e. Several times per year f. None g. Not sure / Prefer not to answer	D	
20. Do delivery vehicles need to make a left turn to enter your loading area? a. Yes b. No c. Not sure / Prefer not to answer / Not applicable	C	
21. What is the busiest time for loading and unloading deliveries at your business, organization, or institution? a. 8:00 am – Noon b. Noon – 3:00 PM c. 3:00 – 6:00 PM d. 6:00 PM – 8:00 AM (next day) e. Not sure / Prefer not to answer / Not applicable	A	

Question	Letter Answer	Comments
22. How long does a typical delivery loading or unloading take? a. 1-10 minutes b. 11-30 minutes c. 31-60 minutes d. More than 60 minutes e. It varies f. Not sure / Prefer not to answer / Not applicable	A	
23. Does your business, organization, or institution require any other accommodations to access information or services (e.g. printed media in an alternate format, sign language interpreter, assistive listening devices, video captioning)? a. Yes [comment box] b. No c. Not sure / Prefer not to answer	B	
24. Is there anything else about your business, organization, or institution you would like to tell VTA? [comment box]		No response

Questions for larger business, organization, or institution:

Question	Letter Answer	Comments
25. Does your business, organization, or institution have a Transportation Management Plan? a. Yes b. No	B	
26. Does your business, organization, or institution have an events calendar over the next 10 years? a. Yes b. No	B	
27. Does your business, organization, or institution have any upcoming expansions and renovations? a. Yes b. No	B	

28. VTA recognizes that large construction projects can impact businesses. To assist us with preparing our Small Business Resource Study, what kinds of assistance may be helpful for your business or organization? a. Support in creating budgeting, business, staff or marketing plans b. Help understanding business or labor regulations c. More information on small business grants, loans or programs d. Guidance on new business software, such as QuickBooks, Square, or Resy e. Assistance with negotiating a rental lease agreement or relocating your business f. Creating advertising campaigns, including radio, television, print and social media g. Showcasing local businesses through fliers, posters, sidewalk displays and wayfinding signage h. Sponsoring local events i. Not Applicable / Not sure / Prefer not to answer j. Other		More information on small business grants, loans or programs Assistance with negotiating a rental lease agreement or relocating your business Creating advertising campaigns, including radio, television, print and social media Showcasing local businesses through fliers, posters, sidewalk displays and wayfinding signage
29. If your business or organization were asked for administrative or financial records in order to qualify for the types of assistance programs discussed above, would you be able and willing to produce employee, financial and tax records for the previous two calendar years? a. Yes b. No	A	
30. Do you have any final comments or suggestions?		No response

Date:	11/24/2020 at 11:00 AM
Organization:	Santa Clara University
Type of Organization:	Educational
Attendees:	Millie Kenney, Erica R., Kate C.
Project Area:	Santa Clara
Address:	500 El Camino Real, Santa Clara, CA 95053

Main Point of Contact	
Name:	Chris Shay
Phone Number:	(408) 551-1606
Email Address:	cshay@scu.edu

Question	Letter Answer	Comments
1. Has your institution made any permanent operational or access changes due to Santa Clara County Public Health orders due to COVID-19 (e.g. staggering classes? offer outdoor seating, outdoor retail or services, added a virtual storefront, created pick-up area, increased customer delivery) that you might continue to apply in the future? If yes, please describe. a. Yes [comment box] b. No c. Not sure / Prefer not to answer / Not applicable	B	
2. What are your hours of operation (staff, school)? After school programs? (i.e. M-F 8 am – 5 pm)		Different groups 6:00 – 9:00 PM, M-F
3. What language(s) is(are) spoken and/or written by you, your employees, and your students and parents (including advertising and reading technical documents, such as legal or financial documents)? a. English b. Spanish / Español c. Portuguese / Português d. Mandarin / 漢語 e. Cantonese / 粵語 f. Vietnamese / Tiếng Việt g. Tagalog h. Other (please specify)	A	

Question	Letter Answer	Comments
4. Approximately how many employees do you have (staff and faculty)? a. 1 b. 2-9 c. 10-35 d. 36-50 e. 51+	E	2,000 staff
5. Approximately how many students? a. Fewer than 50 b. 50-99 c. 100-249 d. 250 or more e. Not sure / Prefer not to answer / Not applicable	D	14,000 students (4,000 grad students)
6. Do you intend to move premises within the next two years? a. Yes b. No	B	
7. Does your business, organization, or institution have any upcoming expansions and renovations? a. Yes b. No	B	Big items should be complete before 2023

The following questions (8-12) are about how your employees, volunteers, customers, students, and visitors access your business, organization, or institution.

Question	Letter Answer	Comments
8. Do you have access to transit, such as buses or light rail, at your location? a. Yes b. No c. Not sure / Prefer not to answer	A	200-400 staff taking transit before COVID-19
9. How many of your faculty and staff regularly drive to work? a. None b. Few than half c. About half d. More than half e. All f. Not sure / Prefer not to answer / Not applicable	D	

Question	Letter Answer	Comments
10. If they drive, where do they typically park? a. Owned parking lot b. Shared parking lot c. Street parking nearby d. Street parking in surrounding neighborhood e. Not sure/ Prefer not to answer / Not applicable	A & D	Residential lots, commuter garages (staff & students) Minority park elsewhere (residential neighborhood)
11. If applicable, please provide the address or approximate location of any shared parking lot or garage.		N/A
12. What time of day does staff and faculty typically arrive? (Check all that apply) a. 6-7am b. 7-8am c. 8-9am d. other	B C	7:30-9:00AM
13. What time of day does staff and faculty typically leave? (Check all that apply) a. 2-4pm b. 3-5pm c. 4-6pm d. Other	B	3:30-5:00 PM
14. What is the busiest time for student drop-off? a. 6-7am b. 7-8am c. 8-9am a. other	B C	Grad students arrive 4:00-6:00 PM for night classes
15. What is the busiest time for student pick-up? a. 2-3pm b. 3-4pm c. 4-5pm d. other	B C	
16. Where does student drop-off/pick-up occur? a. On school site b. On street, adjacent to school c. Other	A	

Question	Letter Answer	Comments
17. How many of your students regularly get dropped off/picked up by car? a. None b. Few than half c. About half d. More than half e. All f. Not sure / Prefer not to answer / Not applicable		No response
18. How many students use school buses?		N/A
19. Do any of your students take public transit? If so, do you know what bus stops they use?		No response
20. How many of your students walk? Do you have a sense of where they are walking from? (intersection of interest)		Most students live on or close to campus. Not a lot of students live NE of campus
21. Does institution host regular or occasional special events? Examples include promoted sales and cultural holidays. If yes, please describe the dates, times, size, and any other relevant event information. a. Yes [comment box] b. No c. Not sure / Prefer not to answer / Not applicable		No response
22. Please describe or list your approximate delivery, mail, and trash schedules. (e.g. deliveries on Mondays at 7:00 am and trash pick-ups on Thursdays at 9:00 am).		No response
23. Does your institution require passenger and/or goods loading and unloading? a. Yes b. No		No response
24. Does your institution use or have access to any of the following? a. Yellow curb (delivery) b. White curb (passenger drop-off) c. Loading dock d. None of the above e. Not sure / Prefer not to say / Not applicable		No response
25. If yes, provide the address or approximate location of your loading areas (yellow curb and/or loading dock).		No response

Question	Letter Answer	Comments
26. How often does your institution require bulk loading and/or unloading? a. Once per day b. Multiple times per day c. Several times per week d. Several times per month e. Several times per year f. None g. Not sure / Prefer not to answer	A	Shipping & Receiving Area Loading dock at dining hall (shared with bookstore) Opposite side of campus from transit center
27. Does your business, organization, or institution require any other accommodations to access information or services (e.g. printed media in an alternate format, sign language interpreter, assistive listening devices, video captioning)? a. Yes [comment box] b. No c. Not sure / Prefer not to answer		No response
28. Are there any other access concerns that you'd like to make us aware of?		El Camino Real @ Palm Drive is main gate; staffed
29. Is there anything else about your business, organization, or institution you would like to tell VTA? [comment box]		Very excited that BART is coming to Santa Clara. Really opens up Santa Clara to the rest of the Bay Area
30. Would you be our best point of contact for future coordination? a. Yes b. No		Millie and Chris Shay

Date:	11/19/2020
Organization:	VTA Operations
Type of Organization:	Public Agency/ Transit
Attendees:	Jay Tyree, Kermit Cuff, Adriano R., Erica R.
Project Area:	Project-wide

Main Point of Contact	
Name:	Jay Tyree
Phone Number:	408.321.5893
Email Address:	Jay.tyree@vta.org

MST: Robert Weber, Chief Operating Officer, 831-760-0861, rweber@mst.org

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Question	Answer
Are there any guidelines to adhere to for moving a stop? (timing)	The decision to relocate/consolidate bus stops depend upon the proximity of other stops. VTA has a preference for far side stops over near side stops – depending on local conditions (i.e. driveways, routes, curb requirements)
If bus re-routing/stop changes/ is necessary - how much advance time needs to be provided to VTA for noticing?	Prefer 2 months notice.
Are there any dwelling locations? (layover location and duration)	On 7th, south of Santa Clara (Hwy 17)
Are there any bus operator services that we need to be aware of? (rest/break rooms, etc.)	1st & Basset
What is minimum bus lane width desired?	12 feet. 10 feet is the absolute minimum and require advance coordination for anything less than 12 feet.

Santa Clara Station

Construction of Santa Clara Station will be limited north/east of the Caltrain tracks. Therefore no direct impact to transit infrastructure is anticipated.

Impact to passenger access via ped tunnel likely. When is highest ridership?

Route	Street	Existing Bus Stop within CSA? (y/n)	Left Turn?	Avg Daily Passengers at stop
60	Coleman	N (East of Brokaw)	N	NB 8 board, 13 alight SB 11 board, 8 alight.

Available Routes:

- 21
- 22
- 53
- 59
- 60
- 522

From Jay Tyree:

- Absolute minimum lane width to operate service on: 10', but anything less than 12' can be problematic depending on local conditions, so we would ask to coordinate in advance if <12' is anticipated at any point
- Minimum notice for potential stop impacts: 2 months
- As far as general guidance or rules, we don't have any general guidance because particularly in a downtown environment bus stop siting decisions are driven by local conditions. The golden rule is that we are happy to work with the team to make anything work, we just need adequate notice. So reach out and we're happy to coordinate.
- As far as the contact person for all these bus stop and lane geometry issues, it would be Michael Catangay who leads our Passenger Facilities team. You might also want to put the team's group email in the document … bus.stop@vta.org

Date:	12/17/2020
Organization:	Hunter Storm/ Coleman Highline (1.7 M sf; not accounting for 175 key hotel)
Type of Organization:	Business Complex
Attendees:	Monica Fiedler-Ross, Erica Roecks, Todd Trekell
Project Area:	Santa Clara

Main Point of Contact	
Name:	Todd Trekell
Phone Number:	(408) 200-8904
Email Address:	todd@hunterproperties.com

Question	Letter Answer	Comments
1. Are you this business or organization's owner or manager? a. Yes b. No	A	Manager
2. Has your business, organization, or institution made any operational or access changes due to Santa Clara County Public Health orders due to COVID-19 (e.g. offer outdoor seating, outdoor retail or services, added a virtual storefront, created pick-up area, increased customer delivery)? If yes, please describe. a. Yes [comment box] b. No c. Not sure / Prefer not to answer / Not applicable	C	
3. What are your hours of operation? (i.e. M-F 8 am – 5 pm)		7 am to 6 pm M – F for bulk of campus
4. Please select your typically busiest times: a. Weekday Morning (before 12 Noon) b. Weekday Afternoon (between 12 Noon and 5 p.m.) c. Weekday Evening (after 5 p.m.) d. Weekend Morning (before 12 Noon) e. Weekend Afternoon (between 12 Noon and 5 p.m.) f. Weekend Evening (after 5 p.m.) g. Not sure / Prefer not to answer / Not applicable	A	Weekday morning 9 and 12

Question	Letter Answer	Comments
5. What language(s) is(are) spoken and/or written by you, your employees, and your customers (including advertising and reading technical documents, such as legal or financial documents)? a. English b. Spanish / Español c. Portuguese / Português d. Mandarin / 漢語 e. Cantonese / 粵語 f. Vietnamese / Tiếng Việt g. Tagalog h. Other (please specify)	A	
6. Approximately how many employees or volunteers do you have? a. 1 b. 2-9 c. 10-35 d. 36-50 e. 51+	E	2,900 employees assumed with Verizon built out. Verizon construction expected to end and occupied December 2021
7. Approximately how many people a day typically visit your business or organization? a. Fewer than 50 b. 50-99 c. 100-249 d. 250 or more e. Not sure / Prefer not to answer / Not applicable	C	100-150
8. Do you intend to move premises within the next two years? a. Yes b. No	B	

Question	Letter Answer	Comments
9. Do they have access to transit, such as buses or light rail, at your location? a. Yes b. No c. Not sure / Prefer not to answer	C	

Question	Letter Answer	Comments
10. How many of them regularly drive to your business, organization, or institution? a. None b. Few than half c. About half d. More than half e. All f. Not sure / Prefer not to answer / Not applicable	E	Assume all do
11. If they drive, where do they typically park? a. Owned parking lot b. Shared parking lot c. Street parking nearby d. Street parking in surrounding neighborhood e. Not sure/ Prefer not to answer / Not applicable	A	Come in on Earthquakes Way, Aviation Avenue, or Champions Way, or left from Coleman Ave going west bound
12. If applicable, please provide the address or approximate location of any shared parking lot or garage.		See map
13. What time of day do they typically arrive? (Check all that apply) a. Weekday Morning (before 12 Noon) b. Weekday Afternoon (between 12 Noon and 5 p.m.) c. Weekday Evening (after 5 p.m.) d. Weekend Morning (before 12 Noon) e. Weekend Afternoon (between 12 Noon and 5 p.m.) f. Weekend Evening (after 5 p.m.) g. Not sure / Prefer not to answer / Not applicable	A	between 7 and 9 am
14. Does your business, organization, or institution host regular or occasional special events? Examples include promoted sales and cultural holidays. If yes, please describe the dates, times, size, and any other relevant event information. a. Yes [comment box] b. No c. Not sure / Prefer not to answer / Not applicable	A	Park earthquakes on property

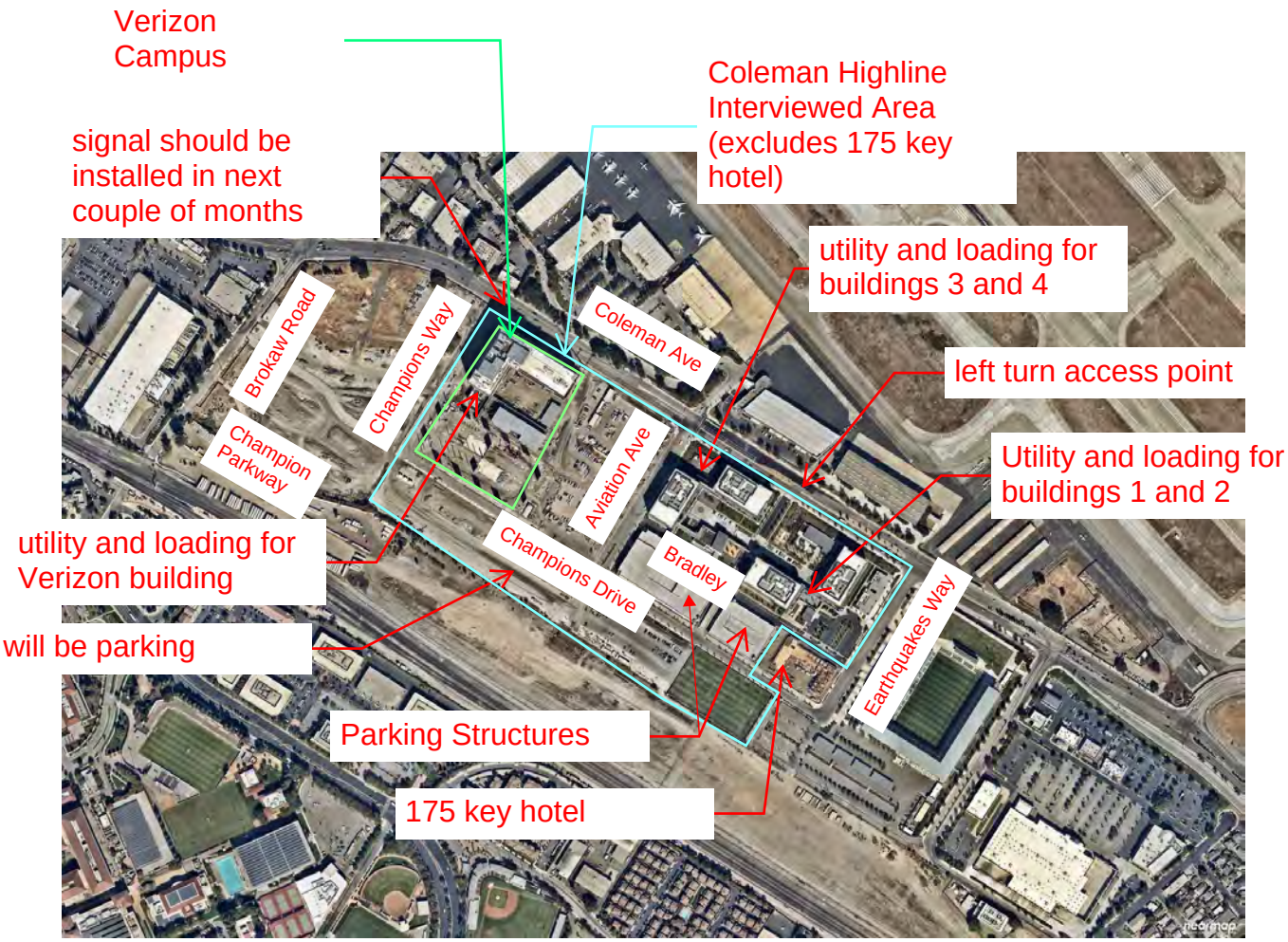
Question	Letter Answer	Comments
15. Please describe or list your approximate delivery, mail, and trash schedules. (e.g. deliveries on Mondays at 7:00 am and trash pick-ups on Thursdays at 9:00 am).		Utilities (trash, power, water) building for Verizon is off of Champions Way (trash comes early in morning); Buildings 3 and 4's utility building is up by Aviation Ave; Buildings 1 and 2 is off Bradley; A majority of access for utilities comes off of Aviation Ave and Center St
16. Does your business, organization, or institution require passenger and/or goods loading and unloading? a. Yes b. No	A	Verizon will have scissor lifts; Location of the goods loading and unloading are at Buildings 3 and 4 (by utility building off of Aviation Ave) and Buildings 1 and 2 (off of Bradley)
17. Does your business, organization, or institution use or have access to any of the following? a. Yellow curb (delivery) b. White curb (passenger drop-off) c. Loading dock d. None of the above e. Not sure / Prefer not to say / Not applicable	C	
18. If yes, provide the address or approximate location of your loading areas (yellow curb and/or loading dock).		See map
19. How often does your business, organization, or institution require bulk loading and/or unloading? a. Once per day b. Multiple times per day c. Several times per week d. Several times per month e. Several times per year f. None g. Not sure / Prefer not to answer	B	
20. Do delivery vehicles need to make a left turn to enter your loading area? a. Yes b. No c. Not sure / Prefer not to answer / Not applicable	C	They would potentially need to make a left turn to access the site overall. Internal circulation should not be affected by project. See map

Question	Letter Answer	Comments
21. What is the busiest time for loading and unloading deliveries at your business, organization, or institution? a. 8:00 am – Noon b. Noon – 3:00 PM c. 3:00 – 6:00 PM d. 6:00 PM – 8:00 AM (next day) e. Not sure / Prefer not to answer / Not applicable	A	
22. How long does a typical delivery loading or unloading take? a. 1-10 minutes b. 11-30 minutes c. 31-60 minutes d. More than 60 minutes e. It varies f. Not sure / Prefer not to answer / Not applicable	E	
23. Does your business, organization, or institution require any other accommodations to access information or services (e.g. printed media in an alternate format, sign language interpreter, assistive listening devices, video captioning)? a. Yes [comment box] b. No c. Not sure / Prefer not to answer	B	
24. Is there anything else about your business, organization, or institution you would like to tell VTA? [comment box]		No response

Questions for larger business, organization, or institution:

Question	Letter Answer	Comments
25. Does your business, organization, or institution have a Transportation Management Plan? a. Yes b. No	a	Thinks it would be included in Avaya Stadium's (concluded that it is not)
26. Does your business, organization, or institution have an events calendar over the next 10 years? a. Yes b. No		No response

27. Does your business, organization, or institution have any upcoming expansions and renovations? (construction Plans) a. Yes b. No		Verizon's building is expected to be complete in December 2021; Phase 4 (parcel between Verizon's and Aviation Ave) of Coleman Highline – no construction until have tenant 300,000 sf – would estimate construction to start 2023


Verizon Campus
Coleman Highline Interviewed Area (excludes 175 key hotel)
signal should be installed in next couple of months
utility and loading for buildings 3 and 4
left turn access point
Utility and loading for buildings 1 and 2
utility and loading for Verizon building
will be parking
Parking Structures
175 key hotel
Brokaw Road
Champions Way
Coleman Ave
Champion Parkway
Aviation Ave
Champions Drive
Bradley
Earthquakes Way

R PROPERTIES

Coleman Highline

Image# 201202329
Flight Date: 12/2/2020

SHARPSHOTS 408.915.2650 www.sharpshotsaerial.com

APPENDIX D

TRAFFIC OPERATION DATA AND ANALYSIS

D-1 LOS RESULTS SUMMARY TABLES

Coleman N/S		AM												PM											
Approach Movement		EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A1	Brokaw Rd																								
	Existing 2023																								
	Approach Volume	110	22	106	27	6	19	18	317	33	217	978	164	252	13	375	160	29	12	10	1308	51	250	473	45
	% Heavy Vehicles	9	9	9	0	0	0	11	11	11	4	4	4	0	0	0	1	1	1	1	1	1	2	2	2
	Turn Bay Length (Ft)	250			100			150			320			250			100			150			320		
	95th % Queue (Ft)	#233	89		61	38		48	141	0	307	375		#423	265		217	49		30	#924	0	#450	126	
	Approach Delay (Sec)		82.7			65.3			23.6			15.4			79.8			66.9			196.6			18.0	
	Approach LOS		F			E			C			B			E			E			F			B	
	Intersection Delay (Sec) / LOS				26.1						C						116.7						F		
	Average Trucks 2023																								
	Approach Volume	110	22	110	27	6	19	18	317	33	221	978	164	252	13	379	160	29	12	10	1348	51	254	525	45
	% Heavy Vehicles	9	9	11	0	0	0	11	11	11	6	4	4	0	0	1	1	1	1	1	1	1	2	2	2
	95th % Queue (Ft)	#233	90		61	38		48	143	0	311	377		#423	270		217	49		30	#964	0	#460	130	
	Approach Delay (Sec)		82.3			65.3			24.7			15.2			79.4			66.9			219.0			17.7	
	Approach LOS		F			E			C			B			E			E			F			B	
	Intersection Delay (Sec) / LOS				26.3						C						126.0						F		
	Peak Trucks 2023																								
	Approach Volume	110	22	115	27	6	19	18	317	33	226	978	164	252	13	385	160	29	12	10	1348	51	259	525	45
	% Heavy Vehicles	9	9	15	0	0	0	11	11	11	8	4	4	0	0	2	1	1	1	1	1	1	4	2	2
	95th % Queue (Ft)	#233	92		61	38		48	146	0	316	377		#423	279		217	49		30	#964	0	#475	126	
	Approach Delay (Sec)		81.7			65.2			25.9			15.2			79.4			66.8			223.8			18.6	
	Approach LOS		F			E			C			B			E			E			F			B	
	Intersection Delay (Sec) / LOS				26.5						C						128.1						F		
	Background 2024																								
	Approach Volume	285	23	150	27	6	20	19	496	33	222	1113	167	275	14	364	163	29	12	10	1466	227	298	665	46
	% Heavy Vehicles	9	9	9	0	0	0	11	11	11	4	4	4	0	0	0	1	1	1	1	1	1	2	2	2
	95th % Queue (Ft)	240	240	46	46	46	0	46	160	0	244	65		m124	m127	347	149	151	0	30	#636	114	#592	266	
	Approach Delay (Sec)		69.0			66.3			26.2			13.7			17.6			60.3			79.8			28.5	
	Approach LOS		E			E			C			B			B			E			E			C	
	Intersection Delay (Sec) / LOS				27.3						C						52.8						D		
	Average Trucks 2024																								
	Approach Volume	285	23	154	27	6	20	19	496	33	226	1113	167	275	14	368	163	29	12	10	1508	227	303	718	46
	% Heavy Vehicles	9	9	8	0	0	0	11	11	11	6	4	4	0	0	1	1	1	1	1	1	1	2	2	2
	95th % Queue (Ft)	243	243	48	46	46	0	46	162	0	244	65		m105	m108	223	149	151	0	30	#665	118	#601	144	
	Approach Delay (Sec)		61.5			66.3			27.2			12.6			20.5			60.3			90.4			22.4	
	Approach LOS		E			E			C			B			C			E			F			C	
	Intersection Delay (Sec) / LOS				25.6						C						56.5						E		
	Peak Trucks 2024																								
	Approach Volume	285	23	159	27	6	20	19	496	33	231	1113	167	275	14	373	163	29	12	10	1508	227	308	718	46
	% Heavy Vehicles	9	9	11	0	0	0	11	11	11	8	4	4	0	0	3	1	1	1	1	1	1	4	2	2
	95th % Queue (Ft)	197	195	46	46	46	0	46	162	0	320	137		m126	m130	383	149	151	0	30	#665	118	#601	128	
	Approach Delay (Sec)		60.8			66.3			28.4			16.0			17.7			60.3			89.3			22.0	
	Approach LOS		E			E			C			B			B			E			F			C	
	Intersection Delay (Sec) / LOS				27.8						C						55.2						E		

Coleman N/S		AM												PM											
Approach Movement		EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A2	Champions Way																								
	Existing 2023																								
	Approach Volume	5		5					453	6	2	1352		5		5					1952	6	9	773	
	% Heavy Vehicles	0		0					6	6	3	3		0		0					1	1	3	3	
	Turn Bay Length (Ft)										250												250		
	95th % Queue (Ft)	20		15					58		m3	289		18		14					m411		m27	0	
	Approach Delay (Sec)	70.7						0.2			0.3			64.5						0.2			1.0		
	Approach LOS	E						A			A			E						A			A		
	Intersection Delay (Sec) / LOS	0.7						A						0.6						A					
	Average Trucks 2023																								
	Approach Volume	5		5					457	6	2	1356		5		5					1997	6	9	829	
	% Heavy Vehicles	0		0					7	6	3	3		0		0					1	1	3	3	
	95th % Queue (Ft)	20		15					58		m3	280		18		14					m405		m26	0	
	Approach Delay (Sec)	70.7						0.3			0.3			64.5						0.2			0.9		
	Approach LOS	E						A			A			E						A			A		
	Intersection Delay (Sec) / LOS	0.7						A						0.6						A					
	Peak Trucks 2023																								
	Approach Volume	5		5					462	6	2	1361		5		5					2002	6	9	834	
	% Heavy Vehicles	0		0					8	6	3	4		0		0					1	1	3	4	
	95th % Queue (Ft)	20		15					59		m3	286		18		14					m400		m25	0	
	Approach Delay (Sec)	70.7						0.3			0.3			64.5						0.2			0.9		
	Approach LOS	E						A			A			E						A			A		
	Intersection Delay (Sec) / LOS	0.7						A						0.6						A					
	Background 2024																								
	Approach Volume	106		5					912	6	116	1231		83		5					2080	6	330	928	
	% Heavy Vehicles	0		0					3	6	3	3		0		0					1	1	3	2	
	95th % Queue (Ft)	161		13					94		177	342		#145		14					m137		421	117	
	Approach Delay (Sec)	64.2						4.9			11.1			79.9						0.7			15.3		
	Approach LOS	E						A			B			E						A			B		
	Intersection Delay (Sec) / LOS	11.2						B						8.1						A					
	Average Trucks 2024																								
	Approach Volume	106		5					916	6	116	1236		83		5					2126	6	330	985	
	% Heavy Vehicles	0		0					3	6	3	4		0		0					1	1	3	3	
	95th % Queue (Ft)	161		13					91		169	177		#145		14					m154		418	146	
	Approach Delay (Sec)	75.2						14.7			6.6			79.9						0.6			16.4		
	Approach LOS	E						B			A			E						A			B		
	Intersection Delay (Sec) / LOS	12.9						B						8.4						A					
	Peak Trucks 2024																								
	Approach Volume	106		5					921	6	116	1241		83		5					2131	6	330	990	
	% Heavy Vehicles	0		0					4	6	3	4		0		0					1	1	3	3	
	95th % Queue (Ft)	161		13					116		193	2		#145		14					m145		425	186	
	Approach Delay (Sec)	75.2						0.3			6.3			79.9						0.6			16.3		
	Approach LOS	E						A			A			E						A			B		
	Intersection Delay (Sec) / LOS	7.2						A						8.4						A					

Coleman N/S		AM												PM											
Approach Movement		EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A3	Aviation Ave																								
	Existing 2023																								
	Approach Volume	6	0	12	9	0	11	20	412	14	9	1388	41	17	0	12	41	0	10	64	1846	2	3	689	15
	% Heavy Vehicles	22	22	22	5	5	5	5	5	5	2	2	2	3	3	3	2	2	2	1	1	1	2	2	2
	Turn Bay Length (Ft)	225		225	75			200			375		500	225		225	75			200			375		500
	95th % Queue (Ft)	13	17	19	28	0		54	47		m10	744	35	27	28	18	#97	0		m95	241		6	198	3
	Approach Delay (Sec)		71.5			72.3			6.1			17.5			61.2			102.0			8.2			8.5	
	Approach LOS		E			E			A			B			E			F			A			A	
	Intersection Delay (Sec) / LOS					16.0						B						10.6						B	
	Average Trucks 2023																								
	Approach Volume	6	0	12	9	0	11	20	416	14	9	1392	41	17	0	12	41	0	10	64	1891	2	3	745	15
	% Heavy Vehicles	22	22	22	5	5	5	5	6	5	2	3	2	3	3	3	2	2	2	1	1	1	2	3	2
	95th % Queue (Ft)	13	17	19	28	0		54	48		m10	746	34	27	28	18	#97	0		m94	256		m6	230	0
	Approach Delay (Sec)		71.5			72.3			6.1			17.7			61.2			102.0			8.3			7.8	
	Approach LOS		E			E			A			B			E			F			A			A	
	Intersection Delay (Sec) / LOS					16.1						B						10.4						B	
	Peak Trucks 2023																								
	Approach Volume	6	0	12	9	0	11	20	421	14	9	1397	41	17	0	12	41	0	10	64	1896	2	3	750	15
	% Heavy Vehicles	22	22	22	5	5	5	5	7	5	2	3	2	3	3	3	2	2	2	1	1	1	2	4	2
	95th % Queue (Ft)	13	17	19	28	0		54	50		m10	750	35	27	28	18	#97	0		m93	257		m6	228	0
	Approach Delay (Sec)		71.5			72.3			6.0			17.9			61.2			102.0			8.2			7.6	
	Approach LOS		E			E			A			B			E			F			A			A	
	Intersection Delay (Sec) / LOS					16.2						B						10.3						B	
	Background 2024																								
	Approach Volume	23	0	49	9	0	11	21	743	141	268	1370	42	133	0	248	42	0	10	66	1947	26	52	1045	16
	% Heavy Vehicles	22	22	22	5	5	5	5	3	5	2	2	2	3	3	3	2	2	2	1	1	1	2	2	2
	95th % Queue (Ft)	34	36	52	28	0		40	383		193	532	24	96	98	#188	72	0		m81	191		51	342	0
	Approach Delay (Sec)		63.8			70.3			27.9			19.3			49.9			54.2			13.5			22.0	
	Approach LOS		E			E			C			B			D			D			B			C	
	Intersection Delay (Sec) / LOS					23.8						C						20.6						C	
	Average Trucks 2024																								
	Approach Volume	23	0	49	9	0	11	21	747	141	268	1374	42	133	0	248	42	0	10	66	1993	26	52	1102	16
	% Heavy Vehicles	22	22	22	5	5	5	5	3	5	2	3	2	3	3	3	2	2	2	1	1	1	2	3	2
	95th % Queue (Ft)	34	36	52	28	0		39	385		196	208	6	96	100	#190	72	0		m75	12		50	383	0
	Approach Delay (Sec)		63.8			70.3			27.9			17.2			50.2			54.2			6.2			30.7	
	Approach LOS		E			E			C			B			D			D			A			C	
	Intersection Delay (Sec) / LOS					22.4						C						19.2						B	
	Peak Trucks 2024																								
	Approach Volume	23	0	49	9	0	11	21	752	141	268	1379	42	133	0	248	42	0	10	66	1998	26	52	1108	16
	% Heavy Vehicles	22	22	22	5	5	5	5	4	5	2	3	2	3	3	3	2	2	2	1	1	1	2	4	2
	95th % Queue (Ft)	34	36	52	28	0		55	110		177	15	0	96	100	#190	72	0		m71	0		45	643	1
	Approach Delay (Sec)		63.8			70.3			10.5			15.8			50.2			54.2			7.0			38.0	
	Approach LOS		E			E			B			B			D			D			A			D	
	Intersection Delay (Sec) / LOS					15.7						B						21.9						C	

Coleman N/S		AM												PM											
Approach Movement		EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A4	Earthquakes Way																								
	Existing 2023																								
	Approach Volume	6		26					429	4	54	1523		10		87					1896	5	28	714	
	% Heavy Vehicles	3		3					7	7	3	3		1		1					1	1	3	3	
	Turn Bay Length (Ft)	225									250			225									250		
	95th % Queue (Ft)	13		20					162		m54	21		21		34					417		28	33	
	Approach Delay (Sec)		59.6						5.1			3.5			53.0						8.1			3.5	
	Approach LOS		E						A			A			D						A			A	
	Intersection Delay (Sec) / LOS		4.7						A						8.4						A				
	Average Trucks 2023																								
	Approach Volume	6		26					434	4	54	1527		10		87					1941	5	28	770	
	% Heavy Vehicles	3		3					8	7	3	3		1		1					1	1	3	3	
	95th % Queue (Ft)	13		20					164		m54	21		21		34					419		32	61	
	Approach Delay (Sec)		59.6						5.0			3.5			53.0						8.0			3.6	
	Approach LOS		E						A			A			D						A			A	
	Intersection Delay (Sec) / LOS		4.7						A						8.3						A				
	Peak Trucks 2023																								
	Approach Volume	6		26					439	4	54	1532		10		87					1946	5	28	775	
	% Heavy Vehicles	3		3					9	7	3	4		1		1					2	1	3	4	
	95th % Queue (Ft)	13		20					166		m54	21		21		34					419		32	60	
	Approach Delay (Sec)		59.6						5.0			3.5			53.0						8.1			3.5	
	Approach LOS		E						A			A			D						A			A	
	Intersection Delay (Sec) / LOS		4.7						A						8.3						A				
	Background 2024																								
	Approach Volume	6		26					797	4	55	1768		10		88					2234	5	29	1120	
	% Heavy Vehicles	3		3					4	7	3	3		1		1					1	1	3	2	
	95th % Queue (Ft)	13		20					351		m56	16		21		34					133		34	61	
	Approach Delay (Sec)		59.6						4.5			3.2			53.0						1.8			3.2	
	Approach LOS		E						A			A			D						A			A	
	Intersection Delay (Sec) / LOS		4.3						A						3.7						A				
	Average Trucks 2024																								
	Approach Volume	6		26					801	4	55	1772		10		88					2280	5	29	1177	
	% Heavy Vehicles	3		3					4	7	3	3		1		1					1	1	3	2	
	95th % Queue (Ft)	13		20					28		m55	8		21		34					856		34	114	
	Approach Delay (Sec)		59.6						1.4			2.8			53.0						3.6			3.8	
	Approach LOS		E						A			A			D						A			A	
	Intersection Delay (Sec) / LOS		3.1						A						5.0						A				
	Peak Trucks 2024																								
	Approach Volume	6		26					806	4	55	1777		10		88					2285	5	29	1182	
	% Heavy Vehicles	3		3					5	7	3	4		1		1					2	1	3	2	
	95th % Queue (Ft)	13		20					161		m51	34		21		35					777		28	164	
	Approach Delay (Sec)		59.6						5.9			3.5			53.0						12.7			3.2	
	Approach LOS		E						A			A			D						B			A	
	Intersection Delay (Sec) / LOS		4.9						A						10.6						B				

Coleman N/S		AM												PM											
Approach Movement		EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A5	Newhall Dr																								
	Existing 2023																								
	Approach Volume	78	0	163	1	1	0	0	380	67	227	1474	3	62	0	357	2	0	0	3	1888	147	337	683	1
	% Heavy Vehicles	3	3	3	0	0	0	5	5	5	2	2	2	1	1	1	50	50	50	1	1	1	2	2	2
	Turn Bay Length (Ft)	175						175			200			175						175			200		
	95th % Queue (Ft)		125	20	7	5			31		118	504			91	39	11			m4	175		212	52	
	Approach Delay (Sec)		47.8			66.2			6.5			13.3			37.1			66.9			16.2			18.9	
	Approach LOS		D			E			A			B			D			E			B			B	
	Intersection Delay (Sec) / LOS			15.5					B							19.5						B			
	Average Trucks 2023																								
	Approach Volume	78	0	173	1	1	0	0	385	67	238	1478	3	114	0	471	2	0	0	3	1892	188	428	687	1
	% Heavy Vehicles	3	3	9	0	0	0	5	6	5	7	3	2	1	1	3	50	50	50	1	1	1	2	3	2
	95th % Queue (Ft)		125	20	7	5			31		127	509			148	60	11			m4	#760		252	50	
	Approach Delay (Sec)		47.0			66.2			6.7			13.7			32.6			66.9			21.5			25.0	
	Approach LOS		D			E			A			B			C			E			C			C	
	Intersection Delay (Sec) / LOS			15.8					B							24.3						C			
	Peak Trucks 2023																								
	Approach Volume	78	0	189	1	1	0	0	390	67	253	1483	3	114	0	487	2	0	0	3	1897	188	444	693	1
	% Heavy Vehicles	3	3	17	0	0	0	5	7	5	13	3	2	1	1	6	50	50	50	1	1	1	6	4	2
	95th % Queue (Ft)		125	21	7	5			31		141	513			146	63	11			m4	#812		259	50	
	Approach Delay (Sec)		45.4			66.2			7.2			14.0			30.8			66.9			31.6			25.1	
	Approach LOS		D			E			A			B			C			E			C			C	
	Intersection Delay (Sec) / LOS			16.2					B							29.6						C			
	Background 2024																								
	Approach Volume	79	0	166	1	1	0	0	747	69	232	1718	3	63	0	364	2	0	0	3	2226	150	343	1089	1
	% Heavy Vehicles	3	3	3	0	0	0	5	3	5	2	2	2	1	1	1	50	50	50	1	1	1	2	1	2
	95th % Queue (Ft)		129	20	7	5			19		147	547			95	43	11			m4	#913		195	117	
	Approach Delay (Sec)		47.4			66.2			4.5			13.2			36.2			66.9			16.0			13.5	
	Approach LOS		D			E			A			B			D			E			B			B	
	Intersection Delay (Sec) / LOS			13.7					B							17.2						B			
	Average Trucks 2024																								
	Approach Volume	79	0	177	1	1	0	0	751	69	242	1722	3	116	0	480	2	0	0	3	2230	191	437	1093	1
	% Heavy Vehicles	3	3	10	0	0	0	5	3	5	7	2	2	1	1	3	50	50	50	1	1	1	2	2	2
	95th % Queue (Ft)		129	21	7	5			63		177	328			152	65	11			m5	#1067		197	63	
	Approach Delay (Sec)		46.5			66.2			2.6			13.0			31.0			66.9			89.8			16.6	
	Approach LOS		D			E			A			B			C			E			F			B	
	Intersection Delay (Sec) / LOS			13.0					B							57.5						E			
	Peak Trucks 2024																								
	Approach Volume	79	0	192	1	1	0	0	756	69	258	1727	3	116	0	496	2	0	0	3	2235	191	452	1098	1
	% Heavy Vehicles	3	3	19	0	0	0	5	4	5	13	3	2	1	1	6	50	50	50	1	1	1	6	3	2
	95th % Queue (Ft)		129	21	7	5			202		175	238			150	70	11			m3	#1101		274	153	
	Approach Delay (Sec)		44.8			66.2			16.3			12.8			29.3			66.9			130.5			22.4	
	Approach LOS		D			E			B			B			C			E			F			C	
	Intersection Delay (Sec) / LOS			16.6					B							80.5						F			

Coleman N/S		AM											PM											
Approach Movement		EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A6	Airport Blvd																								
	Existing 2023																								
	Approach Volume				57		120	54	353			1598	352				89		92	89	1444			946	274
	% Heavy Vehicles				4		4	5	5			2	2				6		6	1	1			2	2
	Turn Bay Length (Ft)				500			300					250				500			300					250
	95th % Queue (Ft)				53		165	53	12			159	0				68		88	m58	15			168	56
	Approach Delay (Sec)				60.2			9.2			15.9						56.4			6.8			19.6		
	Approach LOS				E			A			B						E			A			B		
	Intersection Delay (Sec) / LOS	18.3						B						14.7						B					
	Average Trucks 2023																								
	Approach Volume				57		120	54	367			1613	352				89		98	97	1519			1035	274
	% Heavy Vehicles				4		4	5	8			3	2				6		6	1	2			3	2
	95th % Queue (Ft)				53		165	53	12			173	0				68		103	m59	23			207	m50
	Approach Delay (Sec)				60.2			8.9			16.1						55.7			7.2			20.7		
	Approach LOS				E			A			B						E			A			C		
	Intersection Delay (Sec) / LOS	18.2						B						15.3						B					
	Peak Trucks 2023																								
	Approach Volume				57		120	54	388			1633	352				89		98	97	1539			1056	274
	% Heavy Vehicles				4		4	5	13			4	2				6		6	1	3			5	2
	95th % Queue (Ft)				53		166	54	13			191	0				68		105	m57	m26			130	m5
	Approach Delay (Sec)				60.2			8.5			16.2						55.7			7.2			21.0		
	Approach LOS				E			A			B						E			A			C		
	Intersection Delay (Sec) / LOS	18.2						B						15.4						B					
	Background 2024																								
	Approach Volume				58		147	71	605			1821	359				90		110	116	1664			1337	280
	% Heavy Vehicles				4		4	5	3			1	2				6		6	1	1			1	2
	95th % Queue (Ft)				53		193	63	47			86	0				69		135	m60	297			85	0
	Approach Delay (Sec)				68.3			7.2			2.5						54.3			8.0			0.2		
	Approach LOS				E			A			A						D			A			A		
	Intersection Delay (Sec) / LOS	8.0						A						7.6						A					
	Average Trucks 2024																								
	Approach Volume				58		147	71	620			1836	359				90		116	125	1740			1429	280
	% Heavy Vehicles				4		4	5	4			3	2				6		6	1	1			2	2
	95th % Queue (Ft)				53		193	65	11			89	0				69		144	m63	m180			101	0
	Approach Delay (Sec)				58.7			7.3			0.2						53.6			8.3			0.2		
	Approach LOS				E			A			A						D			A			A		
	Intersection Delay (Sec) / LOS	6.4						A						7.7						A					
	Peak Trucks 2024																								
	Approach Volume				58		147	71	641			1856	359				90		116	125	1761			1450	280
	% Heavy Vehicles				4		4	5	8			4	2				6		6	1	2			3	2
	95th % Queue (Ft)				53		194	65	10			92	0				69		144	m61	m26			105	m7
	Approach Delay (Sec)				58.6			10.4			0.2						53.6			8.3			0.2		
	Approach LOS				E			B			A						D			A			A		
	Intersection Delay (Sec) / LOS	7.1						A						7.6						A					

Coleman N/S		AM											PM										
Approach Movement		EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A7	I-880 SB Ramp																								
	Existing 2023																								
	Approach Volume				259		272		418			1638					336		263		1540			947	
	% Heavy Vehicles				7		7		3			2					4		4		1			2	
	Turn Bay Length (Ft)						500												500						
	95th % Queue (Ft)				139		308		84			304					198		155		58			178	
	Approach Delay (Sec)					58.1			0.1			0.4						101.0			0.3			0.2	
	Approach LOS					E			A			A						F			A			A	
	Intersection Delay (Sec) / LOS					12.2			B									19.8			B				
	Average Trucks 2023																								
	Approach Volume				259		287		432			1638					336		297		1615			1003	
	% Heavy Vehicles				7		9		6			2					4		8		2			2	
	95th % Queue (Ft)				139		329		86			304					198		#253		64			217	
	Approach Delay (Sec)					58.5			0.1			0.5						138.9			0.3			0.2	
	Approach LOS					E			A			A						F			A			A	
	Intersection Delay (Sec) / LOS					12.5			B									27.3			C				
	Peak Trucks 2023																								
	Approach Volume				259		307		453			1638					336		317		1635			1003	
	% Heavy Vehicles				7		15		10			2					4		14		3			2	
	95th % Queue (Ft)				139		#367		89			304					189		#293		65			226	
	Approach Delay (Sec)					59.9			0.1			0.5						108.7			0.4			0.2	
	Approach LOS					E			A			A						F			A			A	
	Intersection Delay (Sec) / LOS					13.1			B									21.8			C				
	Background 2024																								
	Approach Volume				264		331		672			1810					342		374		1762			1233	
	% Heavy Vehicles				7		6		2			2					4		3		1			2	
	95th % Queue (Ft)				128		377		204			327					148		371		540			120	
	Approach Delay (Sec)					49.8			13.8			12.3						46.0			0.8			5.6	
	Approach LOS					D			B			B						D			A			A	
	Intersection Delay (Sec) / LOS					19.9			B									11.1			B				
	Average Trucks 2024																								
	Approach Volume				264		345		686			1810					342		409		1838			1291	
	% Heavy Vehicles				7		7		4			2					4		6		2			2	
	95th % Queue (Ft)				125		391		71			227					146		423		313			134	
	Approach Delay (Sec)					51.9			0.2			0.8						45.5			1.0			7.5	
	Approach LOS					D			A			A						D			A			A	
	Intersection Delay (Sec) / LOS					10.7			B									11.8			B				
	Peak Trucks 2024																								
	Approach Volume				264		366		666			1810					342		430		1858			1291	
	% Heavy Vehicles				7		12		7			2					4		10		3			2	
	95th % Queue (Ft)				98		330		110			208					144		462		201			230	
	Approach Delay (Sec)					50.8			0.2			0.9						45.3			1.3			0.6	
	Approach LOS					D			A			A						D			A			A	
	Intersection Delay (Sec) / LOS					10.9			B									9.7			A				

Coleman N/S		AM												PM										
Approach Movement		EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A8	I-880 / McKendrie St.																								
	Existing 2023																								
	Approach Volume			11	152		611	142	465	29		1150	343			8	146		415	454	1354	13		799	368
	% Heavy Vehicles			0	1		1	5	5	5		3	3			0	1		1	1	1	1		1	1
	Turn Bay Length (Ft)							425					150							425					150
	95th % Queue (Ft)			0	108		209	108	12			160	47			0	104		51	241	182			123	31
	Approach Delay (Sec)		66.4			58.7			18.1			11.7			64.2			53.1			15.7			13.8	
	Approach LOS		E			E			B			B			E			D			B			B	
	Intersection Delay (Sec) / LOS		25.7						C						21.1						C				
	Average Trucks 2023																								
	Approach Volume			11	152		611	156	465	29		1150	343			8	146		443	493	1389	13		827	368
	% Heavy Vehicles			0	1		1	13	5	5		3	3			0	1		1	4	1	1		1	1
	95th % Queue (Ft)			0	108		209	118	12			160	47			0	104		51	265	93			125	36
	Approach Delay (Sec)		66.4			58.7			19.2			12.0			64.2			53.0			16.4			14.9	
	Approach LOS		E			E			B			B			E			D			B			B	
	Intersection Delay (Sec) / LOS		26.0						C						21.8						C				
	Peak Trucks 2023																								
	Approach Volume			11	152		611	176	465	29		1150	343			8	146		443	513	1394	13		827	368
	% Heavy Vehicles			0	1		1	23	5	5		3	3			0	1		1	8	1	1		1	1
	95th % Queue (Ft)			0	108		209	128	13			160	47			0	104		51	280	90			125	29
	Approach Delay (Sec)		66.3			58.7			20.3			12.6			64.2			53.0			16.6			15.0	
	Approach LOS		E			E			C			B			E			D			B			B	
	Intersection Delay (Sec) / LOS		26.5						C						22.0						C				
	Background 2024																								
	Approach Volume			11	155		684	241	624	29		1251	349			8	149		531	539	1496	14		976	375
	% Heavy Vehicles			0	1		1	4	5	5		3	3			0	1		1	1	1	1		1	1
	95th % Queue (Ft)			0	113		182	174	114			207	78			0	103		52	315	257			307	250
	Approach Delay (Sec)		67.3			59.3			18.8			12.1			64.2			52.0			15.5			24.9	
	Approach LOS		E			E			B			B			E			D			B			C	
	Intersection Delay (Sec) / LOS		25.9						C						24.8						C				
	Average Trucks 2024																								
	Approach Volume			11	155		684	256	624	29		1251	349			8	149		560	578	1532	14		1005	375
	% Heavy Vehicles			0	1		1	8	5	5		3	3			0	1		1	3	1	1		1	1
	95th % Queue (Ft)			0	113		162	180	124			337	144			0	103		53	346	334			317	253
	Approach Delay (Sec)		67.7			59.2			20.6			9.6			64.2			52.0			17.2			26.1	
	Approach LOS		E			E			C			A			E			D			B			C	
	Intersection Delay (Sec) / LOS		25.1						C						26.0						C				
	Peak Trucks 2024																								
	Approach Volume			11	155		684	277	624	29		1251	349			8	149		560	599	1532	14		1005	375
	% Heavy Vehicles			0	1		1	15	5	5		3	3			0	1		1	6	1	1		1	1
	95th % Queue (Ft)			0	113		144	194	135			371	210			0	103		53	358	186			187	75
	Approach Delay (Sec)		68.0			58.5			20.1			13.1			64.2			52.0			18.9			17.2	
	Approach LOS		E			E			C			B			E			D			B			B	
	Intersection Delay (Sec) / LOS		26.5						C						24.0						C				

Coleman N/S		AM												PM											
Approach Movement		EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A9	Hedding																								
	Existing 2023																								
	Approach Volume	242	185	101	59	251	296	139	335	141	83	952	48	146	354	125	74	277	376	217	1168	126	83	681	53
	% Heavy Vehicles	4	4	4	4	4	4	4	4	4	4	4	4	1	1	1	1	1	1	2	2	2	2	2	2
	Turn Bay Length (Ft)	350			500			250			125			350			500			250			125		
	95th % Queue (Ft)	163	134		108	260		#114	135		137	496		102	237		#133	269		113	509		#144	384	
	Approach Delay (Sec)		62.1			64.6			21.6			23.5			55.2			53.7			9.9			28.7	
	Approach LOS		E			E			C			C			E			D			A			C	
	Intersection Delay (Sec) / LOS				37.0					D							28.5					C			
	Average Trucks 2023																								
	Approach Volume	242	185	101	59	251	296	139	335	141	83	952	48	148	354	125	74	277	380	222	1195	130	83	704	53
	% Heavy Vehicles	4	4	4	4	4	4	4	4	4	4	4	4	1	1	1	1	1	1	2	2	2	2	2	2
	95th % Queue (Ft)	163	134		108	260		#113	136		137	496		107	253		121	264		134	521		133	375	
	Approach Delay (Sec)		62.1			64.6			21.6			23.5			58.3			52.5			10.9			27.6	
	Approach LOS		E			E			C			C			E			D			B			C	
	Intersection Delay (Sec) / LOS				37.0					D							29.0					C			
	Peak Trucks 2023																								
	Approach Volume	242	185	101	59	251	296	139	335	141	83	952	48	148	354	125	74	277	380	222	1195	130	83	704	53
	% Heavy Vehicles	4	4	4	4	4	4	4	4	4	4	4	4	1	1	1	1	1	1	2	2	2	2	2	2
	95th % Queue (Ft)	163	134		108	260		#113	138		137	496		104	237		#133	271		136	520		#144	400	
	Approach Delay (Sec)		62.1			64.6			21.6			23.5			55.2			53.8			9.8			29.0	
	Approach LOS		E			E			C			C			E			D			A			C	
	Intersection Delay (Sec) / LOS				37.0					D							28.4					C			
	Background 2024																								
	Approach Volume	254	188	103	60	256	311	154	465	156	84	1034	49	161	361	128	76	283	397	234	1284	139	84	828	54
	% Heavy Vehicles	4	4	4	4	4	4	4	4	4	4	4	4	1	1	1	1	1	1	2	2	2	2	2	2
	95th % Queue (Ft)	#189	144		110	268		122	149		141	572		113	254		123	282		158	297		134	453	
	Approach Delay (Sec)		58.5			61.8			39.1			34.2			58.4			52.6			46.9			29.3	
	Approach LOS		E			E			D			C			E			D			D			C	
	Intersection Delay (Sec) / LOS				45.2					D							44.7					D			
	Average Trucks 2024																								
	Approach Volume	254	188	103	60	256	311	154	465	156	84	1034	49	163	361	128	76	283	401	239	1312	142	84	851	54
	% Heavy Vehicles	4	4	4	4	4	4	4	4	4	4	4	4	1	1	1	1	1	1	2	2	2	2	2	2
	95th % Queue (Ft)	#189	144		110	268		109	116		141	572		114	254		123	286		164	307		134	469	
	Approach Delay (Sec)		65.9			64.4			17.7			25.4			58.5			52.7			47.3			29.7	
	Approach LOS		E			E			B			C			E			D			D			C	
	Intersection Delay (Sec) / LOS				36.6					D							45.0					D			
	Peak Trucks 2024																								
	Approach Volume	254	188	103	60	256	311	154	465	156	84	1034	49	163	361	128	76	283	401	239	1323	142	84	851	54
	% Heavy Vehicles	4	4	4	4	4	4	4	4	4	4	4	4	1	1	1	1	1	1	2	2	2	2	2	2
	95th % Queue (Ft)	#189	144		110	268		113	139		141	572		114	254		123	286		165	442		134	469	
	Approach Delay (Sec)		65.9			64.4			37.4			25.5			58.5			52.7			11.1			29.5	
	Approach LOS		E			E			D			C			E			D			B			C	
	Intersection Delay (Sec) / LOS				41.2					D							29.0					C			

Coleman N/S	AM												PM											
Approach Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																								
A10 (B7) Costco & Brokaw																								
Existing 2023 (Stop Controlled)																								
Approach Volume	1	11			34	218	3		215				3	51			12	315	563		9			
% Heavy Vehicles	0	50			4	4	2		2				2	2			1	1	1		1			
Turn Bay Length (Ft)						75												75						
95th % Queue (Ft)	0	0			0	0	27		27				0	0			0	0	131		131			
Approach Delay (Sec)		0.6			0.0			10.2						0.4			0.0			16.2				
Approach LOS								B												C				
Intersection Delay (Sec) / LOS		4.6						A						9.8						A				
Average Trucks 2023 (Stop Controlled)																								
Approach Volume	1	15			38	218	215		3				3	55			16	315	563		9			
% Heavy Vehicles	0	67			21	4	2		2				2	7			31	1	1		1			
95th % Queue (Ft)	0	0			0	0	28		28				0	0			0	0	135		135			
Approach Delay (Sec)		0.4			0.0			10.3						0.4			0.0			16.6				
Approach LOS								B												C				
Intersection Delay (Sec) / LOS		4.6						A						9.9						A				
Peak Trucks 2023 (Stop Controlled)																								
Approach Volume	1	20			43	218	215		3				3	60			21	315	563		9			
% Heavy Vehicles	0	75			30	4	2		2				2	15			48	1	1		1			
95th % Queue (Ft)	0	0			0	0	28		28				0	0			0	0	139		139			
Approach Delay (Sec)		0.3			0.0			10.4						0.4			0.0			17.1				
Approach LOS								B												C				
Intersection Delay (Sec) / LOS		4.5						A						10.1						A				
Background 2024 (Signalized)																								
Approach Volume	1	86	0	43	52	223	219	5	3	0	0	147	3	90	0	170	85	321	496	31	9	0	0	77
% Heavy Vehicles	0	7	2	2	8	4	2	2	2	2	2	2	2	1	2	2	1	1	1	2	1	2	2	2
95th % Queue (Ft)	3	46		m5	0			159			0		8	94		m54	122			522			0	
Approach Delay (Sec)		8.7			9.6			30.6			30.3			19.7			8.2			46.1			60.1	
Approach LOS		A			A			C			C			B			A			D			E	
Intersection Delay (Sec) / LOS		19.5						B						28.0						C				
Average Trucks 2024 (Signalized)																								
Approach Volume	1	90	0	43	56	223	219	5	3	0	0	147	3	95	0	170	89	321	496	31	9	0	0	77
% Heavy Vehicles	0	11	2	2	14	4	2	2	2	2	2	2	2	4	2	2	6	1	1	2	1	2	2	2
95th % Queue (Ft)	3	48		m21	280			159			0		8	98		m48	151			522			0	
Approach Delay (Sec)		8.8			30.0			30.6			30.3			19.8			10.0			46.1			60.1	
Approach LOS		A			C			C			C			B			A			D			E	
Intersection Delay (Sec) / LOS		27.8						C						28.7						C				
Peak Trucks 2024 (Signalized)																								
Approach Volume	1	96	0	43	61	223	219	5	3	0	0	147	3	100	0	170	95	321	496	31	9	0	0	77
% Heavy Vehicles	0	16	2	2	21	4	2	2	2	2	2	2	2	9	2	2	11	1	1	2	1	2	2	2
95th % Queue (Ft)	3	51		m34	137			158			0		8	103		m50	m175			522			0	
Approach Delay (Sec)		9.0			15.0			30.4			30.3			20.0			10.1			46.1			60.1	
Approach LOS		A			B			C			C			C			B			D			E	
Intersection Delay (Sec) / LOS		21.5						C						28.7						C				

Coleman N/S		Weekday Mid-Day (MD)												Weekend Mid-Day (WEMD)											
	Approach Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A1	Brokaw Rd																								
	Existing 2023																								
	Approach Volume	244	16	292	54	15	30	33	515	41	310	472	95	300	13	397	57	21	23	24	377	115	315	308	75
	% Heavy Vehicles	1	1	1	2	2	2	5	5	5	4	4	4	0	0	0	1	1	1	1	1	1	0	0	0
	Turn Bay Length (Ft)	250			100			150			320			250			100			150			320		
	95th % Queue (Ft)	#423	69		83	35		58	267	0	#502	167		#493	66		100	45		54	232	0	#493	115	
	Approach Delay (Sec)		142.9			46.8			42.4			21.7			44.5			46.5			37.9			33.7	
	Approach LOS		F			D			D			C			D			D			D			C	
	Intersection Delay (Sec) / LOS				60.2						E						39.2						D		
	Average Trucks 2023																								
	Approach Volume	244	16	296	54	15	30	33	515	41	314	472	95	300	13	401	57	21	23	24	377	115	319	308	75
	% Heavy Vehicles	1	1	3	2	2	2	5	5	5	2	4	4	0	0	1	1	1	1	1	1	1	0	0	0
	95th % Queue (Ft)	#423	69		83	35		58	267	0	#507	167		#493	66		100	45		54	232	0	#504	115	
	Approach Delay (Sec)		142.2			46.8			41.9			21.8			44.5			46.5			37.9			34.4	
	Approach LOS		F			D			D			C			D			D			D			C	
	Intersection Delay (Sec) / LOS				60.0						E						39.4						D		
	Peak Trucks 2023																								
	Approach Volume	244	16	301	54	15	30	33	515	41	319	472	95	300	13	406	57	21	23	24	377	115	324	308	75
	% Heavy Vehicles	1	1	5	2	2	2	5	5	5	3	4	4	0	0	2	1	1	1	1	1	1	3	0	0
	95th % Queue (Ft)	#423	71		83	35		58	267	0	#516	167		#493	67		100	45		54	232	0	#521	115	
	Approach Delay (Sec)		141.4			46.8			43.7			21.5			44.4			46.5			37.9			36.9	
	Approach LOS		F			D			D			C			D			D			D			D	
	Intersection Delay (Sec) / LOS				60.3						E						40.3						D		
	Background 2024																								
	Approach Volume	422	16	340	55	15	31	34	699	42	278	598	97	324	13	387	58	21	23	24	518	293	365	497	77
	% Heavy Vehicles	1	1	2	2	2	2	5	5	5	4	4	4	0	0	0	1	1	1	1	1	1	0	0	0
	95th % Queue (Ft)	202	202	157	#70	#72	0	58	229	0	#389	187		166	166	185	69	69	0	48	175	66	#566	159	
	Approach Delay (Sec)		26.5			43.9			29.3			25.3			25.1			40.5			29.4			62.9	
	Approach LOS		C			D			C			C			C			D			C			E	
	Intersection Delay (Sec) / LOS				27.5						C						40.7						D		
	Average Trucks 2024																								
	Approach Volume	422	16	344	55	15	31	34	699	42	283	598	97	324	13	391	58	21	23	24	518	293	369	497	77
	% Heavy Vehicles	1	1	3	2	2	2	5	5	5	2	4	4	0	0	1	1	1	1	1	1	1	1	0	0
	95th % Queue (Ft)	202	202	160	#70	#72	0	58	229	0	#390	187		166	166	189	69	69	0	48	175	66	#576	159	
	Approach Delay (Sec)		26.5			43.9			29.3			25.0			24.9			40.7			29.5			66.9	
	Approach LOS		C			D			C			C			C			D			C			E	
	Intersection Delay (Sec) / LOS				27.4						C						42.2						D		
	Peak Trucks 2024																								
	Approach Volume	422	16	349	55	15	31	34	699	42	288	598	97	324	13	396	58	21	23	24	518	293	374	497	77
	% Heavy Vehicles	1	1	4	2	2	2	5	5	5	4	4	4	0	0	2	1	1	1	1	1	1	3	0	0
	95th % Queue (Ft)	202	202	165	#70	#72	0	58	229	0	#404	187		166	166	195	69	69	0	48	175	66	#589	159	
	Approach Delay (Sec)		26.5			43.9			29.3			26.5			24.9			40.8			29.7			74.5	
	Approach LOS		C			D			C			C			C			D			C			E	
	Intersection Delay (Sec) / LOS				28.0						C						45.0						D		

Coleman N/S	Weekday Mid-Day (MD)												Weekend Mid-Day (WEMD)											
Approach Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																								
A2 Champions Way																								
Existing 2023																								
Approach Volume													4		0					866	4	2	824	
% Heavy Vehicles													0		0					0	0	1	1	
Turn Bay Length (Ft)																						250		
95th % Queue (Ft)													10							158		7	43	
Approach Delay (Sec)														39.5						4.8			1.7	
Approach LOS														D						A			A	
Intersection Delay (Sec) / LOS															3.4						A			
Average Trucks 2023																								
Approach Volume													4		0					870	4	2	828	
% Heavy Vehicles													0		0					1	0	1	1	
95th % Queue (Ft)													10							160		7	43	
Approach Delay (Sec)														39.5						4.9			1.7	
Approach LOS														D						A			A	
Intersection Delay (Sec) / LOS															3.4						A			
Peak Trucks 2023																								
Approach Volume													4		0					875	4	2	833	
% Heavy Vehicles													0		0					1	0	1	2	
95th % Queue (Ft)													10							162		7	44	
Approach Delay (Sec)														39.5						4.9			1.7	
Approach LOS														D						A			A	
Intersection Delay (Sec) / LOS															3.4						A			
Background 2024																								
Approach Volume													4		0					973	4	2	1299	
% Heavy Vehicles													0		0					0	0	1	0	
95th % Queue (Ft)													10							109		7	74	
Approach Delay (Sec)														39.5						4.0			2.0	
Approach LOS														D						A			A	
Intersection Delay (Sec) / LOS															2.9						A			
Average Trucks 2024																								
Approach Volume													4		0					977	4	2	1304	
% Heavy Vehicles													0		0					1	0	1	1	
95th % Queue (Ft)													10							110		7	75	
Approach Delay (Sec)														39.5						4.0			2.0	
Approach LOS														D						A			A	
Intersection Delay (Sec) / LOS															2.9						A			
Peak Trucks 2024																								
Approach Volume													4		0					982	4	2	1309	
% Heavy Vehicles													0		0					1	0	1	1	
95th % Queue (Ft)													10							111		7	75	
Approach Delay (Sec)														39.5						4.1			2.0	
Approach LOS														D						A			A	
Intersection Delay (Sec) / LOS															2.9						A			

Coleman N/S		Weekday Mid-Day (MD)												Weekend Mid-Day (WEMD)											
	Approach Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A3	Aviation Ave																								
	Existing 2023																								
	Approach Volume													1	0	2	14	0	7	33	866	1	3	764	25
	% Heavy Vehicles													0	0	0	5	5	5	0	0	0	1	1	1
	Turn Bay Length (Ft)													225		225	75		0	200		0	375		500
	95th % Queue (Ft)														5	3	22	0		42	138		4	201	0
	Approach Delay (Sec)														34.4			38.3			6.8			6.6	
	Approach LOS														C			D			A			A	
	Intersection Delay (Sec) / LOS														7.1						A				
	Average Trucks 2023																								
	Approach Volume													1	0	2	14	0	7	33	870	1	3	768	25
	% Heavy Vehicles													0	0	0	5	5	5	0	1	0	1	1	1
	95th % Queue (Ft)														5	3	22	0		42	139		4	203	0
	Approach Delay (Sec)														34.4			38.3			6.8			6.6	
	Approach LOS														C			D			A			A	
	Intersection Delay (Sec) / LOS														7.2						A				
	Peak Trucks 2023																								
	Approach Volume													1	0	2	14	0	7	33	875	1	3	773	25
	% Heavy Vehicles													0	0	0	5	5	5	0	1	0	1	2	1
	95th % Queue (Ft)														5	3	22	0		42	140		4	205	0
	Approach Delay (Sec)														34.4			38.3			6.8			6.6	
	Approach LOS														C			D			A			A	
	Intersection Delay (Sec) / LOS														7.2						A				
	Background 2024																								
	Approach Volume													117	0	238	14	0	7	34	949	26	52	1122	26
	% Heavy Vehicles													0	0	0	5	5	5	0	0	0	1	1	1
	95th % Queue (Ft)													65	66	#121	22	0		44	168		30	#361	0
	Approach Delay (Sec)														30.7			35.8			14.1			15.3	
	Approach LOS														C			D			B			B	
	Intersection Delay (Sec) / LOS														17.1						B				
	Average Trucks 2024																								
	Approach Volume													117	0	238	14	0	7	34	953	26	52	1126	26
	% Heavy Vehicles													0	0	0	5	5	5	0	1	0	1	1	1
	95th % Queue (Ft)													65	66	#121	22	0		44	169		30	#365	0
	Approach Delay (Sec)														30.7			35.8			14.1			15.3	
	Approach LOS														C			D			B			B	
	Intersection Delay (Sec) / LOS														17.1						B				
	Peak Trucks 2024																								
	Approach Volume													117	0	238	14	0	7	34	958	26	52	1131	26
	% Heavy Vehicles													0	0	0	5	5	5	0	1	0	1	1	1
	95th % Queue (Ft)													65	66	#121	22	0		44	171		30	#387	0
	Approach Delay (Sec)														30.7			35.8			14.1			15.4	
	Approach LOS														C			D			B			B	
	Intersection Delay (Sec) / LOS														17.1						B				

Coleman N/S	Weekday Mid-Day (MD)												Weekend Mid-Day (WEMD)											
Approach Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																								
A4 Earthquakes Way																								
Existing 2023																								
Approach Volume													5		22					815	17	38	824	
% Heavy Vehicles													0		0					0	0	1	1	
Turn Bay Length (Ft)													225		0						0	250		
95th % Queue (Ft)													8		13					90		20	50	
Approach Delay (Sec)														30.5						4.4			3.3	
Approach LOS														C						A			A	
Intersection Delay (Sec) / LOS															4.2						A			
Average Trucks 2023																								
Approach Volume													5		22					819	17	38	828	
% Heavy Vehicles													0		0					1	0	1	1	
95th % Queue (Ft)													8		13					90		20	51	
Approach Delay (Sec)														30.5						4.4			3.3	
Approach LOS														C						A			A	
Intersection Delay (Sec) / LOS															4.3						A			
Peak Trucks 2023																								
Approach Volume													5		22					824	17	38	833	
% Heavy Vehicles													0		0					2	0	1	2	
95th % Queue (Ft)													8		13					91		20	51	
Approach Delay (Sec)														30.5						4.4			3.3	
Approach LOS														C						A			A	
Intersection Delay (Sec) / LOS															4.3						A			
Background 2024																								
Approach Volume													5		22					1132	17	39	1232	
% Heavy Vehicles													0		0					0	0	1	1	
95th % Queue (Ft)													7		10					245		27	210	
Approach Delay (Sec)														29.8						5.9			4.2	
Approach LOS														C						A			A	
Intersection Delay (Sec) / LOS															5.3						A			
Average Trucks 2024																								
Approach Volume													5		22					1136	17	39	1236	
% Heavy Vehicles													0		0					1	0	1	1	
95th % Queue (Ft)													7		10					247		27	210	
Approach Delay (Sec)														29.8						6.0			4.2	
Approach LOS														C						A			A	
Intersection Delay (Sec) / LOS															5.3						A			
Peak Trucks 2024																								
Approach Volume													5		22					1141	17	39	1241	
% Heavy Vehicles													0		0					1	0	1	1	
95th % Queue (Ft)													7		10					248		27	212	
Approach Delay (Sec)														29.8						6.0			4.2	
Approach LOS														C						A			A	
Intersection Delay (Sec) / LOS															5.3						A			

Coleman N/S		Weekday Mid-Day (MD)												Weekend Mid-Day (WEMD)											
	Approach Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A5	Newhall Dr																								
	Existing 2023																								
	Approach Volume	97	0	346	1	0	0	6	790	139	388	845	2	94	0	373	0	0	1	1	774	100	411	779	1
	% Heavy Vehicles	2	2	2	0	0	0	4	4	4	3	3	3	1	1	1	0	0	0	1	1	1	1	1	1
	Turn Bay Length (Ft)	175						175			200			175		0	0		0	175		0	200		0
	95th % Queue (Ft)		#156	42	6			18	263		#296	223			#149	38		0		6	244		#314	203	
	Approach Delay (Sec)		25.9			43.0			16.2			34.5			23.0			36.6			15.4			39.9	
	Approach LOS		C			D			B			C			C			D			B			D	
	Intersection Delay (Sec) / LOS					26.5					C							28.3						C	
	Average Trucks 2023																								
	Approach Volume	97	0	356	1	0	0	6	794	139	398	849	2	94	0	383	0	0	1	1	778	100	421	783	1
	% Heavy Vehicles	2	2	5	0	0	0	4	5	4	3	5	3	1	1	3	0	0	0	1	1	1	3	1	1
	95th % Queue (Ft)		#156	45	6			18	264		#305	226			#158	39		0		6	246		#313	201	
	Approach Delay (Sec)		25.9			43.0			16.3			37.5			23.4			36.7			15.7			34.7	
	Approach LOS		C			D			B			D			C			D			B			C	
	Intersection Delay (Sec) / LOS					28.0					C							26.0						C	
	Peak Trucks 2023																								
	Approach Volume	97	0	371	1	0	0	6	799	139	413	854	2	94	0	398	0	0	1	1	783	100	436	788	1
	% Heavy Vehicles	2	2	8	0	0	0	4	5	4	7	5	3	1	1	7	0	0	0	1	2	1	6	2	1
	95th % Queue (Ft)		#165	49	6			18	266		#311	224			#168	43		0		6	248		#319	200	
	Approach Delay (Sec)		26.3			43.1			16.6			35.1			23.9			36.9			16.0			31.9	
	Approach LOS		C			D			B			D			C			D			B			C	
	Intersection Delay (Sec) / LOS					27.1					C							25.0						C	
	Background 2024																								
	Approach Volume	99	0	353	1	0	0	6	1165	142	396	1077	2	96	0	380	0	0	1	1	1090	102	419	1235	1
	% Heavy Vehicles	2	2	2	0	0	0	4	3	4	3	3	3	1	1	1	0	0	0	1	1	1	1	1	1
	95th % Queue (Ft)		#170	48	6			18	#432		#291	291			#107	52		0		5	216		#208	193	
	Approach Delay (Sec)		26.5			43.1			18.6			25.0			23.2			37.7			15.3			24.8	
	Approach LOS		C			D			B			C			C			D			B			C	
	Intersection Delay (Sec) / LOS					22.7					C							21.2						C	
	Average Trucks 2024																								
	Approach Volume	99	0	363	1	0	0	6	1169	142	406	1081	2	96	0	391	0	0	1	1	1094	102	429	1239	1
	% Heavy Vehicles	2	2	5	0	0	0	4	3	4	3	4	3	1	1	3	0	0	0	1	1	1	3	1	1
	95th % Queue (Ft)		#170	51	6			18	#435		#300	293			#107	55		0		5	217		#217	193	
	Approach Delay (Sec)		26.6			43.1			18.7			27.0			23.1			37.7			15.4			28.3	
	Approach LOS		C			D			B			C			C			D			B			C	
	Intersection Delay (Sec) / LOS					23.6					C							23.0						C	
	Peak Trucks 2024																								
	Approach Volume	99	0	368	1	0	0	6	1174	142	421	1086	2	96	0	406	0	0	1	1	1100	102	445	1244	1
	% Heavy Vehicles	2	2	9	0	0	0	4	4	4	7	4	3	1	1	7	0	0	0	1	1	1	6	1	1
	95th % Queue (Ft)		#179	52	6			18	#441		#306	291			#116	59		0		5	219		#218	189	
	Approach Delay (Sec)		27.5			43.2			18.9			26.0			23.6			38.0			15.7			26.3	
	Approach LOS		C			D			B			C			C			D			B			C	
	Intersection Delay (Sec) / LOS					23.4					C							22.2						C	

Coleman N/S	Weekday Mid-Day (MD)												Weekend Mid-Day (WEMD)											
Approach Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																								
A6 Airport Blvd																								
Existing 2023																								
Approach Volume																71		82	49	704			1087	253
% Heavy Vehicles																2		2	1	1			1	1
Turn Bay Length (Ft)																500		0	300					250
95th % Queue (Ft)																23		37	19	45			94	35
Approach Delay (Sec)																	17.1			4.8			9.1	
Approach LOS																	B			A			A	
Intersection Delay (Sec) / LOS																	8.1						A	
Average Trucks 2023																								
Approach Volume																71		82	49	718			1101	253
% Heavy Vehicles																2		2	1	3			2	1
95th % Queue (Ft)																23		37	19	46			96	35
Approach Delay (Sec)																	17.1			4.8			9.1	
Approach LOS																	B			A			A	
Intersection Delay (Sec) / LOS																	8.1						A	
Peak Trucks 2023																								
Approach Volume																71		82	49	738			1121	253
% Heavy Vehicles																2		2	1	5			4	1
95th % Queue (Ft)																23		37	19	47			99	35
Approach Delay (Sec)																	17.2			4.8			9.2	
Approach LOS																	B			A			A	
Intersection Delay (Sec) / LOS																	8.1						A	
Background 2024																								
Approach Volume																72		91	77	909			1482	258
% Heavy Vehicles																2		2	1	1			0	1
95th % Queue (Ft)																23		41	27	58			134	36
Approach Delay (Sec)																	17.6			5.2			10.4	
Approach LOS																	B			A			B	
Intersection Delay (Sec) / LOS																	8.9						A	
Average Trucks 2024																								
Approach Volume																72		91	77	923			1496	258
% Heavy Vehicles																2		2	1	2			1	1
95th % Queue (Ft)																23		41	27	60			137	36
Approach Delay (Sec)																	17.6			5.2			10.5	
Approach LOS																	B			A			B	
Intersection Delay (Sec) / LOS																	9.0						A	
Peak Trucks 2024																								
Approach Volume																72		91	77	944			1517	258
% Heavy Vehicles																2		2	1	4			3	1
95th % Queue (Ft)																23		41	27	62			140	36
Approach Delay (Sec)																	17.7			5.2			10.6	
Approach LOS																	B			A			B	
Intersection Delay (Sec) / LOS																	9.0						A	

	Coleman N/S	Weekday Mid-Day (MD)												Weekend Mid-Day (WEMD)										
	Approach Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A7	I-880 SB Ramp																								
	Existing 2023																								
	Approach Volume																195		254		677			1014	
	% Heavy Vehicles																1		1		1			1	
	Turn Bay Length (Ft)																0		500						
	95th % Queue (Ft)																35		95		75			116	
	Approach Delay (Sec)																14.3				6.6			7.4	
	Approach LOS																B				A			A	
	Intersection Delay (Sec) / LOS																8.6				A				
	Average Trucks 2023																								
	Approach Volume																195		268		691			1014	
	% Heavy Vehicles																1		6		3			1	
	95th % Queue (Ft)																35		103		77			116	
	Approach Delay (Sec)																14.5				7.0			7.8	
	Approach LOS																B				A			A	
	Intersection Delay (Sec) / LOS																9.0				A				
	Peak Trucks 2023																								
	Approach Volume																195		288		711			1014	
	% Heavy Vehicles																1		13		6			1	
	95th % Queue (Ft)																35		116		79			116	
	Approach Delay (Sec)																14.8				7.7			8.4	
	Approach LOS																B				A			A	
	Intersection Delay (Sec) / LOS																9.6				A				
	Background 2024																								
	Approach Volume																199		565		881			1302	
	% Heavy Vehicles																1		0		1			1	
	95th % Queue (Ft)																32		#309		107			170	
	Approach Delay (Sec)																20.6				13.0			16.0	
	Approach LOS																C				B			B	
	Intersection Delay (Sec) / LOS																16.3				B				
	Average Trucks 2024																								
	Approach Volume																199		579		896			1302	
	% Heavy Vehicles																1		3		2			1	
	95th % Queue (Ft)																32		#328		109			170	
	Approach Delay (Sec)																23.2				13.5			16.6	
	Approach LOS																C				B			B	
	Intersection Delay (Sec) / LOS																17.4				B				
	Peak Trucks 2024																								
	Approach Volume																199		600		916			1302	
	% Heavy Vehicles																1		6		5			1	
	95th % Queue (Ft)																32		#351		113			170	
	Approach Delay (Sec)																27.6				14.3			17.4	
	Approach LOS																C				B			B	
	Intersection Delay (Sec) / LOS																19.2				B				

	Coleman N/S	Weekday Mid-Day (MD)												Weekend Mid-Day (WEMD)											
	Approach Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																									
A8	I-880 / McKendrie St.																								
	Existing 2023																								
	Approach Volume															5	104		553	282	648	10		604	321
	% Heavy Vehicles															0	0		0	1	1	1		1	1
	Turn Bay Length (Ft)															0	0		0	425					150
	95th % Queue (Ft)															0	43		38	#97	54			85	44
	Approach Delay (Sec)														29.1			22.1			11.2			11.5	
	Approach LOS														C			C			B			B	
	Intersection Delay (Sec) / LOS																14.2						B		
	Average Trucks 2023																								
	Approach Volume															5	104		553	296	648	10		604	321
	% Heavy Vehicles															0	0		0	5	1	1		1	1
	95th % Queue (Ft)															0	43		38	#112	54			85	44
	Approach Delay (Sec)														29.1			22.1			12.0			11.5	
	Approach LOS														C			C			B			B	
	Intersection Delay (Sec) / LOS																14.5						B		
	Peak Trucks 2023																								
	Approach Volume															5	104		553	316	648	10		604	321
	% Heavy Vehicles															0	0		0	11	1	1		1	1
	95th % Queue (Ft)															0	43		38	#128	54			85	44
	Approach Delay (Sec)														29.1			22.1			13.7			11.5	
	Approach LOS														C			C			B			B	
	Intersection Delay (Sec) / LOS																15.1						B		
	Background 2024																								
	Approach Volume															5	106		672	364	776	10		777	327
	% Heavy Vehicles															0	0		0	1	1	1		1	1
	95th % Queue (Ft)															0	44		70	#145	66			111	44
	Approach Delay (Sec)														29.9			22.6			15.3			12.8	
	Approach LOS														C			C			B			B	
	Intersection Delay (Sec) / LOS																16.3						B		
	Average Trucks 2024																								
	Approach Volume															5	106		672	378	776	10		777	327
	% Heavy Vehicles															0	0		0	4	1	1		1	1
	95th % Queue (Ft)															0	44		70	#156	66			111	44
	Approach Delay (Sec)														29.9			22.6			17.6			12.8	
	Approach LOS														C			C			B			B	
	Intersection Delay (Sec) / LOS																17.2						B		
	Peak Trucks 2024																								
	Approach Volume															5	106		672	399	776	10		777	327
	% Heavy Vehicles															0	0		0	9	1	1		1	1
	95th % Queue (Ft)															0	44		67	#168	66			112	45
	Approach Delay (Sec)														29.8			22.6			20.6			12.9	
	Approach LOS														C			C			C			B	
	Intersection Delay (Sec) / LOS																18.4						B		

Coleman N/S	Weekday Mid-Day (MD)												Weekend Mid-Day (WEMD)											
Approach Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																								
A9 Hedding																								
Existing 2023																								
Approach Volume													92	114	81	49	141	175	97	441	90	79	682	28
% Heavy Vehicles													1	1	1	1	1	1	1	1	1	1	1	1
Turn Bay Length (Ft)													350		0	500		0	250		0	125		0
95th % Queue (Ft)													55	52		#81	65		58	116		#115	263	
Approach Delay (Sec)														29.3			30.7			18.5			20.2	
Approach LOS														C			C			B			C	
Intersection Delay (Sec) / LOS																22.2						C		
Average Trucks 2023																								
Approach Volume													92	114	81	49	141	175	97	441	90	79	682	28
% Heavy Vehicles													1	1	1	1	1	1	1	1	1	1	1	1
95th % Queue (Ft)													55	52		#81	65		58	116		#115	263	
Approach Delay (Sec)														29.3			30.7			18.5			20.2	
Approach LOS														C			C			B			C	
Intersection Delay (Sec) / LOS																22.2						C		
Peak Trucks 2023																								
Approach Volume													92	114	81	49	141	175	97	441	90	79	682	28
% Heavy Vehicles													1	1	1	1	1	1	1	1	1	1	1	1
95th % Queue (Ft)													55	52		#81	65		58	116		#115	263	
Approach Delay (Sec)														29.3			30.7			18.5			20.2	
Approach LOS														C			C			B			C	
Intersection Delay (Sec) / LOS																22.2						C		
Background 2024																								
Approach Volume													107	116	83	50	144	193	111	544	102	81	829	29
% Heavy Vehicles													1	1	1	1	1	1	1	1	1	1	1	1
95th % Queue (Ft)													#67	53		#83	75		#68	144		#118	333	
Approach Delay (Sec)														29.6			30.9			18.8			22.3	
Approach LOS														C			C			B			C	
Intersection Delay (Sec) / LOS																23.1						C		
Average Trucks 2024																								
Approach Volume													107	116	83	50	144	193	111	544	102	81	829	29
% Heavy Vehicles													1	1	1	1	1	1	1	1	1	1	1	1
95th % Queue (Ft)													#67	53		#83	75		#68	144		#118	333	
Approach Delay (Sec)														29.6			30.9			18.8			22.3	
Approach LOS														C			C			B			C	
Intersection Delay (Sec) / LOS																23.1						C		
Peak Trucks 2024																								
Approach Volume													107	116	83	50	144	193	111	544	102	81	829	29
% Heavy Vehicles													1	1	1	1	1	1	1	1	1	1	1	1
95th % Queue (Ft)													#67	53		#83	75		#68	144		#118	333	
Approach Delay (Sec)														29.6			30.9			18.8			22.3	
Approach LOS														C			C			B			C	
Intersection Delay (Sec) / LOS																23.1						C		

Coleman N/S	Weekday Mid-Day (MD)												Weekend Mid-Day (WEMD)											
Approach Movement	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR	EBL	EBT	EBR	WBL	WBT	WBR	SBL	SBT	SBR	NBL	NBT	NBR
Intersection																								
A10 (B7) Costco & Brokaw																								
Existing 2023 (Stop Controlled)																								
Approach Volume	7	38			16	340	516		7				1	15			12	468	683		9			
% Heavy Vehicles	9	9			1	1	1		1				6	6			0	0	0		0			
Turn Bay Length (Ft)						75							0					75	0		0			
95th % Queue (Ft)	1	1			0	0	138		138				0	0			0	0	185		185			
Approach Delay (Sec)	1.3			0.0			17.0						0.5			0.0			19.0					
Approach LOS							C												C					
Intersection Delay (Sec) / LOS	9.7						A						11.1						A					
Average Trucks 2023 (Stop Controlled)																								
Approach Volume	7	42			20	340	516		7				1	19			16	468	683		9			
% Heavy Vehicles	9	19			20	1	1		1				6	26			31	0	0		0			
95th % Queue (Ft)	1	1			0	0	142		142				0	0			0	0	190		190			
Approach Delay (Sec)	1.2			0.0			17.4						0.4			0.0			19.5					
Approach LOS							C												C					
Intersection Delay (Sec) / LOS	9.8						A						11.3						A					
Peak Trucks 2023 (Stop Controlled)																								
Approach Volume	7	47			25	340	7		516				1	24			21	468	683		9			
% Heavy Vehicles	9	28			36	1	1		1				6	42			43	0	0		0			
95th % Queue (Ft)	1	1			0	0	147		147				0	0			0	0	198		198			
Approach Delay (Sec)	1.1			0.0			17.9						0.3			0.0			20.3					
Approach LOS							C												C					
Intersection Delay (Sec) / LOS	10.0						A						11.7						A					
Background 2024 (Signalized)																								
Approach Volume	8	114	0	43	35	347	526	0	7	0	0	150	4	54	0	171	86	477	697	0	9	0	0	77
% Heavy Vehicles	9	4	9	1	0	1	1	0	1	33	33	1	6	2	6	0	0	0	0	0	0	0	0	0
95th % Queue (Ft)	14	82		38	65			283			8		8	46		127	#330			#522			0	
Approach Delay (Sec)	18.6			19.5			23.4			27.1			19.0			31.8			28.9			34.4		
Approach LOS	B			B			C			C			B			C			C			C		
Intersection Delay (Sec) / LOS	22.0						C						30.2						C					
Average Trucks 2024 (Signalized)																								
Approach Volume	8	118	0	43	39	347	526	0	7	0	0	150	4	58	0	171	90	477	697	0	9	0	0	77
% Heavy Vehicles	9	7	9	1	11	1	1	0	1	33	33	1	6	9	6	0	5	0	0	0	0	0	0	0
95th % Queue (Ft)	14	85		38	69			285			10		8	49		127	#345			#522			0	
Approach Delay (Sec)	18.9			19.7			23.4			27.1			19.2			33.4			28.9			34.4		
Approach LOS	B			B			C			C			B			C			C			C		
Intersection Delay (Sec) / LOS	22.1						C						30.9						C					
Peak Trucks 2024 (Signalized)																								
Approach Volume	8	123	0	43	44	347	526	0	7	0	0	150	4	63	0	171	95	477	697	0	9	0	0	77
% Heavy Vehicles	9	11	9	1	21	1	1	0	1	33	33	1	6	16	6	0	10	0	0	0	0	0	0	0
95th % Queue (Ft)	14	89		39	74			287			12		8	52		127	#367			#522			0	
Approach Delay (Sec)	19.3			20.0			23.5			27.1			19.4			36.2			28.9			34.4		
Approach LOS	B			B			C			C			B			D			C			C		
Intersection Delay (Sec) / LOS	22.3						C						32.2						C					

D-2 FIGURES

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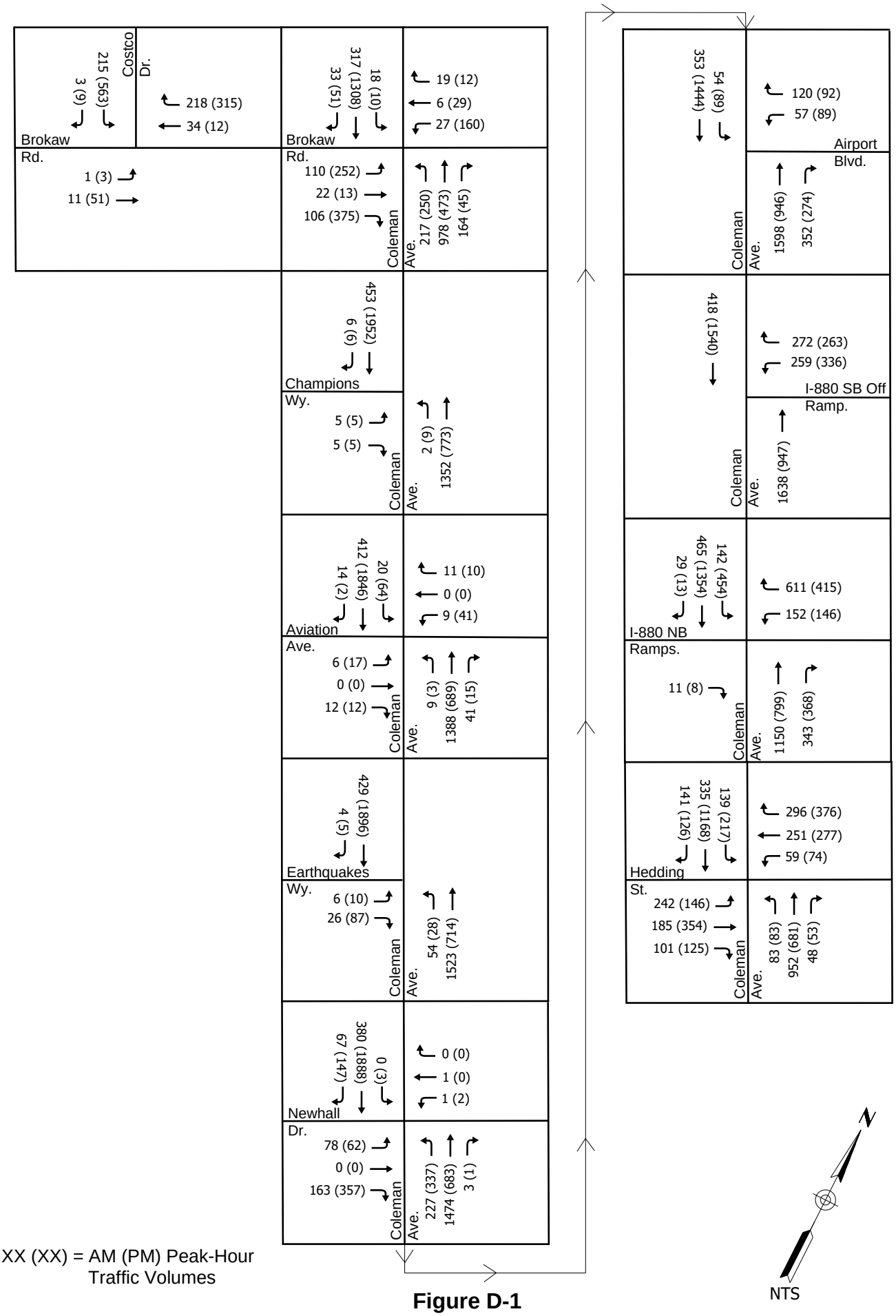
D-19 2024 Average Trucks Condition Total Volumes WEMD

D-20 2024 Peak Trucks Condition Total Volumes AM/PM

D-21 2024 Peak Trucks Condition Total Volumes Mid-Day at 3 Int

D-22 2024 Peak Trucks Condition Total Volumes WEMD



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

Figure D-1
2023 Existing Volumes AM, PM

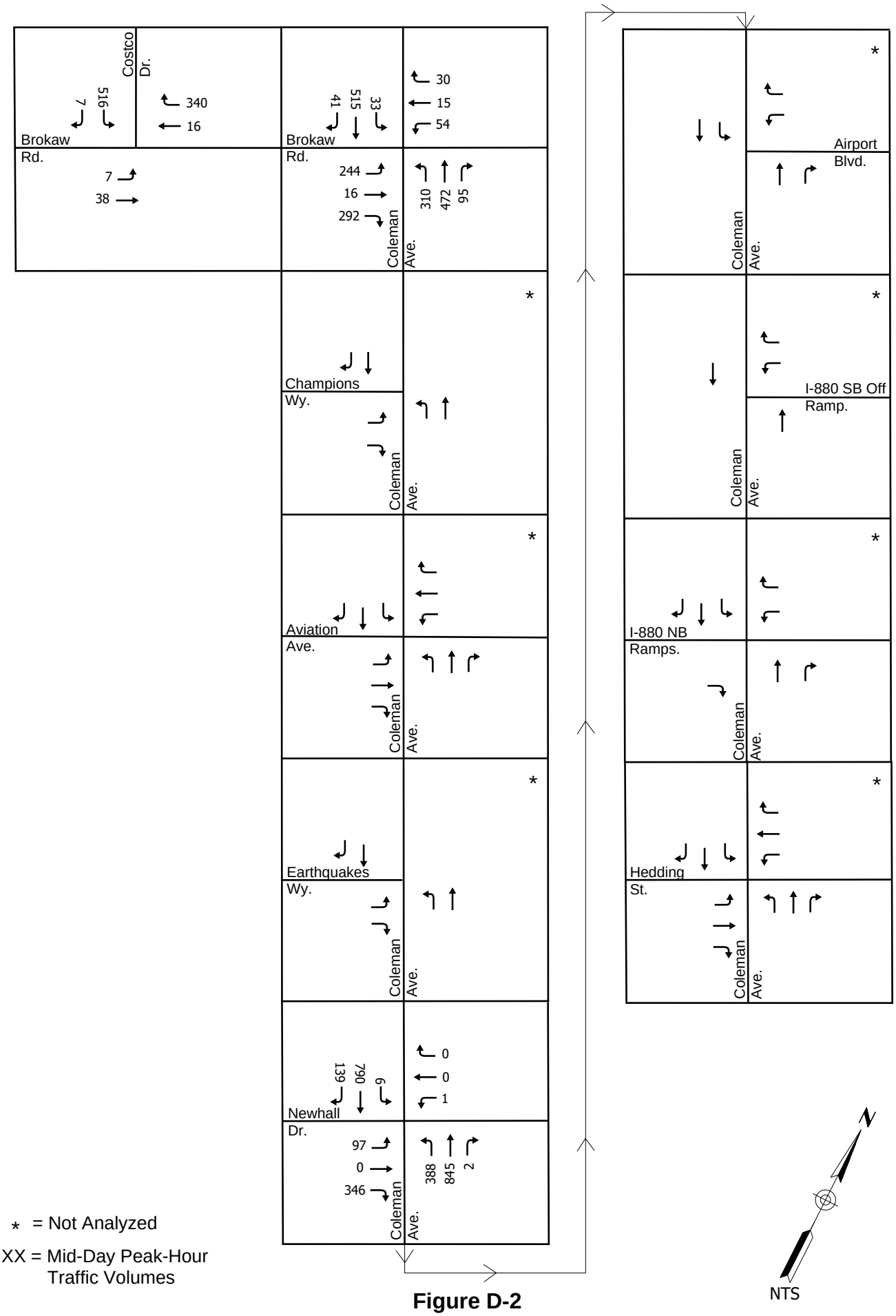


Figure D-2
2023 Existing Volumes Mid-Day at 3 Int

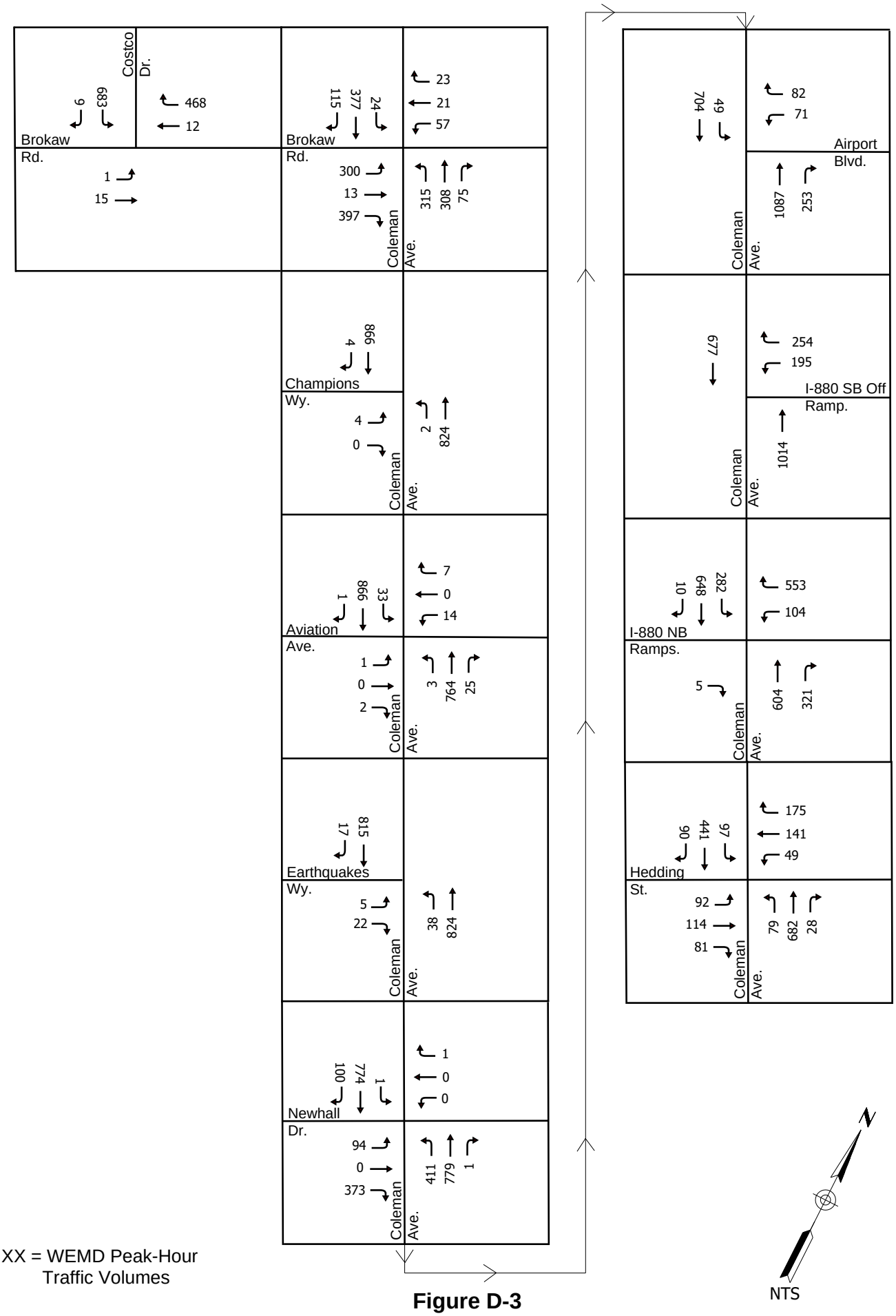


Figure D-3
2023 Existing Volumes WEMD

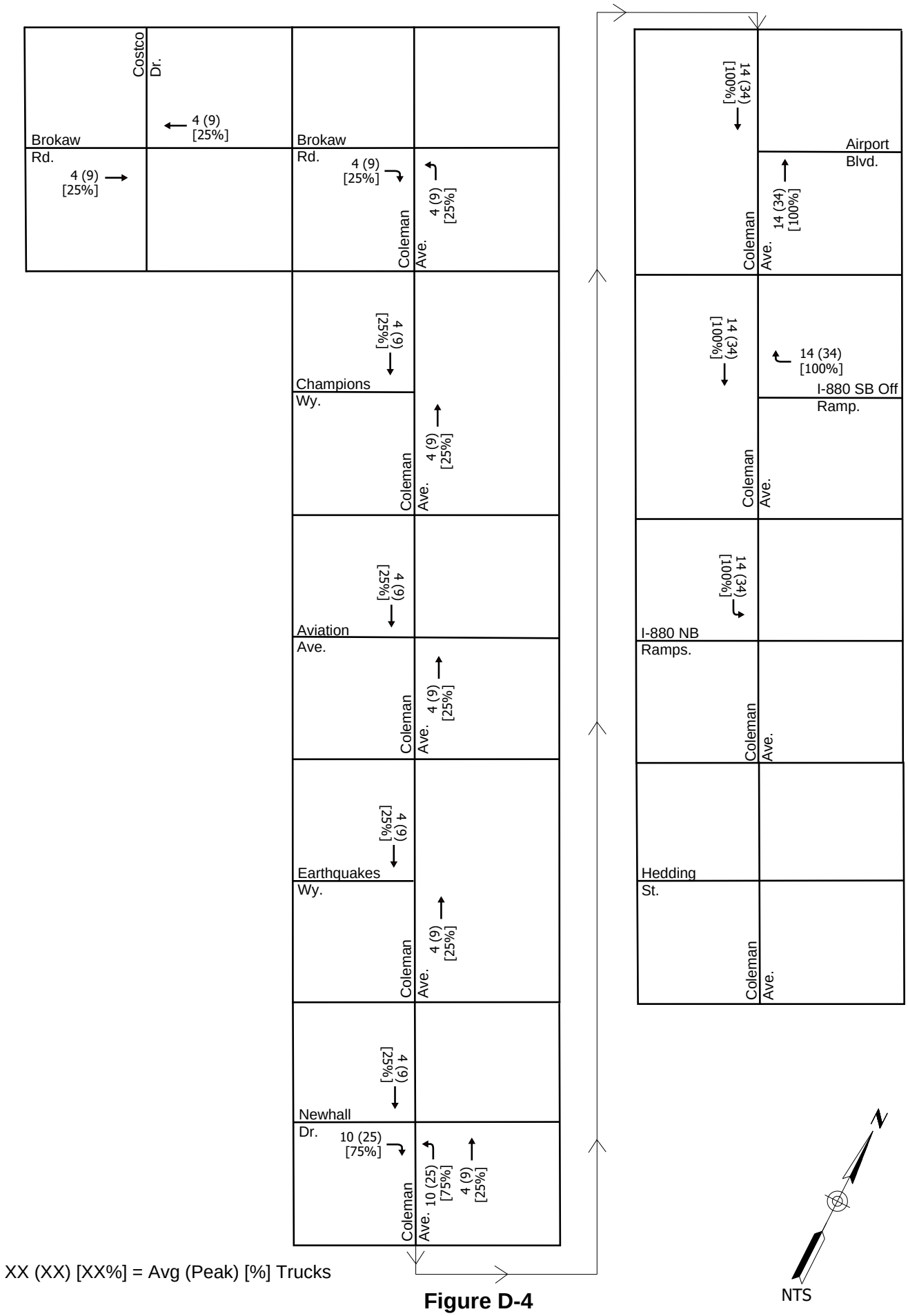
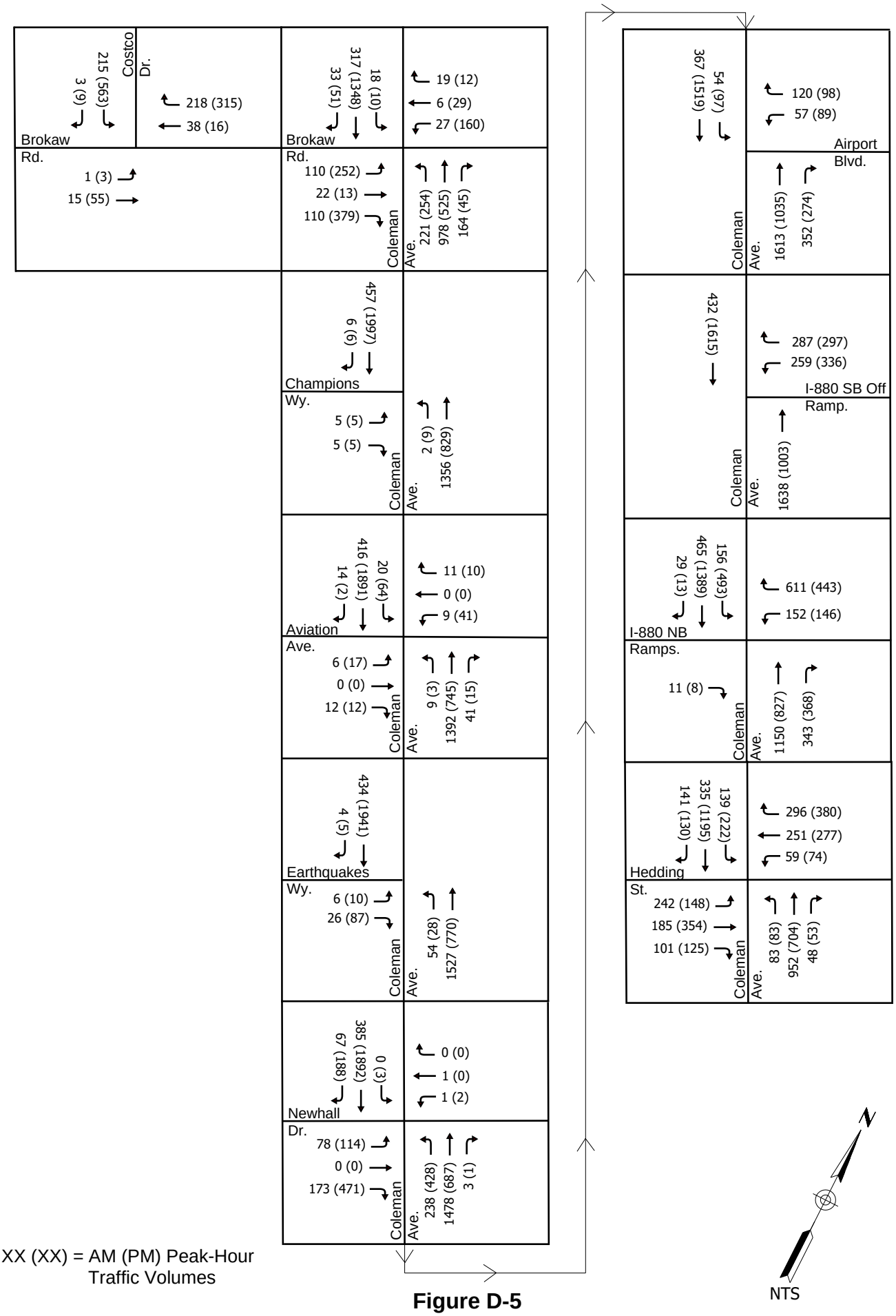


Figure D-4
CTMP Project Generated Truck Trips Assignment



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

Figure D-5
2023 Average Trucks Condition Total Volumes AM, PM

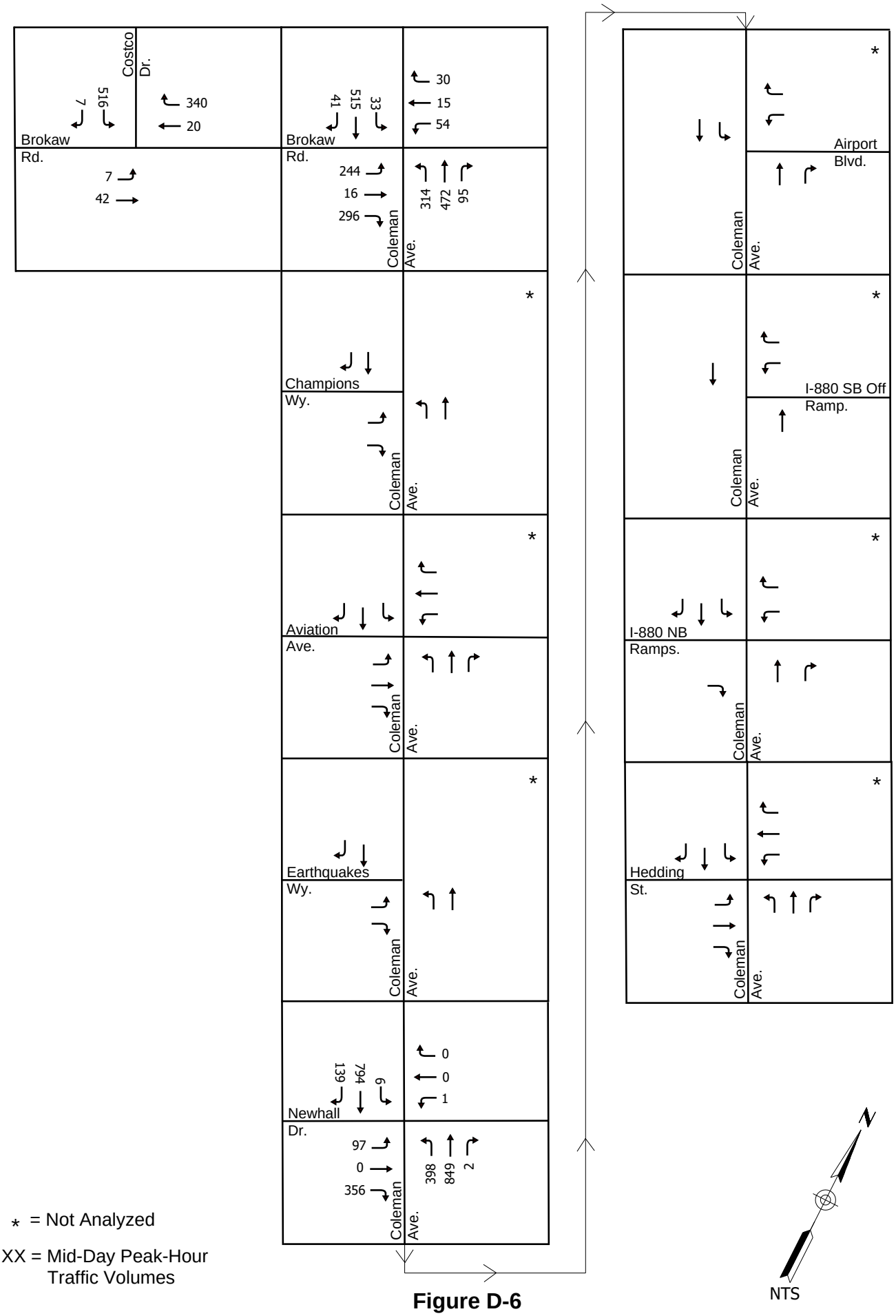


Figure D-6
2023 Average Trucks Condition Total Volumes Mid-Day at 3 Int

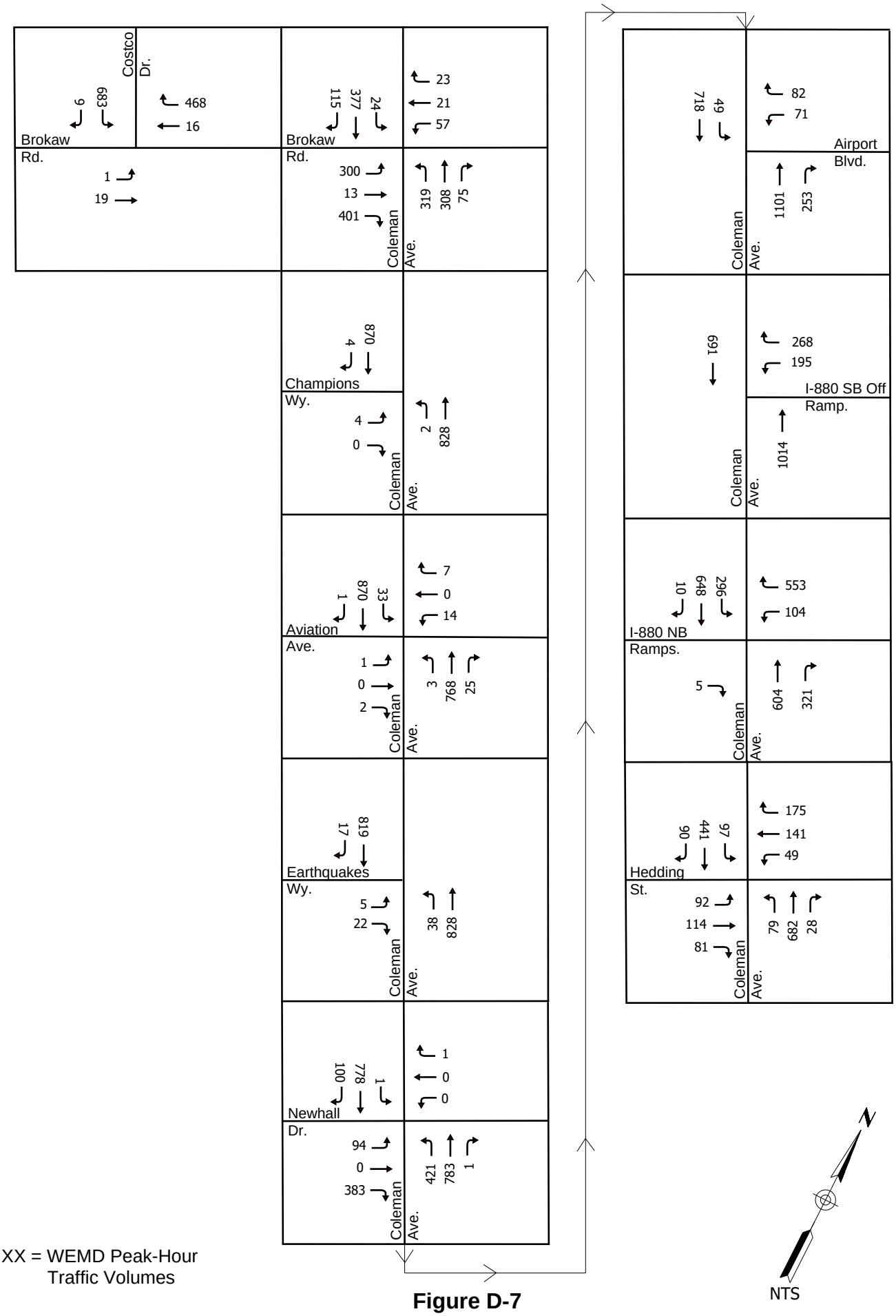
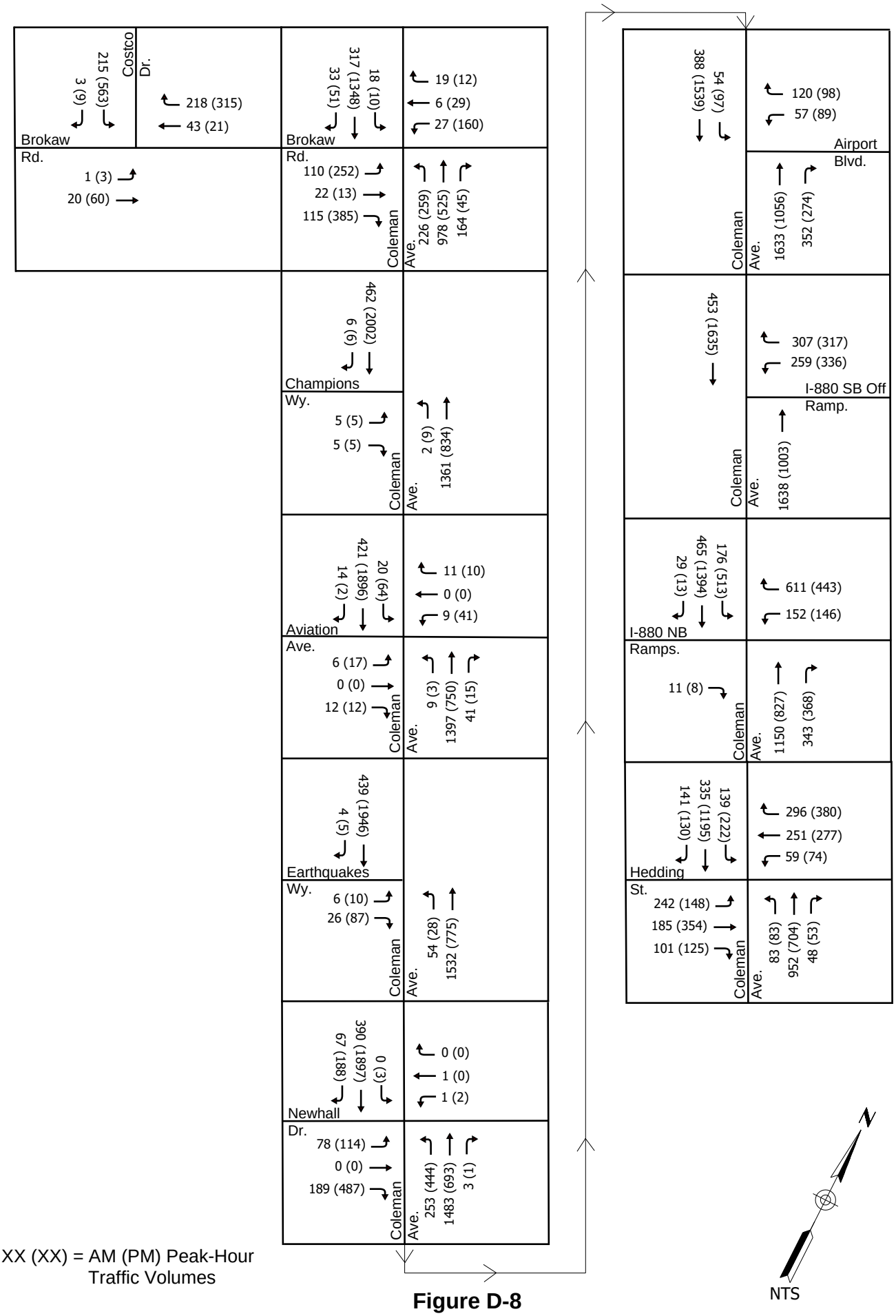


Figure D-7
2023 Average Trucks Condition Total Volumes WEMD



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

Figure D-8
2023 Peak Trucks Condition Total Volumes AM, PM

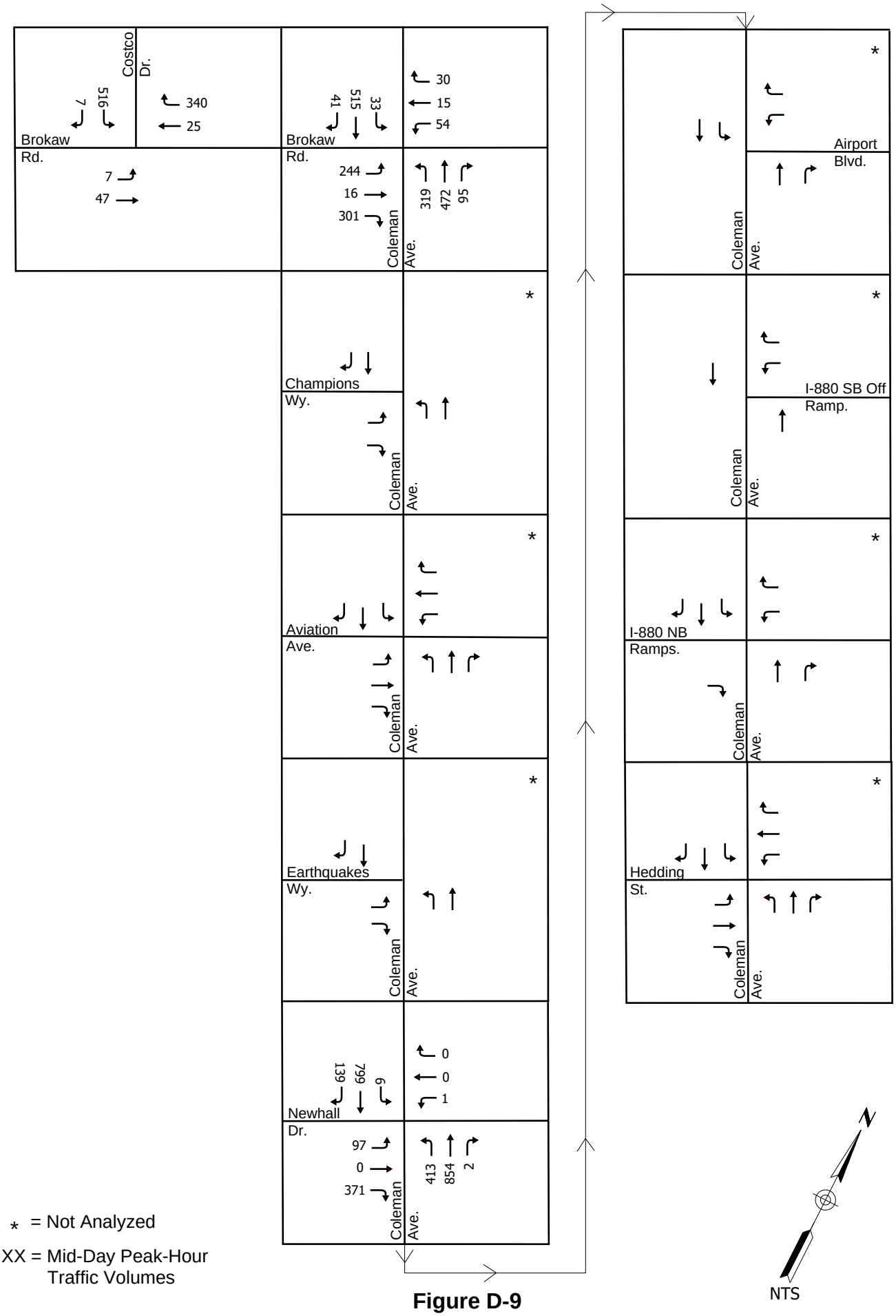


Figure D-9
2023 Peak Trucks Condition Total Volumes Mid-Day at 3 Int

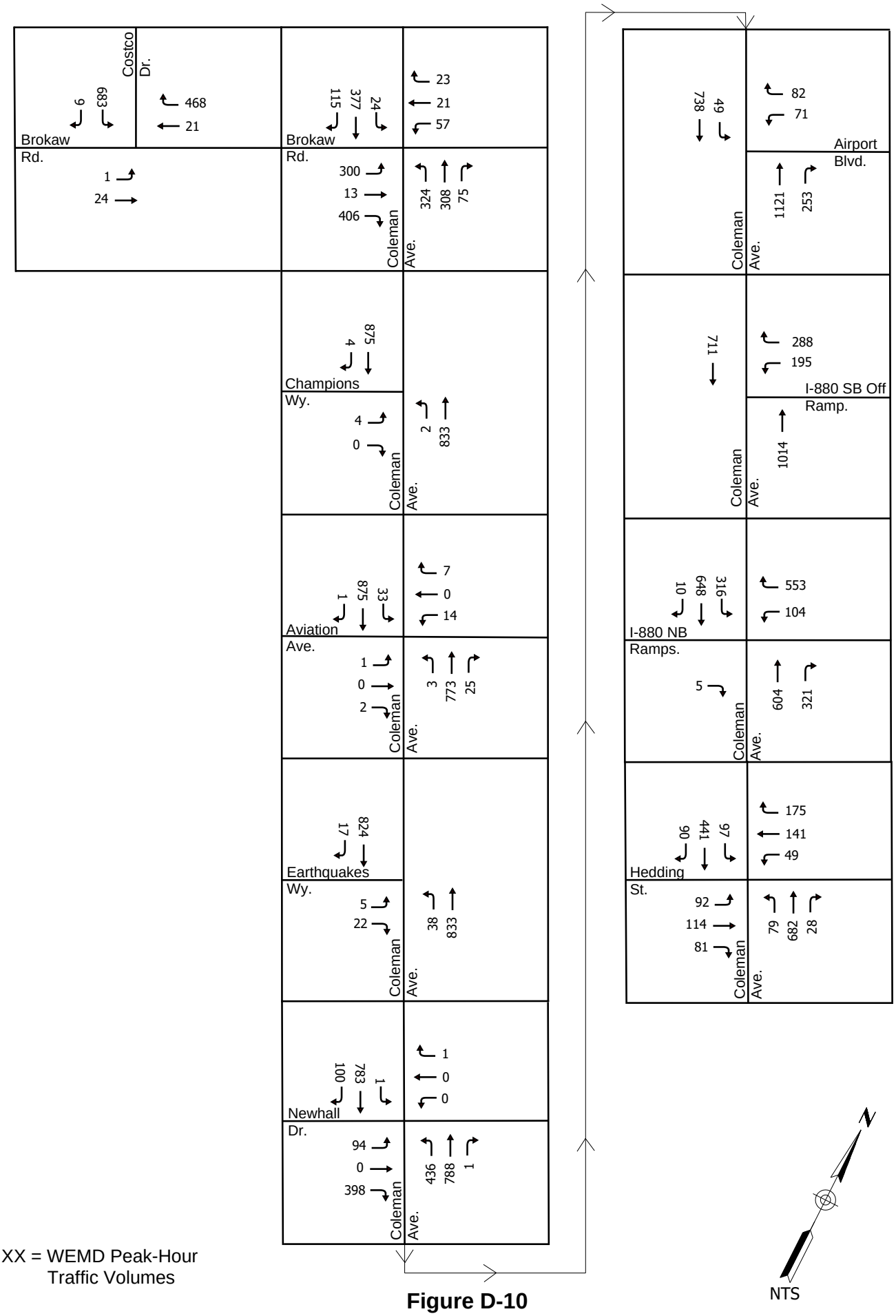
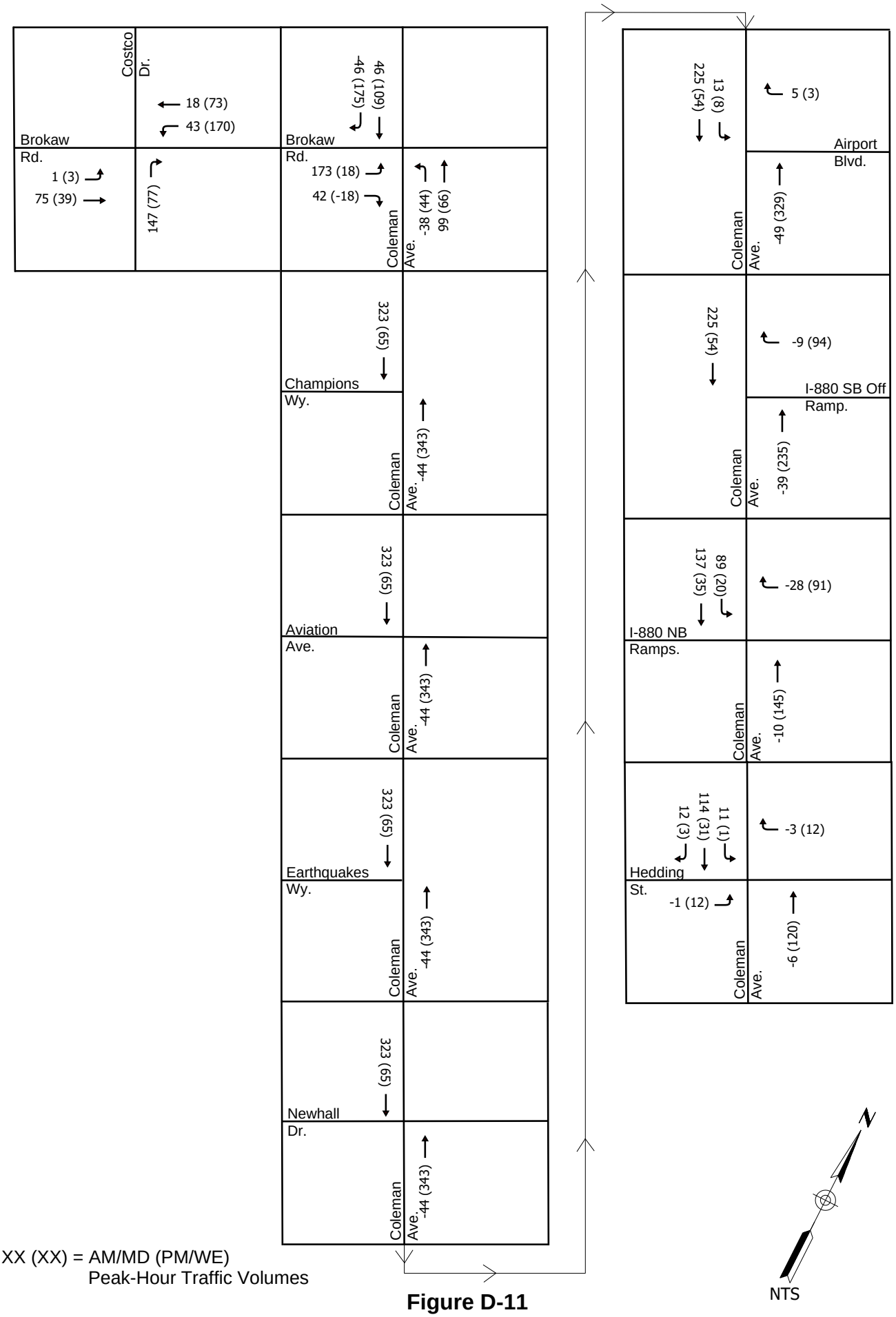


Figure D-10
2023 Peak Trucks Condition Total Volumes WEMD



XX (XX) = AM/MD (PM/WE)
Peak-Hour Traffic Volumes

Figure D-11
Gateway Crossings Trip Assignment

TRIP GENERATION														
ITE Land Use (710)	SF	Unit	AM Peak						PM Peak					
			Rate	Trips	In %	Out %	Trips In	Trips Out	Rate	Trips	In %	Out %	Trips In	Trips Out
General Office Building	307,000	S.F.	1.43	439	88%	12%	386	53	1.37	422	17%	83%	72	350

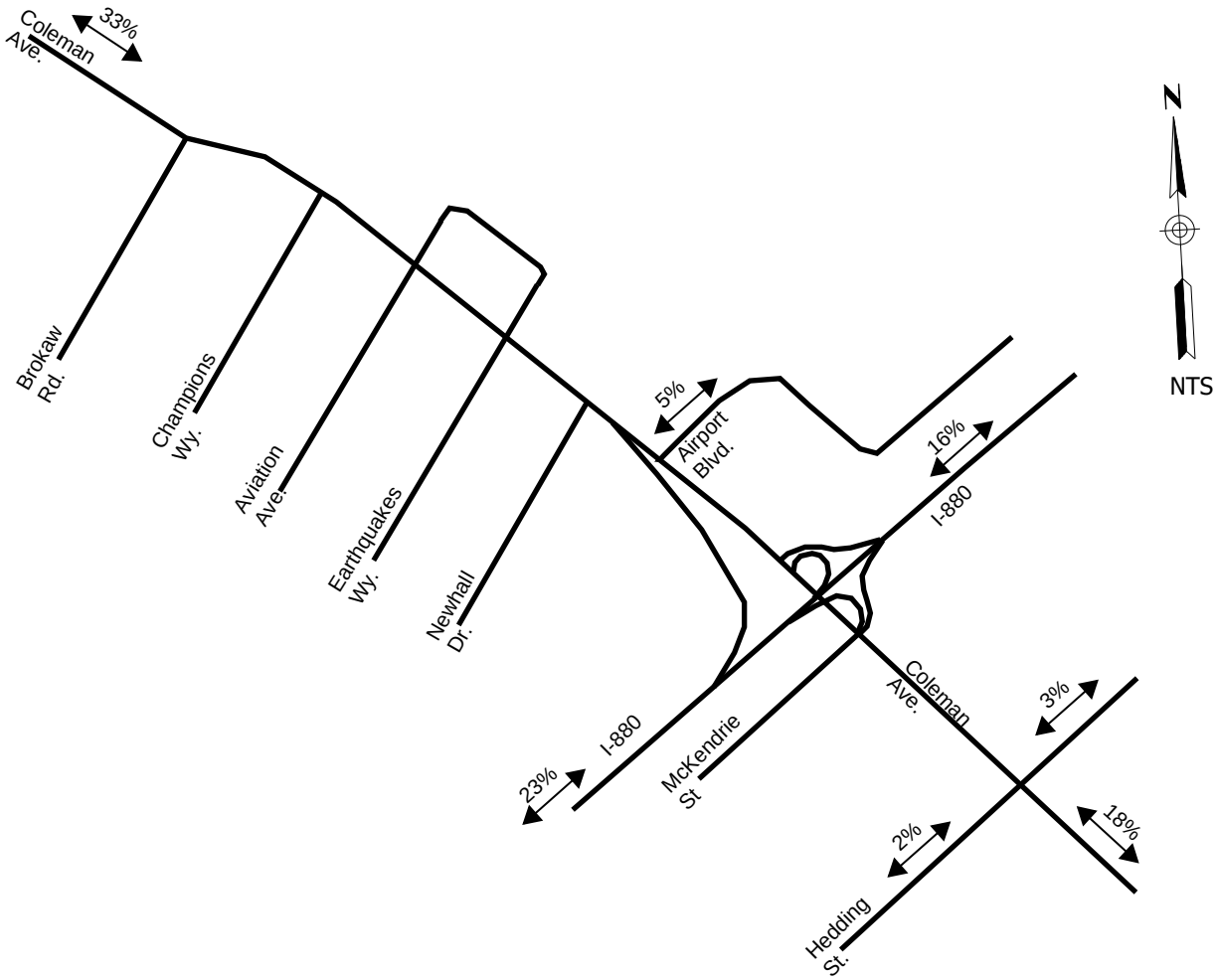
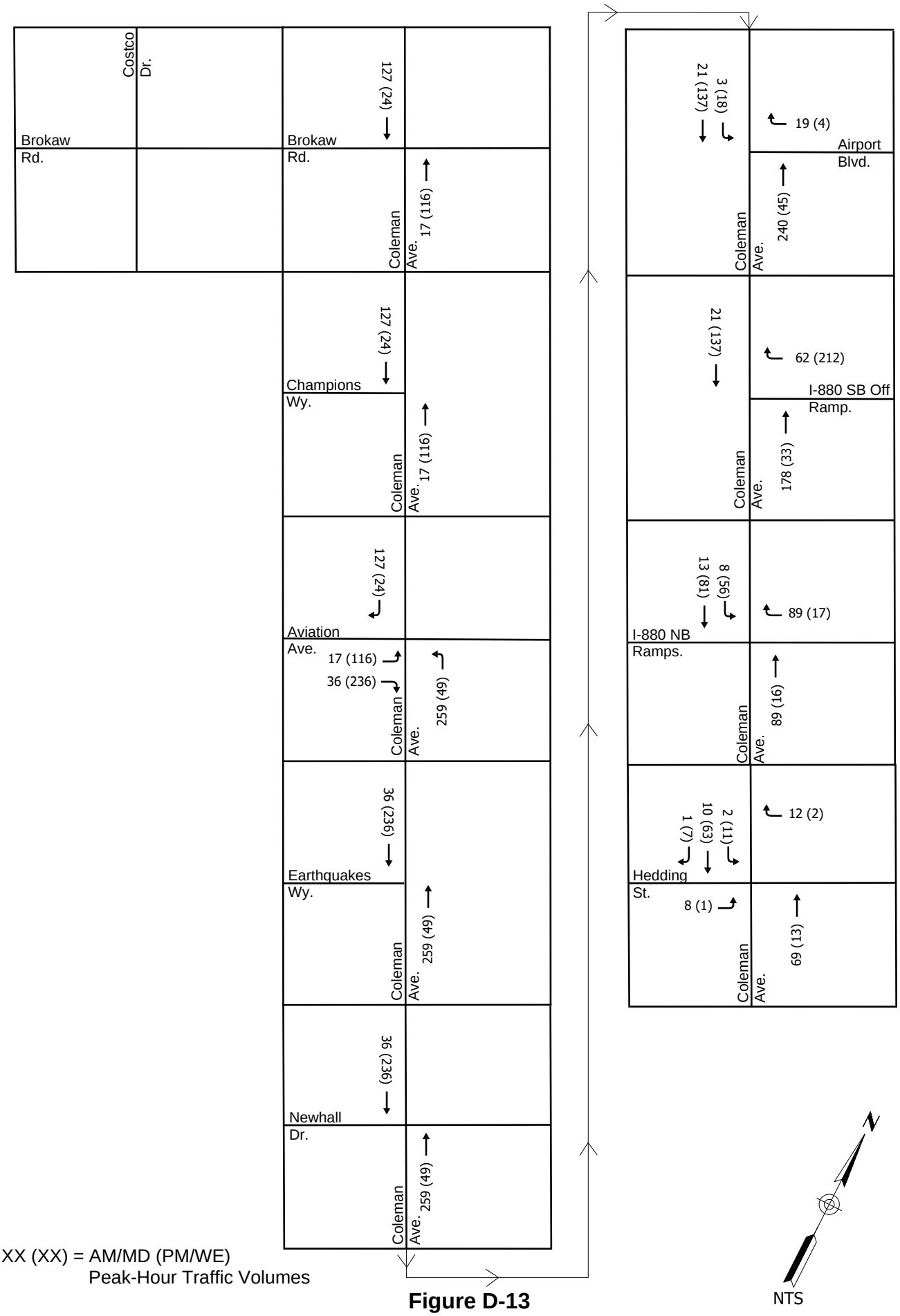
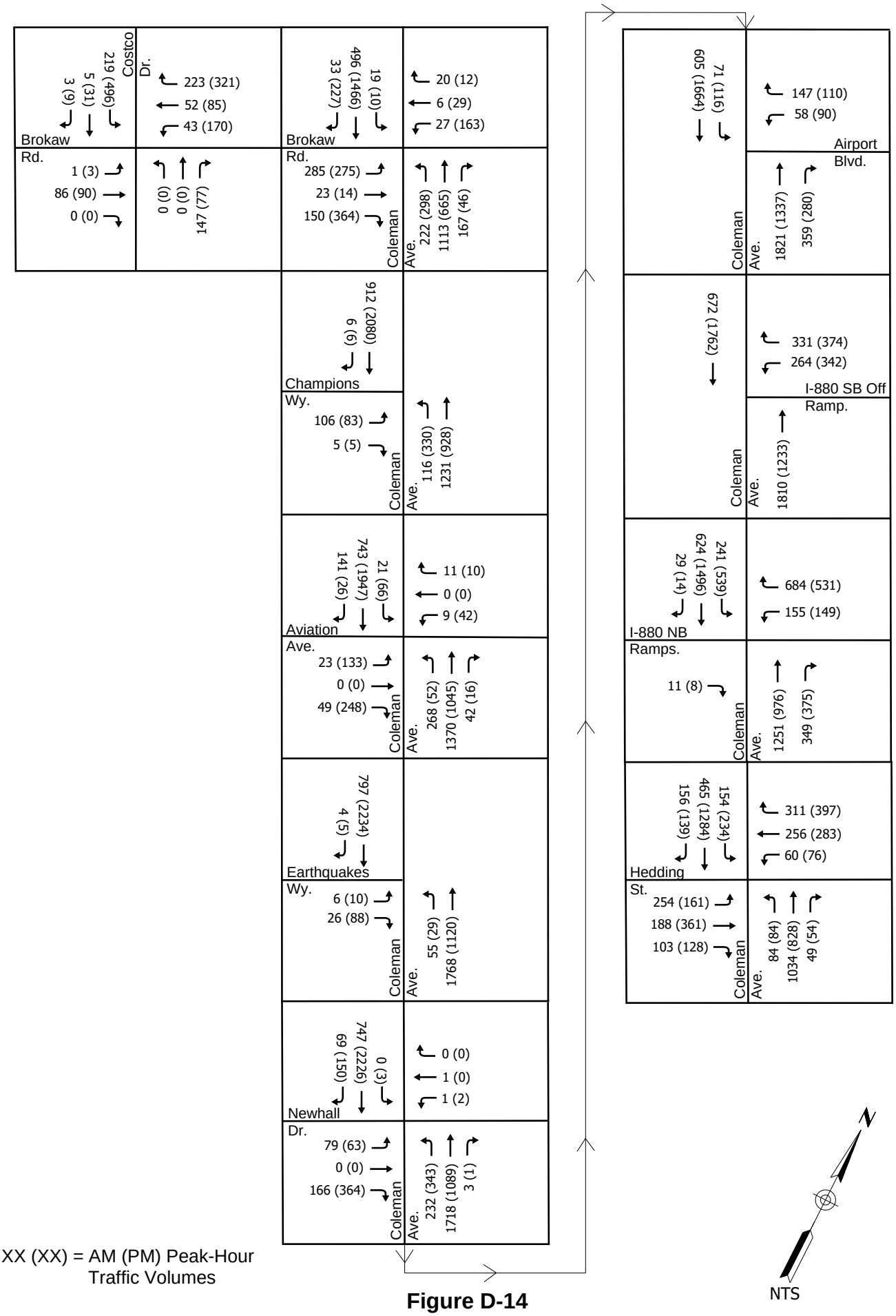


Figure D-12
Coleman Highline Trip Generation and Distribution



XX (XX) = AM/MD (PM/WE)
Peak-Hour Traffic Volumes

Figure D-13
Coleman Highline Trip Assignment



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

Figure D-14
2024 Background Volumes AM/PM

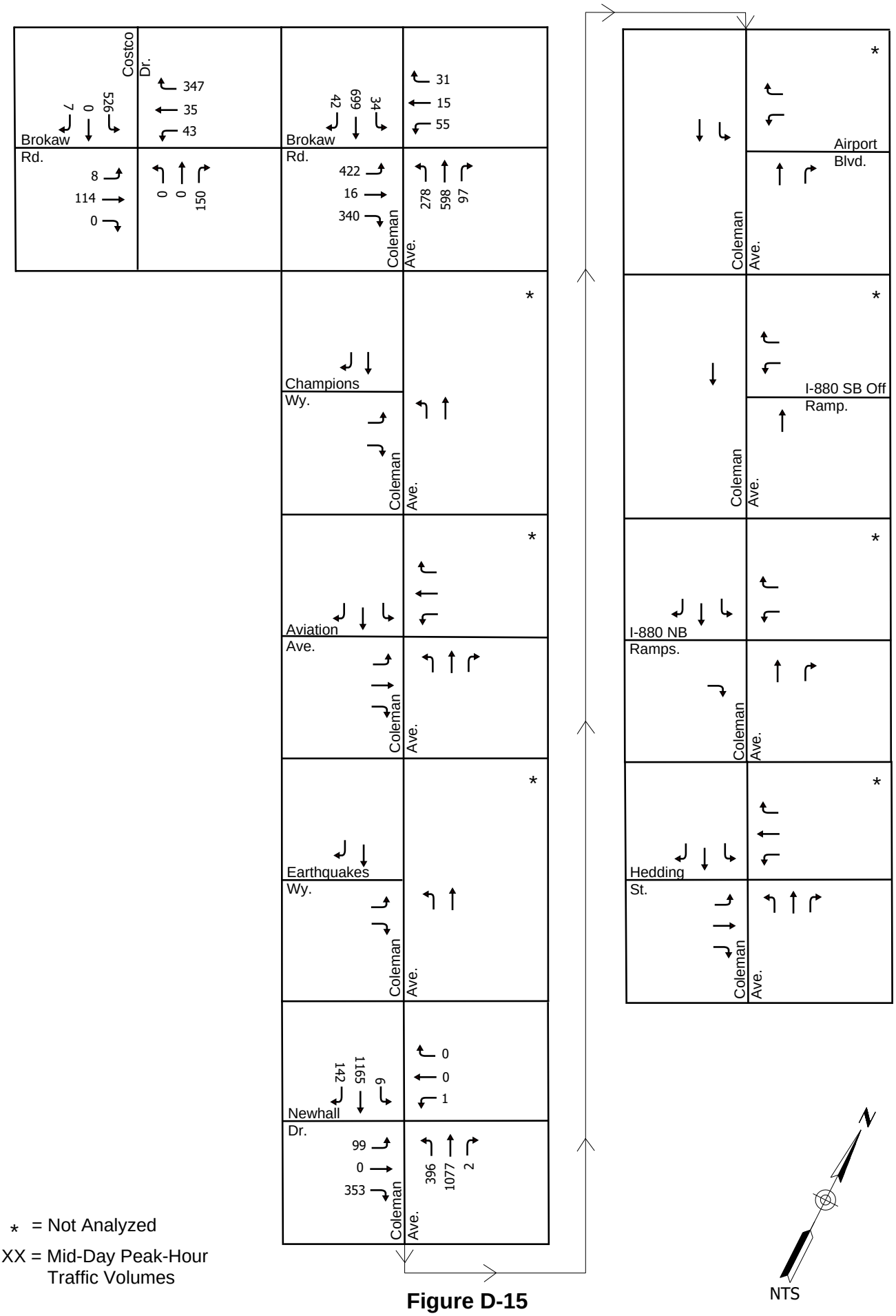


Figure D-15
2024 Background Volumes Mid-Day at 3 Int

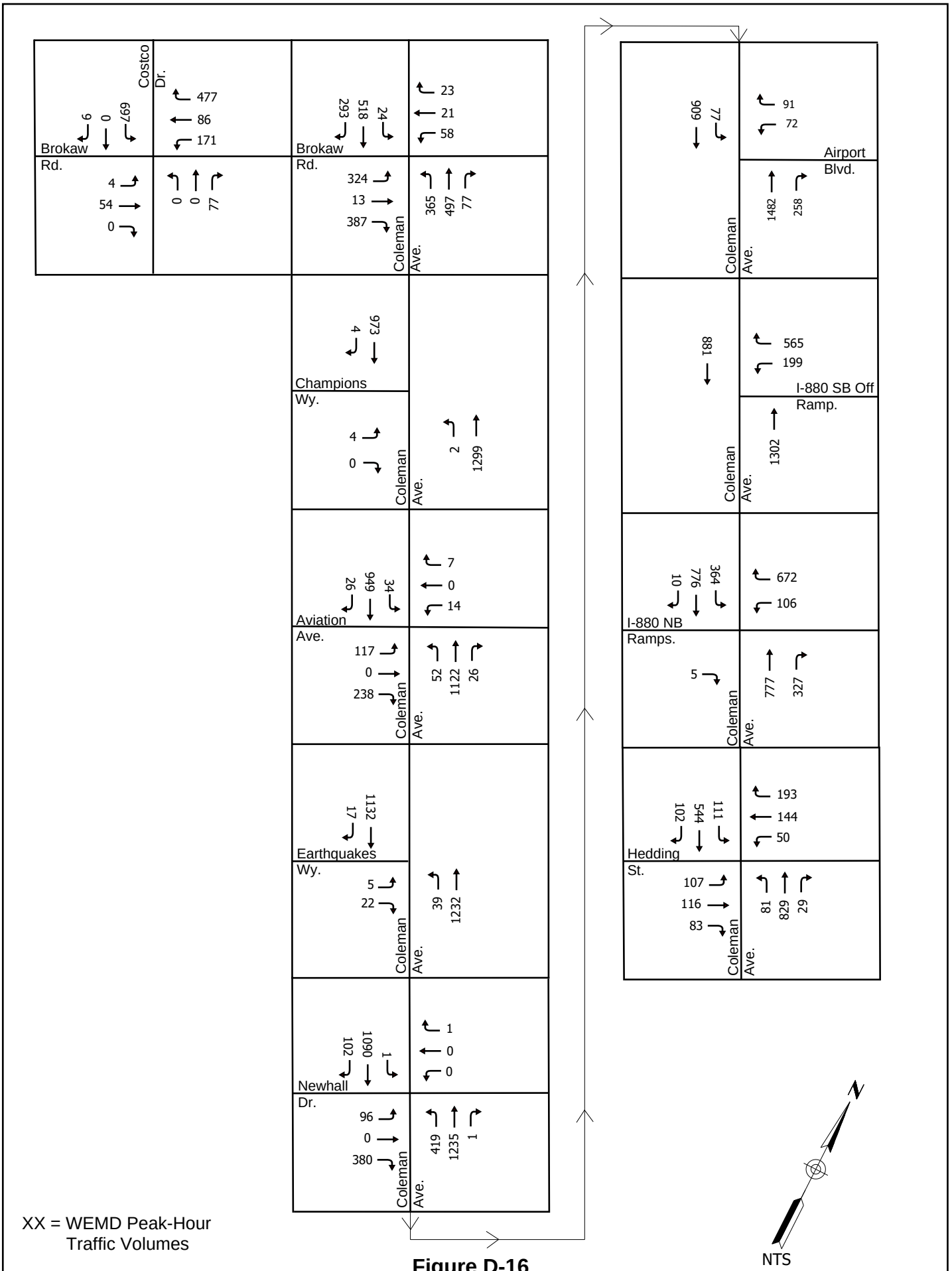
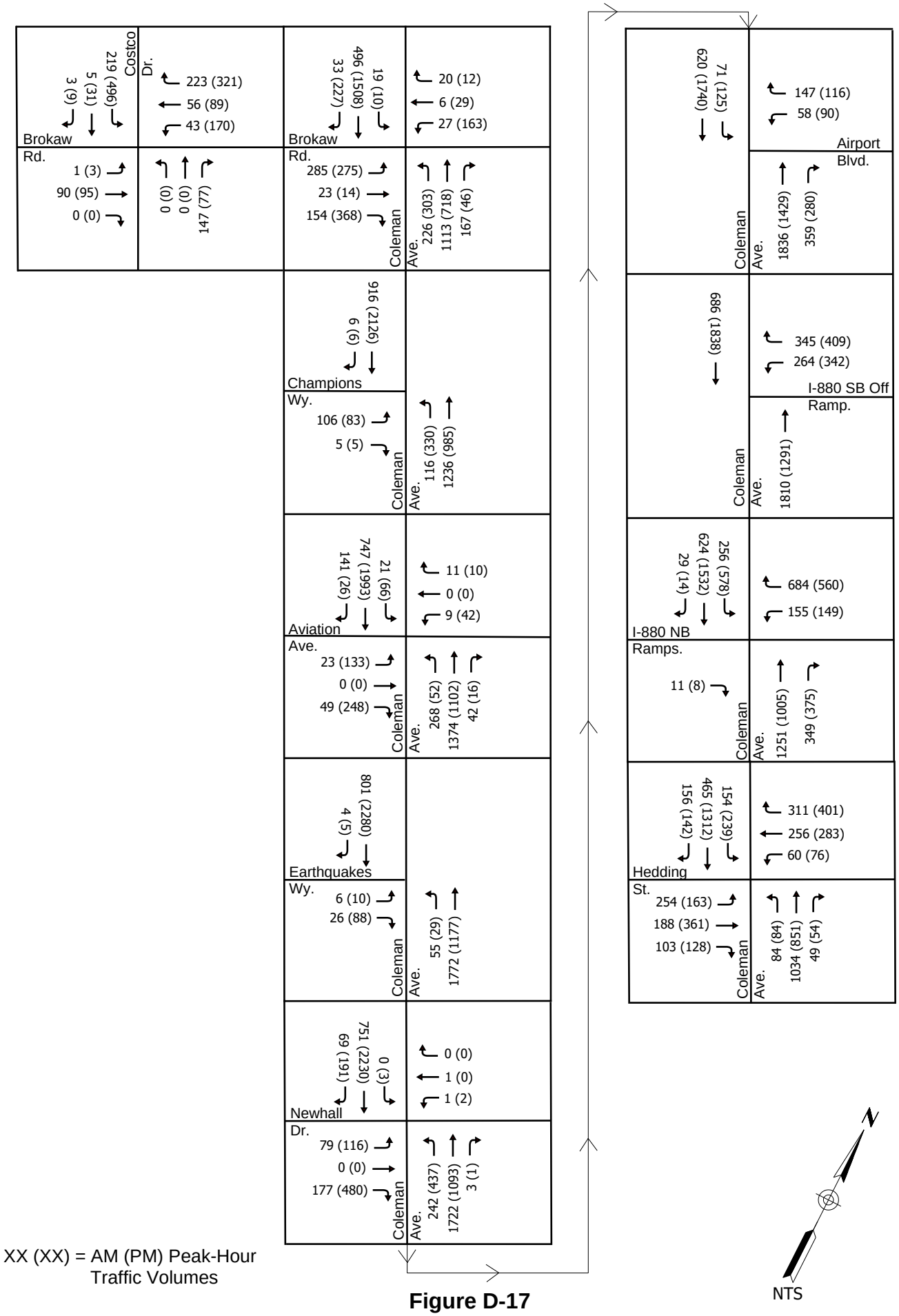


Figure D-16
2024 Background Volumes WEMD



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

Figure D-17
2024 Average Trucks Condition Total Volumes AM/PM

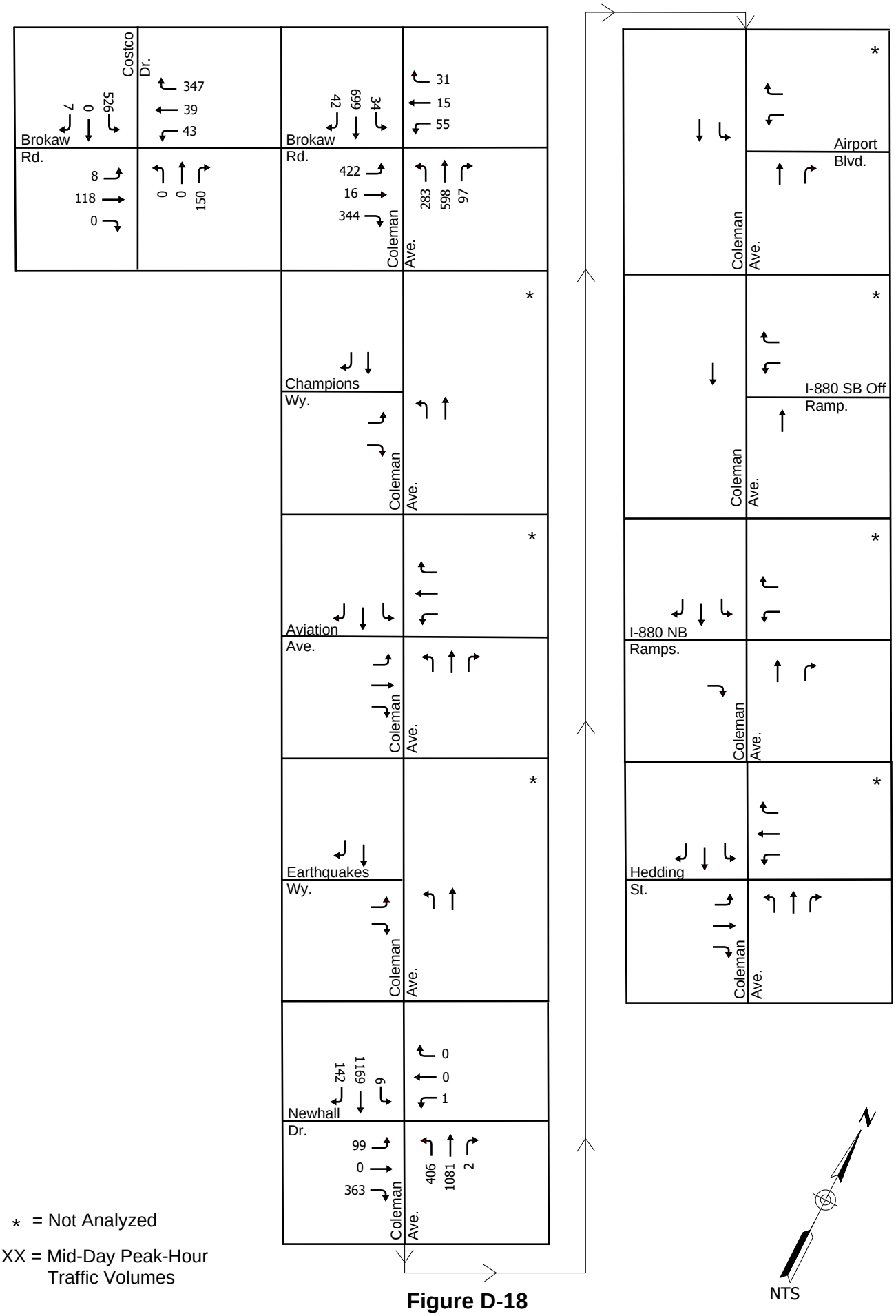


Figure D-18
2024 Average Trucks Condition Total Volumes Mid-Day at 3 Int

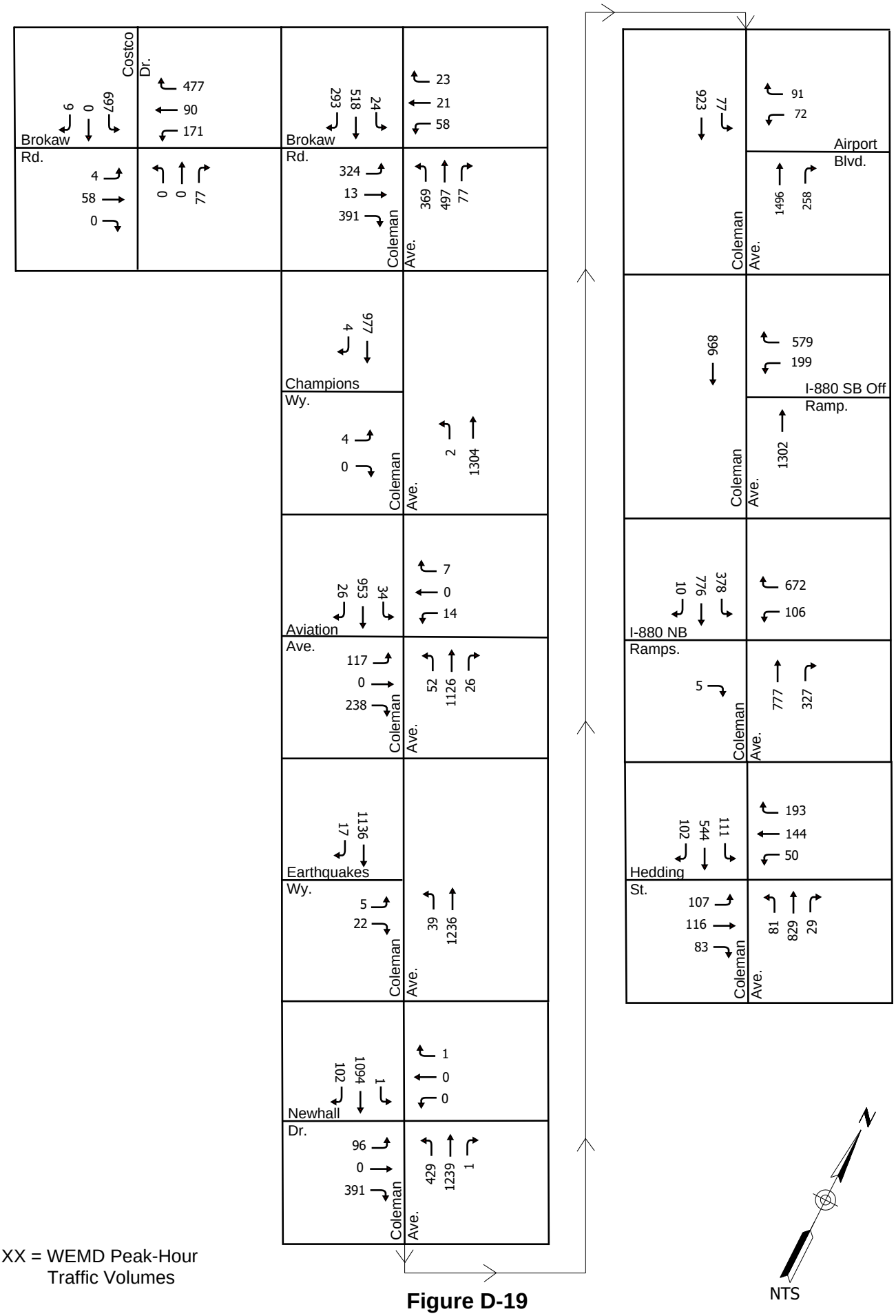


Figure D-19
2024 Average Trucks Condition Total Volumes WEMD

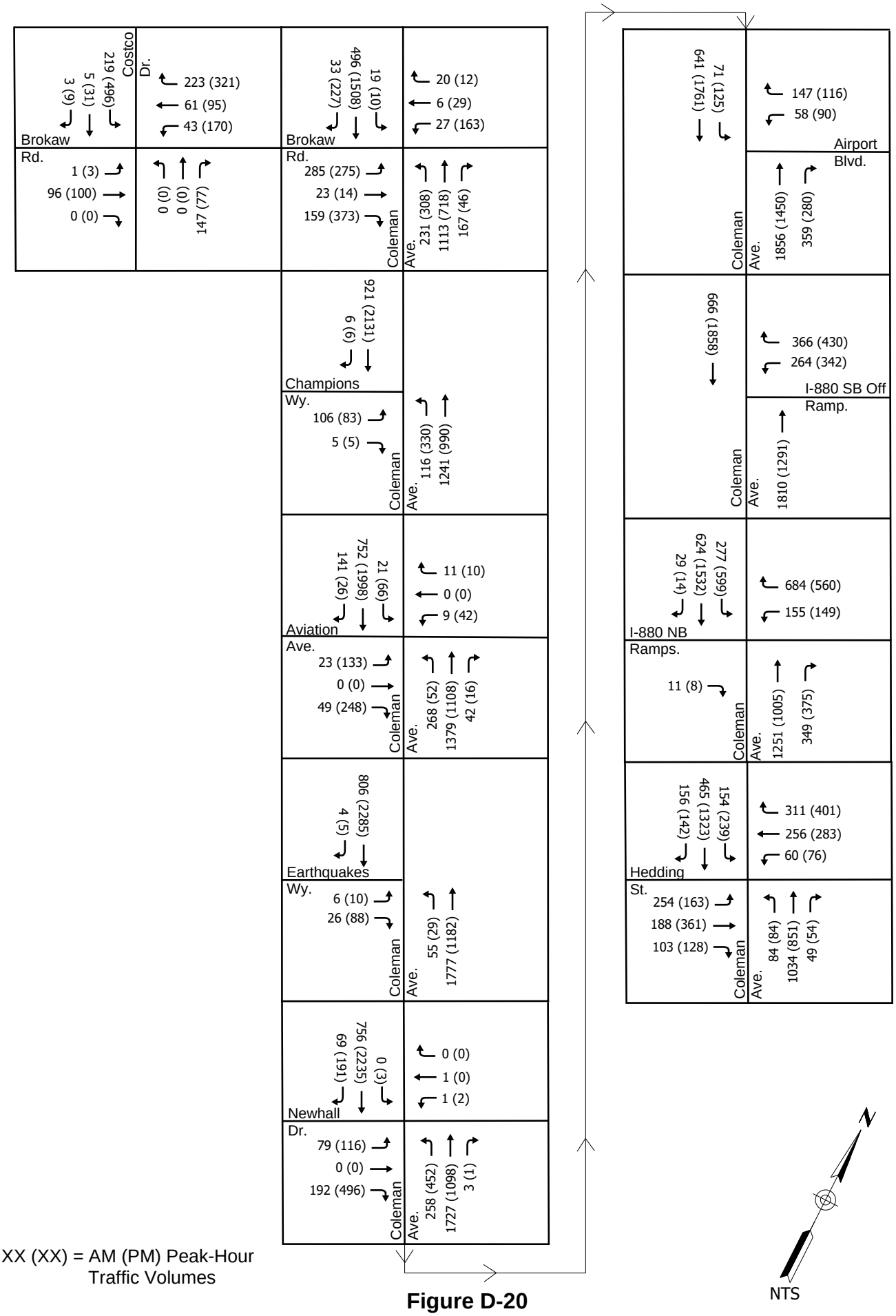


Figure D-20
2024 Peak Trucks Condition Total Volumes AM/PM

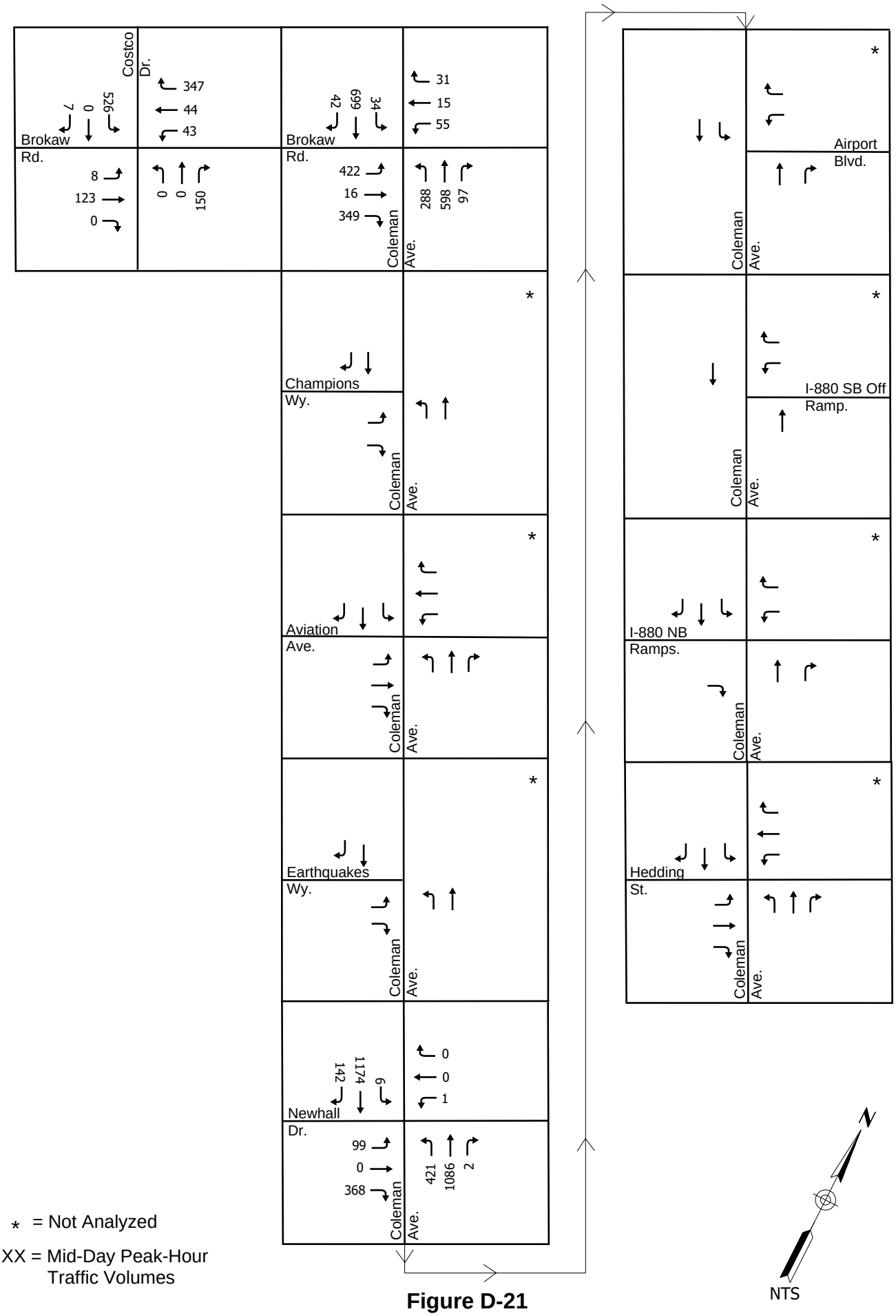


Figure D-21
2024 Peak Trucks Condition Total Volumes Mid-Day at 3 Int

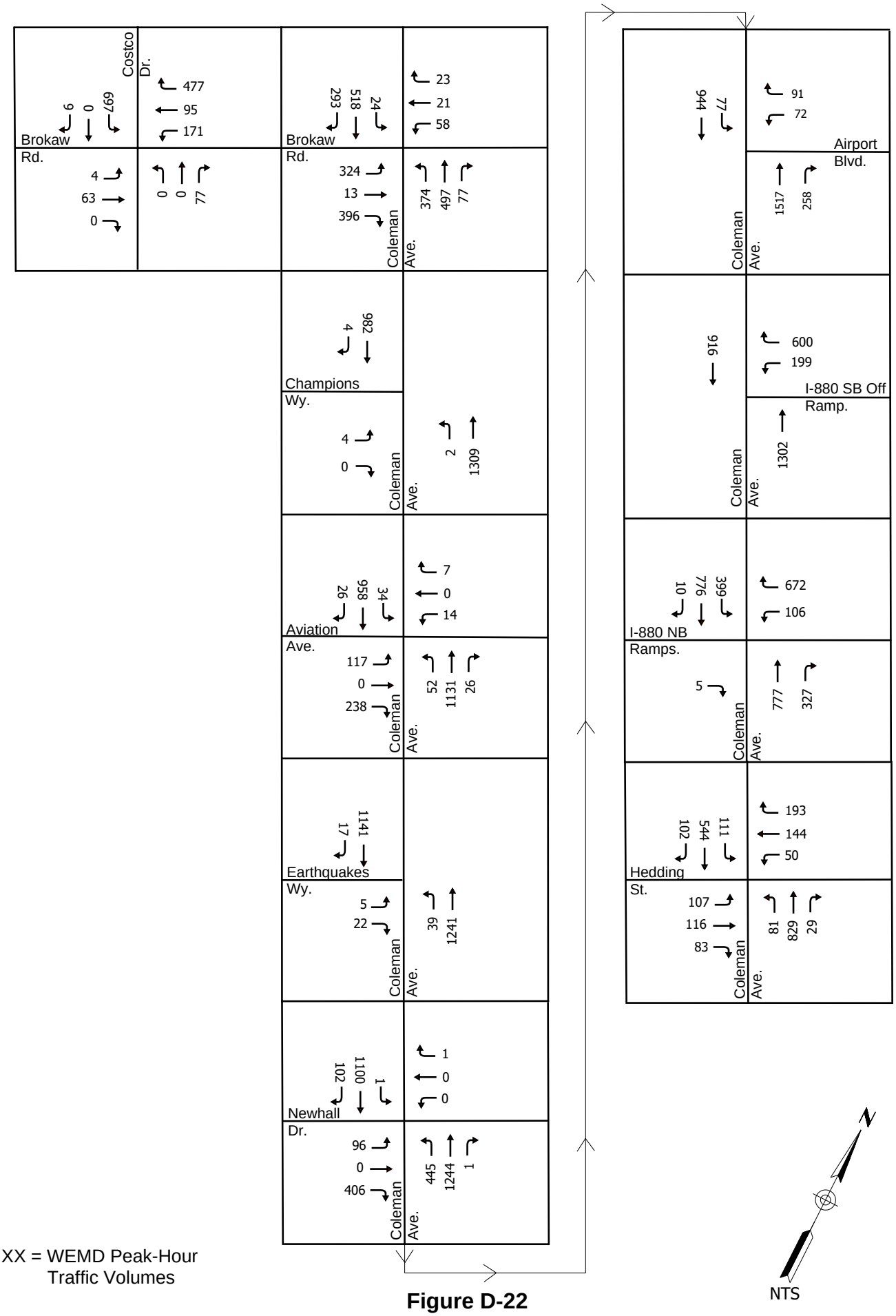


Figure D-22
2024 Peak Trucks Condition Total Volumes WEMD

D-3 QUEUING ANALYSIS

March 23, 2023

Jon Andresen, Jr.
Kiewit Shae Traylor, a Joint Venture
2830 De La Cruz Blvd., Santa Clara, CA 95050

RE: PayPal Park Events – Coleman Ave. & Newhall Dr. Queuing Analysis

1.0 Background

As part of the Contract Package 2 (CP2) West Portal Early Works Construction Transportation Management Plan (CTMP) review, a queuing analysis was requested for the Coleman Ave. & Newhall Dr. intersection to show what impacts, if any, may happen if truck hauling occurs during a weekday evening (Wednesday) or weekend evening (Saturday) PayPal Park event. As part of this request, the intersection was modeled in Trafficware's Synchro software using current intersection geometrics, event signal timing patterns, and typical event volumes as collected by the City of San Jose. This analysis looks at potential effects to queuing at the intersection, particularly the northbound left and eastbound right turns, during the ingress and egress conditions.

2.0 Assumptions

Several assumptions were necessary to complete the analysis. The assumptions were reviewed by project stakeholders prior to completing the final analysis. Those include:

- Ingress activity provided was for 1.5 hours and the egress was 1 hour. Therefore, ingress counts were factored down to 1 hour for analysis. Both were stated to be a typical event count.
- Signal controller event timing plans were used for the ingress (Pattern 21 - 150s Cycle Length for Weekday PM, Pattern 23 – 170s Cycle Length for Weekend PM) and egress (Pattern 27 – 210s Cycle Length for both Weekday and Weekend PM).
- The EBLT from Newhall Dr. to Coleman Ave. is closed during event egress. Instead of removing the movements from the models, the minor volumes were simply zeroed out to prevent detector and phase activation. As part of some of the controller patterns implemented, the SBLT phase is also omitted, therefore, that minor volume was also zeroed out.
- Analysis included the early works average trucks condition and assumed 75% of trucks would be using Newhall Dr. to access the project site. No development volumes or mitigation were included.
- For the weekday scenario, this analysis used the previously developed existing PM model as a base (with CTMP comment adjustments), factored those volumes up to 2023, and then replaced applicable existing volumes with the given PayPal volumes. For the weekend scenario, this analysis used recently collected Saturday PM peak volumes since they represented actual ingress conditions, and then the City provided PayPal event volumes were again used for the egress condition. Truck percentages were adjusted as part of the project inclusive scenarios.
- Analysis north of Newhall Dr. on Coleman Ave. was not completed, as an average of four trucks over an hour, only utilizing the through lanes, do not have a notable affect.

3.0 Queue Analysis

An analysis of the queue lengths and turn pockets was conducted at the intersection of Coleman Ave. & Newhall Dr. using the existing 2022 and 2023 traffic volumes, provided typical PayPal Park event ingress and egress volumes, provided traffic signal controller event timing patterns, and other analysis assumptions provided above. The tables below show the results of the analysis.

Intersection	Traffic Control	Direction	Weekday PM Ingress		Existing Pocket Length
			2023 PayPal Only 95th Percentile Queue	2023 PayPal + Avg Project Trks 95th Percentile Queue	
Coleman Ave. / Newhall Dr. / Fire Sta.	Signalized	NBL	#838	#853	[1]200'
		EBR	105	109	N/A
		Direction	Weekday PM Egress		Existing Pocket Length
			2023 PayPal Only 95th Percentile Queue	2023 PayPal + Avg Project Trks 95th Percentile Queue	
		NBL	#453	#470	[1]200'
		EBR	689	#730	N/A

Intersection	Traffic Control	Direction	Weekend PM Ingress		Existing Pocket Length
			2023 PayPal Only 95th Percentile Queue	2023 PayPal + Avg Project Trks 95th Percentile Queue	
Coleman Ave. / Newhall Dr. / Fire Sta.	Signalized	NBL	#443	#460	[1]200'
		EBR	84	88	N/A
		Direction	Weekend PM Egress		Existing Pocket Length
			2023 PayPal Only 95th Percentile Queue	2023 PayPal + Avg Project Trks 95th Percentile Queue	
		NBL	#451	#471	[1]200'
		EBR	629	646	N/A

[1] 200 foot left turn pocket plus approximately 800' left turn storage.
# 95th percentile volume exceeds capacity, queue may be longer.
NBL = Northbound Left, EBR = Eastbound Right, where Coleman Ave. is considered a N/S corridor.

Based on the queue analysis, it is concluded that the addition of project trucks does not lead to a significant increase in queuing over normal PayPal Park operations during the weekday or weekend ingress or egress events.

Re: VTA's BSVII CP2 CTMP for CSJ review by 02/15

Nelson, Brian <Brian.Nelson@sanjoseca.gov>

Tue 2/28/2023 8:33 AM

To: Erica Roecks <eroecks@vtabsv.com>;Lee, Jeff <Jeff.Lee@sanjoseca.gov>;Aoun, Alisar <Alisar.Aoun@sanjoseca.gov>;Lu, Stacey <Stacey.Lu@sanjoseca.gov>;Tani, Andrew <andrew.tani@sanjoseca.gov>;Sadorra, Rey <rey.sadorra@sanjoseca.gov>;Merrill, Thomas Jr. <thomas.merrill.jr@sanjoseca.gov>;Tranngo, Tan <tan.tranngo@sanjoseca.gov>

Cc: Bernice Alaniz <balaniz@vtabsv.com>;Merrick Howarth <mhowarth@vtabsv.com>;Paul Hetu <phetu@vtabsv.com>;Bruce Shewchuk <bshewchuk@vtabsv.com>;Erin Sheelen <esheelen@vtabsv.com>

Hi Erica,

The following are traffic counts that were obtained by our Signal Operations group during a typical PayPal Park event with ingress lasting approximately 1.5 hours and egress lasting approximately 1 hour.

Coleman is N/S, side streets are E/W

Ingress

Earthquakes & Coleman

Phase 1 (Left turn into earthquakes) = 1780 cars
Phase 2 (Southbound Coleman) = 1506 cars
Phase 2 (Southbound Coleman turning onto earthquakes) = 339 cars

Coleman & Newhall

Phase 1 (Left turn onto Newhall) = 1240
Phase 2 (Southbound Coleman) = 1256
Phase 2 (Right turn into Newhall) = 250
Phase 3 (Left turn onto N Coleman) = 464
Phase 8 (Right turn onto S Coleman) = 691

Egress

Earthquakes & Coleman

Phase 2 (Southbound Coleman) = 630 Cars
- Phase 2 count may be inaccurate due to the angle of the camera not allowing me to see into the far-right lane. Also Phase 8 Turning right used all 3 lanes

Phase 6 (Northbound Coleman) = 311 Cars
Phase 8 (Turning Left onto N. Coleman) = 106 cars
Phase 8 (Turning Right onto S. Coleman) = 1,209 Cars

Aviation & Coleman

Phase 1 (Northbound Left Turn onto Aviation): Total Cars = 102
-Only 26 cars made a correct left turn, while 76 made an illegal u turn.

Phase 2 (Southbound through): Total Cars = 425
Total Pedestrians: About 310

Phase 3 (Eastbound through/left): Total Cars = 856 Cars
-Left Turn: 770
-Right Turn: 76
-right turns due to lack of personnel before main egress period beginning and after main outflow of cars leaving.

Total Pedestrians: 83

Phase 6 (Northbound): Total Cars = 387
Phase 7 (Westbound Left onto Southbound Coleman): Total Cars = 58

Champion & Coleman

Phase 2 (Southbound): Total Cars = 419
Total Pedestrians = About 310
Phase 3 (Eastbound left onto Northbound Coleman): Total Cars = 923
Phase 4 (North leg crosswalk crossing Coleman: Total Pedestrians = 16
Phase 8 (Eastbound right onto Southbound Coleman): Total Cars = 14

Coleman & Newhall

Phase 1 (Northbound left onto Newhall): Total Cars = 282
Phase 2 (Southbound Coleman): Total Cars = 1768
Total Peds = 939
Phase 3 (Eastbound left onto Northbound Coleman): Total Cars = 21
Phase 8 (Eastbound right onto Southbound Coleman): Total Cars = 786
Phase 4 (North leg crosswalk crossing Coleman): Total Pedestrians = 19

Coleman & Mckendrie (Left Turn onto 880)

Total Cars = 1081

If you have any questions, please let us know.

Thanks.

Brian Nelson
Senior Engineer, Parking and Downtown Operations
City of San Jose, Department of Transportation
200 East Santa Clara Street, San Jose, CA 95113
408-975-3278

From: Erica Roecks <eroecks@vtabsv.com>
Sent: Friday, February 24, 2023 1:57 PM
To: Nelson, Brian <Brian.Nelson@sanjoseca.gov>; Lee, Jeff <Jeff.Lee@sanjoseca.gov>; Aoun, Alisar <Alisar.Aoun@sanjoseca.gov>; Lu, Stacey <Stacey.Lu@sanjoseca.gov>; Tani, Andrew <andrew.tani@sanjoseca.gov>; Sadorra, Rey <rey.sadorra@sanjoseca.gov>; Merrill, Thomas Jr. <thomas.merrill.jr@sanjoseca.gov>
Cc: Bernice Alaniz <balaniz@vtabsv.com>; Merrick Howarth <mhowarth@vtabsv.com>; Paul Hetu <phetu@vtabsv.com>; Bruce Shewchuk <bshewchuk@vtabsv.com>; Erin Sheelen <esheelen@vtabsv.com>
Subject: Re: VTA's BSVII CP2 CTMP for CSJ review by 02/15

[External Email]

Great, thank you Brian!!

Erica

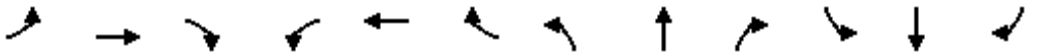
Erica Roecks, PE

Lane Group	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	854	307	907	2043
v/c Ratio	0.77	1.18	0.26	0.69
Control Delay	56.8	182.5	13.4	32.0
Queue Delay	0.0	0.0	0.0	13.5
Total Delay	56.8	182.5	13.4	45.5
Queue Length 50th (ft)	532	~285	174	706
Queue Length 95th (ft)	629	#451	210	749
Internal Link Dist (ft)			154	662
Turn Bay Length (ft)		200		
Base Capacity (vph)	1088	261	3517	2967
Starvation Cap Reductn	0	0	0	947
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.78	1.18	0.26	1.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	786	0	0	0	282	870	1	0	1768	116
Future Volume (vph)	0	0	786	0	0	0	282	870	1	0	1768	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.7				5.7	5.7			5.7	
Lane Util. Factor			0.88				0.97	0.91			0.91	
Frt			0.85				1.00	1.00			0.99	
Flt Protected			1.00				0.95	1.00			1.00	
Satd. Flow (prot)			2842				3467	5135			5090	
Flt Permitted			1.00				0.95	1.00			1.00	
Satd. Flow (perm)			2842				3467	5135			5090	
Peak-hour factor, PHF	0.96	0.96	0.92	0.96	0.96	0.96	0.92	0.96	0.96	0.96	0.92	0.96
Adj. Flow (vph)	0	0	854	0	0	0	307	906	1	0	1922	121
RTOR Reduction (vph)	0	0	73	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	0	781	0	0	0	307	907	0	0	2040	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type			custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)			76.3				15.8	143.8			122.3	
Effective Green, g (s)			71.3				15.8	143.8			122.3	
Actuated g/C Ratio			0.34				0.08	0.68			0.58	
Clearance Time (s)							5.7	5.7			5.7	
Vehicle Extension (s)							3.0	5.0			5.0	
Lane Grp Cap (vph)			964				260	3516			2964	
v/s Ratio Prot			c0.27				c0.09	0.18			c0.40	
v/s Ratio Perm												
v/c Ratio			0.81				1.18	0.26			0.69	
Uniform Delay, d1			63.2				97.1	12.7			30.6	
Progression Factor			1.00				1.00	1.00			1.00	
Incremental Delay, d2			5.2				113.7	0.2			1.3	
Delay (s)			68.4				210.8	12.9			31.9	
Level of Service			E				F	B			C	
Approach Delay (s)		68.4			0.0			62.9			31.9	
Approach LOS		E			A			E			C	

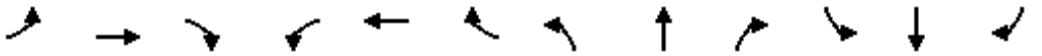
Intersection Summary			
HCM 2000 Control Delay	48.6	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	210.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	73.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	306	452	567	1618	964
v/c Ratio	1.25	0.25	0.95	0.60	0.60
Control Delay	195.5	6.9	95.0	29.1	49.6
Queue Delay	0.0	0.0	0.0	1.5	0.0
Total Delay	195.5	6.9	95.0	30.6	49.6
Queue Length 50th (ft)	~423	53	326	449	327
Queue Length 95th (ft)	#626	84	#443	495	377
Internal Link Dist (ft)	573			154	662
Turn Bay Length (ft)			200		
Base Capacity (vph)	245	1836	597	2697	1620
Starvation Cap Reductn	0	0	0	827	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.25	0.25	0.95	0.87	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	294	0	434	0	0	0	544	1552	1	0	809	116
Future Volume (vph)	294	0	434	0	0	0	544	1552	1	0	809	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7				5.7	5.7			5.7	
Lane Util. Factor		1.00	0.88				0.97	0.91			0.91	
Frt		1.00	0.85				1.00	1.00			0.98	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1805	2842				3467	5135			5039	
Flt Permitted		0.76	1.00				0.95	1.00			1.00	
Satd. Flow (perm)		1439	2842				3467	5135			5039	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	306	0	452	0	0	0	567	1617	1	0	843	121
RTOR Reduction (vph)	0	0	100	0	0	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	306	352	0	0	0	567	1618	0	0	953	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		29.0	104.3				29.3	89.3			54.3	
Effective Green, g (s)		29.0	99.3				29.3	89.3			54.3	
Actuated g/C Ratio		0.17	0.58				0.17	0.53			0.32	
Clearance Time (s)		4.0					5.7	5.7			5.7	
Vehicle Extension (s)		4.0					3.0	5.0			5.0	
Lane Grp Cap (vph)		245	1660				597	2697			1609	
v/s Ratio Prot			c0.12				c0.16	c0.32			0.19	
v/s Ratio Perm		c0.21										
v/c Ratio		1.25	0.21				0.95	0.60			0.59	
Uniform Delay, d1		70.5	16.8				69.6	28.0			48.6	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		141.3	0.1				24.6	1.0			1.6	
Delay (s)		211.8	16.8				94.3	29.0			50.2	
Level of Service		F	B				F	C			D	
Approach Delay (s)		95.5			0.0			45.9			50.2	
Approach LOS		F			A			D			D	

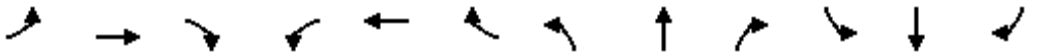
Intersection Summary			
HCM 2000 Control Delay	56.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBR	WBL	NBL	NBT	SBT
Lane Group Flow (vph)	854	2	306	728	2077
v/c Ratio	0.80	0.06	1.25	0.21	0.70
Control Delay	60.4	103.5	209.8	13.1	32.4
Queue Delay	0.0	0.0	0.0	0.0	16.8
Total Delay	60.4	103.5	209.8	13.1	49.3
Queue Length 50th (ft)	540	3	~304	137	726
Queue Length 95th (ft)	689	15	#453	166	769
Internal Link Dist (ft)				154	662
Turn Bay Length (ft)			200		
Base Capacity (vph)	1061	34	244	3461	2959
Starvation Cap Reductn	0	0	0	0	928
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.80	0.06	1.25	0.21	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	770	2	0	0	276	670	1	0	1733	144
Future Volume (vph)	0	0	770	2	0	0	276	670	1	0	1733	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.7	4.0			5.7	5.7			5.7	
Lane Util. Factor			0.88	1.00			0.97	0.91			0.91	
Frpb, ped/bikes			1.00	1.00			1.00	1.00			1.00	
Flpb, ped/bikes			1.00	1.00			1.00	1.00			1.00	
Frt			0.85	1.00			1.00	1.00			0.99	
Flt Protected			1.00	0.95			0.95	1.00			1.00	
Satd. Flow (prot)			2814	1203			3433	5084			5072	
Flt Permitted			1.00	0.95			0.95	1.00			1.00	
Satd. Flow (perm)			2814	1203			3433	5084			5072	
Peak-hour factor, PHF	0.92	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	854	2	0	0	306	727	1	0	1921	156
RTOR Reduction (vph)	0	0	68	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	0	786	2	0	0	306	728	0	0	2072	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	1%	1%	1%	50%	50%	50%	2%	2%	2%	1%	1%	1%
Turn Type			custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)			74.3	1.2			14.9	139.7			119.1	
Effective Green, g (s)			69.3	1.2			14.9	139.7			119.1	
Actuated g/C Ratio			0.33	0.01			0.07	0.67			0.57	
Clearance Time (s)				4.0			5.7	5.7			5.7	
Vehicle Extension (s)				3.0			3.0	5.0			5.0	
Lane Grp Cap (vph)			928	6			243	3382			2876	
v/s Ratio Prot			c0.28				c0.09	0.14			c0.41	
v/s Ratio Perm				c0.00								
v/c Ratio			0.85	0.33			1.26	0.22			0.72	
Uniform Delay, d1			65.4	104.0			97.5	13.7			33.3	
Progression Factor			1.00	1.00			1.00	1.00			1.00	
Incremental Delay, d2			7.2	30.0			145.5	0.1			1.6	
Delay (s)			72.6	134.0			243.1	13.9			34.9	
Level of Service			E	F			F	B			C	
Approach Delay (s)		72.6			134.0			81.7			34.9	
Approach LOS		E			F			F			C	

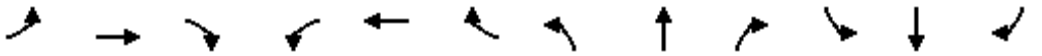
Intersection Summary			
HCM 2000 Control Delay	55.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	210.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	81.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	336	500	2	898	728	3	1091
v/c Ratio	1.22	0.27	0.04	2.01	0.32	0.05	0.73
Control Delay	177.1	7.2	71.0	495.0	27.5	72.0	49.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	177.1	7.2	71.0	495.0	27.5	72.0	49.6
Queue Length 50th (ft)	~402	56	2	~705	161	3	344
Queue Length 95th (ft)	#605	105	12	#838	220	15	400
Internal Link Dist (ft)	573				154		662
Turn Bay Length (ft)				200		175	
Base Capacity (vph)	275	1823	50	446	2281	59	1494
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.22	0.27	0.04	2.01	0.32	0.05	0.73

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	303	0	451	2	0	0	810	670	1	3	821	163
Future Volume (vph)	303	0	451	2	0	0	810	670	1	3	821	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1787	2814	1203			3467	5084		1787	4996	
Flt Permitted		0.76	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1424	2814	1267			3467	5084		1787	4996	
Peak-hour factor, PHF	0.92	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.92
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	336	0	500	2	0	0	898	727	1	3	910	181
RTOR Reduction (vph)	0	0	100	0	0	0	0	0	0	0	20	0
Lane Group Flow (vph)	0	336	400	2	0	0	898	728	0	3	1071	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	1%	1%	1%	50%	50%	50%	1%	2%	2%	1%	1%	1%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		32.2	92.3	1.2			19.3	60.1		1.0	41.1	
Effective Green, g (s)		32.2	87.3	1.2			19.3	60.1		1.0	41.1	
Actuated g/C Ratio		0.21	0.58	0.01			0.13	0.40		0.01	0.27	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		305	1637	10			446	2036		11	1368	
v/s Ratio Prot			c0.14				c0.26	0.14		0.00	c0.21	
v/s Ratio Perm		c0.24		c0.00								
v/c Ratio		1.10	0.24	0.20			2.01	0.36		0.27	0.78	
Uniform Delay, d1		58.9	15.3	73.9			65.3	31.4		74.1	50.3	
Progression Factor		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		81.6	0.1	9.6			463.9	0.5		13.0	4.5	
Delay (s)		140.5	15.4	83.6			529.3	31.9		87.1	54.9	
Level of Service		F	B	F			F	C		F	D	
Approach Delay (s)		65.7			83.6			306.6			54.9	
Approach LOS		E			F			F			D	

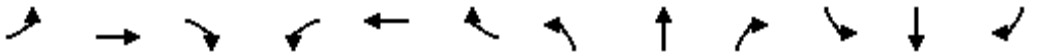
Intersection Summary			
HCM 2000 Control Delay	172.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBR	WBL	NBL	NBT	SBT
Lane Group Flow (vph)	865	2	317	732	2082
v/c Ratio	0.82	0.06	1.43	0.21	0.70
Control Delay	61.7	103.5	277.3	13.6	32.5
Queue Delay	0.0	0.0	0.0	0.0	17.5
Total Delay	61.7	103.5	277.3	13.6	50.0
Queue Length 50th (ft)	554	3	~350	143	730
Queue Length 95th (ft)	#730	15	#470	167	773
Internal Link Dist (ft)				154	662
Turn Bay Length (ft)			200		
Base Capacity (vph)	1048	34	221	3430	2959
Starvation Cap Reductn	0	0	0	0	927
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.83	0.06	1.43	0.21	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	780	2	0	0	286	674	1	0	1737	144
Future Volume (vph)	0	0	780	2	0	0	286	674	1	0	1737	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.7	4.0			5.7	5.7			5.7	
Lane Util. Factor			0.88	1.00			0.97	0.91			0.91	
Frpb, ped/bikes			1.00	1.00			1.00	1.00			1.00	
Flpb, ped/bikes			1.00	1.00			1.00	1.00			1.00	
Frt			0.85	1.00			1.00	1.00			0.99	
Flt Protected			1.00	0.95			0.95	1.00			1.00	
Satd. Flow (prot)			2787	1203			3400	5084			5072	
Flt Permitted			1.00	0.95			0.95	1.00			1.00	
Satd. Flow (perm)			2787	1203			3400	5084			5072	
Peak-hour factor, PHF	0.92	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.94
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	865	2	0	0	317	731	1	0	1926	156
RTOR Reduction (vph)	0	0	68	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	0	797	2	0	0	317	732	0	0	2077	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	2%	1%	2%	50%	50%	50%	3%	2%	2%	1%	1%	1%
Turn Type			custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)			74.3	1.2			13.7	138.5			119.1	
Effective Green, g (s)			69.3	1.2			13.7	138.5			119.1	
Actuated g/C Ratio			0.33	0.01			0.07	0.66			0.57	
Clearance Time (s)				4.0			5.7	5.7			5.7	
Vehicle Extension (s)				3.0			3.0	5.0			5.0	
Lane Grp Cap (vph)			919	6			221	3353			2876	
v/s Ratio Prot			c0.29				c0.09	0.14			c0.41	
v/s Ratio Perm				c0.00								
v/c Ratio			0.87	0.33			1.43	0.22			0.72	
Uniform Delay, d1			66.0	104.0			98.2	14.2			33.3	
Progression Factor			1.00	1.00			1.00	1.00			1.00	
Incremental Delay, d2			8.7	30.0			219.4	0.1			1.6	
Delay (s)			74.7	134.0			317.6	14.4			34.9	
Level of Service			E	F			F	B			C	
Approach Delay (s)		74.7			134.0			106.0			34.9	
Approach LOS		E			F			F			C	

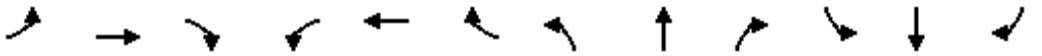
Intersection Summary			
HCM 2000 Control Delay	62.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	210.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	WBL	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	336	511	2	909	732	3	1096
v/c Ratio	1.24	0.28	0.04	2.06	0.32	0.05	0.74
Control Delay	182.0	7.4	71.0	515.7	27.6	72.0	50.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	182.0	7.4	71.0	515.7	27.6	72.0	50.0
Queue Length 50th (ft)	~405	59	2	~719	162	3	347
Queue Length 95th (ft)	#608	109	12	#853	221	15	404
Internal Link Dist (ft)	573				154		662
Turn Bay Length (ft)				200		175	
Base Capacity (vph)	272	1806	50	441	2281	59	1480
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.24	0.28	0.04	2.06	0.32	0.05	0.74

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	303	0	461	2	0	0	820	674	1	3	825	163
Future Volume (vph)	303	0	461	2	0	0	820	674	1	3	825	163
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1770	2787	1203			3433	5084		1787	4947	
Flt Permitted		0.76	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1410	2787	1267			3433	5084		1787	4947	
Peak-hour factor, PHF	0.92	0.94	0.92	0.94	0.94	0.94	0.92	0.94	0.94	0.94	0.92	0.92
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	336	0	511	2	0	0	909	731	1	3	915	181
RTOR Reduction (vph)	0	0	100	0	0	0	0	0	0	0	20	0
Lane Group Flow (vph)	0	336	411	2	0	0	909	732	0	3	1076	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	2%	1%	2%	50%	50%	50%	2%	2%	2%	1%	2%	2%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		32.2	92.3	1.2			19.3	60.1		1.0	41.1	
Effective Green, g (s)		32.2	87.3	1.2			19.3	60.1		1.0	41.1	
Actuated g/C Ratio		0.21	0.58	0.01			0.13	0.40		0.01	0.27	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		302	1622	10			441	2036		11	1355	
v/s Ratio Prot			c0.15				c0.26	0.14		0.00	c0.22	
v/s Ratio Perm		c0.24		c0.00								
v/c Ratio		1.11	0.25	0.20			2.06	0.36		0.27	0.79	
Uniform Delay, d1		58.9	15.4	73.9			65.3	31.5		74.1	50.5	
Progression Factor		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		85.5	0.1	9.6			485.4	0.5		13.0	4.9	
Delay (s)		144.4	15.5	83.6			550.7	32.0		87.1	55.4	
Level of Service		F	B	F			F	C		F	E	
Approach Delay (s)		66.6			83.6			319.3			55.5	
Approach LOS		E			F			F			E	

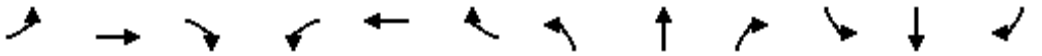
Intersection Summary			
HCM 2000 Control Delay	178.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	87.2%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	865	317	911	2047
v/c Ratio	0.79	1.36	0.26	0.69
Control Delay	58.1	248.8	13.8	32.0
Queue Delay	0.0	0.0	0.0	13.9
Total Delay	58.1	248.8	13.8	45.9
Queue Length 50th (ft)	546	~332	182	708
Queue Length 95th (ft)	646	#471	212	752
Internal Link Dist (ft)			154	662
Turn Bay Length (ft)		200		
Base Capacity (vph)	1091	233	3451	2967
Starvation Cap Reductn	0	0	0	946
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.79	1.36	0.26	1.01

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	796	0	0	0	292	874	1	0	1772	116
Future Volume (vph)	0	0	796	0	0	0	292	874	1	0	1772	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)			5.7				5.7	5.7			5.7	
Lane Util. Factor			0.88				0.97	0.91			0.91	
Frt			0.85				1.00	1.00			0.99	
Flt Protected			1.00				0.95	1.00			1.00	
Satd. Flow (prot)			2814				3367	5085			5090	
Flt Permitted			1.00				0.95	1.00			1.00	
Satd. Flow (perm)			2814				3367	5085			5090	
Peak-hour factor, PHF	0.96	0.96	0.92	0.96	0.96	0.96	0.92	0.96	0.96	0.96	0.92	0.96
Adj. Flow (vph)	0	0	865	0	0	0	317	910	1	0	1926	121
RTOR Reduction (vph)	0	0	72	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	0	793	0	0	0	317	911	0	0	2044	0
Heavy Vehicles (%)	0%	0%	1%	0%	0%	0%	4%	2%	1%	1%	1%	1%
Turn Type			custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)			76.3				14.5	142.5			122.3	
Effective Green, g (s)			71.3				14.5	142.5			122.3	
Actuated g/C Ratio			0.34				0.07	0.68			0.58	
Clearance Time (s)							5.7	5.7			5.7	
Vehicle Extension (s)							3.0	5.0			5.0	
Lane Grp Cap (vph)			955				232	3450			2964	
v/s Ratio Prot			c0.28				c0.09	0.18			c0.40	
v/s Ratio Perm												
v/c Ratio			0.83				1.37	0.26			0.69	
Uniform Delay, d1			63.8				97.8	13.2			30.6	
Progression Factor			1.00				1.00	1.00			1.00	
Incremental Delay, d2			6.2				190.0	0.2			1.3	
Delay (s)			70.0				287.7	13.4			31.9	
Level of Service			E				F	B			C	
Approach Delay (s)		70.0			0.0			84.2			31.9	
Approach LOS		E			A			F			C	

Intersection Summary			
HCM 2000 Control Delay	55.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	210.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	74.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Lane Group	EBT	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	306	463	577	1622	968
v/c Ratio	1.25	0.26	0.98	0.60	0.60
Control Delay	195.5	7.2	100.4	29.2	49.8
Queue Delay	0.0	0.0	0.0	1.5	0.0
Total Delay	195.5	7.2	100.4	30.7	49.8
Queue Length 50th (ft)	~423	57	334	450	329
Queue Length 95th (ft)	#626	88	#460	497	380
Internal Link Dist (ft)	573			154	662
Turn Bay Length (ft)			200		
Base Capacity (vph)	245	1802	591	2697	1606
Starvation Cap Reductn	0	0	0	826	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.25	0.26	0.98	0.87	0.60

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
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95th percentile volume exceeds capacity, queue may be longer.
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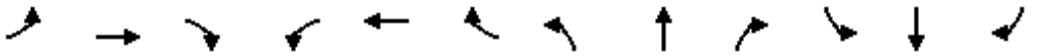


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	294	0	444	0	0	0	554	1556	1	0	813	116
Future Volume (vph)	294	0	444	0	0	0	554	1556	1	0	813	116
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7				5.7	5.7			5.7	
Lane Util. Factor		1.00	0.88				0.97	0.91			0.91	
Frt		1.00	0.85				1.00	1.00			0.98	
Flt Protected		0.95	1.00				0.95	1.00			1.00	
Satd. Flow (prot)		1805	2787				3433	5135			4996	
Flt Permitted		0.76	1.00				0.95	1.00			1.00	
Satd. Flow (perm)		1439	2787				3433	5135			4996	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	306	0	462	0	0	0	577	1621	1	0	847	121
RTOR Reduction (vph)	0	0	99	0	0	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	306	364	0	0	0	577	1622	0	0	957	0
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	2%	1%	1%	1%	2%	1%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		29.0	104.3				29.3	89.3			54.3	
Effective Green, g (s)		29.0	99.3				29.3	89.3			54.3	
Actuated g/C Ratio		0.17	0.58				0.17	0.53			0.32	
Clearance Time (s)		4.0					5.7	5.7			5.7	
Vehicle Extension (s)		4.0					3.0	5.0			5.0	
Lane Grp Cap (vph)		245	1627				591	2697			1595	
v/s Ratio Prot			c0.13				c0.17	c0.32			0.19	
v/s Ratio Perm		c0.21										
v/c Ratio		1.25	0.22				0.98	0.60			0.60	
Uniform Delay, d1		70.5	16.9				70.0	28.0			48.7	
Progression Factor		1.00	1.00				1.00	1.00			1.00	
Incremental Delay, d2		141.3	0.1				30.8	1.0			1.7	
Delay (s)		211.8	17.0				100.8	29.0			50.4	
Level of Service		F	B				F	C			D	
Approach Delay (s)		94.5			0.0			47.8			50.4	
Approach LOS		F			A			D			D	

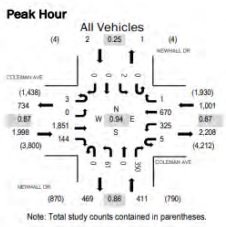
Intersection Summary			
HCM 2000 Control Delay	57.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

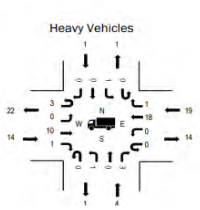
San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

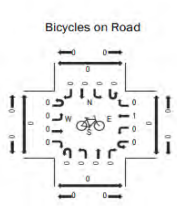
Project
Project Manager

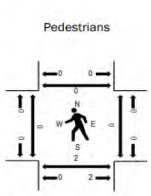
	Start	End
PM Peak Hour	5:00 PM	6:00 PM
Peak 15-Minutes	5:20 PM	5:35 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	11/03/2022	

Peak Hour









Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Lights (Classes II & III)	0	60	0	347	0	0	1841	143	0	1	0	0	5	325	652	0	3,374
Mediums (Classes IV, V & VI)	0	1	0	3	3	0	10	1	0	1	0	0	0	0	14	1	34
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
Total	0	61	0	350	3	0	1851	144	0	2	0	0	5	325	671	1	3,413
Total Motorized Vehicles	0	61	0	350	3	0	1851	144	0	2	0	0	5	325	670	1	3,412

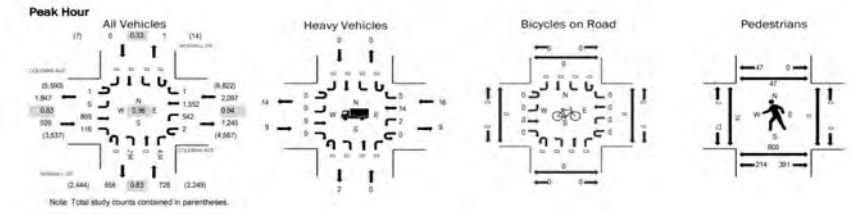
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	1.0%	0.7%	50.0%	1.9%	1.1%
Peak Hour Factor (PHF)	0.86	0.87	0.25	0.87	0.94
Pedestrians on Crosswalk	2	0	0	0	2

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
PM Peak Hour	5:30 PM	6:30 PM
Peak 15-Minutes	6:15 PM	6:30 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		

Date 03/04/2023

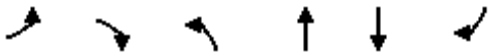


Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	294	0	434	1	0	800	116	0	0	0	0	2	540	1538	1	3,726
Mediums (Classes IV, V & VI)	0	0	0	0	0	0	9	0	0	0	0	0	0	2	13	0	24
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	294	0	434	1	0	809	116	0	0	0	0	2	542	1552	1	3,751
Total Motorized Vehicles	0	294	0	434	1	0	809	116	0	0	0	0	2	542	1552	1	3,751

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	1.0%	0.0%	0.8%	0.7%
Peak Hour Factor (PHF)	0.83	0.83	0.33	0.94	0.96
Pedestrians on Crosswalk	605	74	47	0	726

D-4 SYNCHRO MODEL RESULTS



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	2	1325	444	6
Future Volume (veh/h)	5	5	2	1325	444	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1856	1811	1811
Adj Flow Rate, veh/h	6	6	2	1553	521	7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	3	3	6	6
Cap, veh/h	34	36	7	4598	3001	40
Arrive On Green	0.02	0.02	0.01	1.00	1.00	1.00
Sat Flow, veh/h	1810	1610	1767	5233	3567	47
Grp Volume(v), veh/h	6	6	2	1553	258	270
Grp Sat Flow(s),veh/h/ln	1810	1610	1767	1689	1721	1803
Q Serve(g_s), s	0.5	0.5	0.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.5	0.2	0.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.03
Lane Grp Cap(c), veh/h	34	36	7	4598	1485	1556
V/C Ratio(X)	0.18	0.17	0.30	0.34	0.17	0.17
Avail Cap(c_a), veh/h	134	126	117	4598	1485	1556
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.98	0.98
Uniform Delay (d), s/veh	67.6	67.2	69.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	3.5	3.0	32.9	0.2	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.1	0.1	0.1	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	71.2	70.2	102.2	0.2	0.2	0.2
LnGrp LOS	E	E	F	A	A	A
Approach Vol, veh/h	12			1555	528	
Approach Delay, s/veh	70.7			0.3	0.2	
Approach LOS	E			A	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	6.2	126.6				132.8	7.2
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	9.3	104.3				119.3	10.4
Max Q Clear Time (g_c+I1), s	2.2	2.0				2.0	2.5
Green Ext Time (p_c), s	0.0	12.3				74.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	0.7
HCM 6th LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	56	118	1567	345	53	346
Future Volume (veh/h)	56	118	1567	345	53	346
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1841	1841	1870	1870	1826	1826
Adj Flow Rate, veh/h	64	135	1796	0	61	397
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	2	2	5	5
Cap, veh/h	356	214	4716		109	4036
Arrive On Green	0.10	0.10	0.49	0.00	0.06	1.00
Sat Flow, veh/h	3401	1560	6696	1585	3374	5149
Grp Volume(v), veh/h	64	135	1796	0	61	397
Grp Sat Flow(s),veh/h/ln	1700	1560	1609	1585	1687	1662
Q Serve(g_s), s	2.4	11.4	24.5	0.0	2.5	0.0
Cycle Q Clear(g_c), s	2.4	11.4	24.5	0.0	2.5	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	356	214	4716		109	4036
V/C Ratio(X)	0.18	0.63	0.38		0.56	0.10
Avail Cap(c_a), veh/h	1062	537	4716		212	4036
HCM Platoon Ratio	1.00	1.00	0.67	0.67	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.84	0.00	1.00	1.00
Uniform Delay (d), s/veh	57.2	57.1	15.7	0.0	64.5	0.0
Incr Delay (d2), s/veh	0.3	4.3	0.2	0.0	4.4	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	10.0	9.8	0.0	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	57.5	61.4	15.9	0.0	68.9	0.0
LnGrp LOS	E	E	B		E	A
Approach Vol, veh/h	199		1796			458
Approach Delay, s/veh	60.2		15.9			9.2
Approach LOS	E		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		119.1		20.9	10.7	108.3
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		84.3		43.7	8.8	69.3
Max Q Clear Time (g_c+I1), s		2.0		13.4	4.5	26.5
Green Ext Time (p_c), s		11.1		1.2	0.0	38.5

Intersection Summary	
HCM 6th Ctrl Delay	18.3
HCM 6th LOS	B

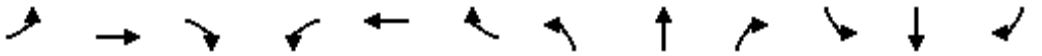
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	254	267	1606	0	0	410
Future Volume (veh/h)	254	267	1606	0	0	410
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1796	1796	1870	0	0	1856
Adj Flow Rate, veh/h	270	284	1706	0	0	436
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	7	2	0	0	3
Cap, veh/h	713	327	3616	0	0	3587
Arrive On Green	0.21	0.21	1.00	0.00	0.00	1.00
Sat Flow, veh/h	3319	1522	5443	0	0	5400
Grp Volume(v), veh/h	270	284	1706	0	0	436
Grp Sat Flow(s),veh/h/ln	1659	1522	1702	0	0	1689
Q Serve(g_s), s	9.7	25.2	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.7	25.2	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	713	327	3616	0	0	3587
V/C Ratio(X)	0.38	0.87	0.47	0.00	0.00	0.12
Avail Cap(c_a), veh/h	946	434	3616	0	0	3587
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	47.0	53.1	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	15.2	0.4	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.1	11.0	0.1	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	47.5	68.2	0.4	0.0	0.0	0.1
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	554		1706			436
Approach Delay, s/veh	58.1		0.4			0.1
Approach LOS	E		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		104.8		35.2		104.8
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		89.3		39.9		89.3
Max Q Clear Time (g_c+I1), s		2.0		27.2		2.0
Green Ext Time (p_c), s		10.3		2.8		68.1

Intersection Summary	
HCM 6th Ctrl Delay	12.2
HCM 6th LOS	B



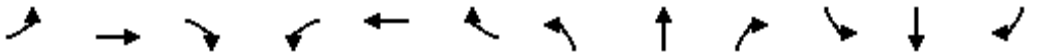
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	181	99	58	246	290	81	933	47	136	328	138
Future Volume (veh/h)	237	181	99	58	246	290	81	933	47	136	328	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		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	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	260	199	109	64	270	0	89	1023	52	149	360	0
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	317	365	191	81	414		188	1954	99	194	2673	
Arrive On Green	0.09	0.17	0.17	0.05	0.12	0.00	0.11	0.58	0.58	0.11	1.00	0.00
Sat Flow, veh/h	3401	2209	1155	1753	3589	0	1753	3386	172	3401	5191	0
Grp Volume(v), veh/h	260	156	152	64	270	0	89	528	547	149	360	0
Grp Sat Flow(s),veh/h/ln	1700	1749	1615	1753	1749	0	1753	1749	1810	1700	1675	0
Q Serve(g_s), s	10.5	11.4	12.2	5.1	10.3	0.0	6.7	25.6	25.6	6.0	0.0	0.0
Cycle Q Clear(g_c), s	10.5	11.4	12.2	5.1	10.3	0.0	6.7	25.6	25.6	6.0	0.0	0.0
Prop In Lane	1.00		0.72	1.00		0.00	1.00		0.10	1.00		0.00
Lane Grp Cap(c), veh/h	317	289	267	81	414		188	1009	1044	194	2673	
V/C Ratio(X)	0.82	0.54	0.57	0.79	0.65		0.47	0.52	0.52	0.77	0.13	
Avail Cap(c_a), veh/h	459	461	426	136	722		188	1009	1044	226	2673	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.99	0.99	0.00
Uniform Delay (d), s/veh	62.3	53.6	53.9	66.1	59.0	0.0	58.8	17.9	18.0	61.1	0.0	0.0
Incr Delay (d2), s/veh	7.6	1.6	1.9	15.1	1.7	0.0	8.3	1.9	1.9	12.6	0.1	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	4.9	5.1	5.1	2.6	4.7	0.0	3.4	10.5	10.8	2.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.9	55.1	55.8	81.2	60.7	0.0	67.1	19.9	19.8	73.7	0.1	0.0
LnGrp LOS	E	E	E	F	E		E	B	B	E	A	
Approach Vol, veh/h		568			334			1164			509	
Approach Delay, s/veh		62.1			64.6			23.5			21.6	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	80.2	18.1	21.7	13.7	86.5	11.6	28.2
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	15.0	56.3	18.9	28.9	9.3	61.3	10.9	36.9
Max Q Clear Time (g_c+I1), s	8.7	2.0	12.5	12.3	8.0	27.6	7.1	14.2
Green Ext Time (p_c), s	0.1	6.4	0.5	0.9	0.1	19.3	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	37.0
HCM 6th LOS	D

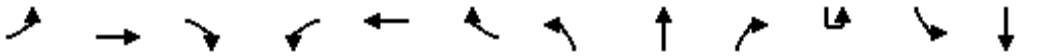
Notes

Unsignalized Delay for [WBR, SBR] 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 (vph)	108	22	104	26	6	19	213	959	161	18	311	32
Future Volume (vph)	108	22	104	26	6	19	213	959	161	18	311	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.88		1.00	0.89		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1503		1805	1666		1736	4880		1626	3252	1416
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1656	1503		1805	1666		1736	4880		1626	3252	1416
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	124	25	119	30	7	22	244	1099	185	21	356	37
RTOR Reduction (vph)	0	108	0	0	21	0	0	10	0	0	0	19
Lane Group Flow (vph)	124	36	0	30	8	0	244	1274	0	21	356	18
Confl. Peds. (#/hr)	2		6	6		2	2					2
Heavy Vehicles (%)	9%	9%	9%	0%	0%	0%	4%	4%	4%	11%	11%	11%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7			3			5	2		1	6	
Permitted Phases		4			8							6
Actuated Green, G (s)	11.8	13.1		6.0	6.5		31.1	94.0		4.5	67.4	67.4
Effective Green, g (s)	11.8	13.1		6.0	6.5		31.1	94.0		4.5	67.4	67.4
Actuated g/C Ratio	0.08	0.09		0.04	0.05		0.22	0.67		0.03	0.48	0.48
Clearance Time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	4.0	2.0		2.0	2.0		2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	139	140		77	77		385	3276		52	1565	681
v/s Ratio Prot	c0.07			0.02			c0.14	c0.26		0.01	0.11	
v/s Ratio Perm		c0.02			0.00							0.01
v/c Ratio	0.89	0.26		0.39	0.10		0.63	0.39		0.40	0.23	0.03
Uniform Delay, d1	63.5	58.9		65.2	64.0		49.3	10.2		66.4	21.1	19.1
Progression Factor	1.00	1.00		1.00	1.00		0.76	1.01		1.00	1.00	1.00
Incremental Delay, d2	46.3	0.4		1.2	0.2		2.9	0.3		1.9	0.3	0.1
Delay (s)	109.8	59.3		66.4	64.2		40.2	10.7		68.3	21.5	19.1
Level of Service	F	E		E	E		D	B		E	C	B
Approach Delay (s)		82.7			65.3			15.4			23.6	
Approach LOS		F			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	26.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	66.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	0	12	9	0	11	9	1361	40	5	15	404
Future Volume (vph)	6	0	12	9	0	11	9	1361	40	5	15	404
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	0.99
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1406	1406	2330	1719	1538		3433	3539	1550		1719	4912
Flt Permitted	0.95	1.00	1.00	1.00	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1406	1480	2330	1810	1538		3433	3539	1550		1719	4912
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
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	7	0	13	10	0	12	10	1509	44	6	17	448
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	10	0	0	1
Lane Group Flow (vph)	3	4	13	10	0	0	10	1509	34	0	23	463
Confl. Peds. (#/hr)							3					
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	22%	22%	22%	5%	5%	5%	2%	2%	2%	5%	5%	5%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	1.7	1.7	3.6	2.1	4.0		1.5	108.3	108.3		5.4	112.2
Effective Green, g (s)	1.7	1.7	3.6	2.1	4.0		1.5	108.3	108.3		5.4	112.2
Actuated g/C Ratio	0.01	0.01	0.03	0.02	0.03		0.01	0.77	0.77		0.04	0.80
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	17	17	59	27	43		36	2737	1199		66	3936
v/s Ratio Prot	0.00		c0.01		0.00		0.00	c0.43			c0.01	c0.09
v/s Ratio Perm		0.00		c0.01					0.02			
v/c Ratio	0.18	0.24	0.22	0.37	0.01		0.28	0.55	0.03		0.35	0.12
Uniform Delay, d1	68.5	68.5	66.8	68.3	66.1		68.7	6.3	3.7		65.6	3.0
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.67	2.71	1.00		1.05	0.90
Incremental Delay, d2	6.7	9.5	1.9	11.3	0.1		5.4	0.8	0.0		3.7	0.1
Delay (s)	75.1	78.0	68.7	79.6	66.2		51.6	17.7	3.7		72.8	2.8
Level of Service	E	E	E	E	E		D	B	A		E	A
Approach Delay (s)		71.5			72.3			17.5				6.1
Approach LOS		E			E			B				A

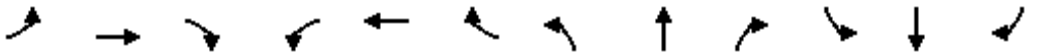
Intersection Summary			
HCM 2000 Control Delay	16.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	55.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	14
Future Volume (vph)	14
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Growth Factor (vph)	102%
Adj. Flow (vph)	16
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	3
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	5%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

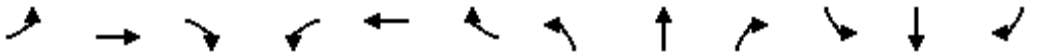
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	6	25	12	41	1493	421	4
Future Volume (vph)	6	25	12	41	1493	421	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.90	0.85		1.00	1.00	1.00	
Flt Protected	0.98	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3168	1427		3400	5036	4841	
Flt Permitted	0.98	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3168	1427		3400	5036	4841	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	7	28	13	45	1655	467	4
RTOR Reduction (vph)	13	13	0	0	0	0	0
Lane Group Flow (vph)	8	1	0	58	1655	471	0
Confl. Peds. (#/hr)				1			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	7%	7%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	11.0	11.0		6.9	118.7	106.1	
Effective Green, g (s)	11.0	11.0		6.9	118.7	106.1	
Actuated g/C Ratio	0.08	0.08		0.05	0.85	0.76	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	248	112		167	4269	3668	
v/s Ratio Prot	c0.00			0.02	c0.33	0.10	
v/s Ratio Perm		0.00					
v/c Ratio	0.03	0.01		0.35	0.39	0.13	
Uniform Delay, d1	59.6	59.5		64.4	2.4	4.5	
Progression Factor	1.00	1.00		1.30	0.16	1.11	
Incremental Delay, d2	0.1	0.0		1.4	0.2	0.1	
Delay (s)	59.7	59.5		85.4	0.6	5.1	
Level of Service	E	E		F	A	A	
Approach Delay (s)	59.6				3.5	5.1	
Approach LOS	E				A	A	

Intersection Summary			
HCM 2000 Control Delay	4.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.3%	ICU Level of Service	A
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 (vph)	76	0	160	1	1	0	223	1445	3	0	373	66
Future Volume (vph)	76	0	160	1	1	0	223	1445	3	0	373	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0	4.0		5.7	5.7			5.7	
Lane Util. Factor		1.00	0.88	1.00	1.00		0.97	0.91			0.91	
Frpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	1.00			0.98	
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1750	2760	1805	1900		3433	5084			4818	
Flt Permitted		0.76	1.00	1.00	1.00		0.95	1.00			1.00	
Satd. Flow (perm)		1395	2760	1900	1900		3433	5084			4818	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	82	0	174	1	1	0	242	1568	3	0	405	72
RTOR Reduction (vph)	0	0	130	0	0	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	82	44	1	1	0	242	1571	0	0	466	0
Confl. Peds. (#/hr)	1					1	2					2
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	2%	2%	2%	5%	5%	5%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		14.9	40.3	1.4	7.6		15.2	103.8			82.9	
Effective Green, g (s)		14.9	35.3	1.4	7.6		15.2	103.8			82.9	
Actuated g/C Ratio		0.11	0.25	0.01	0.05		0.11	0.74			0.59	
Clearance Time (s)		4.0		4.0	4.0		5.7	5.7			5.7	
Vehicle Extension (s)		4.0		3.0	3.0		3.0	5.0			5.0	
Lane Grp Cap (vph)		148	695	19	103		372	3769			2852	
v/s Ratio Prot			c0.02		0.00		c0.07	c0.31			0.10	
v/s Ratio Perm		c0.06		c0.00								
v/c Ratio		0.55	0.06	0.05	0.01		0.65	0.42			0.16	
Uniform Delay, d1		59.4	39.8	68.6	62.6		59.9	6.8			12.9	
Progression Factor		1.00	1.00	1.00	1.00		1.11	0.61			0.49	
Incremental Delay, d2		5.4	0.0	1.2	0.0		3.8	0.3			0.1	
Delay (s)		64.8	39.8	69.8	62.7		70.2	4.5			6.5	
Level of Service		E	D	E	E		E	A			A	
Approach Delay (s)		47.8			66.2			13.3			6.5	
Approach LOS		D			E			B			A	

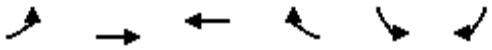
Intersection Summary			
HCM 2000 Control Delay	15.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	57.0%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	11	149	0	599	0	1127	336	139	456	28
Future Volume (vph)	0	0	11	149	0	599	0	1127	336	139	456	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	0.99	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1454	3467		2814		5204	1620	3335	4891	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1454	3467		2814		5204	1620	3335	4891	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	12	157	0	630	0	1185	353	146	480	29
RTOR Reduction (vph)	0	0	12	0	0	294	0	0	105	0	3	0
Lane Group Flow (vph)	0	0	0	157	0	336	0	1185	248	146	506	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	3%	3%	3%	5%	5%	5%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			3.8	15.2		24.2		87.0	87.0	13.4	106.1	
Effective Green, g (s)			3.8	15.2		24.2		87.0	87.0	13.4	106.1	
Actuated g/C Ratio			0.03	0.11		0.17		0.62	0.62	0.10	0.76	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			39	376		486		3233	1006	319	3706	
v/s Ratio Prot				0.05		c0.12		c0.23		c0.04	0.10	
v/s Ratio Perm			0.00						0.15			
v/c Ratio			0.01	0.42		0.69		0.37	0.25	0.46	0.14	
Uniform Delay, d1			66.3	58.3		54.4		13.0	11.8	59.9	4.6	
Progression Factor			1.00	1.00		1.00		0.85	1.08	1.17	0.54	
Incremental Delay, d2			0.1	0.8		4.2		0.2	0.4	2.2	0.1	
Delay (s)			66.4	59.0		58.6		11.3	13.2	72.3	2.6	
Level of Service			E	E		E		B	B	E	A	
Approach Delay (s)		66.4			58.7			11.7			18.1	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

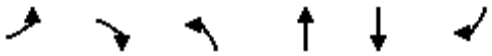
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	11	33	214	211	3
Future Volume (Veh/h)	1	11	33	214	211	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	1	13	39	254	250	4
Pedestrians		1			4	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			485			
pX, platoon unblocked						
vC, conflicting volume	297				58	44
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	297				58	44
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				74	100
cM capacity (veh/h)	1271				945	1021

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	14	39	254	254
Volume Left	1	0	0	250
Volume Right	0	0	254	4
cSH	1271	1700	1700	946
Volume to Capacity	0.00	0.02	0.15	0.27
Queue Length 95th (ft)	0	0	0	27
Control Delay (s)	0.6	0.0	0.0	10.2
Lane LOS	A			B
Approach Delay (s)	0.6	0.0		10.2
Approach LOS				B

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	2	1329	448	6
Future Volume (veh/h)	5	5	2	1329	448	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1856	1796	1811
Adj Flow Rate, veh/h	6	6	2	1558	525	7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	3	3	7	6
Cap, veh/h	34	36	7	4598	2977	40
Arrive On Green	0.02	0.02	0.01	1.00	1.00	1.00
Sat Flow, veh/h	1810	1610	1767	5233	3538	46
Grp Volume(v), veh/h	6	6	2	1558	260	272
Grp Sat Flow(s),veh/h/ln	1810	1610	1767	1689	1706	1788
Q Serve(g_s), s	0.5	0.5	0.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.5	0.2	0.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.03
Lane Grp Cap(c), veh/h	34	36	7	4598	1473	1544
V/C Ratio(X)	0.18	0.17	0.30	0.34	0.18	0.18
Avail Cap(c_a), veh/h	134	126	117	4598	1473	1544
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.98	0.98
Uniform Delay (d), s/veh	67.6	67.2	69.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	3.5	3.0	32.9	0.2	0.3	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.1	0.1	0.1	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	71.2	70.2	102.2	0.2	0.3	0.2
LnGrp LOS	E	E	F	A	A	A
Approach Vol, veh/h	12			1560	532	
Approach Delay, s/veh	70.7			0.3	0.3	
Approach LOS	E			A	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	6.2	126.6				132.8	7.2
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	9.3	104.3				119.3	10.4
Max Q Clear Time (g_c+I1), s	2.2	2.0				2.0	2.5
Green Ext Time (p_c), s	0.0	12.5				75.1	0.0

Intersection Summary	
HCM 6th Ctrl Delay	0.7
HCM 6th LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	56	118	1581	345	53	360
Future Volume (veh/h)	56	118	1581	345	53	360
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1841	1841	1856	1870	1826	1781
Adj Flow Rate, veh/h	64	135	1812	0	61	413
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	3	2	5	8
Cap, veh/h	356	214	4679		109	3938
Arrive On Green	0.10	0.10	0.49	0.00	0.06	1.00
Sat Flow, veh/h	3401	1560	6643	1585	3374	5024
Grp Volume(v), veh/h	64	135	1812	0	61	413
Grp Sat Flow(s),veh/h/ln	1700	1560	1596	1585	1687	1621
Q Serve(g_s), s	2.4	11.4	25.0	0.0	2.5	0.0
Cycle Q Clear(g_c), s	2.4	11.4	25.0	0.0	2.5	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	356	214	4679		109	3938
V/C Ratio(X)	0.18	0.63	0.39		0.56	0.10
Avail Cap(c_a), veh/h	1062	537	4679		212	3938
HCM Platoon Ratio	1.00	1.00	0.67	0.67	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.83	0.00	1.00	1.00
Uniform Delay (d), s/veh	57.2	57.1	15.9	0.0	64.5	0.0
Incr Delay (d2), s/veh	0.3	4.3	0.2	0.0	4.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	10.0	9.9	0.0	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	57.5	61.4	16.1	0.0	68.9	0.1
LnGrp LOS	E	E	B		E	A
Approach Vol, veh/h	199		1812			474
Approach Delay, s/veh	60.2		16.1			8.9
Approach LOS	E		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		119.1		20.9	10.7	108.3
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		84.3		43.7	8.8	69.3
Max Q Clear Time (g_c+I1), s		2.0		13.4	4.5	27.0
Green Ext Time (p_c), s		11.7		1.2	0.0	38.2

Intersection Summary	
HCM 6th Ctrl Delay	18.2
HCM 6th LOS	B

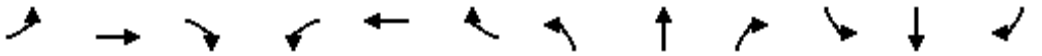
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	254	281	1606	0	0	424
Future Volume (veh/h)	254	281	1606	0	0	424
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1796	1767	1870	0	0	1811
Adj Flow Rate, veh/h	270	299	1706	0	0	450
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	9	2	0	0	6
Cap, veh/h	752	339	3555	0	0	3443
Arrive On Green	0.23	0.23	1.00	0.00	0.00	1.00
Sat Flow, veh/h	3319	1497	5443	0	0	5270
Grp Volume(v), veh/h	270	299	1706	0	0	450
Grp Sat Flow(s),veh/h/ln	1659	1497	1702	0	0	1648
Q Serve(g_s), s	9.6	27.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.6	27.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	752	339	3555	0	0	3443
V/C Ratio(X)	0.36	0.88	0.48	0.00	0.00	0.13
Avail Cap(c_a), veh/h	946	427	3555	0	0	3443
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	45.6	52.3	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	17.4	0.5	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.0	11.7	0.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	46.0	69.7	0.5	0.0	0.0	0.1
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	569		1706			450
Approach Delay, s/veh	58.5		0.5			0.1
Approach LOS	E		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		103.2		36.8		103.2
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		89.3		39.9		89.3
Max Q Clear Time (g_c+I1), s		2.0		29.0		2.0
Green Ext Time (p_c), s		10.7		2.7		68.1

Intersection Summary	
HCM 6th Ctrl Delay	12.5
HCM 6th LOS	B



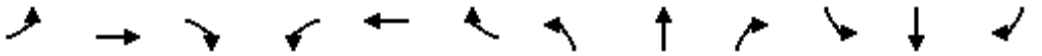
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	181	99	58	246	290	81	933	47	136	328	138
Future Volume (veh/h)	237	181	99	58	246	290	81	933	47	136	328	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		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	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	260	199	109	64	270	0	89	1023	52	149	360	0
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	317	365	191	81	414		188	1954	99	194	2673	
Arrive On Green	0.09	0.17	0.17	0.05	0.12	0.00	0.11	0.58	0.58	0.11	1.00	0.00
Sat Flow, veh/h	3401	2209	1155	1753	3589	0	1753	3386	172	3401	5191	0
Grp Volume(v), veh/h	260	156	152	64	270	0	89	528	547	149	360	0
Grp Sat Flow(s),veh/h/ln	1700	1749	1615	1753	1749	0	1753	1749	1810	1700	1675	0
Q Serve(g_s), s	10.5	11.4	12.2	5.1	10.3	0.0	6.7	25.6	25.6	6.0	0.0	0.0
Cycle Q Clear(g_c), s	10.5	11.4	12.2	5.1	10.3	0.0	6.7	25.6	25.6	6.0	0.0	0.0
Prop In Lane	1.00		0.72	1.00		0.00	1.00		0.10	1.00		0.00
Lane Grp Cap(c), veh/h	317	289	267	81	414		188	1009	1044	194	2673	
V/C Ratio(X)	0.82	0.54	0.57	0.79	0.65		0.47	0.52	0.52	0.77	0.13	
Avail Cap(c_a), veh/h	459	461	426	136	722		188	1009	1044	226	2673	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.99	0.99	0.00
Uniform Delay (d), s/veh	62.3	53.6	53.9	66.1	59.0	0.0	58.8	17.9	18.0	61.1	0.0	0.0
Incr Delay (d2), s/veh	7.6	1.6	1.9	15.1	1.7	0.0	8.3	1.9	1.9	12.6	0.1	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	4.9	5.1	5.1	2.6	4.7	0.0	3.4	10.5	10.8	2.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.9	55.1	55.8	81.2	60.7	0.0	67.1	19.9	19.8	73.7	0.1	0.0
LnGrp LOS	E	E	E	F	E		E	B	B	E	A	
Approach Vol, veh/h		568			334			1164			509	
Approach Delay, s/veh		62.1			64.6			23.5			21.6	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	80.2	18.1	21.7	13.7	86.5	11.6	28.2
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	15.0	56.3	18.9	28.9	9.3	61.3	10.9	36.9
Max Q Clear Time (g_c+I1), s	8.7	2.0	12.5	12.3	8.0	27.6	7.1	14.2
Green Ext Time (p_c), s	0.1	6.4	0.5	0.9	0.1	19.3	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	37.0
HCM 6th LOS	D

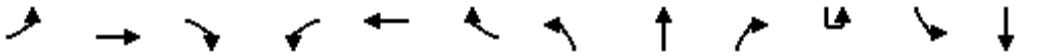
Notes

Unsignalized Delay for [WBR, SBR] 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 (vph)	108	22	108	26	6	19	217	959	161	18	311	32
Future Volume (vph)	108	22	108	26	6	19	217	959	161	18	311	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.88		1.00	0.89		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1479		1805	1666		1703	4880		1626	3252	1416
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1656	1479		1805	1666		1703	4880		1626	3252	1416
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	124	25	124	30	7	22	249	1099	185	21	356	37
RTOR Reduction (vph)	0	112	0	0	21	0	0	10	0	0	0	20
Lane Group Flow (vph)	124	37	0	30	8	0	249	1274	0	21	356	17
Confl. Peds. (#/hr)	2		6	6		2	2					2
Heavy Vehicles (%)	9%	9%	11%	0%	0%	0%	6%	4%	4%	11%	11%	11%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7			3			5	2		1	6	
Permitted Phases		4			8							6
Actuated Green, G (s)	11.8	13.1		6.0	6.5		33.0	94.0		4.5	65.5	65.5
Effective Green, g (s)	11.8	13.1		6.0	6.5		33.0	94.0		4.5	65.5	65.5
Actuated g/C Ratio	0.08	0.09		0.04	0.05		0.24	0.67		0.03	0.47	0.47
Clearance Time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	4.0	2.0		2.0	2.0		2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	139	138		77	77		401	3276		52	1521	662
v/s Ratio Prot	c0.07			0.02			c0.15	c0.26		0.01	0.11	
v/s Ratio Perm		c0.02			0.00							0.01
v/c Ratio	0.89	0.27		0.39	0.10		0.62	0.39		0.40	0.23	0.03
Uniform Delay, d1	63.5	59.0		65.2	64.0		47.9	10.2		66.4	22.3	20.1
Progression Factor	1.00	1.00		1.00	1.00		0.75	1.01		1.00	1.00	1.00
Incremental Delay, d2	46.3	0.4		1.2	0.2		2.5	0.3		1.9	0.4	0.1
Delay (s)	109.8	59.4		66.4	64.2		38.5	10.7		68.3	22.6	20.1
Level of Service	F	E		E	E		D	B		E	C	C
Approach Delay (s)		82.3			65.3			15.2			24.7	
Approach LOS		F			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	26.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	0	12	9	0	11	9	1365	40	5	15	408
Future Volume (vph)	6	0	12	9	0	11	9	1365	40	5	15	408
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	0.99
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1406	1406	2330	1719	1538		3433	3505	1550		1719	4867
Flt Permitted	0.95	1.00	1.00	1.00	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1406	1480	2330	1810	1538		3433	3505	1550		1719	4867
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
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	7	0	13	10	0	12	10	1513	44	6	17	452
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	10	0	0	1
Lane Group Flow (vph)	3	4	13	10	0	0	10	1513	34	0	23	467
Confl. Peds. (#/hr)							3					
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	22%	22%	22%	5%	5%	5%	2%	3%	2%	5%	5%	6%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	1.7	1.7	3.6	2.1	4.0		1.5	108.3	108.3		5.4	112.2
Effective Green, g (s)	1.7	1.7	3.6	2.1	4.0		1.5	108.3	108.3		5.4	112.2
Actuated g/C Ratio	0.01	0.01	0.03	0.02	0.03		0.01	0.77	0.77		0.04	0.80
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	17	17	59	27	43		36	2711	1199		66	3900
v/s Ratio Prot	0.00		c0.01		0.00		0.00	c0.43			c0.01	c0.10
v/s Ratio Perm		0.00		c0.01					0.02			
v/c Ratio	0.18	0.24	0.22	0.37	0.01		0.28	0.56	0.03		0.35	0.12
Uniform Delay, d1	68.5	68.5	66.8	68.3	66.1		68.7	6.3	3.7		65.6	3.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.66	2.71	1.00		1.04	0.91
Incremental Delay, d2	6.7	9.5	1.9	11.3	0.1		5.4	0.8	0.0		3.7	0.1
Delay (s)	75.1	78.0	68.7	79.6	66.2		50.7	17.9	3.7		72.0	2.8
Level of Service	E	E	E	E	E		D	B	A		E	A
Approach Delay (s)		71.5			72.3			17.7				6.1
Approach LOS		E			E			B				A

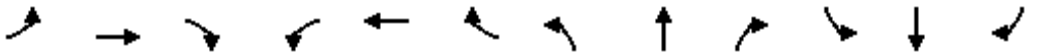
Intersection Summary			
HCM 2000 Control Delay	16.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	55.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	14
Future Volume (vph)	14
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Growth Factor (vph)	102%
Adj. Flow (vph)	16
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	3
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	5%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

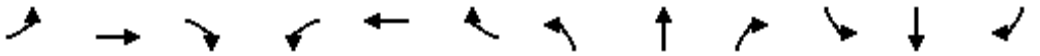
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	6	25	12	41	1497	425	4
Future Volume (vph)	6	25	12	41	1497	425	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.90	0.85		1.00	1.00	1.00	
Flt Protected	0.98	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3168	1427		3400	5036	4797	
Flt Permitted	0.98	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3168	1427		3400	5036	4797	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	7	28	13	45	1660	471	4
RTOR Reduction (vph)	13	13	0	0	0	0	0
Lane Group Flow (vph)	8	1	0	58	1660	475	0
Confl. Peds. (#/hr)				1			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	8%	7%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	11.0	11.0		6.9	118.7	106.1	
Effective Green, g (s)	11.0	11.0		6.9	118.7	106.1	
Actuated g/C Ratio	0.08	0.08		0.05	0.85	0.76	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	248	112		167	4269	3635	
v/s Ratio Prot	c0.00			0.02	c0.33	0.10	
v/s Ratio Perm		0.00					
v/c Ratio	0.03	0.01		0.35	0.39	0.13	
Uniform Delay, d1	59.6	59.5		64.4	2.4	4.6	
Progression Factor	1.00	1.00		1.31	0.16	1.09	
Incremental Delay, d2	0.1	0.0		1.4	0.3	0.1	
Delay (s)	59.7	59.5		85.9	0.6	5.0	
Level of Service	E	E		F	A	A	
Approach Delay (s)	59.6				3.5	5.0	
Approach LOS	E				A	A	

Intersection Summary			
HCM 2000 Control Delay	4.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.4%	ICU Level of Service	A
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 (vph)	76	0	170	1	1	0	233	1449	3	0	377	66
Future Volume (vph)	76	0	170	1	1	0	233	1449	3	0	377	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0	4.0		5.7	5.7			5.7	
Lane Util. Factor		1.00	0.88	1.00	1.00		0.97	0.91			0.91	
Frpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	1.00			0.98	
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1750	2608	1805	1900		3273	5035			4780	
Flt Permitted		0.76	1.00	1.00	1.00		0.95	1.00			1.00	
Satd. Flow (perm)		1395	2608	1900	1900		3273	5035			4780	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	82	0	184	1	1	0	253	1572	3	0	409	72
RTOR Reduction (vph)	0	0	136	0	0	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	82	48	1	1	0	253	1575	0	0	470	0
Confl. Peds. (#/hr)	1					1	2					2
Heavy Vehicles (%)	3%	3%	9%	0%	0%	0%	7%	3%	2%	5%	6%	5%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		14.9	41.5	1.4	7.6		16.4	103.8			81.7	
Effective Green, g (s)		14.9	36.5	1.4	7.6		16.4	103.8			81.7	
Actuated g/C Ratio		0.11	0.26	0.01	0.05		0.12	0.74			0.58	
Clearance Time (s)		4.0		4.0	4.0		5.7	5.7			5.7	
Vehicle Extension (s)		4.0		3.0	3.0		3.0	5.0			5.0	
Lane Grp Cap (vph)		148	679	19	103		383	3733			2789	
v/s Ratio Prot			c0.02		0.00		c0.08	c0.31			0.10	
v/s Ratio Perm		c0.06		c0.00								
v/c Ratio		0.55	0.07	0.05	0.01		0.66	0.42			0.17	
Uniform Delay, d1		59.4	39.0	68.6	62.6		59.1	6.8			13.5	
Progression Factor		1.00	1.00	1.00	1.00		1.13	0.61			0.49	
Incremental Delay, d2		5.4	0.0	1.2	0.0		4.0	0.3			0.1	
Delay (s)		64.8	39.0	69.8	62.7		70.8	4.5			6.7	
Level of Service		E	D	E	E		E	A			A	
Approach Delay (s)		47.0			66.2			13.7			6.7	
Approach LOS		D			E			B			A	

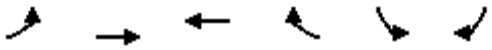
Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	57.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	11	149	0	599	0	1127	336	153	456	28
Future Volume (vph)	0	0	11	149	0	599	0	1127	336	153	456	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	0.99	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1454	3467		2814		5204	1620	3099	4891	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1454	3467		2814		5204	1620	3099	4891	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	12	157	0	630	0	1185	353	161	480	29
RTOR Reduction (vph)	0	0	12	0	0	294	0	0	107	0	3	0
Lane Group Flow (vph)	0	0	0	157	0	336	0	1185	246	161	506	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	3%	3%	3%	13%	5%	5%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			3.8	15.2		24.2		85.9	85.9	14.5	106.1	
Effective Green, g (s)			3.8	15.2		24.2		85.9	85.9	14.5	106.1	
Actuated g/C Ratio			0.03	0.11		0.17		0.61	0.61	0.10	0.76	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			39	376		486		3193	993	320	3706	
v/s Ratio Prot				0.05		c0.12		c0.23		c0.05	0.10	
v/s Ratio Perm			0.00						0.15			
v/c Ratio			0.01	0.42		0.69		0.37	0.25	0.50	0.14	
Uniform Delay, d1			66.3	58.3		54.4		13.5	12.3	59.3	4.6	
Progression Factor			1.00	1.00		1.00		0.84	1.05	1.17	0.52	
Incremental Delay, d2			0.1	0.8		4.2		0.3	0.5	2.6	0.1	
Delay (s)			66.4	59.0		58.6		11.6	13.4	71.9	2.5	
Level of Service			E	E		E		B	B	E	A	
Approach Delay (s)		66.4			58.7			12.0			19.2	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

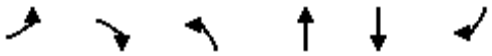
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	15	37	214	211	3
Future Volume (Veh/h)	1	15	37	214	211	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	1	18	44	254	250	4
Pedestrians		1			4	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			485			
pX, platoon unblocked						
vC, conflicting volume	302				68	49
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	302				68	49
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				73	100
cM capacity (veh/h)	1266				933	1015

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	19	44	254	254
Volume Left	1	0	0	250
Volume Right	0	0	254	4
cSH	1266	1700	1700	934
Volume to Capacity	0.00	0.03	0.15	0.27
Queue Length 95th (ft)	0	0	0	28
Control Delay (s)	0.4	0.0	0.0	10.3
Lane LOS	A			B
Approach Delay (s)	0.4	0.0		10.3
Approach LOS				B

Intersection Summary			
Average Delay	4.6		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	2	1334	453	6
Future Volume (veh/h)	5	5	2	1334	453	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1841	1781	1811
Adj Flow Rate, veh/h	6	6	2	1564	531	7
Peak Hour Factor	0.87	0.87	0.87	0.87	0.87	0.87
Percent Heavy Veh, %	0	0	3	4	8	6
Cap, veh/h	34	36	7	4562	2953	39
Arrive On Green	0.02	0.02	0.01	1.00	1.00	1.00
Sat Flow, veh/h	1810	1610	1767	5191	3510	45
Grp Volume(v), veh/h	6	6	2	1564	263	275
Grp Sat Flow(s),veh/h/ln	1810	1610	1767	1675	1692	1773
Q Serve(g_s), s	0.5	0.5	0.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	0.5	0.2	0.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.03
Lane Grp Cap(c), veh/h	34	36	7	4562	1461	1531
V/C Ratio(X)	0.18	0.17	0.30	0.34	0.18	0.18
Avail Cap(c_a), veh/h	134	126	117	4562	1461	1531
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.98	0.98
Uniform Delay (d), s/veh	67.6	67.2	69.3	0.0	0.0	0.0
Incr Delay (d2), s/veh	3.5	3.0	32.9	0.2	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.1	0.1	0.1	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	71.2	70.2	102.2	0.2	0.3	0.3
LnGrp LOS	E	E	F	A	A	A
Approach Vol, veh/h	12			1566	538	
Approach Delay, s/veh	70.7			0.3	0.3	
Approach LOS	E			A	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	6.2	126.6				132.8	7.2
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	9.3	104.3				119.3	10.4
Max Q Clear Time (g_c+I1), s	2.2	2.0				2.0	2.5
Green Ext Time (p_c), s	0.0	12.7				75.6	0.0

Intersection Summary		
HCM 6th Ctrl Delay		0.7
HCM 6th LOS		A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	56	118	1601	345	53	380
Future Volume (veh/h)	56	118	1601	345	53	380
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1841	1841	1841	1870	1826	1707
Adj Flow Rate, veh/h	64	135	1835	0	61	436
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	4	4	4	2	5	13
Cap, veh/h	356	214	4641		109	3774
Arrive On Green	0.10	0.10	0.49	0.00	0.06	1.00
Sat Flow, veh/h	3401	1560	6590	1585	3374	4815
Grp Volume(v), veh/h	64	135	1835	0	61	436
Grp Sat Flow(s),veh/h/ln	1700	1560	1583	1585	1687	1554
Q Serve(g_s), s	2.4	11.4	25.6	0.0	2.5	0.0
Cycle Q Clear(g_c), s	2.4	11.4	25.6	0.0	2.5	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	356	214	4641		109	3774
V/C Ratio(X)	0.18	0.63	0.40		0.56	0.12
Avail Cap(c_a), veh/h	1062	537	4641		212	3774
HCM Platoon Ratio	1.00	1.00	0.67	0.67	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.81	0.00	1.00	1.00
Uniform Delay (d), s/veh	57.2	57.1	16.0	0.0	64.5	0.0
Incr Delay (d2), s/veh	0.3	4.3	0.2	0.0	4.4	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	10.0	10.1	0.0	1.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	57.5	61.4	16.2	0.0	68.9	0.1
LnGrp LOS	E	E	B		E	A
Approach Vol, veh/h	199		1835			497
Approach Delay, s/veh	60.2		16.2			8.5
Approach LOS	E		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		119.1		20.9	10.7	108.3
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		84.3		43.7	8.8	69.3
Max Q Clear Time (g_c+I1), s		2.0		13.4	4.5	27.6
Green Ext Time (p_c), s		12.5		1.2	0.0	37.9

Intersection Summary	
HCM 6th Ctrl Delay	18.2
HCM 6th LOS	B

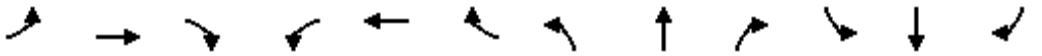
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	254	301	1606	0	0	444
Future Volume (veh/h)	254	301	1606	0	0	444
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1796	1678	1870	0	0	1752
Adj Flow Rate, veh/h	270	320	1706	0	0	472
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	7	15	2	0	0	10
Cap, veh/h	824	353	3444	0	0	3226
Arrive On Green	0.25	0.25	1.00	0.00	0.00	1.00
Sat Flow, veh/h	3319	1422	5443	0	0	5098
Grp Volume(v), veh/h	270	320	1706	0	0	472
Grp Sat Flow(s),veh/h/ln	1659	1422	1702	0	0	1594
Q Serve(g_s), s	9.3	30.6	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.3	30.6	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	824	353	3444	0	0	3226
V/C Ratio(X)	0.33	0.91	0.50	0.00	0.00	0.15
Avail Cap(c_a), veh/h	946	405	3444	0	0	3226
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	43.1	51.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	22.7	0.5	0.0	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	13.0	0.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.4	73.8	0.5	0.0	0.0	0.1
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	590		1706			472
Approach Delay, s/veh	59.9		0.5			0.1
Approach LOS	E		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		100.1		39.9		100.1
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		89.3		39.9		89.3
Max Q Clear Time (g_c+I1), s		2.0		32.6		2.0
Green Ext Time (p_c), s		11.4		2.2		68.1

Intersection Summary	
HCM 6th Ctrl Delay	13.1
HCM 6th LOS	B



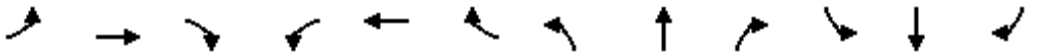
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	237	181	99	58	246	290	81	933	47	136	328	138
Future Volume (veh/h)	237	181	99	58	246	290	81	933	47	136	328	138
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		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	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	260	199	109	64	270	0	89	1023	52	149	360	0
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	317	365	191	81	414		188	1954	99	194	2673	
Arrive On Green	0.09	0.17	0.17	0.05	0.12	0.00	0.11	0.58	0.58	0.11	1.00	0.00
Sat Flow, veh/h	3401	2209	1155	1753	3589	0	1753	3386	172	3401	5191	0
Grp Volume(v), veh/h	260	156	152	64	270	0	89	528	547	149	360	0
Grp Sat Flow(s),veh/h/ln	1700	1749	1615	1753	1749	0	1753	1749	1810	1700	1675	0
Q Serve(g_s), s	10.5	11.4	12.2	5.1	10.3	0.0	6.7	25.6	25.6	6.0	0.0	0.0
Cycle Q Clear(g_c), s	10.5	11.4	12.2	5.1	10.3	0.0	6.7	25.6	25.6	6.0	0.0	0.0
Prop In Lane	1.00		0.72	1.00		0.00	1.00		0.10	1.00		0.00
Lane Grp Cap(c), veh/h	317	289	267	81	414		188	1009	1044	194	2673	
V/C Ratio(X)	0.82	0.54	0.57	0.79	0.65		0.47	0.52	0.52	0.77	0.13	
Avail Cap(c_a), veh/h	459	461	426	136	722		188	1009	1044	226	2673	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.99	0.99	0.00
Uniform Delay (d), s/veh	62.3	53.6	53.9	66.1	59.0	0.0	58.8	17.9	18.0	61.1	0.0	0.0
Incr Delay (d2), s/veh	7.6	1.6	1.9	15.1	1.7	0.0	8.3	1.9	1.9	12.6	0.1	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	4.9	5.1	5.1	2.6	4.7	0.0	3.4	10.5	10.8	2.8	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	69.9	55.1	55.8	81.2	60.7	0.0	67.1	19.9	19.8	73.7	0.1	0.0
LnGrp LOS	E	E	E	F	E		E	B	B	E	A	
Approach Vol, veh/h		568			334			1164			509	
Approach Delay, s/veh		62.1			64.6			23.5			21.6	
Approach LOS		E			E			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	80.2	18.1	21.7	13.7	86.5	11.6	28.2
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	15.0	56.3	18.9	28.9	9.3	61.3	10.9	36.9
Max Q Clear Time (g_c+I1), s	8.7	2.0	12.5	12.3	8.0	27.6	7.1	14.2
Green Ext Time (p_c), s	0.1	6.4	0.5	0.9	0.1	19.3	0.0	3.2

Intersection Summary	
HCM 6th Ctrl Delay	37.0
HCM 6th LOS	D

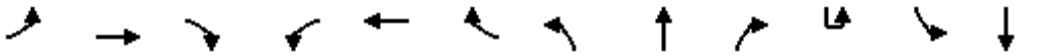
Notes

Unsignalized Delay for [WBR, SBR] 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 (vph)	108	22	113	26	6	19	222	959	161	18	311	32
Future Volume (vph)	108	22	113	26	6	19	222	959	161	18	311	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.87		1.00	0.89		1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1656	1434		1805	1666		1671	4880		1626	3252	1416
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1656	1434		1805	1666		1671	4880		1626	3252	1416
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	124	25	130	30	7	22	254	1099	185	21	356	37
RTOR Reduction (vph)	0	118	0	0	21	0	0	10	0	0	0	20
Lane Group Flow (vph)	124	37	0	30	8	0	254	1274	0	21	356	17
Confl. Peds. (#/hr)	2		6	6		2	2					2
Heavy Vehicles (%)	9%	9%	15%	0%	0%	0%	8%	4%	4%	11%	11%	11%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7			3			5	2		1	6	
Permitted Phases		4			8							6
Actuated Green, G (s)	11.8	13.3		6.0	6.7		34.8	93.8		4.5	63.5	63.5
Effective Green, g (s)	11.8	13.3		6.0	6.7		34.8	93.8		4.5	63.5	63.5
Actuated g/C Ratio	0.08	0.10		0.04	0.05		0.25	0.67		0.03	0.45	0.45
Clearance Time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	4.0	2.0		2.0	2.0		2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	139	136		77	79		415	3269		52	1475	642
v/s Ratio Prot	c0.07			0.02			c0.15	c0.26		0.01	0.11	
v/s Ratio Perm		c0.03			0.00							0.01
v/c Ratio	0.89	0.27		0.39	0.10		0.61	0.39		0.40	0.24	0.03
Uniform Delay, d1	63.5	58.9		65.2	63.8		46.6	10.3		66.4	23.5	21.2
Progression Factor	1.00	1.00		1.00	1.00		0.76	1.01		1.00	1.00	1.00
Incremental Delay, d2	46.3	0.4		1.2	0.2		2.2	0.3		1.9	0.4	0.1
Delay (s)	109.8	59.3		66.4	64.0		37.4	10.8		68.3	23.9	21.2
Level of Service	F	E		E	E		D	B		E	C	C
Approach Delay (s)		81.7			65.2			15.2			25.9	
Approach LOS		F			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	66.8%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	6	0	12	9	0	11	9	1370	40	5	15	413
Future Volume (vph)	6	0	12	9	0	11	9	1370	40	5	15	413
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	0.99
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1406	1406	2330	1719	1538		3433	3505	1550		1719	4823
Flt Permitted	0.95	1.00	1.00	1.00	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1406	1480	2330	1810	1538		3433	3505	1550		1719	4823
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
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	7	0	13	10	0	12	10	1519	44	6	17	458
RTOR Reduction (vph)	0	0	0	0	12	0	0	0	10	0	0	1
Lane Group Flow (vph)	3	4	13	10	0	0	10	1519	34	0	23	473
Confl. Peds. (#/hr)							3					
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	22%	22%	22%	5%	5%	5%	2%	3%	2%	5%	5%	7%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	1.7	1.7	3.6	2.1	4.0		1.5	108.3	108.3		5.4	112.2
Effective Green, g (s)	1.7	1.7	3.6	2.1	4.0		1.5	108.3	108.3		5.4	112.2
Actuated g/C Ratio	0.01	0.01	0.03	0.02	0.03		0.01	0.77	0.77		0.04	0.80
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	17	17	59	27	43		36	2711	1199		66	3865
v/s Ratio Prot	0.00		c0.01		0.00		0.00	c0.43			c0.01	c0.10
v/s Ratio Perm		0.00		c0.01					0.02			
v/c Ratio	0.18	0.24	0.22	0.37	0.01		0.28	0.56	0.03		0.35	0.12
Uniform Delay, d1	68.5	68.5	66.8	68.3	66.1		68.7	6.3	3.7		65.6	3.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.67	2.73	1.00		1.02	0.93
Incremental Delay, d2	6.7	9.5	1.9	11.3	0.1		5.3	0.8	0.0		3.7	0.1
Delay (s)	75.1	78.0	68.7	79.6	66.2		51.3	18.1	3.7		70.6	2.9
Level of Service	E	E	E	E	E		D	B	A		E	A
Approach Delay (s)		71.5			72.3			17.9				6.0
Approach LOS		E			E			B				A

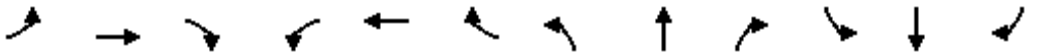
Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	14
Future Volume (vph)	14
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Growth Factor (vph)	102%
Adj. Flow (vph)	16
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	3
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	5%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

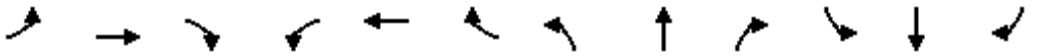
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	6	25	12	41	1502	430	4
Future Volume (vph)	6	25	12	41	1502	430	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.90	0.85		1.00	1.00	1.00	
Flt Protected	0.98	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3168	1427		3400	4988	4753	
Flt Permitted	0.98	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3168	1427		3400	4988	4753	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	7	28	13	45	1665	477	4
RTOR Reduction (vph)	13	13	0	0	0	0	0
Lane Group Flow (vph)	8	1	0	58	1665	481	0
Confl. Peds. (#/hr)				1			1
Heavy Vehicles (%)	3%	3%	3%	3%	4%	9%	7%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	11.0	11.0		6.9	118.7	106.1	
Effective Green, g (s)	11.0	11.0		6.9	118.7	106.1	
Actuated g/C Ratio	0.08	0.08		0.05	0.85	0.76	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	248	112		167	4229	3602	
v/s Ratio Prot	c0.00			0.02	c0.33	0.10	
v/s Ratio Perm		0.00					
v/c Ratio	0.03	0.01		0.35	0.39	0.13	
Uniform Delay, d1	59.6	59.5		64.4	2.4	4.6	
Progression Factor	1.00	1.00		1.31	0.16	1.08	
Incremental Delay, d2	0.1	0.0		1.4	0.3	0.1	
Delay (s)	59.7	59.5		85.7	0.6	5.0	
Level of Service	E	E		F	A	A	
Approach Delay (s)	59.6				3.5	5.0	
Approach LOS	E				A	A	

Intersection Summary			
HCM 2000 Control Delay	4.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



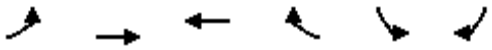
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	76	0	185	1	1	0	248	1454	3	0	382	66
Future Volume (vph)	76	0	185	1	1	0	248	1454	3	0	382	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0	4.0		5.7	5.7			5.7	
Lane Util. Factor		1.00	0.88	1.00	1.00		0.97	0.91			0.91	
Frpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	1.00			0.98	
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1750	2429	1805	1900		3099	5035			4743	
Flt Permitted		0.76	1.00	1.00	1.00		0.95	1.00			1.00	
Satd. Flow (perm)		1395	2429	1900	1900		3099	5035			4743	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	82	0	201	1	1	0	269	1578	3	0	415	72
RTOR Reduction (vph)	0	0	145	0	0	0	0	0	0	0	11	0
Lane Group Flow (vph)	0	82	56	1	1	0	269	1581	0	0	476	0
Confl. Peds. (#/hr)	1					1	2					2
Heavy Vehicles (%)	3%	3%	17%	0%	0%	0%	13%	3%	2%	5%	7%	5%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		14.9	43.8	1.4	7.6		18.7	103.8			79.4	
Effective Green, g (s)		14.9	38.8	1.4	7.6		18.7	103.8			79.4	
Actuated g/C Ratio		0.11	0.28	0.01	0.05		0.13	0.74			0.57	
Clearance Time (s)		4.0		4.0	4.0		5.7	5.7			5.7	
Vehicle Extension (s)		4.0		3.0	3.0		3.0	5.0			5.0	
Lane Grp Cap (vph)		148	673	19	103		413	3733			2689	
v/s Ratio Prot			c0.02		0.00		c0.09	c0.31			0.10	
v/s Ratio Perm		c0.06		c0.00								
v/c Ratio		0.55	0.08	0.05	0.01		0.65	0.42			0.18	
Uniform Delay, d1		59.4	37.4	68.6	62.6		57.6	6.8			14.6	
Progression Factor		1.00	1.00	1.00	1.00		1.17	0.59			0.49	
Incremental Delay, d2		5.4	0.1	1.2	0.0		3.4	0.3			0.1	
Delay (s)		64.8	37.5	69.8	62.7		70.7	4.4			7.2	
Level of Service		E	D	E	E		E	A			A	
Approach Delay (s)		45.4			66.2			14.0			7.2	
Approach LOS		D			E			B			A	

Intersection Summary			
HCM 2000 Control Delay	16.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.46		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	57.7%	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 (vph)	0	0	11	149	0	599	0	1127	336	173	456	28
Future Volume (vph)	0	0	11	149	0	599	0	1127	336	173	456	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	0.99	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1644	3467		2814		5204	1620	2847	4891	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1644	3467		2814		5204	1620	2847	4891	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	12	157	0	630	0	1185	353	182	480	29
RTOR Reduction (vph)	0	0	12	0	0	294	0	0	111	0	3	0
Lane Group Flow (vph)	0	0	0	157	0	336	0	1185	242	182	506	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	3%	3%	3%	23%	5%	5%
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			3.8	15.2		24.2		84.1	84.1	16.3	106.1	
Effective Green, g (s)			3.8	15.2		24.2		84.1	84.1	16.3	106.1	
Actuated g/C Ratio			0.03	0.11		0.17		0.60	0.60	0.12	0.76	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			44	376		486		3126	973	331	3706	
v/s Ratio Prot				0.05		c0.12		c0.23		c0.06	0.10	
v/s Ratio Perm			0.00						0.15			
v/c Ratio			0.01	0.42		0.69		0.38	0.25	0.55	0.14	
Uniform Delay, d1			66.3	58.3		54.4		14.5	13.1	58.4	4.6	
Progression Factor			1.00	1.00		1.00		0.83	1.01	1.15	0.49	
Incremental Delay, d2			0.1	0.8		4.2		0.3	0.5	3.2	0.1	
Delay (s)			66.3	59.0		58.6		12.2	13.8	70.6	2.3	
Level of Service			E	E		E		B	B	E	A	
Approach Delay (s)		66.3			58.7			12.6			20.3	
Approach LOS		E			E			B			C	

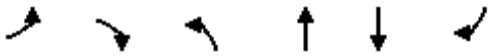
Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	20	42	214	211	3
Future Volume (Veh/h)	1	20	42	214	211	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	1	24	50	254	250	4
Pedestrians		1			4	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			485			
pX, platoon unblocked						
vC, conflicting volume	308				80	55
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	308				80	55
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				73	100
cM capacity (veh/h)	1259				918	1007

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	25	50	254	254
Volume Left	1	0	0	250
Volume Right	0	0	254	4
cSH	1259	1700	1700	919
Volume to Capacity	0.00	0.03	0.15	0.28
Queue Length 95th (ft)	0	0	0	28
Control Delay (s)	0.3	0.0	0.0	10.4
Lane LOS	A			B
Approach Delay (s)	0.3	0.0		10.4
Approach LOS				B

Intersection Summary			
Average Delay	4.5		
Intersection Capacity Utilization	23.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	102	5	112	1184	877	6
Future Volume (vph)	102	5	112	1184	877	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.7	5.7	5.7	5.7	
Lane Util. Factor	1.00	1.00	1.00	0.91	0.91	
Frt	1.00	0.85	1.00	1.00	1.00	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1805	1615	1752	5036	5030	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1805	1615	1752	5036	5030	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	115	6	127	1338	991	7
RTOR Reduction (vph)	0	5	0	0	0	0
Lane Group Flow (vph)	115	1	127	1338	998	0
Heavy Vehicles (%)	0%	0%	3%	3%	3%	6%
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	3	1	1	6	2	
Permitted Phases		8				
Actuated Green, G (s)	15.2	16.4	16.4	114.5	92.4	
Effective Green, g (s)	15.2	16.4	16.4	114.5	92.4	
Actuated g/C Ratio	0.11	0.12	0.12	0.82	0.66	
Clearance Time (s)	4.6	5.7	5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0	4.0	5.0	5.0	
Lane Grp Cap (vph)	195	189	205	4118	3319	
v/s Ratio Prot	c0.06	0.00	c0.07	c0.27	0.20	
v/s Ratio Perm						
v/c Ratio	0.59	0.00	0.62	0.32	0.30	
Uniform Delay, d1	59.4	54.6	58.8	3.2	10.1	
Progression Factor	1.00	1.00	1.07	1.73	0.46	
Incremental Delay, d2	5.3	0.0	5.4	0.2	0.2	
Delay (s)	64.7	54.6	68.2	5.7	4.9	
Level of Service	E	D	E	A	A	
Approach Delay (s)	64.2			11.1	4.9	
Approach LOS	E			B	A	

Intersection Summary			
HCM 2000 Control Delay	11.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	44.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	56	141	1751	345	68	582
Future Volume (vph)	56	141	1751	345	68	582
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.2	5.7	5.7	6.2	5.7
Lane Util. Factor	0.97	1.00	0.86	1.00	0.97	0.91
Frt	1.00	0.85	1.00	0.85	1.00	1.00
Flt Protected	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (prot)	3367	1553	6471	1583	3335	5036
Flt Permitted	0.95	1.00	1.00	1.00	0.95	1.00
Satd. Flow (perm)	3367	1553	6471	1583	3335	5036
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	63	159	1979	390	77	658
RTOR Reduction (vph)	0	3	0	100	0	0
Lane Group Flow (vph)	63	156	1979	290	77	658
Heavy Vehicles (%)	4%	4%	1%	2%	5%	3%
Turn Type	Prot	pm+ov	NA	Perm	Prot	NA
Protected Phases	4	5	6		5	2
Permitted Phases		4		6		
Actuated Green, G (s)	7.6	19.3	102.5	102.5	11.7	120.4
Effective Green, g (s)	7.6	19.3	102.5	102.5	11.7	120.4
Actuated g/C Ratio	0.05	0.14	0.73	0.73	0.08	0.86
Clearance Time (s)	6.3	6.2	5.7	5.7	6.2	5.7
Vehicle Extension (s)	4.0	3.0	5.0	5.0	3.0	5.0
Lane Grp Cap (vph)	182	214	4737	1158	278	4330
v/s Ratio Prot	0.02	c0.06	c0.31		0.02	0.13
v/s Ratio Perm		0.04		0.18		
v/c Ratio	0.35	0.73	0.42	0.25	0.28	0.15
Uniform Delay, d1	63.8	57.8	7.2	6.2	60.2	1.6
Progression Factor	1.00	1.00	0.37	0.00	0.97	0.70
Incremental Delay, d2	1.6	11.6	0.2	0.4	0.5	0.1
Delay (s)	65.4	69.4	2.9	0.4	59.1	1.2
Level of Service	E	E	A	A	E	A
Approach Delay (s)	68.3		2.5			7.2
Approach LOS	E		A			A

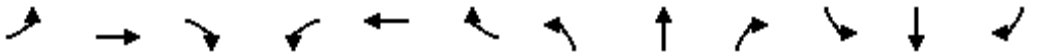
Intersection Summary			
HCM 2000 Control Delay	8.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	18.2
Intersection Capacity Utilization	45.4%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	254	318	1740	0	0	646
Future Volume (vph)	254	318	1740	0	0	646
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1	5.7			5.7
Lane Util. Factor	0.97	1.00	0.91			0.91
Frt	1.00	0.85	1.00			1.00
Flt Protected	0.95	1.00	1.00			1.00
Satd. Flow (prot)	3273	1524	5085			5085
Flt Permitted	0.95	1.00	1.00			1.00
Satd. Flow (perm)	3273	1524	5085			5085
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	287	359	1967	0	0	730
RTOR Reduction (vph)	0	5	0	0	0	0
Lane Group Flow (vph)	287	354	1967	0	0	730
Heavy Vehicles (%)	7%	6%	2%	2%	3%	2%
Turn Type	Prot	Perm	NA			NA
Protected Phases	4		6			2
Permitted Phases		4				
Actuated Green, G (s)	40.0	40.0	89.2			89.2
Effective Green, g (s)	40.0	40.0	89.2			89.2
Actuated g/C Ratio	0.29	0.29	0.64			0.64
Clearance Time (s)	5.1	5.1	5.7			5.7
Vehicle Extension (s)	4.0	4.0	5.0			5.0
Lane Grp Cap (vph)	935	435	3239			3239
v/s Ratio Prot	0.09		c0.39			0.14
v/s Ratio Perm		c0.23				
v/c Ratio	0.31	0.81	0.61			0.23
Uniform Delay, d1	39.1	46.5	15.0			10.8
Progression Factor	1.00	1.00	0.77			1.27
Incremental Delay, d2	0.3	11.7	0.8			0.2
Delay (s)	39.4	58.2	12.3			13.8
Level of Service	D	E	B			B
Approach Delay (s)	49.8		12.3			13.8
Approach LOS	D		B			B

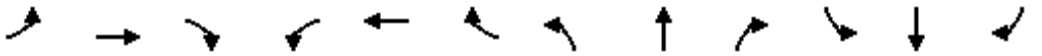
Intersection Summary			
HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	10.8
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	181	99	58	246	299	81	994	47	148	447	150
Future Volume (vph)	244	181	99	58	246	299	81	994	47	148	447	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.1	5.1		5.1	5.1		5.0	5.7		5.7	5.7	
Lane Util. Factor	0.97	0.95		1.00	0.95		1.00	0.95		0.97	0.91	
Frpb, ped/bikes	1.00	0.99		1.00	0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.95		1.00	0.92		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	3367	3262		1736	3162		1736	3448		3367	4780	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	3367	3262		1736	3162		1736	3448		3367	4780	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	276	205	112	66	278	338	92	1124	53	167	505	170
RTOR Reduction (vph)	0	53	0	0	146	0	0	2	0	0	44	0
Lane Group Flow (vph)	276	264	0	66	470	0	92	1175	0	167	631	0
Confl. Peds. (#/hr)	1		7	7		1	2					2
Heavy Vehicles (%)	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%	4%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases												
Actuated Green, G (s)	14.4	32.2		8.8	26.6		21.8	66.0		11.4	56.3	
Effective Green, g (s)	14.4	32.2		8.8	26.6		21.8	66.0		11.4	56.3	
Actuated g/C Ratio	0.10	0.23		0.06	0.19		0.16	0.47		0.08	0.40	
Clearance Time (s)	5.1	5.1		5.1	5.1		5.0	5.7		5.7	5.7	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)	346	750		109	600		270	1625		274	1922	
v/s Ratio Prot	c0.08	0.08		0.04	c0.15		0.05	c0.34		c0.05	0.13	
v/s Ratio Perm												
v/c Ratio	0.80	0.35		0.61	0.78		0.34	0.72		0.61	0.33	
Uniform Delay, d1	61.4	45.2		63.9	54.0		52.7	29.7		62.1	28.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		0.99	1.12	
Incremental Delay, d2	12.1	0.3		9.2	6.6		3.4	2.8		3.8	0.5	
Delay (s)	73.4	45.4		73.1	60.6		56.1	32.5		65.1	32.6	
Level of Service	E	D		E	E		E	C		E	C	
Approach Delay (s)		58.5			61.8			34.2			39.1	
Approach LOS		E			E			C			D	

Intersection Summary			
HCM 2000 Control Delay	45.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	21.6
Intersection Capacity Utilization	77.1%	ICU Level of Service	D
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 (vph)	274	22	144	26	6	19	213	1070	161	18	477	32
Future Volume (vph)	274	22	144	26	6	19	213	1070	161	18	477	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.2	6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1573	1588	1482	1715	1751	1615	1736	4890		1626	4673	1416
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1573	1588	1482	1715	1751	1615	1736	4890		1626	4673	1416
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	310	25	163	29	7	21	241	1210	182	20	539	36
RTOR Reduction (vph)	0	0	98	0	0	20	0	9	0	0	0	20
Lane Group Flow (vph)	167	168	65	18	18	1	241	1383	0	20	539	16
Confl. Peds. (#/hr)	2		6	6		2	2					2
Heavy Vehicles (%)	9%	9%	9%	0%	0%	0%	4%	4%	4%	11%	11%	11%
Turn Type	Split	NA	pt+ov	Split	NA	Prot	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	3	3	3	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	19.4	19.4	56.2	4.9	4.9	4.9	30.6	88.1		4.4	61.9	61.9
Effective Green, g (s)	19.4	19.4	56.2	4.9	4.9	4.9	30.6	88.1		4.4	61.9	61.9
Actuated g/C Ratio	0.14	0.14	0.40	0.04	0.04	0.04	0.22	0.63		0.03	0.44	0.44
Clearance Time (s)	6.2	6.2		6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	217	220	594	60	61	56	379	3077		51	2066	626
v/s Ratio Prot	c0.11	0.11	0.04	c0.01	0.01	0.00	c0.14	c0.28		0.01	0.12	
v/s Ratio Perm												0.01
v/c Ratio	0.77	0.76	0.11	0.30	0.30	0.01	0.64	0.45		0.39	0.26	0.03
Uniform Delay, d1	58.1	58.1	26.2	65.9	65.9	65.2	49.6	13.4		66.5	24.6	22.0
Progression Factor	1.16	1.16	1.75	1.00	1.00	1.00	1.20	0.36		1.00	1.00	1.00
Incremental Delay, d2	13.2	12.6	0.0	1.0	1.0	0.0	3.0	0.5		1.8	0.3	0.1
Delay (s)	80.6	79.9	45.8	66.9	66.9	65.2	62.4	5.3		68.3	24.9	22.1
Level of Service	F	E	D	E	E	E	E	A		E	C	C
Approach Delay (s)		69.0			66.3			13.7			26.2	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	27.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	22	0	47	9	0	11	258	1317	40	5	15	714
Future Volume (vph)	22	0	47	9	0	11	258	1317	40	5	15	714
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	0.98
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1406	1406	2330	1719	1538		3433	3539	1550		1719	4887
Flt Permitted	0.95	0.75	1.00	1.00	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1406	1109	2330	1810	1538		3433	3539	1550		1719	4887
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	25	0	53	10	0	12	292	1489	45	6	17	807
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	12	0	0	16
Lane Group Flow (vph)	12	13	53	10	1	0	292	1489	33	0	23	945
Confl. Peds. (#/hr)							3					
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	22%	22%	22%	5%	5%	5%	2%	2%	2%	5%	5%	3%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	6.7	6.7	10.4	2.3	6.0		18.1	101.7	101.7		5.0	88.6
Effective Green, g (s)	6.7	6.7	10.4	2.3	6.0		18.1	101.7	101.7		5.0	88.6
Actuated g/C Ratio	0.05	0.05	0.07	0.02	0.04		0.13	0.73	0.73		0.04	0.63
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	67	53	173	29	65		443	2570	1125		61	3092
v/s Ratio Prot	0.01		c0.02		0.00		c0.09	c0.42			0.01	0.19
v/s Ratio Perm		0.01		c0.01					0.02			
v/c Ratio	0.18	0.25	0.31	0.34	0.01		0.66	0.58	0.03		0.38	0.31
Uniform Delay, d1	64.0	64.2	61.4	68.1	64.2		58.0	9.0	5.4		66.0	11.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.86	1.34	1.00		0.68	2.32
Incremental Delay, d2	1.8	3.3	1.0	9.5	0.1		3.6	0.9	0.0		4.4	0.2
Delay (s)	65.8	67.5	62.4	77.6	64.2		53.3	13.0	5.4		49.3	27.4
Level of Service	E	E	E	E	E		D	B	A		D	C
Approach Delay (s)		63.8			70.3			19.3				27.9
Approach LOS		E			E			B				C

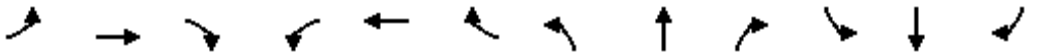
Intersection Summary			
HCM 2000 Control Delay	23.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	136
Future Volume (vph)	136
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Growth Factor (vph)	104%
Adj. Flow (vph)	154
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	3
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	5%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

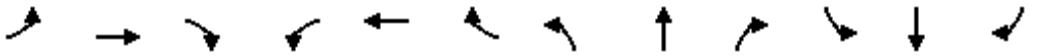
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	6	25	12	41	1700	766	4
Future Volume (vph)	6	25	12	41	1700	766	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.90	0.85		1.00	1.00	1.00	
Flt Protected	0.98	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3168	1427		3400	5036	4982	
Flt Permitted	0.98	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3168	1427		3400	5036	4982	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	7	28	14	46	1922	866	5
RTOR Reduction (vph)	13	13	0	0	0	0	0
Lane Group Flow (vph)	8	1	0	60	1922	871	0
Confl. Peds. (#/hr)				1			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	4%	7%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	11.0	11.0		7.1	118.7	105.9	
Effective Green, g (s)	11.0	11.0		7.1	118.7	105.9	
Actuated g/C Ratio	0.08	0.08		0.05	0.85	0.76	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	248	112		172	4269	3768	
v/s Ratio Prot	c0.00			0.02	c0.38	0.17	
v/s Ratio Perm		0.00					
v/c Ratio	0.03	0.01		0.35	0.45	0.23	
Uniform Delay, d1	59.6	59.5		64.2	2.6	5.0	
Progression Factor	1.00	1.00		1.33	0.12	0.86	
Incremental Delay, d2	0.1	0.0		1.3	0.3	0.1	
Delay (s)	59.7	59.5		87.0	0.6	4.5	
Level of Service	E	E		F	A	A	
Approach Delay (s)	59.6				3.2	4.5	
Approach LOS	E				A	A	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.1%	ICU Level of Service	A
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 (vph)	76	0	160	1	1	0	223	1652	3	0	718	66
Future Volume (vph)	76	0	160	1	1	0	223	1652	3	0	718	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0	4.0		5.7	5.7			5.7	
Lane Util. Factor		1.00	0.88	1.00	1.00		0.97	0.91			0.91	
Frpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	1.00			0.99	
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1750	2760	1805	1900		3433	5084			4958	
Flt Permitted		0.76	1.00	1.00	1.00		0.95	1.00			1.00	
Satd. Flow (perm)		1395	2760	1900	1900		3433	5084			4958	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	86	0	181	1	1	0	252	1867	3	0	812	75
RTOR Reduction (vph)	0	0	134	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	86	47	1	1	0	252	1870	0	0	882	0
Confl. Peds. (#/hr)	1					1	2					2
Heavy Vehicles (%)	3%	3%	3%	0%	0%	0%	2%	2%	2%	5%	3%	5%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		15.4	41.2	1.4	7.6		15.6	103.3			82.0	
Effective Green, g (s)		15.4	36.2	1.4	7.6		15.6	103.3			82.0	
Actuated g/C Ratio		0.11	0.26	0.01	0.05		0.11	0.74			0.59	
Clearance Time (s)		4.0		4.0	4.0		5.7	5.7			5.7	
Vehicle Extension (s)		4.0		3.0	3.0		3.0	5.0			5.0	
Lane Grp Cap (vph)		153	713	19	103		382	3751			2903	
v/s Ratio Prot			c0.02		0.00		c0.07	c0.37			0.18	
v/s Ratio Perm		c0.06		c0.00								
v/c Ratio		0.56	0.07	0.05	0.01		0.66	0.50			0.30	
Uniform Delay, d1		59.1	39.1	68.6	62.6		59.7	7.6			14.6	
Progression Factor		1.00	1.00	1.00	1.00		1.21	0.57			0.29	
Incremental Delay, d2		5.6	0.0	1.2	0.0		3.8	0.4			0.3	
Delay (s)		64.7	39.2	69.8	62.7		76.1	4.8			4.5	
Level of Service		E	D	E	E		E	A			A	
Approach Delay (s)		47.4			66.2			13.2			4.5	
Approach LOS		D			E			B			A	

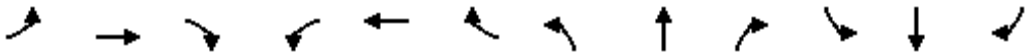
Intersection Summary			
HCM 2000 Control Delay	13.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	60.7%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	11	149	0	658	0	1203	336	232	600	28
Future Volume (vph)	0	0	11	149	0	658	0	1203	336	232	600	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	0.99	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1454	3467		2814		5204	1620	3367	4901	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1454	3467		2814		5204	1620	3367	4901	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	0	0	12	168	0	744	0	1360	380	262	678	32
RTOR Reduction (vph)	0	0	12	0	0	453	0	0	95	0	2	0
Lane Group Flow (vph)	0	0	0	168	0	291	0	1360	285	262	708	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	3%	3%	3%	4%	5%	5%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			2.9	13.9		22.0		84.6	84.6	18.0	108.3	
Effective Green, g (s)			2.9	13.9		22.0		84.6	84.6	18.0	108.3	
Actuated g/C Ratio			0.02	0.10		0.16		0.60	0.60	0.13	0.77	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			30	344		442		3144	978	432	3791	
v/s Ratio Prot				0.05		c0.10		c0.26		c0.08	0.14	
v/s Ratio Perm			0.00						0.18			
v/c Ratio			0.01	0.49		0.66		0.43	0.29	0.61	0.19	
Uniform Delay, d1			67.1	59.7		55.5		14.8	13.3	57.7	4.2	
Progression Factor			1.00	1.00		1.00		0.81	0.81	0.98	0.82	
Incremental Delay, d2			0.1	1.1		3.5		0.3	0.5	3.5	0.1	
Delay (s)			67.3	60.8		59.0		12.3	11.2	60.0	3.5	
Level of Service			E	E		E		B	B	E	A	
Approach Delay (s)		67.3			59.3			12.1			18.8	
Approach LOS		E			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

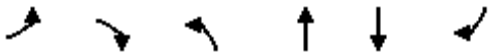
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	83	0	41	50	214	0	0	141	211	5	3
Future Volume (vph)	1	83	0	41	50	214	0	0	141	211	5	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.88			0.86			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	
Satd. Flow (prot)	1796	1598		1770	1558			1611			1774	
Flt Permitted	0.54	1.00		0.70	1.00			1.00			0.95	
Satd. Flow (perm)	1028	1598		1297	1558			1611			1774	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	1	94	0	46	57	242	0	0	159	239	6	3
RTOR Reduction (vph)	0	0	0	0	115	0	0	147	0	0	1	0
Lane Group Flow (vph)	1	94	0	46	184	0	0	12	0	0	247	0
Confl. Peds. (#/hr)	4					4						1
Heavy Vehicles (%)	0%	7%	2%	2%	8%	4%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA			NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	36.6	36.6		36.6	36.6			5.5			14.4	
Effective Green, g (s)	36.6	36.6		36.6	36.6			5.5			14.4	
Actuated g/C Ratio	0.52	0.52		0.52	0.52			0.08			0.21	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	537	835		678	814			126			364	
v/s Ratio Prot		0.06			c0.12			c0.01			c0.14	
v/s Ratio Perm	0.00			0.04								
v/c Ratio	0.00	0.11		0.07	0.23			0.10			0.68	
Uniform Delay, d1	8.0	8.5		8.3	9.0			29.9			25.7	
Progression Factor	1.00	1.00		0.31	1.11			1.00			1.00	
Incremental Delay, d2	0.0	0.3		0.2	0.6			0.3			5.0	
Delay (s)	8.0	8.7		2.7	10.6			30.3			30.6	
Level of Service	A	A		A	B			C			C	
Approach Delay (s)		8.7			9.6			30.3			30.6	
Approach LOS		A			A			C			C	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	49.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	102	5	112	1188	881	6
Future Volume (veh/h)	102	5	112	1188	881	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1841	1856	1811
Adj Flow Rate, veh/h	115	6	127	1343	996	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	3	4	3	6
Cap, veh/h	144	270	155	4255	3727	26
Arrive On Green	0.08	0.08	0.12	1.00	0.48	0.48
Sat Flow, veh/h	1810	1610	1767	5191	5357	36
Grp Volume(v), veh/h	115	6	127	1343	648	355
Grp Sat Flow(s),veh/h/ln	1810	1610	1767	1675	1689	1849
Q Serve(g_s), s	8.7	0.4	9.8	0.0	16.0	16.0
Cycle Q Clear(g_c), s	8.7	0.4	9.8	0.0	16.0	16.0
Prop In Lane	1.00	1.00	1.00			0.02
Lane Grp Cap(c), veh/h	144	270	155	4255	2425	1328
V/C Ratio(X)	0.80	0.02	0.82	0.32	0.27	0.27
Avail Cap(c_a), veh/h	367	468	420	4255	2425	1328
HCM Platoon Ratio	1.00	1.00	1.33	1.33	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.98	0.98
Uniform Delay (d), s/veh	63.3	48.7	60.7	0.0	14.4	14.4
Incr Delay (d2), s/veh	13.2	0.0	13.8	0.2	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.2	4.8	0.1	6.8	7.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	76.5	48.7	74.5	0.2	14.6	14.9
LnGrp LOS	E	D	E	A	B	B
Approach Vol, veh/h	121			1470	1003	
Approach Delay, s/veh	75.2			6.6	14.7	
Approach LOS	E			A	B	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	18.0	106.2				124.2	15.8
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	33.3	62.3				101.3	28.4
Max Q Clear Time (g_c+I1), s	11.8	18.0				2.0	10.7
Green Ext Time (p_c), s	0.6	23.8				54.8	0.5

Intersection Summary			
HCM 6th Ctrl Delay		12.9	
HCM 6th LOS		B	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	56	141	1765	345	68	596
Future Volume (veh/h)	56	141	1765	345	68	596
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1841	1841	1856	1870	1826	1841
Adj Flow Rate, veh/h	63	159	1995	0	77	674
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	3	2	5	4
Cap, veh/h	407	242	4564		119	3993
Arrive On Green	0.12	0.12	1.00	0.00	0.07	1.00
Sat Flow, veh/h	3401	1560	6643	1585	3374	5191
Grp Volume(v), veh/h	63	159	1995	0	77	674
Grp Sat Flow(s),veh/h/ln	1700	1560	1596	1585	1687	1675
Q Serve(g_s), s	2.3	13.4	0.0	0.0	3.1	0.0
Cycle Q Clear(g_c), s	2.3	13.4	0.0	0.0	3.1	0.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	407	242	4564		119	3993
V/C Ratio(X)	0.15	0.66	0.44		0.65	0.17
Avail Cap(c_a), veh/h	1045	534	4564		260	3993
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	0.71	0.00	1.00	1.00
Uniform Delay (d), s/veh	55.3	55.7	0.0	0.0	64.2	0.0
Incr Delay (d2), s/veh	0.2	4.3	0.2	0.0	5.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	11.7	0.1	0.0	1.4	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.5	59.9	0.2	0.0	70.0	0.1
LnGrp LOS	E	E	A		E	A
Approach Vol, veh/h	222		1995			751
Approach Delay, s/veh	58.7		0.2			7.3
Approach LOS	E		A			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		116.9		23.1	11.1	105.8
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		85.0		43.0	10.8	68.0
Max Q Clear Time (g_c+I1), s		2.0		15.4	5.1	2.0
Green Ext Time (p_c), s		22.0		1.3	0.1	60.0

Intersection Summary	
HCM 6th Ctrl Delay	6.4
HCM 6th LOS	A

Notes

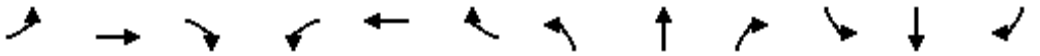
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	254	332	1740	0	0	660
Future Volume (veh/h)	254	332	1740	0	0	660
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1796	1796	1870	0	0	1841
Adj Flow Rate, veh/h	287	375	1967	0	0	746
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	7	2	0	0	4
Cap, veh/h	928	426	3285	0	0	3233
Arrive On Green	0.28	0.28	1.00	0.00	0.00	1.00
Sat Flow, veh/h	3319	1522	5443	0	0	5356
Grp Volume(v), veh/h	287	375	1967	0	0	746
Grp Sat Flow(s),veh/h/ln	1659	1522	1702	0	0	1675
Q Serve(g_s), s	9.5	33.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.5	33.0	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	928	426	3285	0	0	3233
V/C Ratio(X)	0.31	0.88	0.60	0.00	0.00	0.23
Avail Cap(c_a), veh/h	1278	586	3285	0	0	3233
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.99
Uniform Delay (d), s/veh	39.8	48.2	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	12.7	0.8	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.9	13.9	0.2	0.0	0.0	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	40.0	60.9	0.8	0.0	0.0	0.2
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	662		1967			746
Approach Delay, s/veh	51.9		0.8			0.2
Approach LOS	D		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		95.8		44.2		95.8
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		75.3		53.9		75.3
Max Q Clear Time (g_c+I1), s		2.0		35.0		2.0
Green Ext Time (p_c), s		20.2		4.2		65.5

Intersection Summary		
HCM 6th Ctrl Delay		10.7
HCM 6th LOS		B



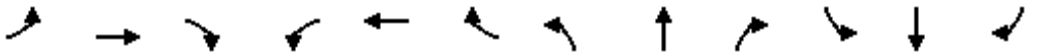
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	181	99	58	246	299	81	994	47	148	447	150
Future Volume (veh/h)	244	181	99	58	246	299	81	994	47	148	447	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		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	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	276	205	112	66	278	0	92	1124	53	167	505	0
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	325	372	194	84	422		188	1927	91	214	2651	
Arrive On Green	0.10	0.17	0.17	0.05	0.12	0.00	0.11	0.57	0.57	0.13	1.00	0.00
Sat Flow, veh/h	3401	2210	1154	1753	3589	0	1753	3400	160	3401	5191	0
Grp Volume(v), veh/h	276	160	157	66	278	0	92	578	599	167	505	0
Grp Sat Flow(s),veh/h/ln	1700	1749	1616	1753	1749	0	1753	1749	1812	1700	1675	0
Q Serve(g_s), s	11.2	11.7	12.5	5.2	10.6	0.0	6.9	29.9	30.0	6.7	0.0	0.0
Cycle Q Clear(g_c), s	11.2	11.7	12.5	5.2	10.6	0.0	6.9	29.9	30.0	6.7	0.0	0.0
Prop In Lane	1.00		0.71	1.00		0.00	1.00		0.09	1.00		0.00
Lane Grp Cap(c), veh/h	325	294	272	84	422		188	991	1027	214	2651	
V/C Ratio(X)	0.85	0.54	0.58	0.79	0.66		0.49	0.58	0.58	0.78	0.19	
Avail Cap(c_a), veh/h	362	431	398	154	797		188	991	1027	275	2651	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	62.3	53.3	53.6	65.9	58.8	0.0	58.9	19.6	19.6	60.3	0.0	0.0
Incr Delay (d2), s/veh	15.9	1.6	1.9	14.7	1.8	0.0	8.9	2.5	2.4	10.3	0.2	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	5.5	5.3	5.2	2.7	4.8	0.0	3.5	12.3	12.8	3.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.2	54.9	55.6	80.6	60.6	0.0	67.8	22.1	22.1	70.6	0.2	0.0
LnGrp LOS	E	D	E	F	E		E	C	C	E	A	
Approach Vol, veh/h		593			344			1269			672	
Approach Delay, s/veh		65.9			64.4			25.4			17.7	
Approach LOS		E			E			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	79.5	18.5	22.0	14.5	85.1	11.8	28.6
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	15.0	57.3	14.9	31.9	11.3	60.3	12.3	34.5
Max Q Clear Time (g_c+I1), s	8.9	2.0	13.2	12.6	8.7	32.0	7.2	14.5
Green Ext Time (p_c), s	0.1	9.5	0.2	1.0	0.1	18.9	0.1	3.1

Intersection Summary	
HCM 6th Ctrl Delay	36.6
HCM 6th LOS	D

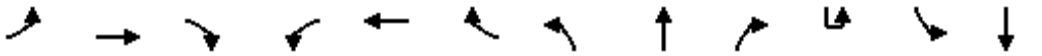
Notes

Unsignalized Delay for [WBR, SBR] 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 (vph)	274	22	148	26	6	19	217	1070	161	18	477	32
Future Volume (vph)	274	22	148	26	6	19	217	1070	161	18	477	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.2	6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1573	1588	1495	1715	1751	1615	1703	4890		1626	4673	1416
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1573	1588	1495	1715	1751	1615	1703	4890		1626	4673	1416
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	310	25	167	29	7	21	245	1210	182	20	539	36
RTOR Reduction (vph)	0	0	98	0	0	20	0	9	0	0	0	20
Lane Group Flow (vph)	167	168	69	18	18	1	245	1383	0	20	539	16
Confl. Peds. (#/hr)	2		6	6		2	2					2
Heavy Vehicles (%)	9%	9%	8%	0%	0%	0%	6%	4%	4%	11%	11%	11%
Turn Type	Split	NA	pt+ov	Split	NA	Prot	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	3	3	3	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	19.4	19.4	57.8	4.9	4.9	4.9	32.2	88.1		4.4	60.3	60.3
Effective Green, g (s)	19.4	19.4	57.8	4.9	4.9	4.9	32.2	88.1		4.4	60.3	60.3
Actuated g/C Ratio	0.14	0.14	0.41	0.04	0.04	0.04	0.23	0.63		0.03	0.43	0.43
Clearance Time (s)	6.2	6.2		6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	217	220	617	60	61	56	391	3077		51	2012	609
v/s Ratio Prot	c0.11	0.11	0.05	c0.01	0.01	0.00	c0.14	c0.28		0.01	0.12	
v/s Ratio Perm												0.01
v/c Ratio	0.77	0.76	0.11	0.30	0.30	0.01	0.63	0.45		0.39	0.27	0.03
Uniform Delay, d1	58.1	58.1	25.3	65.9	65.9	65.2	48.5	13.4		66.5	25.6	22.9
Progression Factor	1.05	1.05	1.43	1.00	1.00	1.00	1.14	0.31		1.00	1.00	1.00
Incremental Delay, d2	13.2	12.6	0.0	1.0	1.0	0.0	2.6	0.5		1.8	0.3	0.1
Delay (s)	74.3	73.7	36.3	66.9	66.9	65.2	58.0	4.7		68.3	26.0	23.0
Level of Service	E	E	D	E	E	E	E	A		E	C	C
Approach Delay (s)		61.5			66.3			12.6			27.2	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	25.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	22	0	47	9	0	11	258	1321	40	5	15	718
Future Volume (vph)	22	0	47	9	0	11	258	1321	40	5	15	718
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	0.98
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1406	1406	2330	1719	1538		3433	3505	1550		1719	4887
Flt Permitted	0.95	0.75	1.00	1.00	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1406	1109	2330	1810	1538		3433	3505	1550		1719	4887
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	25	0	53	10	0	12	292	1493	45	6	17	812
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	12	0	0	16
Lane Group Flow (vph)	12	13	53	10	1	0	292	1493	33	0	23	950
Confl. Peds. (#/hr)							3					
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	22%	22%	22%	5%	5%	5%	2%	3%	2%	5%	5%	3%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	6.7	6.7	10.4	2.3	6.0		18.1	101.7	101.7		5.0	88.6
Effective Green, g (s)	6.7	6.7	10.4	2.3	6.0		18.1	101.7	101.7		5.0	88.6
Actuated g/C Ratio	0.05	0.05	0.07	0.02	0.04		0.13	0.73	0.73		0.04	0.63
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	67	53	173	29	65		443	2546	1125		61	3092
v/s Ratio Prot	0.01		c0.02		0.00		c0.09	c0.43			0.01	0.19
v/s Ratio Perm		0.01		c0.01					0.02			
v/c Ratio	0.18	0.25	0.31	0.34	0.01		0.66	0.59	0.03		0.38	0.31
Uniform Delay, d1	64.0	64.2	61.4	68.1	64.2		58.0	9.1	5.4		66.0	11.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.05	0.81	1.00		0.69	2.31
Incremental Delay, d2	1.8	3.3	1.0	9.5	0.1		3.6	0.9	0.0		4.4	0.3
Delay (s)	65.8	67.5	62.4	77.6	64.2		64.3	8.3	5.4		49.8	27.3
Level of Service	E	E	E	E	E		E	A	A		D	C
Approach Delay (s)		63.8			70.3			17.2				27.9
Approach LOS		E			E			B				C

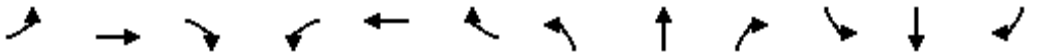
Intersection Summary			
HCM 2000 Control Delay	22.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	136
Future Volume (vph)	136
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Growth Factor (vph)	104%
Adj. Flow (vph)	154
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	3
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	5%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

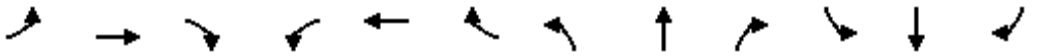
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	6	25	12	41	1704	770	4
Future Volume (vph)	6	25	12	41	1704	770	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.90	0.85		1.00	1.00	1.00	
Flt Protected	0.98	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3168	1427		3400	5036	4982	
Flt Permitted	0.98	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3168	1427		3400	5036	4982	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	7	28	14	46	1926	870	5
RTOR Reduction (vph)	13	13	0	0	0	0	0
Lane Group Flow (vph)	8	1	0	60	1926	875	0
Confl. Peds. (#/hr)				1			1
Heavy Vehicles (%)	3%	3%	3%	3%	3%	4%	7%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	11.0	11.0		7.1	118.7	105.9	
Effective Green, g (s)	11.0	11.0		7.1	118.7	105.9	
Actuated g/C Ratio	0.08	0.08		0.05	0.85	0.76	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	248	112		172	4269	3768	
v/s Ratio Prot	c0.00			0.02	c0.38	0.18	
v/s Ratio Perm		0.00					
v/c Ratio	0.03	0.01		0.35	0.45	0.23	
Uniform Delay, d1	59.6	59.5		64.2	2.6	5.0	
Progression Factor	1.00	1.00		1.15	0.08	0.26	
Incremental Delay, d2	0.1	0.0		1.3	0.3	0.1	
Delay (s)	59.7	59.5		75.4	0.5	1.4	
Level of Service	E	E		E	A	A	
Approach Delay (s)	59.6				2.8	1.4	
Approach LOS	E				A	A	

Intersection Summary			
HCM 2000 Control Delay	3.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.43		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
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 (vph)	76	0	170	1	1	0	233	1656	3	0	722	66
Future Volume (vph)	76	0	170	1	1	0	233	1656	3	0	722	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0	4.0		5.7	5.7			5.7	
Lane Util. Factor		1.00	0.88	1.00	1.00		0.97	0.91			0.91	
Frpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	1.00			0.99	
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1750	2584	1805	1900		3273	5084			4958	
Flt Permitted		0.76	1.00	1.00	1.00		0.95	1.00			1.00	
Satd. Flow (perm)		1395	2584	1900	1900		3273	5084			4958	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	86	0	192	1	1	0	263	1872	3	0	816	75
RTOR Reduction (vph)	0	0	141	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	86	51	1	1	0	263	1875	0	0	886	0
Confl. Peds. (#/hr)	1					1	2					2
Heavy Vehicles (%)	3%	3%	10%	0%	0%	0%	7%	2%	2%	5%	3%	5%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		15.4	42.5	1.4	7.6		16.9	103.3			80.7	
Effective Green, g (s)		15.4	37.5	1.4	7.6		16.9	103.3			80.7	
Actuated g/C Ratio		0.11	0.27	0.01	0.05		0.12	0.74			0.58	
Clearance Time (s)		4.0		4.0	4.0		5.7	5.7			5.7	
Vehicle Extension (s)		4.0		3.0	3.0		3.0	5.0			5.0	
Lane Grp Cap (vph)		153	692	19	103		395	3751			2857	
v/s Ratio Prot			c0.02		0.00		c0.08	c0.37			0.18	
v/s Ratio Perm		c0.06		c0.00								
v/c Ratio		0.56	0.07	0.05	0.01		0.67	0.50			0.31	
Uniform Delay, d1		59.1	38.3	68.6	62.6		58.9	7.6			15.3	
Progression Factor		1.00	1.00	1.00	1.00		1.10	0.63			0.15	
Incremental Delay, d2		5.6	0.0	1.2	0.0		3.9	0.4			0.3	
Delay (s)		64.7	38.3	69.8	62.7		68.3	5.2			2.6	
Level of Service		E	D	E	E		E	A			A	
Approach Delay (s)		46.5			66.2			13.0			2.6	
Approach LOS		D			E			B			A	

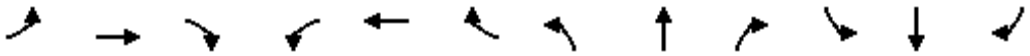
Intersection Summary			
HCM 2000 Control Delay	13.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	60.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	11	149	0	658	0	1203	336	246	600	28
Future Volume (vph)	0	0	11	149	0	658	0	1203	336	246	600	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	0.99	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1454	3467		2814		5204	1620	3242	4901	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1454	3467		2814		5204	1620	3242	4901	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	0	0	12	168	0	744	0	1360	380	278	678	32
RTOR Reduction (vph)	0	0	12	0	0	490	0	0	94	0	2	0
Lane Group Flow (vph)	0	0	0	168	0	254	0	1360	286	278	708	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	3%	3%	3%	8%	5%	5%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			2.5	13.0		20.7		84.8	84.8	19.1	109.6	
Effective Green, g (s)			2.5	13.0		20.7		84.8	84.8	19.1	109.6	
Actuated g/C Ratio			0.02	0.09		0.15		0.61	0.61	0.14	0.78	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			25	321		416		3152	981	442	3836	
v/s Ratio Prot				0.05		c0.09		c0.26		c0.09	0.14	
v/s Ratio Perm			0.00						0.18			
v/c Ratio			0.01	0.52		0.61		0.43	0.29	0.63	0.18	
Uniform Delay, d1			67.5	60.5		55.9		14.7	13.2	57.1	3.9	
Progression Factor			1.00	1.00		1.00		0.65	0.59	0.98	1.33	
Incremental Delay, d2			0.1	1.5		2.6		0.3	0.5	3.9	0.1	
Delay (s)			67.7	62.1		58.5		9.9	8.3	59.6	5.2	
Level of Service			E	E		E		A	A	E	A	
Approach Delay (s)		67.7			59.2			9.6			20.6	
Approach LOS		E			E			A			C	

Intersection Summary			
HCM 2000 Control Delay	25.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

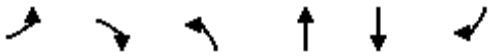
c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	87	0	41	54	214	0	0	141	211	5	3
Future Volume (vph)	1	87	0	41	54	214	0	0	141	211	5	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.88			0.86			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	
Satd. Flow (prot)	1796	1541		1770	1543			1611			1774	
Flt Permitted	0.54	1.00		0.69	1.00			1.00			0.95	
Satd. Flow (perm)	1021	1541		1292	1543			1611			1774	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	1	98	0	46	61	242	0	0	159	239	6	3
RTOR Reduction (vph)	0	0	0	0	115	0	0	147	0	0	1	0
Lane Group Flow (vph)	1	98	0	46	188	0	0	12	0	0	247	0
Confl. Peds. (#/hr)	4					4						1
Heavy Vehicles (%)	0%	11%	2%	2%	14%	4%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA			NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	36.6	36.6		36.6	36.6			5.5			14.4	
Effective Green, g (s)	36.6	36.6		36.6	36.6			5.5			14.4	
Actuated g/C Ratio	0.52	0.52		0.52	0.52			0.08			0.21	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	533	805		675	806			126			364	
v/s Ratio Prot		0.06			c0.12			c0.01			c0.14	
v/s Ratio Perm	0.00			0.04								
v/c Ratio	0.00	0.12		0.07	0.23			0.10			0.68	
Uniform Delay, d1	8.0	8.5		8.3	9.1			29.9			25.7	
Progression Factor	1.00	1.00		0.76	3.64			1.00			1.00	
Incremental Delay, d2	0.0	0.3		0.2	0.6			0.3			5.0	
Delay (s)	8.0	8.8		6.5	33.6			30.3			30.6	
Level of Service	A	A		A	C			C			C	
Approach Delay (s)		8.8			30.0			30.3			30.6	
Approach LOS		A			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	50.0%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	102	5	112	1193	886	6
Future Volume (veh/h)	102	5	112	1193	886	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1841	1841	1811
Adj Flow Rate, veh/h	115	6	127	1349	1002	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	3	4	4	6
Cap, veh/h	144	268	154	4255	3702	26
Arrive On Green	0.08	0.08	0.17	1.00	1.00	1.00
Sat Flow, veh/h	1810	1610	1767	5191	5314	36
Grp Volume(v), veh/h	115	6	127	1349	652	357
Grp Sat Flow(s),veh/h/ln	1810	1610	1767	1675	1675	1834
Q Serve(g_s), s	8.7	0.4	9.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	8.7	0.4	9.7	0.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.02
Lane Grp Cap(c), veh/h	144	268	154	4255	2409	1319
V/C Ratio(X)	0.80	0.02	0.83	0.32	0.27	0.27
Avail Cap(c_a), veh/h	367	467	408	4255	2409	1319
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.97	0.97
Uniform Delay (d), s/veh	63.3	48.8	56.8	0.0	0.0	0.0
Incr Delay (d2), s/veh	13.2	0.0	14.5	0.2	0.3	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.6	0.2	4.6	0.1	0.1	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	76.5	48.8	71.3	0.2	0.3	0.5
LnGrp LOS	E	D	E	A	A	A
Approach Vol, veh/h	121			1476	1009	
Approach Delay, s/veh	75.2			6.3	0.3	
Approach LOS	E			A	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	17.9	106.4				124.2	15.8
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	32.3	63.3				101.3	28.4
Max Q Clear Time (g_c+I1), s	11.7	2.0				2.0	10.7
Green Ext Time (p_c), s	0.6	28.2				55.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	7.2
HCM 6th LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	56	141	1785	345	68	616
Future Volume (veh/h)	56	141	1785	345	68	616
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1841	1841	1841	1870	1826	1781
Adj Flow Rate, veh/h	63	159	2018	0	77	696
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	4	4	2	5	8
Cap, veh/h	407	242	4526		120	3864
Arrive On Green	0.12	0.12	1.00	0.00	0.04	0.79
Sat Flow, veh/h	3401	1560	6590	1585	3374	5024
Grp Volume(v), veh/h	63	159	2018	0	77	696
Grp Sat Flow(s),veh/h/ln	1700	1560	1583	1585	1687	1621
Q Serve(g_s), s	2.3	13.4	0.0	0.0	3.2	4.8
Cycle Q Clear(g_c), s	2.3	13.4	0.0	0.0	3.2	4.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	407	242	4526		120	3864
V/C Ratio(X)	0.15	0.66	0.45		0.64	0.18
Avail Cap(c_a), veh/h	1045	535	4526		260	3864
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.68	0.00	1.00	1.00
Uniform Delay (d), s/veh	55.3	55.6	0.0	0.0	66.6	3.4
Incr Delay (d2), s/veh	0.2	4.3	0.2	0.0	5.6	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.0	11.7	0.1	0.0	1.4	1.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.5	59.9	0.2	0.0	72.3	3.5
LnGrp LOS	E	E	A		E	A
Approach Vol, veh/h	222		2018			773
Approach Delay, s/veh	58.6		0.2			10.4
Approach LOS	E		A			B

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		116.9		23.1	11.2	105.8
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		85.0		43.0	10.8	68.0
Max Q Clear Time (g_c+I1), s		6.8		15.4	5.2	2.0
Green Ext Time (p_c), s		22.8		1.3	0.1	60.4

Intersection Summary	
HCM 6th Ctrl Delay	7.1
HCM 6th LOS	A

Notes

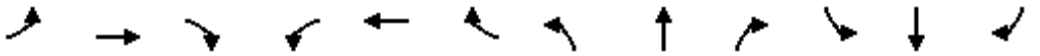
User approved pedestrian interval to be less than phase max green.

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	254	352	1740	0	0	640
Future Volume (veh/h)	254	352	1740	0	0	640
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1796	1722	1870	0	0	1796
Adj Flow Rate, veh/h	287	398	1967	0	0	723
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	7	12	2	0	0	7
Cap, veh/h	1014	446	3152	0	0	3027
Arrive On Green	0.31	0.31	1.00	0.00	0.00	1.00
Sat Flow, veh/h	3319	1459	5443	0	0	5227
Grp Volume(v), veh/h	287	398	1967	0	0	723
Grp Sat Flow(s),veh/h/ln	1659	1459	1702	0	0	1635
Q Serve(g_s), s	9.2	36.5	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	9.2	36.5	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	1014	446	3152	0	0	3027
V/C Ratio(X)	0.28	0.89	0.62	0.00	0.00	0.24
Avail Cap(c_a), veh/h	1349	593	3152	0	0	3027
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.99
Uniform Delay (d), s/veh	37.0	46.4	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	14.1	0.9	0.0	0.0	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.8	14.8	0.3	0.0	0.0	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	37.2	60.6	0.9	0.0	0.0	0.2
LnGrp LOS	D	E	A	A	A	A
Approach Vol, veh/h	685		1967			723
Approach Delay, s/veh	50.8		0.9			0.2
Approach LOS	D		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		92.1		47.9		92.1
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		72.3		56.9		72.3
Max Q Clear Time (g_c+I1), s		2.0		38.5		2.0
Green Ext Time (p_c), s		19.3		4.3		63.1

Intersection Summary	
HCM 6th Ctrl Delay	10.9
HCM 6th LOS	B



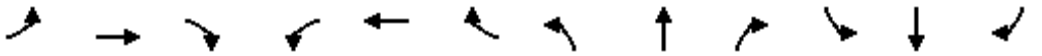
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	181	99	58	246	299	81	994	47	148	447	150
Future Volume (veh/h)	244	181	99	58	246	299	81	994	47	148	447	150
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		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	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841	1841
Adj Flow Rate, veh/h	276	205	112	66	278	0	92	1124	53	167	505	0
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, %	4	4	4	4	4	4	4	4	4	4	4	4
Cap, veh/h	325	372	194	84	422		188	1924	91	217	2651	
Arrive On Green	0.10	0.17	0.17	0.05	0.12	0.00	0.11	0.57	0.57	0.04	0.35	0.00
Sat Flow, veh/h	3401	2210	1154	1753	3589	0	1753	3400	160	3401	5191	0
Grp Volume(v), veh/h	276	160	157	66	278	0	92	578	599	167	505	0
Grp Sat Flow(s),veh/h/ln	1700	1749	1616	1753	1749	0	1753	1749	1812	1700	1675	0
Q Serve(g_s), s	11.2	11.7	12.5	5.2	10.6	0.0	6.9	30.0	30.0	6.8	9.8	0.0
Cycle Q Clear(g_c), s	11.2	11.7	12.5	5.2	10.6	0.0	6.9	30.0	30.0	6.8	9.8	0.0
Prop In Lane	1.00		0.71	1.00		0.00	1.00		0.09	1.00		0.00
Lane Grp Cap(c), veh/h	325	294	272	84	422		188	990	1025	217	2651	
V/C Ratio(X)	0.85	0.54	0.58	0.79	0.66		0.49	0.58	0.58	0.77	0.19	
Avail Cap(c_a), veh/h	362	431	398	154	797		188	990	1025	275	2651	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.98	0.98	0.00
Uniform Delay (d), s/veh	62.3	53.3	53.6	65.9	58.8	0.0	58.9	19.7	19.7	66.0	24.5	0.0
Incr Delay (d2), s/veh	15.9	1.6	1.9	14.7	1.8	0.0	8.9	2.5	2.4	9.6	0.2	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	5.5	5.3	5.2	2.7	4.8	0.0	3.5	12.4	12.8	3.3	4.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	78.2	54.9	55.6	80.6	60.6	0.0	67.8	22.2	22.1	75.6	24.7	0.0
LnGrp LOS	E	D	E	F	E		E	C	C	E	C	
Approach Vol, veh/h		593			344			1269			672	
Approach Delay, s/veh		65.9			64.4			25.5			37.4	
Approach LOS		E			E			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.0	79.5	18.5	22.0	14.6	84.9	11.8	28.6
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	15.0	57.3	14.9	31.9	11.3	60.3	12.3	34.5
Max Q Clear Time (g_c+I1), s	8.9	11.8	13.2	12.6	8.8	32.0	7.2	14.5
Green Ext Time (p_c), s	0.1	9.1	0.2	1.0	0.1	18.9	0.1	3.1

Intersection Summary	
HCM 6th Ctrl Delay	41.2
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] 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 (vph)	274	22	153	26	6	19	222	1070	161	18	477	32
Future Volume (vph)	274	22	153	26	6	19	222	1070	161	18	477	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.2	6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1573	1588	1455	1715	1751	1615	1671	4890		1626	4673	1416
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1573	1588	1455	1715	1751	1615	1671	4890		1626	4673	1416
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	310	25	173	29	7	21	251	1210	182	20	539	36
RTOR Reduction (vph)	0	0	99	0	0	20	0	9	0	0	0	21
Lane Group Flow (vph)	167	168	74	18	18	1	251	1383	0	20	539	15
Confl. Peds. (#/hr)	2		6	6		2	2					2
Heavy Vehicles (%)	9%	9%	11%	0%	0%	0%	8%	4%	4%	11%	11%	11%
Turn Type	Split	NA	pt+ov	Split	NA	Prot	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	3	3	3	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	19.4	19.4	59.7	4.9	4.9	4.9	34.1	88.1		4.4	58.4	58.4
Effective Green, g (s)	19.4	19.4	59.7	4.9	4.9	4.9	34.1	88.1		4.4	58.4	58.4
Actuated g/C Ratio	0.14	0.14	0.43	0.04	0.04	0.04	0.24	0.63		0.03	0.42	0.42
Clearance Time (s)	6.2	6.2		6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	217	220	620	60	61	56	407	3077		51	1949	590
v/s Ratio Prot	c0.11	0.11	0.05	c0.01	0.01	0.00	c0.15	c0.28		0.01	0.12	
v/s Ratio Perm												0.01
v/c Ratio	0.77	0.76	0.12	0.30	0.30	0.01	0.62	0.45		0.39	0.28	0.03
Uniform Delay, d1	58.1	58.1	24.3	65.9	65.9	65.2	47.1	13.4		66.5	26.9	24.0
Progression Factor	0.87	0.87	2.29	1.00	1.00	1.00	1.26	0.54		1.00	1.00	1.00
Incremental Delay, d2	13.2	12.7	0.0	1.0	1.0	0.0	2.3	0.5		1.8	0.4	0.1
Delay (s)	63.8	63.2	55.5	66.9	66.9	65.2	61.8	7.7		68.3	27.2	24.1
Level of Service	E	E	E	E	E	E	E	A		E	C	C
Approach Delay (s)		60.8			66.3			16.0			28.4	
Approach LOS		E			E			B			C	

Intersection Summary			
HCM 2000 Control Delay	27.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	22	0	47	9	0	11	258	1326	40	5	15	723
Future Volume (vph)	22	0	47	9	0	11	258	1326	40	5	15	723
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	0.98
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1406	1406	2330	1719	1538		3433	3505	1550		1719	4849
Flt Permitted	0.95	0.75	1.00	1.00	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1406	1109	2330	1810	1538		3433	3505	1550		1719	4849
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	25	0	53	10	0	12	292	1499	45	6	17	817
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	12	0	0	16
Lane Group Flow (vph)	12	13	53	10	1	0	292	1499	33	0	23	955
Confl. Peds. (#/hr)							3					
Confl. Bikes (#/hr)			1						2			
Heavy Vehicles (%)	22%	22%	22%	5%	5%	5%	2%	3%	2%	5%	5%	4%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	6.7	6.7	10.4	2.3	6.0		18.0	101.7	101.7		5.0	88.7
Effective Green, g (s)	6.7	6.7	10.4	2.3	6.0		18.0	101.7	101.7		5.0	88.7
Actuated g/C Ratio	0.05	0.05	0.07	0.02	0.04		0.13	0.73	0.73		0.04	0.63
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	67	53	173	29	65		441	2546	1125		61	3072
v/s Ratio Prot	0.01		c0.02		0.00		c0.09	c0.43			0.01	0.20
v/s Ratio Perm		0.01		c0.01					0.02			
v/c Ratio	0.18	0.25	0.31	0.34	0.01		0.66	0.59	0.03		0.38	0.31
Uniform Delay, d1	64.0	64.2	61.4	68.1	64.2		58.1	9.2	5.4		66.0	11.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.30	0.31	1.00		0.82	0.78
Incremental Delay, d2	1.8	3.3	1.0	9.5	0.1		3.7	0.9	0.0		4.4	0.3
Delay (s)	65.8	67.5	62.4	77.6	64.2		79.1	3.8	5.4		58.3	9.4
Level of Service	E	E	E	E	E		E	A	A		E	A
Approach Delay (s)		63.8			70.3			15.8				10.5
Approach LOS		E			E			B				B

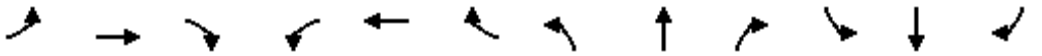
Intersection Summary			
HCM 2000 Control Delay	15.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	64.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	136
Future Volume (vph)	136
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Growth Factor (vph)	104%
Adj. Flow (vph)	154
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	3
Confl. Bikes (#/hr)	1
Heavy Vehicles (%)	5%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

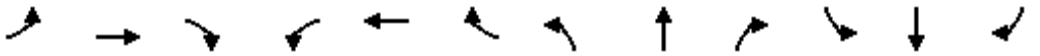
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	6	25	12	41	1709	775	4
Future Volume (vph)	6	25	12	41	1709	775	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.90	0.85		1.00	1.00	1.00	
Flt Protected	0.98	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3168	1427		3400	4988	4935	
Flt Permitted	0.98	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3168	1427		3400	4988	4935	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	7	28	14	46	1932	876	5
RTOR Reduction (vph)	13	13	0	0	0	0	0
Lane Group Flow (vph)	8	1	0	60	1932	881	0
Confl. Peds. (#/hr)				1			1
Heavy Vehicles (%)	3%	3%	3%	3%	4%	5%	7%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	11.0	11.0		7.1	118.7	105.9	
Effective Green, g (s)	11.0	11.0		7.1	118.7	105.9	
Actuated g/C Ratio	0.08	0.08		0.05	0.85	0.76	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	248	112		172	4229	3732	
v/s Ratio Prot	c0.00			0.02	c0.39	0.18	
v/s Ratio Perm		0.00					
v/c Ratio	0.03	0.01		0.35	0.46	0.24	
Uniform Delay, d1	59.6	59.5		64.2	2.6	5.1	
Progression Factor	1.00	1.00		1.27	0.29	1.14	
Incremental Delay, d2	0.1	0.0		1.3	0.3	0.1	
Delay (s)	59.7	59.5		82.7	1.1	5.9	
Level of Service	E	E		F	A	A	
Approach Delay (s)	59.6				3.5	5.9	
Approach LOS	E				A	A	

Intersection Summary			
HCM 2000 Control Delay	4.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.44		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
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 (vph)	76	0	185	1	1	0	248	1661	3	0	727	66
Future Volume (vph)	76	0	185	1	1	0	248	1661	3	0	727	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0	4.0		5.7	5.7			5.7	
Lane Util. Factor		1.00	0.88	1.00	1.00		0.97	0.91			0.91	
Frpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00			1.00	
Frt		1.00	0.85	1.00	1.00		1.00	1.00			0.99	
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		1750	2389	1805	1900		3099	5035			4915	
Flt Permitted		0.76	1.00	1.00	1.00		0.95	1.00			1.00	
Satd. Flow (perm)		1395	2389	1900	1900		3099	5035			4915	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	86	0	209	1	1	0	280	1878	3	0	822	75
RTOR Reduction (vph)	0	0	149	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	86	60	1	1	0	280	1881	0	0	892	0
Confl. Peds. (#/hr)	1					1	2					2
Heavy Vehicles (%)	3%	3%	19%	0%	0%	0%	13%	3%	2%	5%	4%	5%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		15.4	45.2	1.4	7.6		19.6	103.3			78.0	
Effective Green, g (s)		15.4	40.2	1.4	7.6		19.6	103.3			78.0	
Actuated g/C Ratio		0.11	0.29	0.01	0.05		0.14	0.74			0.56	
Clearance Time (s)		4.0		4.0	4.0		5.7	5.7			5.7	
Vehicle Extension (s)		4.0		3.0	3.0		3.0	5.0			5.0	
Lane Grp Cap (vph)		153	685	19	103		433	3715			2738	
v/s Ratio Prot			c0.03		0.00		c0.09	c0.37			0.18	
v/s Ratio Perm		c0.06		c0.00								
v/c Ratio		0.56	0.09	0.05	0.01		0.65	0.51			0.33	
Uniform Delay, d1		59.1	36.5	68.6	62.6		56.9	7.7			16.8	
Progression Factor		1.00	1.00	1.00	1.00		1.23	0.44			0.95	
Incremental Delay, d2		5.6	0.1	1.2	0.0		3.0	0.5			0.3	
Delay (s)		64.7	36.5	69.8	62.7		72.8	3.8			16.3	
Level of Service		E	D	E	E		E	A			B	
Approach Delay (s)		44.8			66.2			12.8			16.3	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	60.9%	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 (vph)	0	0	11	149	0	658	0	1203	336	266	600	28
Future Volume (vph)	0	0	11	149	0	658	0	1203	336	266	600	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	0.99	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1454	3467		2814		5204	1620	3045	4901	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1454	3467		2814		5204	1620	3045	4901	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	0	0	12	168	0	744	0	1360	380	301	678	32
RTOR Reduction (vph)	0	0	12	0	0	519	0	0	96	0	2	0
Lane Group Flow (vph)	0	0	0	168	0	225	0	1360	284	301	708	0
Confl. Peds. (#/hr)							1					1
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	3%	3%	3%	15%	5%	5%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			2.2	12.6		20.0		83.8	83.8	20.8	110.3	
Effective Green, g (s)			2.2	12.6		20.0		83.8	83.8	20.8	110.3	
Actuated g/C Ratio			0.02	0.09		0.14		0.60	0.60	0.15	0.79	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			22	312		402		3114	969	452	3861	
v/s Ratio Prot				0.05		c0.08		c0.26		c0.10	0.14	
v/s Ratio Perm			0.00						0.18			
v/c Ratio			0.01	0.54		0.56		0.44	0.29	0.67	0.18	
Uniform Delay, d1			67.8	60.9		55.9		15.3	13.7	56.3	3.7	
Progression Factor			1.00	1.00		1.00		0.79	1.09	0.94	1.08	
Incremental Delay, d2			0.2	1.8		1.7		0.3	0.5	4.8	0.1	
Delay (s)			68.0	62.7		57.6		12.4	15.5	58.0	4.1	
Level of Service			E	E		E		B	B	E	A	
Approach Delay (s)		68.0			58.5			13.1			20.1	
Approach LOS		E			E			B			C	

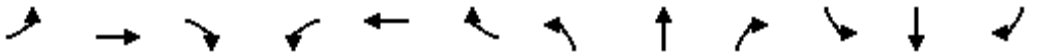
Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	140.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	56.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	92	0	41	59	214	0	0	141	211	5	3
Future Volume (vph)	1	92	0	41	59	214	0	0	141	211	5	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.88			0.86			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	
Satd. Flow (prot)	1796	1474		1770	1523			1611			1774	
Flt Permitted	0.53	1.00		0.69	1.00			1.00			0.95	
Satd. Flow (perm)	1010	1474		1285	1523			1611			1774	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	1	104	0	46	67	242	0	0	159	239	6	3
RTOR Reduction (vph)	0	0	0	0	116	0	0	147	0	0	1	0
Lane Group Flow (vph)	1	104	0	46	193	0	0	12	0	0	247	0
Confl. Peds. (#/hr)	4					4						1
Heavy Vehicles (%)	0%	16%	2%	2%	21%	4%	2%	2%	2%	2%	2%	2%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA			NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	36.5	36.5		36.5	36.5			5.5			14.5	
Effective Green, g (s)	36.5	36.5		36.5	36.5			5.5			14.5	
Actuated g/C Ratio	0.52	0.52		0.52	0.52			0.08			0.21	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	526	768		670	794			126			367	
v/s Ratio Prot		0.07			c0.13			c0.01			c0.14	
v/s Ratio Perm	0.00			0.04								
v/c Ratio	0.00	0.14		0.07	0.24			0.10			0.67	
Uniform Delay, d1	8.0	8.6		8.3	9.2			29.9			25.6	
Progression Factor	1.00	1.00		1.05	1.66			1.00			1.00	
Incremental Delay, d2	0.0	0.4		0.2	0.7			0.3			4.8	
Delay (s)	8.0	9.0		8.9	15.9			30.3			30.4	
Level of Service	A	A		A	B			C			C	
Approach Delay (s)		9.0			15.0			30.3			30.4	
Approach LOS		A			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	21.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.34		
Actuated Cycle Length (s)	70.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	50.3%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



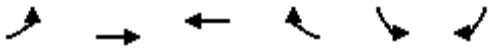
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	16	292	54	15	30	310	472	95	33	515	41
Future Volume (vph)	244	16	292	54	15	30	310	472	95	33	515	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.90		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	1587		1770	1659		1736	4843		1719	3438	1538
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	1587		1770	1659		1736	4843		1719	3438	1538
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	274	18	328	61	17	34	348	530	107	37	579	46
RTOR Reduction (vph)	0	275	0	0	30	0	0	18	0	0	0	35
Lane Group Flow (vph)	274	71	0	61	21	0	348	619	0	37	579	11
Confl. Peds. (#/hr)	4		6	6		4			1	1		
Heavy Vehicles (%)	1%	1%	1%	2%	2%	2%	4%	4%	4%	5%	5%	5%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7			3			5	2		1	6	
Permitted Phases		4			8							6
Actuated Green, G (s)	11.8	17.7		8.1	13.2		35.0	56.9		4.9	26.8	26.8
Effective Green, g (s)	11.8	17.7		8.1	13.2		35.0	56.9		4.9	26.8	26.8
Actuated g/C Ratio	0.11	0.16		0.07	0.12		0.32	0.52		0.04	0.24	0.24
Clearance Time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	4.0	2.0		2.0	2.0		2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	191	255		130	199		552	2505		76	837	374
v/s Ratio Prot	c0.15			0.03			c0.20	0.13		0.02	c0.17	
v/s Ratio Perm		c0.04			0.01							0.01
v/c Ratio	1.43	0.28		0.47	0.11		0.63	0.25		0.49	0.69	0.03
Uniform Delay, d1	49.1	40.5		48.9	43.1		32.0	14.7		51.3	37.8	31.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	222.8	0.2		1.0	0.1		2.1	0.2		1.8	4.7	0.1
Delay (s)	271.9	40.8		49.9	43.2		34.0	14.9		53.1	42.5	31.8
Level of Service	F	D		D	D		C	B		D	D	C
Approach Delay (s)		142.9			46.8			21.7			42.4	
Approach LOS		F			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	60.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
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 (vph)	97	0	346	1	0	0	388	845	2	6	790	139
Future Volume (vph)	97	0	346	1	0	0	388	845	2	6	790	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1764	2787	1805			3400	5034		1736	4860	
Flt Permitted		0.76	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1406	2787	1900			3400	5034		1736	4860	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	101	0	360	1	0	0	404	880	2	6	823	145
RTOR Reduction (vph)	0	0	193	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	101	167	1	0	0	404	882	0	6	953	0
Confl. Peds. (#/hr)	5					5	11					11
Confl. Bikes (#/hr)						1						2
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	3%	3%	3%	4%	4%	4%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		11.0	29.3	0.7			9.7	47.8		0.7	38.1	
Effective Green, g (s)		11.0	24.3	0.7			9.7	47.8		0.7	38.1	
Actuated g/C Ratio		0.13	0.29	0.01			0.12	0.57		0.01	0.46	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		185	811	15			394	2881		14	2217	
v/s Ratio Prot			c0.06				c0.12	0.18		0.00	c0.20	
v/s Ratio Perm		c0.07		c0.00								
v/c Ratio		0.55	0.21	0.07			1.03	0.31		0.43	0.43	
Uniform Delay, d1		33.9	22.3	41.1			36.9	9.3		41.2	15.4	
Progression Factor		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.1	0.1	1.9			52.0	0.3		19.7	0.6	
Delay (s)		38.0	22.5	43.0			88.9	9.5		60.9	16.0	
Level of Service		D	C	D			F	A		E	B	
Approach Delay (s)		25.9			43.0			34.5			16.2	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	20.4
Intersection Capacity Utilization	62.6%	ICU Level of Service	B
Analysis Period (min)	15		

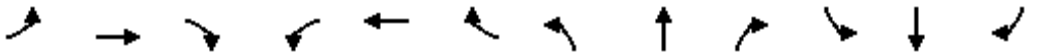
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	38	16	340	516	7
Future Volume (Veh/h)	7	38	16	340	516	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	8	45	19	400	607	8
Pedestrians		2			7	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			485			
pX, platoon unblocked						
vC, conflicting volume	426				87	28
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	426				87	28
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	99				33	99
cM capacity (veh/h)	1090				904	1041

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	53	19	400	615
Volume Left	8	0	0	607
Volume Right	0	0	400	8
cSH	1090	1700	1700	905
Volume to Capacity	0.01	0.01	0.24	0.68
Queue Length 95th (ft)	1	0	0	138
Control Delay (s)	1.3	0.0	0.0	17.0
Lane LOS	A			C
Approach Delay (s)	1.3	0.0		17.0
Approach LOS				C

Intersection Summary			
Average Delay	9.7		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		



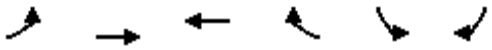
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	16	296	54	15	30	314	472	95	33	515	41
Future Volume (vph)	244	16	296	54	15	30	314	472	95	33	515	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.90		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	1558		1770	1659		1770	4843		1719	3438	1538
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	1558		1770	1659		1770	4843		1719	3438	1538
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	274	18	333	61	17	34	353	530	107	37	579	46
RTOR Reduction (vph)	0	279	0	0	30	0	0	18	0	0	0	35
Lane Group Flow (vph)	274	72	0	61	21	0	353	619	0	37	579	11
Confl. Peds. (#/hr)	4		6	6		4			1	1		
Heavy Vehicles (%)	1%	1%	3%	2%	2%	2%	2%	4%	4%	5%	5%	5%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7			3			5	2		1	6	
Permitted Phases		4			8							6
Actuated Green, G (s)	11.8	17.7		8.1	13.2		34.7	56.9		4.9	27.1	27.1
Effective Green, g (s)	11.8	17.7		8.1	13.2		34.7	56.9		4.9	27.1	27.1
Actuated g/C Ratio	0.11	0.16		0.07	0.12		0.32	0.52		0.04	0.25	0.25
Clearance Time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	4.0	2.0		2.0	2.0		2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	191	250		130	199		558	2505		76	846	378
v/s Ratio Prot	c0.15			0.03			c0.20	0.13		0.02	c0.17	
v/s Ratio Perm		c0.05			0.01							0.01
v/c Ratio	1.43	0.29		0.47	0.11		0.63	0.25		0.49	0.68	0.03
Uniform Delay, d1	49.1	40.6		48.9	43.1		32.2	14.7		51.3	37.6	31.5
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	222.8	0.2		1.0	0.1		2.1	0.2		1.8	4.5	0.1
Delay (s)	271.9	40.8		49.9	43.2		34.3	14.9		53.1	42.0	31.6
Level of Service	F	D		D	D		C	B		D	D	C
Approach Delay (s)		142.2			46.8			21.8			41.9	
Approach LOS		F			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	60.0	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	82.8%	ICU Level of Service	E
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 (vph)	97	0	356	1	0	0	398	849	2	6	794	139
Future Volume (vph)	97	0	356	1	0	0	398	849	2	6	794	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1764	2707	1805			3400	4939		1736	4821	
Flt Permitted		0.76	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1406	2707	1900			3400	4939		1736	4821	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	101	0	371	1	0	0	415	884	2	6	827	145
RTOR Reduction (vph)	0	0	193	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	101	178	1	0	0	415	886	0	6	957	0
Confl. Peds. (#/hr)	5					5	11					11
Confl. Bikes (#/hr)						1						2
Heavy Vehicles (%)	2%	2%	5%	0%	0%	0%	3%	5%	3%	4%	5%	4%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		11.0	29.3	0.7			9.7	47.8		0.7	38.1	
Effective Green, g (s)		11.0	24.3	0.7			9.7	47.8		0.7	38.1	
Actuated g/C Ratio		0.13	0.29	0.01			0.12	0.57		0.01	0.46	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		185	787	15			394	2827		14	2199	
v/s Ratio Prot			c0.07				c0.12	0.18		0.00	c0.20	
v/s Ratio Perm		c0.07		c0.00								
v/c Ratio		0.55	0.23	0.07			1.05	0.31		0.43	0.44	
Uniform Delay, d1		33.9	22.5	41.1			36.9	9.3		41.2	15.4	
Progression Factor		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.1	0.1	1.9			60.0	0.3		19.7	0.6	
Delay (s)		38.0	22.6	43.0			96.9	9.6		60.9	16.0	
Level of Service		D	C	D			F	A		E	B	
Approach Delay (s)		25.9			43.0			37.5			16.3	
Approach LOS		C			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	83.5	Sum of lost time (s)	20.4
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

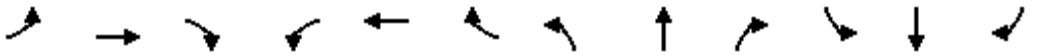
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	42	20	340	516	7
Future Volume (Veh/h)	7	42	20	340	516	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	8	49	24	400	607	8
Pedestrians		2			7	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			485			
pX, platoon unblocked						
vC, conflicting volume	431				96	33
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	431				96	33
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	99				32	99
cM capacity (veh/h)	1085				893	1034

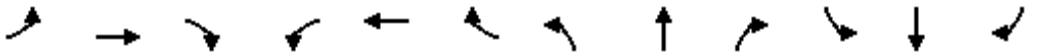
Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	57	24	400	615
Volume Left	8	0	0	607
Volume Right	0	0	400	8
cSH	1085	1700	1700	895
Volume to Capacity	0.01	0.01	0.24	0.69
Queue Length 95th (ft)	1	0	0	142
Control Delay (s)	1.2	0.0	0.0	17.4
Lane LOS	A			C
Approach Delay (s)	1.2	0.0		17.4
Approach LOS				C

Intersection Summary			
Average Delay	9.8		
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	16	301	54	15	30	319	472	95	33	515	41
Future Volume (vph)	244	16	301	54	15	30	319	472	95	33	515	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.98		1.00	0.99		1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.90		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1787	1529		1770	1659		1752	4843		1719	3438	1538
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1787	1529		1770	1659		1752	4843		1719	3438	1538
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	274	18	338	61	17	34	358	530	107	37	579	46
RTOR Reduction (vph)	0	284	0	0	30	0	0	18	0	0	0	35
Lane Group Flow (vph)	274	72	0	61	21	0	358	619	0	37	579	11
Confl. Peds. (#/hr)	4		6	6		4			1	1		
Heavy Vehicles (%)	1%	1%	5%	2%	2%	2%	3%	4%	4%	5%	5%	5%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7			3			5	2		1	6	
Permitted Phases		4			8							6
Actuated Green, G (s)	11.8	17.7		8.1	13.2		35.9	56.9		4.9	25.9	25.9
Effective Green, g (s)	11.8	17.7		8.1	13.2		35.9	56.9		4.9	25.9	25.9
Actuated g/C Ratio	0.11	0.16		0.07	0.12		0.33	0.52		0.04	0.24	0.24
Clearance Time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	4.0	2.0		2.0	2.0		2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	191	246		130	199		571	2505		76	809	362
v/s Ratio Prot	c0.15			0.03			c0.20	0.13		0.02	c0.17	
v/s Ratio Perm		c0.05			0.01							0.01
v/c Ratio	1.43	0.29		0.47	0.11		0.63	0.25		0.49	0.72	0.03
Uniform Delay, d1	49.1	40.6		48.9	43.1		31.4	14.7		51.3	38.7	32.4
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	222.8	0.2		1.0	0.1		1.9	0.2		1.8	5.4	0.2
Delay (s)	271.9	40.9		49.9	43.2		33.2	14.9		53.1	44.0	32.5
Level of Service	F	D		D	D		C	B		D	D	C
Approach Delay (s)		141.4			46.8			21.5			43.7	
Approach LOS		F			D			C			D	

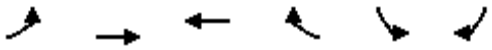
Intersection Summary			
HCM 2000 Control Delay	60.3	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	110.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	83.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	0	371	1	0	0	413	854	2	6	799	139
Future Volume (vph)	97	0	371	1	0	0	413	854	2	6	799	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1764	2632	1805			3273	4939		1736	4821	
Flt Permitted		0.76	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1406	2632	1900			3273	4939		1736	4821	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	101	0	386	1	0	0	430	890	2	6	832	145
RTOR Reduction (vph)	0	0	191	0	0	0	0	0	0	0	15	0
Lane Group Flow (vph)	0	101	195	1	0	0	430	892	0	6	962	0
Confl. Peds. (#/hr)	5					5	11					11
Confl. Bikes (#/hr)						1						2
Heavy Vehicles (%)	2%	2%	8%	0%	0%	0%	7%	5%	3%	4%	5%	4%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		10.4	29.7	0.7			10.7	48.7		0.7	38.0	
Effective Green, g (s)		10.4	24.7	0.7			10.7	48.7		0.7	38.0	
Actuated g/C Ratio		0.12	0.29	0.01			0.13	0.58		0.01	0.45	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		174	775	15			417	2870		14	2186	
v/s Ratio Prot			c0.07				c0.13	0.18		0.00	c0.20	
v/s Ratio Perm		c0.07		c0.00								
v/c Ratio		0.58	0.25	0.07			1.03	0.31		0.43	0.44	
Uniform Delay, d1		34.6	22.5	41.2			36.5	9.0		41.4	15.6	
Progression Factor		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.7	0.2	1.9			52.3	0.3		19.7	0.6	
Delay (s)		40.4	22.7	43.1			88.9	9.3		61.1	16.3	
Level of Service		D	C	D			F	A		E	B	
Approach Delay (s)		26.3			43.1			35.1			16.6	
Approach LOS		C			D			D			B	

Intersection Summary			
HCM 2000 Control Delay	27.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	20.4
Intersection Capacity Utilization	63.3%	ICU Level of Service	B
Analysis Period (min)	15		

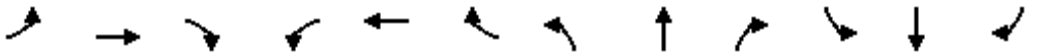
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	7	47	25	340	516	7
Future Volume (Veh/h)	7	47	25	340	516	7
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85
Hourly flow rate (vph)	8	55	29	400	607	8
Pedestrians		2			7	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			1	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			485			
pX, platoon unblocked						
vC, conflicting volume	436				107	38
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	436				107	38
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	99				31	99
cM capacity (veh/h)	1080				880	1028

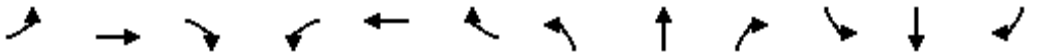
Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	63	29	400	615
Volume Left	8	0	0	607
Volume Right	0	0	400	8
cSH	1080	1700	1700	882
Volume to Capacity	0.01	0.02	0.24	0.70
Queue Length 95th (ft)	1	0	0	147
Control Delay (s)	1.1	0.0	0.0	17.9
Lane LOS	A			C
Approach Delay (s)	1.1	0.0		17.9
Approach LOS				C

Intersection Summary			
Average Delay	10.0		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	414	16	333	54	15	30	273	586	95	33	685	41
Future Volume (vph)	414	16	333	54	15	30	273	586	95	33	685	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.2	6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1698	1708	1583	1681	1720	1583	1736	4868		1719	4940	1538
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1698	1708	1583	1681	1720	1583	1736	4868		1719	4940	1538
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	474	18	382	62	17	34	313	672	109	38	785	47
RTOR Reduction (vph)	0	0	48	0	0	33	0	17	0	0	0	35
Lane Group Flow (vph)	246	246	334	39	40	1	313	764	0	38	785	12
Confl. Peds. (#/hr)	4		6	6		4			1	1		
Heavy Vehicles (%)	1%	1%	2%	2%	2%	2%	4%	4%	4%	5%	5%	5%
Turn Type	Split	NA	pt+ov	Split	NA	Prot	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	3	3	3	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	18.6	18.6	43.8	3.8	3.8	3.8	19.0	38.6		3.6	23.2	23.2
Effective Green, g (s)	18.6	18.6	43.8	3.8	3.8	3.8	19.0	38.6		3.6	23.2	23.2
Actuated g/C Ratio	0.21	0.21	0.50	0.04	0.04	0.04	0.22	0.44		0.04	0.26	0.26
Clearance Time (s)	6.2	6.2		6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	359	361	789	72	74	68	375	2140		70	1305	406
v/s Ratio Prot	c0.14	0.14	0.21	0.02	c0.02	0.00	c0.18	0.16		0.02	c0.16	
v/s Ratio Perm												0.01
v/c Ratio	0.69	0.68	0.42	0.54	0.54	0.02	0.83	0.36		0.54	0.60	0.03
Uniform Delay, d1	31.9	31.9	14.0	41.1	41.1	40.2	32.9	16.3		41.3	28.3	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.3	4.2	0.1	4.4	4.3	0.0	14.5	0.0		4.5	0.5	0.0
Delay (s)	36.2	36.1	14.1	45.5	45.4	40.3	47.4	16.4		45.8	28.8	24.0
Level of Service	D	D	B	D	D	D	D	B		D	C	C
Approach Delay (s)		26.5			43.9			25.3			29.3	
Approach LOS		C			D			C			C	

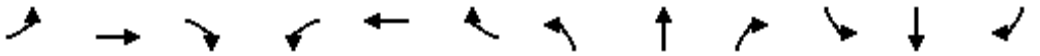
Intersection Summary			
HCM 2000 Control Delay	27.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	23.2
Intersection Capacity Utilization	67.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	0	346	1	0	0	388	1056	2	6	1142	139
Future Volume (vph)	97	0	346	1	0	0	388	1056	2	6	1142	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1764	2787	1805			3400	5035		1736	4937	
Flt Permitted		0.76	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1406	2787	1900			3400	5035		1736	4937	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	103	0	368	1	0	0	412	1122	2	6	1213	148
RTOR Reduction (vph)	0	0	178	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	103	190	1	0	0	412	1124	0	6	1352	0
Confl. Peds. (#/hr)	5					5	11					11
Confl. Bikes (#/hr)						1						2
Heavy Vehicles (%)	2%	2%	2%	0%	0%	0%	3%	3%	3%	4%	3%	4%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		10.4	29.7	0.7			10.7	48.7		0.7	38.0	
Effective Green, g (s)		10.4	24.7	0.7			10.7	48.7		0.7	38.0	
Actuated g/C Ratio		0.12	0.29	0.01			0.13	0.58		0.01	0.45	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		174	821	15			434	2926		14	2238	
v/s Ratio Prot			c0.07				c0.12	0.22		0.00	c0.27	
v/s Ratio Perm		c0.07		c0.00								
v/c Ratio		0.59	0.23	0.07			0.95	0.38		0.43	0.60	
Uniform Delay, d1		34.7	22.4	41.2			36.3	9.5		41.4	17.2	
Progression Factor		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.2	0.1	1.9			30.2	0.4		19.7	1.2	
Delay (s)		40.9	22.5	43.1			66.5	9.8		61.1	18.5	
Level of Service		D	C	D			E	A		E	B	
Approach Delay (s)		26.5			43.1			25.0			18.6	
Approach LOS		C			D			C			B	

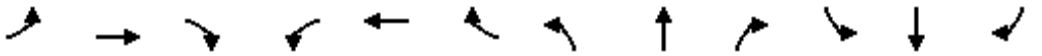
Intersection Summary			
HCM 2000 Control Delay	22.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	20.4
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	112	0	42	34	340	0	0	147	516	0	7
Future Volume (vph)	8	112	0	42	34	340	0	0	147	516	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.97			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.86			0.86			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	
Satd. Flow (prot)	1648	1644		1771	1577			1627			1789	
Flt Permitted	0.23	1.00		0.67	1.00			1.00			0.95	
Satd. Flow (perm)	391	1644		1252	1577			1627			1789	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	10	134	0	50	41	408	0	0	176	619	0	8
RTOR Reduction (vph)	0	0	0	0	287	0	0	160	0	0	49	0
Lane Group Flow (vph)	10	134	0	50	162	0	0	16	0	0	578	0
Confl. Peds. (#/hr)	7		6	6		7	2					2
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	9%	4%	9%	1%	0%	1%	33%	33%	1%	1%	0%	1%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA			NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	19.0	19.0		19.0	19.0			5.8			25.8	
Effective Green, g (s)	19.0	19.0		19.0	19.0			5.8			25.8	
Actuated g/C Ratio	0.30	0.30		0.30	0.30			0.09			0.40	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	115	487		371	467			147			720	
v/s Ratio Prot		0.08			c0.10			c0.01			c0.32	
v/s Ratio Perm	0.03			0.04								
v/c Ratio	0.09	0.28		0.13	0.35			0.11			0.80	
Uniform Delay, d1	16.3	17.3		16.5	17.7			26.8			16.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.5	1.4		0.8	2.0			0.3			6.5	
Delay (s)	17.8	18.7		17.3	19.7			27.1			23.4	
Level of Service	B	B		B	B			C			C	
Approach Delay (s)		18.6			19.5			27.1			23.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	64.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.1%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



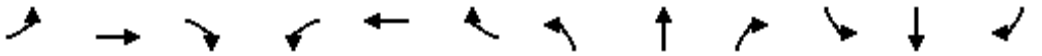
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	414	16	337	54	15	30	277	586	95	33	685	41
Future Volume (vph)	414	16	337	54	15	30	277	586	95	33	685	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.2	6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1698	1708	1568	1681	1720	1583	1770	4868		1719	4940	1538
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1698	1708	1568	1681	1720	1583	1770	4868		1719	4940	1538
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	474	18	386	62	17	34	317	672	109	38	785	47
RTOR Reduction (vph)	0	0	48	0	0	33	0	17	0	0	0	35
Lane Group Flow (vph)	246	246	338	39	40	1	317	764	0	38	785	12
Confl. Peds. (#/hr)	4		6	6		4			1	1		
Heavy Vehicles (%)	1%	1%	3%	2%	2%	2%	2%	4%	4%	5%	5%	5%
Turn Type	Split	NA	pt+ov	Split	NA	Prot	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	3	3	3	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	18.6	18.6	43.8	3.8	3.8	3.8	19.0	38.6		3.6	23.2	23.2
Effective Green, g (s)	18.6	18.6	43.8	3.8	3.8	3.8	19.0	38.6		3.6	23.2	23.2
Actuated g/C Ratio	0.21	0.21	0.50	0.04	0.04	0.04	0.22	0.44		0.04	0.26	0.26
Clearance Time (s)	6.2	6.2		6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	359	361	782	72	74	68	383	2140		70	1305	406
v/s Ratio Prot	c0.14	0.14	0.22	0.02	c0.02	0.00	c0.18	0.16		0.02	c0.16	
v/s Ratio Perm												0.01
v/c Ratio	0.69	0.68	0.43	0.54	0.54	0.02	0.83	0.36		0.54	0.60	0.03
Uniform Delay, d1	31.9	31.9	14.1	41.1	41.1	40.2	32.8	16.3		41.3	28.3	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.3	4.2	0.1	4.4	4.3	0.0	13.4	0.0		4.5	0.5	0.0
Delay (s)	36.2	36.1	14.2	45.5	45.4	40.3	46.2	16.4		45.8	28.8	24.0
Level of Service	D	D	B	D	D	D	D	B		D	C	C
Approach Delay (s)		26.5			43.9			25.0			29.3	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	27.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	23.2
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
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 (vph)	97	0	356	1	0	0	398	1060	2	6	1146	139
Future Volume (vph)	97	0	356	1	0	0	398	1060	2	6	1146	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1764	2707	1805			3400	4986		1736	4937	
Flt Permitted		0.76	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1406	2707	1900			3400	4986		1736	4937	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	103	0	378	1	0	0	423	1126	2	6	1218	148
RTOR Reduction (vph)	0	0	178	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	103	200	1	0	0	423	1128	0	6	1357	0
Confl. Peds. (#/hr)	5					5	11					11
Confl. Bikes (#/hr)						1						2
Heavy Vehicles (%)	2%	2%	5%	0%	0%	0%	3%	4%	3%	4%	3%	4%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		10.4	29.7	0.7			10.7	48.7		0.7	38.0	
Effective Green, g (s)		10.4	24.7	0.7			10.7	48.7		0.7	38.0	
Actuated g/C Ratio		0.12	0.29	0.01			0.13	0.58		0.01	0.45	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		174	797	15			434	2897		14	2238	
v/s Ratio Prot			c0.07				c0.12	0.23		0.00	c0.27	
v/s Ratio Perm		c0.07		c0.00								
v/c Ratio		0.59	0.25	0.07			0.97	0.39		0.43	0.61	
Uniform Delay, d1		34.7	22.5	41.2			36.4	9.5		41.4	17.3	
Progression Factor		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		6.2	0.2	1.9			36.3	0.4		19.7	1.2	
Delay (s)		40.9	22.7	43.1			72.7	9.9		61.1	18.5	
Level of Service		D	C	D			E	A		E	B	
Approach Delay (s)		26.6			43.1			27.0			18.7	
Approach LOS		C			D			C			B	

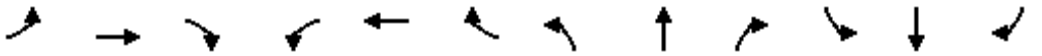
Intersection Summary			
HCM 2000 Control Delay	23.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	83.8	Sum of lost time (s)	20.4
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	116	0	42	38	340	0	0	147	516	0	7
Future Volume (vph)	8	116	0	42	38	340	0	0	147	516	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.97			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.87			0.86			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	
Satd. Flow (prot)	1648	1598		1771	1563			1627			1789	
Flt Permitted	0.22	1.00		0.67	1.00			1.00			0.95	
Satd. Flow (perm)	379	1598		1246	1563			1627			1789	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	10	139	0	50	46	408	0	0	176	619	0	8
RTOR Reduction (vph)	0	0	0	0	287	0	0	160	0	0	49	0
Lane Group Flow (vph)	10	139	0	50	167	0	0	16	0	0	578	0
Confl. Peds. (#/hr)	7		6	6		7	2					2
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	9%	7%	9%	1%	11%	1%	33%	33%	1%	1%	0%	1%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA			NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	19.0	19.0		19.0	19.0			5.8			25.8	
Effective Green, g (s)	19.0	19.0		19.0	19.0			5.8			25.8	
Actuated g/C Ratio	0.30	0.30		0.30	0.30			0.09			0.40	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	112	473		369	463			147			720	
v/s Ratio Prot		0.09			c0.11			c0.01			c0.32	
v/s Ratio Perm	0.03			0.04								
v/c Ratio	0.09	0.29		0.14	0.36			0.11			0.80	
Uniform Delay, d1	16.3	17.4		16.5	17.8			26.8			16.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.6	1.6		0.8	2.2			0.3			6.5	
Delay (s)	17.9	19.0		17.3	19.9			27.1			23.4	
Level of Service	B	B		B	B			C			C	
Approach Delay (s)		18.9			19.7			27.1			23.4	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	64.1	Sum of lost time (s)	13.5
Intersection Capacity Utilization	74.3%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



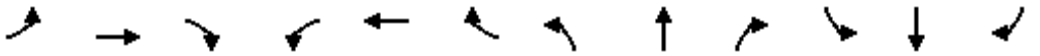
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	414	16	342	54	15	30	282	586	95	33	685	41
Future Volume (vph)	414	16	342	54	15	30	282	586	95	33	685	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.2	6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1698	1708	1553	1681	1720	1583	1736	4868		1719	4940	1538
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1698	1708	1553	1681	1720	1583	1736	4868		1719	4940	1538
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	474	18	392	62	17	34	323	672	109	38	785	47
RTOR Reduction (vph)	0	0	48	0	0	33	0	17	0	0	0	35
Lane Group Flow (vph)	246	246	344	39	40	1	323	764	0	38	785	12
Confl. Peds. (#/hr)	4		6	6		4			1	1		
Heavy Vehicles (%)	1%	1%	4%	2%	2%	2%	4%	4%	4%	5%	5%	5%
Turn Type	Split	NA	pt+ov	Split	NA	Prot	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	3	3	3	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	18.6	18.6	43.8	3.8	3.8	3.8	19.0	38.6		3.6	23.2	23.2
Effective Green, g (s)	18.6	18.6	43.8	3.8	3.8	3.8	19.0	38.6		3.6	23.2	23.2
Actuated g/C Ratio	0.21	0.21	0.50	0.04	0.04	0.04	0.22	0.44		0.04	0.26	0.26
Clearance Time (s)	6.2	6.2		6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	359	361	774	72	74	68	375	2140		70	1305	406
v/s Ratio Prot	c0.14	0.14	0.22	0.02	c0.02	0.00	c0.19	0.16		0.02	c0.16	
v/s Ratio Perm												0.01
v/c Ratio	0.69	0.68	0.44	0.54	0.54	0.02	0.86	0.36		0.54	0.60	0.03
Uniform Delay, d1	31.9	31.9	14.2	41.1	41.1	40.2	33.1	16.3		41.3	28.3	24.0
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	4.3	4.2	0.1	4.4	4.3	0.0	17.8	0.0		4.5	0.5	0.0
Delay (s)	36.2	36.1	14.3	45.5	45.4	40.3	50.9	16.4		45.8	28.8	24.0
Level of Service	D	D	B	D	D	D	D	B		D	C	C
Approach Delay (s)		26.5			43.9			26.5			29.3	
Approach LOS		C			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	87.8	Sum of lost time (s)	23.2
Intersection Capacity Utilization	67.7%	ICU Level of Service	C
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 (vph)	97	0	361	1	0	0	413	1065	2	6	1151	139
Future Volume (vph)	97	0	361	1	0	0	413	1065	2	6	1151	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1764	2608	1805			3273	4986		1736	4895	
Flt Permitted		0.76	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1406	2608	1900			3273	4986		1736	4895	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	103	0	384	1	0	0	439	1132	2	6	1223	148
RTOR Reduction (vph)	0	0	177	0	0	0	0	0	0	0	9	0
Lane Group Flow (vph)	0	103	207	1	0	0	439	1134	0	6	1362	0
Confl. Peds. (#/hr)	5					5	11					11
Confl. Bikes (#/hr)						1						2
Heavy Vehicles (%)	2%	2%	9%	0%	0%	0%	7%	4%	3%	4%	4%	4%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		9.6	29.9	0.7			11.7	49.7		0.7	38.0	
Effective Green, g (s)		9.6	24.9	0.7			11.7	49.7		0.7	38.0	
Actuated g/C Ratio		0.11	0.30	0.01			0.14	0.59		0.01	0.45	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		160	773	15			455	2950		14	2214	
v/s Ratio Prot			c0.08				c0.13	0.23		0.00	c0.28	
v/s Ratio Perm		c0.07		c0.00								
v/c Ratio		0.64	0.27	0.07			0.96	0.38		0.43	0.62	
Uniform Delay, d1		35.6	22.6	41.3			35.9	9.1		41.5	17.5	
Progression Factor		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Incremental Delay, d2		9.5	0.2	1.9			33.0	0.4		19.7	1.3	
Delay (s)		45.1	22.8	43.2			68.9	9.4		61.2	18.7	
Level of Service		D	C	D			E	A		E	B	
Approach Delay (s)		27.5			43.2			26.0			18.9	
Approach LOS		C			D			C			B	

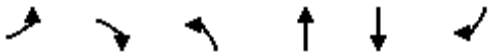
Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	63.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	121	0	42	43	340	0	0	147	516	0	7
Future Volume (vph)	8	121	0	42	43	340	0	0	147	516	0	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.97			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		0.99	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.87			0.86			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	
Satd. Flow (prot)	1648	1541		1771	1548			1627			1789	
Flt Permitted	0.21	1.00		0.66	1.00			1.00			0.95	
Satd. Flow (perm)	365	1541		1239	1548			1627			1789	
Peak-hour factor, PHF	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	10	145	0	50	52	408	0	0	176	619	0	8
RTOR Reduction (vph)	0	0	0	0	287	0	0	160	0	0	49	0
Lane Group Flow (vph)	10	145	0	50	173	0	0	16	0	0	578	0
Confl. Peds. (#/hr)	7		6	6		7	2					2
Confl. Bikes (#/hr)						1						
Heavy Vehicles (%)	9%	11%	9%	1%	21%	1%	33%	33%	1%	1%	0%	1%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA			NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	19.0	19.0		19.0	19.0			5.9			25.8	
Effective Green, g (s)	19.0	19.0		19.0	19.0			5.9			25.8	
Actuated g/C Ratio	0.30	0.30		0.30	0.30			0.09			0.40	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	108	456		366	458			149			718	
v/s Ratio Prot		0.09			c0.11			c0.01			c0.32	
v/s Ratio Perm	0.03			0.04								
v/c Ratio	0.09	0.32		0.14	0.38			0.11			0.80	
Uniform Delay, d1	16.4	17.6		16.6	17.9			26.7			17.0	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	1.7	1.8		0.8	2.4			0.3			6.5	
Delay (s)	18.1	19.4		17.4	20.3			27.1			23.5	
Level of Service	B	B		B	C			C			C	
Approach Delay (s)		19.3			20.0			27.1			23.5	
Approach LOS		B			B			C			C	

Intersection Summary			
HCM 2000 Control Delay	22.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	64.2	Sum of lost time (s)	13.5
Intersection Capacity Utilization	82.4%	ICU Level of Service	E
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	9	758	1914	6
Future Volume (veh/h)	5	5	9	758	1914	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1856	1885	1885
Adj Flow Rate, veh/h	5	5	10	814	2055	6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	3	3	1	1
Cap, veh/h	30	53	29	4582	3093	9
Arrive On Green	0.02	0.02	0.03	1.00	1.00	1.00
Sat Flow, veh/h	1810	1610	1767	5233	3758	11
Grp Volume(v), veh/h	5	5	10	814	1004	1057
Grp Sat Flow(s),veh/h/ln	1810	1610	1767	1689	1791	1883
Q Serve(g_s), s	0.4	0.4	0.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.4	0.7	0.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	30	53	29	4582	1512	1590
V/C Ratio(X)	0.17	0.10	0.35	0.18	0.66	0.66
Avail Cap(c_a), veh/h	145	155	126	4582	1512	1590
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.09	0.09
Uniform Delay (d), s/veh	63.1	61.0	62.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	3.8	1.1	9.9	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.4	0.0	0.1	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	66.9	62.1	72.1	0.1	0.2	0.2
LnGrp LOS	E	E	E	A	A	A
Approach Vol, veh/h	10			824	2061	
Approach Delay, s/veh	64.5			1.0	0.2	
Approach LOS	E			A	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	7.8	115.5				123.3	6.7
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	9.3	94.3				109.3	10.4
Max Q Clear Time (g_c+I1), s	2.7	2.0				2.0	2.4
Green Ext Time (p_c), s	0.0	87.2				24.5	0.0

Intersection Summary	
HCM 6th Ctrl Delay	0.6
HCM 6th LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	87	90	927	269	87	1416
Future Volume (veh/h)	87	90	927	269	87	1416
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1811	1811	1870	1870	1885	1885
Adj Flow Rate, veh/h	96	100	1028	0	96	1570
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	2	2	1	1
Cap, veh/h	286	196	4712		147	4231
Arrive On Green	0.09	0.09	0.24	0.00	0.04	0.82
Sat Flow, veh/h	3346	1535	6696	1585	3483	5316
Grp Volume(v), veh/h	96	100	1028	0	96	1570
Grp Sat Flow(s),veh/h/ln	1673	1535	1609	1585	1742	1716
Q Serve(g_s), s	3.5	7.9	16.6	0.0	3.5	10.1
Cycle Q Clear(g_c), s	3.5	7.9	16.6	0.0	3.5	10.1
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	286	196	4712		147	4231
V/C Ratio(X)	0.34	0.51	0.22		0.65	0.37
Avail Cap(c_a), veh/h	1125	581	4712		316	4231
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.95	0.00	1.00	1.00
Uniform Delay (d), s/veh	56.0	52.9	19.5	0.0	61.3	3.0
Incr Delay (d2), s/veh	1.0	2.9	0.1	0.0	4.9	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	6.9	7.2	0.0	1.6	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.9	55.8	19.6	0.0	66.2	3.2
LnGrp LOS	E	E	B		E	A
Approach Vol, veh/h	196		1028			1666
Approach Delay, s/veh	56.4		19.6			6.8
Approach LOS	E		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		112.6		17.4	11.7	100.9
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		74.3		43.7	11.8	56.3
Max Q Clear Time (g_c+I1), s		12.1		9.9	5.5	18.6
Green Ext Time (p_c), s		52.4		1.2	0.1	22.6

Intersection Summary	
HCM 6th Ctrl Delay	14.7
HCM 6th LOS	B

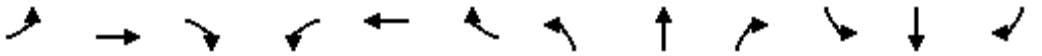
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	329	258	928	0	0	1510
Future Volume (veh/h)	329	258	928	0	0	1510
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1841	1841	1870	0	0	1885
Adj Flow Rate, veh/h	350	274	986	0	0	1604
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	4	2	0	0	1
Cap, veh/h	521	239	3900	0	0	3931
Arrive On Green	0.15	0.15	1.00	0.00	0.00	1.00
Sat Flow, veh/h	3401	1560	5443	0	0	5486
Grp Volume(v), veh/h	350	274	986	0	0	1604
Grp Sat Flow(s),veh/h/ln	1700	1560	1702	0	0	1716
Q Serve(g_s), s	12.6	19.9	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.6	19.9	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	521	239	3900	0	0	3931
V/C Ratio(X)	0.67	1.15	0.25	0.00	0.00	0.41
Avail Cap(c_a), veh/h	521	239	3900	0	0	3931
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.94
Uniform Delay (d), s/veh	52.0	55.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	3.8	103.8	0.2	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	14.6	0.1	0.0	0.0	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.8	158.9	0.2	0.0	0.0	0.3
LnGrp LOS	E	F	A	A	A	A
Approach Vol, veh/h	624		986			1604
Approach Delay, s/veh	101.0		0.2			0.3
Approach LOS	F		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		105.0		25.0		105.0
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		99.3		19.9		99.3
Max Q Clear Time (g_c+I1), s		2.0		21.9		2.0
Green Ext Time (p_c), s		69.0		0.0		32.8

Intersection Summary		
HCM 6th Ctrl Delay		19.8
HCM 6th LOS		B



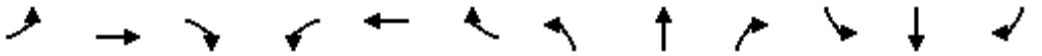
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	143	347	123	73	272	369	81	668	52	213	1145	124
Future Volume (veh/h)	143	347	123	73	272	369	81	668	52	213	1145	124
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	160	389	138	82	305	0	91	749	58	239	1283	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	221	521	182	103	701		151	1633	126	297	2530	
Arrive On Green	0.06	0.20	0.20	0.06	0.20	0.00	0.08	0.49	0.49	0.17	0.99	0.00
Sat Flow, veh/h	3483	2587	905	1795	3676	0	1781	3341	259	3456	5274	0
Grp Volume(v), veh/h	160	268	259	82	305	0	91	398	409	239	1283	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1701	1795	1791	0	1781	1777	1823	1728	1702	0
Q Serve(g_s), s	5.9	18.2	18.7	5.9	9.7	0.0	6.4	19.2	19.2	8.6	0.6	0.0
Cycle Q Clear(g_c), s	5.9	18.2	18.7	5.9	9.7	0.0	6.4	19.2	19.2	8.6	0.6	0.0
Prop In Lane	1.00		0.53	1.00		0.00	1.00		0.14	1.00		0.00
Lane Grp Cap(c), veh/h	221	361	343	103	701		151	869	891	297	2530	
V/C Ratio(X)	0.72	0.74	0.76	0.79	0.44		0.60	0.46	0.46	0.80	0.51	
Avail Cap(c_a), veh/h	506	522	496	137	796		151	869	891	486	2530	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.94	0.94	0.00
Uniform Delay (d), s/veh	59.8	48.7	48.9	60.5	46.0	0.0	57.4	21.9	21.9	52.8	0.3	0.0
Incr Delay (d2), s/veh	4.5	3.3	4.0	20.4	0.4	0.0	16.6	1.7	1.7	4.8	0.7	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	2.7	8.4	8.3	3.2	4.4	0.0	3.5	8.2	8.4	3.6	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.2	52.0	52.9	80.9	46.4	0.0	74.0	23.6	23.6	57.6	1.0	0.0
LnGrp LOS	E	D	D	F	D		E	C	C	E	A	
Approach Vol, veh/h		687			387			898			1522	
Approach Delay, s/veh		55.2			53.7			28.7			9.9	
Approach LOS		E			D			C			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	70.1	13.3	30.5	16.9	69.2	12.6	31.3
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	11.0	50.3	18.9	28.9	18.3	42.3	9.9	37.9
Max Q Clear Time (g_c+I1), s	8.4	2.6	7.9	11.7	10.6	21.2	7.9	20.7
Green Ext Time (p_c), s	0.0	28.8	0.4	1.1	0.5	10.7	0.0	5.1

Intersection Summary	
HCM 6th Ctrl Delay	28.5
HCM 6th LOS	C

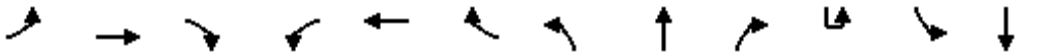
Notes

Unsignalized Delay for [WBR, SBR] 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 (vph)	247	13	368	157	28	12	245	464	44	10	1282	50
Future Volume (vph)	247	13	368	157	28	12	245	464	44	10	1282	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.95		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1601		1787	1787		1770	5008		1787	3574	1548
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1601		1787	1787		1770	5008		1787	3574	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	265	14	395	169	30	13	263	498	47	11	1376	54
RTOR Reduction (vph)	0	177	0	0	11	0	0	6	0	0	0	38
Lane Group Flow (vph)	265	232	0	169	32	0	263	539	0	11	1376	16
Confl. Peds. (#/hr)	4		3	3		4	4		2	2		4
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7			3			5	2		1	6	
Permitted Phases		4			8							6
Actuated Green, G (s)	19.3	24.2		15.6	19.7		30.3	65.3		2.5	37.5	37.5
Effective Green, g (s)	19.3	24.2		15.6	19.7		30.3	65.3		2.5	37.5	37.5
Actuated g/C Ratio	0.15	0.19		0.12	0.15		0.23	0.50		0.02	0.29	0.29
Clearance Time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	4.0	2.0		2.0	2.0		2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	267	298		214	270		412	2515		34	1030	446
v/s Ratio Prot	c0.15			0.09			c0.15	0.11		0.01	c0.38	
v/s Ratio Perm		c0.15			0.02							0.01
v/c Ratio	0.99	0.78		0.79	0.12		0.64	0.21		0.32	1.34	0.03
Uniform Delay, d1	55.3	50.4		55.6	47.6		44.9	18.0		62.9	46.2	33.2
Progression Factor	1.00	1.00		1.00	1.00		0.77	0.46		1.00	1.00	1.00
Incremental Delay, d2	52.8	11.2		16.2	0.1		2.8	0.2		2.0	157.8	0.1
Delay (s)	108.1	61.5		71.8	47.7		37.5	8.5		64.9	204.1	33.4
Level of Service	F	E		E	D		D	A		E	F	C
Approach Delay (s)		79.8			66.9			18.0			196.6	
Approach LOS		E			E			B			F	

Intersection Summary			
HCM 2000 Control Delay	116.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.00		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	102.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	17	0	12	40	0	10	3	675	15	49	14	1810
Future Volume (vph)	17	0	12	40	0	10	3	675	15	49	14	1810
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	1.00
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1665	1665	2760	1757	1583		3433	3539	1548		1787	5135
Flt Permitted	0.95	0.75	1.00	0.48	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1665	1315	2760	891	1583		3433	3539	1548		1787	5135
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
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	19	0	13	44	0	11	3	748	17	54	16	2007
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	6	0	0	0
Lane Group Flow (vph)	9	10	13	44	1	0	3	748	11	0	70	2009
Confl. Peds. (#/hr)			3	3					1		1	
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	6.2	6.2	4.1	8.3	6.2		1.4	87.5	87.5		9.5	95.6
Effective Green, g (s)	6.2	6.2	4.1	8.3	6.2		1.4	87.5	87.5		9.5	95.6
Actuated g/C Ratio	0.05	0.05	0.03	0.06	0.05		0.01	0.67	0.67		0.07	0.74
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	79	62	87	56	75		36	2382	1041		130	3776
v/s Ratio Prot	0.01		0.00		0.00		0.00	0.21			c0.04	c0.39
v/s Ratio Perm		c0.01		c0.05					0.01			
v/c Ratio	0.11	0.16	0.15	0.79	0.01		0.08	0.31	0.01		0.54	0.53
Uniform Delay, d1	59.3	59.4	61.3	60.0	59.0		63.7	8.8	7.0		58.1	7.5
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.21	0.89	1.00		1.04	0.78
Incremental Delay, d2	0.9	1.7	0.8	52.7	0.1		1.3	0.3	0.0		3.8	0.4
Delay (s)	60.1	61.1	62.1	112.7	59.0		78.1	8.2	7.0		64.4	6.3
Level of Service	E	E	E	F	E		E	A	A		E	A
Approach Delay (s)		61.2			102.0			8.5				8.2
Approach LOS		E			F			A				A

Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	62.1%	ICU Level of Service	B
Analysis Period (min)	15		

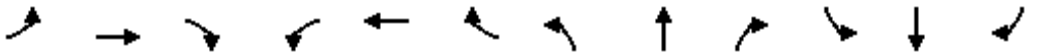
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	2
Future Volume (vph)	2
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Growth Factor (vph)	102%
Adj. Flow (vph)	2
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	1%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	10	85	8	20	700	1859	5
Future Volume (vph)	10	85	8	20	700	1859	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.88	0.85		1.00	1.00	1.00	
Flt Protected	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3176	1455		3400	5036	5134	
Flt Permitted	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3176	1455		3400	5036	5134	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	11	93	9	22	768	2039	5
RTOR Reduction (vph)	42	41	0	0	0	0	0
Lane Group Flow (vph)	16	5	0	31	768	2044	0
Confl. Peds. (#/hr)				2			2
Confl. Bikes (#/hr)							2
Heavy Vehicles (%)	1%	1%	3%	3%	3%	1%	1%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	13.0	13.0		4.7	106.7	96.3	
Effective Green, g (s)	13.0	13.0		4.7	106.7	96.3	
Actuated g/C Ratio	0.10	0.10		0.04	0.82	0.74	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	317	145		122	4133	3803	
v/s Ratio Prot	c0.00			0.01	c0.15	c0.40	
v/s Ratio Perm		0.00					
v/c Ratio	0.05	0.03		0.25	0.19	0.54	
Uniform Delay, d1	52.9	52.8		60.9	2.5	7.3	
Progression Factor	1.00	1.00		0.94	0.48	1.04	
Incremental Delay, d2	0.1	0.1		1.3	0.1	0.5	
Delay (s)	53.0	52.9		58.5	1.3	8.1	
Level of Service	D	D		E	A	A	
Approach Delay (s)	53.0				3.5	8.1	
Approach LOS	D				A	A	

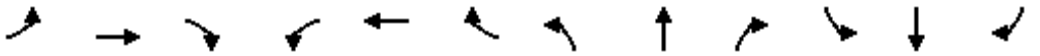
Intersection Summary			
HCM 2000 Control Delay	8.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	53.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



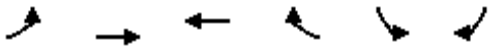
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	0	350	2	0	0	330	670	1	3	1851	144
Future Volume (vph)	61	0	350	2	0	0	330	670	1	3	1851	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1787	2814	1203			3433	5084		1787	5075	
Flt Permitted		0.95	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1787	2814	1267			3433	5084		1787	5075	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	66	0	380	2	0	0	358	727	1	3	2009	156
RTOR Reduction (vph)	0	0	271	0	0	0	0	0	0	0	5	0
Lane Group Flow (vph)	0	66	109	2	0	0	358	728	0	3	2160	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	1%	1%	1%	50%	50%	50%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		16.9	42.2	1.7			27.0	97.1		1.3	70.7	
Effective Green, g (s)		16.9	37.2	1.7			27.0	97.1		1.3	70.7	
Actuated g/C Ratio		0.13	0.29	0.01			0.21	0.75		0.01	0.54	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		232	805	16			713	3797		17	2760	
v/s Ratio Prot			0.04				c0.10	0.14		0.00	c0.43	
v/s Ratio Perm		c0.04		0.00								
v/c Ratio		0.28	0.14	0.12			0.50	0.19		0.18	0.78	
Uniform Delay, d1		51.1	34.5	63.4			45.6	4.9		63.8	23.6	
Progression Factor		1.00	1.00	1.00			1.10	0.63		0.94	0.60	
Incremental Delay, d2		0.9	0.1	3.5			0.6	0.1		4.4	2.0	
Delay (s)		52.0	34.5	66.9			50.7	3.2		64.1	16.1	
Level of Service		D	C	E			D	A		E	B	
Approach Delay (s)		37.1			66.9			18.9			16.2	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
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 (vph)	0	0	8	143	0	407	0	783	361	445	1327	13
Future Volume (vph)	0	0	8	143	0	407	0	783	361	445	1327	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			0.88	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1285	3467		2814		5307	1652	3467	5127	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1285	3467		2814		5307	1652	3467	5127	
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
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	9	159	0	451	0	868	400	493	1471	14
RTOR Reduction (vph)	0	0	9	0	0	393	0	0	176	0	1	0
Lane Group Flow (vph)	0	0	0	159	0	58	0	868	224	493	1484	0
Confl. Peds. (#/hr)			3				3					3
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			1.1	10.5		16.8		72.7	72.7	25.1	103.5	
Effective Green, g (s)			1.1	10.5		16.8		72.7	72.7	25.1	103.5	
Actuated g/C Ratio			0.01	0.08		0.13		0.56	0.56	0.19	0.80	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			10	280		363		2967	923	669	4081	
v/s Ratio Prot				c0.05		c0.02		0.16		c0.14	c0.29	
v/s Ratio Perm			0.00						0.14			
v/c Ratio			0.01	0.57		0.16		0.29	0.24	0.74	0.36	
Uniform Delay, d1			63.9	57.6		50.3		15.1	14.6	49.3	3.8	
Progression Factor			1.00	1.00		1.00		0.88	0.95	0.79	1.62	
Incremental Delay, d2			0.3	2.6		0.2		0.2	0.5	4.7	0.2	
Delay (s)			64.2	60.2		50.5		13.5	14.4	43.8	6.4	
Level of Service			E	E		D		B	B	D	A	
Approach Delay (s)		64.2			53.1			13.8			15.7	
Approach LOS		E			D			B			B	

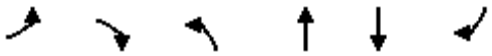
Intersection Summary			
HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	51.3%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	50	12	309	552	9
Future Volume (Veh/h)	3	50	12	309	552	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	3	55	13	339	605	10
Pedestrians		1			3	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			485			
pX, platoon unblocked						
vC, conflicting volume	355				77	17
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	355				77	17
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				34	99
cM capacity (veh/h)	1200				924	1061

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	58	13	339	615
Volume Left	3	0	0	605
Volume Right	0	0	339	10
cSH	1200	1700	1700	925
Volume to Capacity	0.00	0.01	0.20	0.66
Queue Length 95th (ft)	0	0	0	131
Control Delay (s)	0.4	0.0	0.0	16.2
Lane LOS	A			C
Approach Delay (s)	0.4	0.0		16.2
Approach LOS				C

Intersection Summary			
Average Delay	9.8		
Intersection Capacity Utilization	43.6%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	9	813	1958	6
Future Volume (veh/h)	5	5	9	813	1958	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1856	1885	1885
Adj Flow Rate, veh/h	5	5	10	873	2102	6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	3	3	1	1
Cap, veh/h	30	53	29	4582	3093	9
Arrive On Green	0.02	0.02	0.03	1.00	1.00	1.00
Sat Flow, veh/h	1810	1610	1767	5233	3758	10
Grp Volume(v), veh/h	5	5	10	873	1027	1081
Grp Sat Flow(s),veh/h/ln	1810	1610	1767	1689	1791	1883
Q Serve(g_s), s	0.4	0.4	0.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.4	0.7	0.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	30	53	29	4582	1512	1590
V/C Ratio(X)	0.17	0.10	0.35	0.19	0.68	0.68
Avail Cap(c_a), veh/h	145	155	126	4582	1512	1590
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.09	0.09
Uniform Delay (d), s/veh	63.1	61.0	62.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	3.8	1.1	9.9	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.4	0.0	0.1	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	66.9	62.1	72.1	0.1	0.2	0.2
LnGrp LOS	E	E	E	A	A	A
Approach Vol, veh/h	10			883	2108	
Approach Delay, s/veh	64.5			0.9	0.2	
Approach LOS	E			A	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	7.8	115.5				123.3	6.7
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	9.3	94.3				109.3	10.4
Max Q Clear Time (g_c+I1), s	2.7	2.0				2.0	2.4
Green Ext Time (p_c), s	0.0	88.0				27.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	0.6
HCM 6th LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	87	96	1015	269	95	1489
Future Volume (veh/h)	87	96	1015	269	95	1489
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1811	1811	1856	1870	1885	1870
Adj Flow Rate, veh/h	96	106	1125	0	105	1651
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	3	2	1	2
Cap, veh/h	299	206	4632		157	4179
Arrive On Green	0.09	0.09	0.24	0.00	0.05	0.82
Sat Flow, veh/h	3346	1535	6643	1585	3483	5274
Grp Volume(v), veh/h	96	106	1125	0	105	1651
Grp Sat Flow(s),veh/h/ln	1673	1535	1596	1585	1742	1702
Q Serve(g_s), s	3.5	8.3	18.5	0.0	3.9	11.3
Cycle Q Clear(g_c), s	3.5	8.3	18.5	0.0	3.9	11.3
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	299	206	4632		157	4179
V/C Ratio(X)	0.32	0.51	0.24		0.67	0.40
Avail Cap(c_a), veh/h	1125	585	4632		316	4179
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.92	0.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	52.3	20.6	0.0	61.1	3.2
Incr Delay (d2), s/veh	0.9	2.8	0.1	0.0	4.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	7.3	7.9	0.0	1.8	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.4	55.1	20.7	0.0	65.9	3.4
LnGrp LOS	E	E	C		E	A
Approach Vol, veh/h	202		1125			1756
Approach Delay, s/veh	55.7		20.7			7.2
Approach LOS	E		C			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		112.1		17.9	12.1	100.0
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		74.3		43.7	11.8	56.3
Max Q Clear Time (g_c+I1), s		13.3		10.3	5.9	20.5
Green Ext Time (p_c), s		53.3		1.3	0.1	23.8

Intersection Summary	
HCM 6th Ctrl Delay	15.3
HCM 6th LOS	B

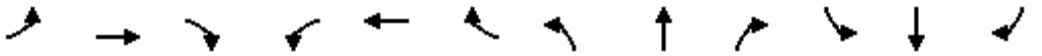
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	329	291	983	0	0	1583
Future Volume (veh/h)	329	291	983	0	0	1583
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1841	1781	1870	0	0	1870
Adj Flow Rate, veh/h	350	309	1044	0	0	1682
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	8	2	0	0	2
Cap, veh/h	521	231	3900	0	0	3900
Arrive On Green	0.15	0.15	1.00	0.00	0.00	1.00
Sat Flow, veh/h	3401	1510	5443	0	0	5443
Grp Volume(v), veh/h	350	309	1044	0	0	1682
Grp Sat Flow(s),veh/h/ln	1700	1510	1702	0	0	1702
Q Serve(g_s), s	12.6	19.9	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.6	19.9	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	521	231	3900	0	0	3900
V/C Ratio(X)	0.67	1.34	0.27	0.00	0.00	0.43
Avail Cap(c_a), veh/h	521	231	3900	0	0	3900
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.93
Uniform Delay (d), s/veh	52.0	55.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	3.8	178.0	0.2	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.6	18.9	0.1	0.0	0.0	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.8	233.1	0.2	0.0	0.0	0.3
LnGrp LOS	E	F	A	A	A	A
Approach Vol, veh/h	659		1044			1682
Approach Delay, s/veh	138.9		0.2			0.3
Approach LOS	F		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		105.0		25.0		105.0
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		99.3		19.9		99.3
Max Q Clear Time (g_c+I1), s		2.0		21.9		2.0
Green Ext Time (p_c), s		72.9		0.0		36.1

Intersection Summary		
HCM 6th Ctrl Delay		27.3
HCM 6th LOS		C



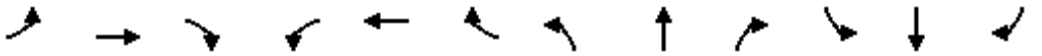
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	347	123	73	272	373	81	690	52	218	1172	127
Future Volume (veh/h)	145	347	123	73	272	373	81	690	52	218	1172	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	163	389	138	82	305	0	91	773	58	244	1314	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	218	506	177	104	683		178	1655	124	299	2481	
Arrive On Green	0.06	0.20	0.20	0.06	0.19	0.00	0.10	0.49	0.49	0.17	0.97	0.00
Sat Flow, veh/h	3483	2587	905	1795	3676	0	1781	3350	251	3456	5274	0
Grp Volume(v), veh/h	163	268	259	82	305	0	91	410	421	244	1314	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1700	1795	1791	0	1781	1777	1824	1728	1702	0
Q Serve(g_s), s	6.0	18.4	18.8	5.9	9.8	0.0	6.3	19.7	19.7	8.8	2.0	0.0
Cycle Q Clear(g_c), s	6.0	18.4	18.8	5.9	9.8	0.0	6.3	19.7	19.7	8.8	2.0	0.0
Prop In Lane	1.00		0.53	1.00		0.00	1.00		0.14	1.00		0.00
Lane Grp Cap(c), veh/h	218	350	332	104	683		178	878	901	299	2481	
V/C Ratio(X)	0.75	0.76	0.78	0.79	0.45		0.51	0.47	0.47	0.82	0.53	
Avail Cap(c_a), veh/h	308	448	425	178	934		178	878	901	420	2481	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.93	0.93	0.00
Uniform Delay (d), s/veh	59.9	49.5	49.6	60.5	46.5	0.0	55.5	21.6	21.6	52.8	1.0	0.0
Incr Delay (d2), s/veh	6.1	5.8	7.0	12.4	0.5	0.0	10.1	1.8	1.7	7.8	0.8	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	2.8	8.7	8.6	3.0	4.4	0.0	3.3	8.4	8.6	3.8	0.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.0	55.3	56.6	72.8	47.0	0.0	65.6	23.4	23.4	60.6	1.7	0.0
LnGrp LOS	E	E	E	E	D		E	C	C	E	A	
Approach Vol, veh/h		690			387			922			1558	
Approach Delay, s/veh		58.3			52.5			27.6			10.9	
Approach LOS		E			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	68.9	13.2	29.9	16.9	69.9	12.6	30.5
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	13.0	50.7	11.5	33.9	15.8	47.2	12.9	32.5
Max Q Clear Time (g_c+I1), s	8.3	4.0	8.0	11.8	10.8	21.7	7.9	20.8
Green Ext Time (p_c), s	0.1	29.2	0.2	1.2	0.4	12.3	0.1	4.0

Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

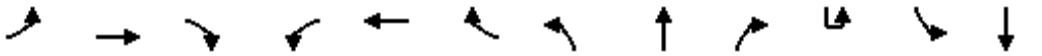
Notes

Unsignalized Delay for [WBR, SBR] 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 (vph)	247	13	372	157	28	12	249	515	44	10	1322	50
Future Volume (vph)	247	13	372	157	28	12	249	515	44	10	1322	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.95		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1586		1787	1787		1770	5015		1787	3574	1548
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1586		1787	1787		1770	5015		1787	3574	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	265	14	399	169	30	13	267	553	47	11	1419	54
RTOR Reduction (vph)	0	176	0	0	11	0	0	6	0	0	0	39
Lane Group Flow (vph)	265	237	0	169	32	0	267	594	0	11	1419	15
Confl. Peds. (#/hr)	4		3	3		4	4		2	2		4
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7			3			5	2		1	6	
Permitted Phases		4			8							6
Actuated Green, G (s)	19.4	24.6		15.6	20.0		30.2	64.9		2.5	37.2	37.2
Effective Green, g (s)	19.4	24.6		15.6	20.0		30.2	64.9		2.5	37.2	37.2
Actuated g/C Ratio	0.15	0.19		0.12	0.15		0.23	0.50		0.02	0.29	0.29
Clearance Time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	4.0	2.0		2.0	2.0		2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	269	300		214	274		411	2503		34	1022	442
v/s Ratio Prot	c0.15			0.09			c0.15	0.12		0.01	c0.40	
v/s Ratio Perm		c0.15			0.02							0.01
v/c Ratio	0.99	0.79		0.79	0.12		0.65	0.24		0.32	1.39	0.03
Uniform Delay, d1	55.2	50.2		55.6	47.4		45.1	18.5		62.9	46.4	33.5
Progression Factor	1.00	1.00		1.00	1.00		0.79	0.44		1.00	1.00	1.00
Incremental Delay, d2	50.5	12.4		16.2	0.1		3.1	0.2		2.0	180.9	0.1
Delay (s)	105.6	62.6		71.8	47.5		38.9	8.3		64.9	227.3	33.6
Level of Service	F	E		E	D		D	A		E	F	C
Approach Delay (s)		79.4			66.9			17.7			219.0	
Approach LOS		E			E			B			F	

Intersection Summary			
HCM 2000 Control Delay	126.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.02		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	104.0%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	17	0	12	40	0	10	3	730	15	49	14	1854
Future Volume (vph)	17	0	12	40	0	10	3	730	15	49	14	1854
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	1.00
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1665	1665	2760	1757	1583		3433	3505	1548		1787	5135
Flt Permitted	0.95	0.75	1.00	0.48	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1665	1315	2760	891	1583		3433	3505	1548		1787	5135
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
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	19	0	13	44	0	11	3	809	17	54	16	2056
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	6	0	0	0
Lane Group Flow (vph)	9	10	13	44	1	0	3	809	11	0	70	2058
Confl. Peds. (#/hr)			3	3					1		1	
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	3%	2%	1%	1%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	6.2	6.2	4.1	8.3	6.2		1.4	87.5	87.5		9.5	95.6
Effective Green, g (s)	6.2	6.2	4.1	8.3	6.2		1.4	87.5	87.5		9.5	95.6
Actuated g/C Ratio	0.05	0.05	0.03	0.06	0.05		0.01	0.67	0.67		0.07	0.74
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	79	62	87	56	75		36	2359	1041		130	3776
v/s Ratio Prot	0.01		0.00		0.00		0.00	0.23			c0.04	c0.40
v/s Ratio Perm		c0.01		c0.05					0.01			
v/c Ratio	0.11	0.16	0.15	0.79	0.01		0.08	0.34	0.01		0.54	0.55
Uniform Delay, d1	59.3	59.4	61.3	60.0	59.0		63.7	9.0	7.0		58.1	7.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.28	0.79	1.00		1.05	0.78
Incremental Delay, d2	0.9	1.7	0.8	52.7	0.1		1.3	0.4	0.0		3.7	0.4
Delay (s)	60.1	61.1	62.1	112.7	59.0		82.7	7.6	7.0		64.5	6.4
Level of Service	E	E	E	F	E		F	A	A		E	A
Approach Delay (s)		61.2			102.0			7.8				8.3
Approach LOS		E			F			A				A

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	63.0%	ICU Level of Service	B
Analysis Period (min)	15		

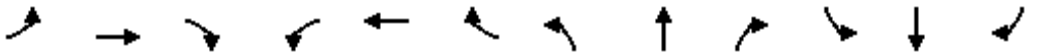
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	2
Future Volume (vph)	2
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Growth Factor (vph)	102%
Adj. Flow (vph)	2
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	1%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	10	85	8	20	755	1903	5
Future Volume (vph)	10	85	8	20	755	1903	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.88	0.85		1.00	1.00	1.00	
Flt Protected	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3176	1455		3400	5036	5134	
Flt Permitted	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3176	1455		3400	5036	5134	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	11	93	9	22	828	2087	5
RTOR Reduction (vph)	42	41	0	0	0	0	0
Lane Group Flow (vph)	16	5	0	31	828	2092	0
Confl. Peds. (#/hr)				2			2
Confl. Bikes (#/hr)							2
Heavy Vehicles (%)	1%	1%	3%	3%	3%	1%	1%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	13.0	13.0		4.7	106.7	96.3	
Effective Green, g (s)	13.0	13.0		4.7	106.7	96.3	
Actuated g/C Ratio	0.10	0.10		0.04	0.82	0.74	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	317	145		122	4133	3803	
v/s Ratio Prot	c0.00			0.01	c0.16	c0.41	
v/s Ratio Perm		0.00					
v/c Ratio	0.05	0.03		0.25	0.20	0.55	
Uniform Delay, d1	52.9	52.8		60.9	2.5	7.4	
Progression Factor	1.00	1.00		0.97	0.55	1.02	
Incremental Delay, d2	0.1	0.1		1.3	0.1	0.5	
Delay (s)	53.0	52.9		60.2	1.5	8.0	
Level of Service	D	D		E	A	A	
Approach Delay (s)	53.0				3.6	8.0	
Approach LOS	D				A	A	

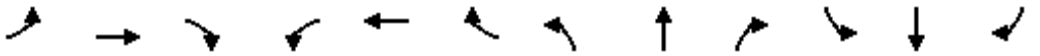
Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



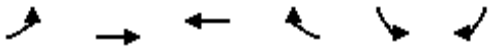
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	0	462	2	0	0	420	674	1	3	1855	184
Future Volume (vph)	112	0	462	2	0	0	420	674	1	3	1855	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1787	2760	1203			3433	5035		1787	5059	
Flt Permitted		0.95	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1787	2760	1267			3433	5035		1787	5059	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	122	0	501	2	0	0	456	731	1	3	2013	200
RTOR Reduction (vph)	0	0	282	0	0	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	122	219	2	0	0	456	732	0	3	2207	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	1%	1%	3%	50%	50%	50%	2%	3%	2%	1%	1%	1%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		24.6	51.6	1.7			28.7	89.4		1.3	61.3	
Effective Green, g (s)		24.6	46.6	1.7			28.7	89.4		1.3	61.3	
Actuated g/C Ratio		0.19	0.36	0.01			0.22	0.69		0.01	0.47	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		338	989	16			757	3462		17	2385	
v/s Ratio Prot			0.08				c0.13	0.15		0.00	c0.44	
v/s Ratio Perm		c0.07		0.00								
v/c Ratio		0.36	0.22	0.12			0.60	0.21		0.18	0.93	
Uniform Delay, d1		45.9	29.1	63.4			45.5	7.4		63.8	32.2	
Progression Factor		1.00	1.00	1.00			1.27	0.49		1.14	0.45	
Incremental Delay, d2		0.9	0.1	3.5			1.3	0.1		4.3	6.8	
Delay (s)		46.8	29.2	66.9			59.1	3.8		76.9	21.4	
Level of Service		D	C	E			E	A		E	C	
Approach Delay (s)		32.6			66.9			25.0			21.5	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	78.8%	ICU Level of Service	D
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 (vph)	0	0	8	143	0	434	0	811	361	483	1362	13
Future Volume (vph)	0	0	8	143	0	434	0	811	361	483	1362	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			0.88	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1285	3467		2814		5307	1652	3367	5127	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1285	3467		2814		5307	1652	3367	5127	
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
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	9	159	0	481	0	899	400	536	1510	14
RTOR Reduction (vph)	0	0	9	0	0	419	0	0	183	0	1	0
Lane Group Flow (vph)	0	0	0	159	0	62	0	899	217	536	1523	0
Confl. Peds. (#/hr)			3				3					3
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	4%	1%	1%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			1.1	10.5		16.8		70.4	70.4	27.4	103.5	
Effective Green, g (s)			1.1	10.5		16.8		70.4	70.4	27.4	103.5	
Actuated g/C Ratio			0.01	0.08		0.13		0.54	0.54	0.21	0.80	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			10	280		363		2873	894	709	4081	
v/s Ratio Prot				c0.05		c0.02		0.17		c0.16	c0.30	
v/s Ratio Perm			0.00						0.13			
v/c Ratio			0.01	0.57		0.17		0.31	0.24	0.76	0.37	
Uniform Delay, d1			63.9	57.6		50.4		16.4	15.7	48.2	3.8	
Progression Factor			1.00	1.00		1.00		0.87	0.97	1.02	0.75	
Incremental Delay, d2			0.3	2.6		0.2		0.2	0.5	5.0	0.2	
Delay (s)			64.2	60.2		50.6		14.5	15.7	54.1	3.1	
Level of Service			E	E		D		B	B	D	A	
Approach Delay (s)		64.2			53.0			14.9			16.4	
Approach LOS		E			D			B			B	

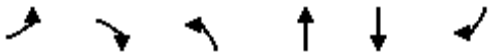
Intersection Summary			
HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	54	16	309	552	9
Future Volume (Veh/h)	3	54	16	309	552	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	3	59	18	339	605	10
Pedestrians		1			3	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			485			
pX, platoon unblocked						
vC, conflicting volume	360				86	22
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	360				86	22
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				34	99
cM capacity (veh/h)	1195				913	1054

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	62	18	339	615
Volume Left	3	0	0	605
Volume Right	0	0	339	10
cSH	1195	1700	1700	915
Volume to Capacity	0.00	0.01	0.20	0.67
Queue Length 95th (ft)	0	0	0	135
Control Delay (s)	0.4	0.0	0.0	16.6
Lane LOS	A			C
Approach Delay (s)	0.4	0.0		16.6
Approach LOS				C

Intersection Summary			
Average Delay	9.9		
Intersection Capacity Utilization	43.8%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	5	5	9	818	1963	6
Future Volume (veh/h)	5	5	9	818	1963	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1841	1885	1885
Adj Flow Rate, veh/h	5	5	10	878	2108	6
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	0	0	3	4	1	1
Cap, veh/h	30	53	29	4545	3093	9
Arrive On Green	0.02	0.02	0.03	1.00	1.00	1.00
Sat Flow, veh/h	1810	1610	1767	5191	3758	10
Grp Volume(v), veh/h	5	5	10	878	1030	1084
Grp Sat Flow(s),veh/h/ln	1810	1610	1767	1675	1791	1883
Q Serve(g_s), s	0.4	0.4	0.7	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.4	0.4	0.7	0.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	30	53	29	4545	1512	1590
V/C Ratio(X)	0.17	0.10	0.35	0.19	0.68	0.68
Avail Cap(c_a), veh/h	145	155	126	4545	1512	1590
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.09	0.09
Uniform Delay (d), s/veh	63.1	61.0	62.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	3.8	1.1	9.9	0.1	0.2	0.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.2	0.4	0.0	0.1	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	66.9	62.1	72.1	0.1	0.2	0.2
LnGrp LOS	E	E	E	A	A	A
Approach Vol, veh/h	10			888	2114	
Approach Delay, s/veh	64.5			0.9	0.2	
Approach LOS	E			A	A	

Timer - Assigned Phs	1	2	6	8
Phs Duration (G+Y+Rc), s	7.8	115.5	123.3	6.7
Change Period (Y+Rc), s	5.7	5.7	5.7	4.6
Max Green Setting (Gmax), s	9.3	94.3	109.3	10.4
Max Q Clear Time (g_c+I1), s	2.7	2.0	2.0	2.4
Green Ext Time (p_c), s	0.0	88.1	27.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	0.6
HCM 6th LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	87	96	1035	269	95	1509
Future Volume (veh/h)	87	96	1035	269	95	1509
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1811	1811	1826	1870	1885	1856
Adj Flow Rate, veh/h	96	106	1148	0	105	1673
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	5	2	1	3
Cap, veh/h	299	206	4558		157	4146
Arrive On Green	0.09	0.09	0.24	0.00	0.05	0.82
Sat Flow, veh/h	3346	1535	6537	1585	3483	5233
Grp Volume(v), veh/h	96	106	1148	0	105	1673
Grp Sat Flow(s),veh/h/ln	1673	1535	1570	1585	1742	1689
Q Serve(g_s), s	3.5	8.3	19.2	0.0	3.9	11.6
Cycle Q Clear(g_c), s	3.5	8.3	19.2	0.0	3.9	11.6
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	299	206	4558		157	4146
V/C Ratio(X)	0.32	0.51	0.25		0.67	0.40
Avail Cap(c_a), veh/h	1125	585	4558		316	4146
HCM Platoon Ratio	1.00	1.00	0.33	0.33	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.91	0.00	1.00	1.00
Uniform Delay (d), s/veh	55.5	52.3	20.9	0.0	61.1	3.2
Incr Delay (d2), s/veh	0.9	2.8	0.1	0.0	4.8	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	7.3	8.1	0.0	1.8	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.4	55.1	21.0	0.0	65.9	3.5
LnGrp LOS	E	E	C		E	A
Approach Vol, veh/h	202		1148			1778
Approach Delay, s/veh	55.7		21.0			7.2
Approach LOS	E		C			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		112.1		17.9	12.1	100.0
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		74.3		43.7	11.8	56.3
Max Q Clear Time (g_c+I1), s		13.6		10.3	5.9	21.2
Green Ext Time (p_c), s		53.4		1.3	0.1	23.9

Intersection Summary	
HCM 6th Ctrl Delay	15.4
HCM 6th LOS	B

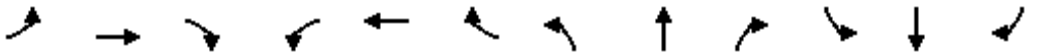
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	329	311	983	0	0	1603
Future Volume (veh/h)	329	311	983	0	0	1603
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1841	1693	1870	0	0	1856
Adj Flow Rate, veh/h	350	330	1044	0	0	1703
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	4	14	2	0	0	3
Cap, veh/h	651	275	3704	0	0	3675
Arrive On Green	0.19	0.19	1.00	0.00	0.00	1.00
Sat Flow, veh/h	3401	1434	5443	0	0	5400
Grp Volume(v), veh/h	350	330	1044	0	0	1703
Grp Sat Flow(s),veh/h/ln	1700	1434	1702	0	0	1689
Q Serve(g_s), s	12.1	24.9	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	12.1	24.9	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	651	275	3704	0	0	3675
V/C Ratio(X)	0.54	1.20	0.28	0.00	0.00	0.46
Avail Cap(c_a), veh/h	651	275	3704	0	0	3675
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.92
Uniform Delay (d), s/veh	47.4	52.5	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	1.1	120.0	0.2	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.2	18.0	0.1	0.0	0.0	0.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	48.5	172.6	0.2	0.0	0.0	0.4
LnGrp LOS	D	F	A	A	A	A
Approach Vol, veh/h	680		1044			1703
Approach Delay, s/veh	108.7		0.2			0.4
Approach LOS	F		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		100.0		30.0		100.0
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		94.3		24.9		94.3
Max Q Clear Time (g_c+I1), s		2.0		26.9		2.0
Green Ext Time (p_c), s		71.0		0.0		35.5

Intersection Summary		
HCM 6th Ctrl Delay		21.8
HCM 6th LOS		C



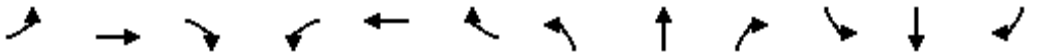
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	145	347	123	73	272	373	81	690	52	218	1172	127
Future Volume (veh/h)	145	347	123	73	272	373	81	690	52	218	1172	127
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	163	389	138	82	305	0	91	773	58	244	1314	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	224	521	182	103	698		151	1633	122	302	2530	
Arrive On Green	0.06	0.20	0.20	0.06	0.19	0.00	0.08	0.49	0.49	0.17	0.99	0.00
Sat Flow, veh/h	3483	2587	905	1795	3676	0	1781	3350	251	3456	5274	0
Grp Volume(v), veh/h	163	268	259	82	305	0	91	410	421	244	1314	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1701	1795	1791	0	1781	1777	1824	1728	1702	0
Q Serve(g_s), s	6.0	18.2	18.7	5.9	9.7	0.0	6.4	20.0	20.0	8.8	0.6	0.0
Cycle Q Clear(g_c), s	6.0	18.2	18.7	5.9	9.7	0.0	6.4	20.0	20.0	8.8	0.6	0.0
Prop In Lane	1.00		0.53	1.00		0.00	1.00		0.14	1.00		0.00
Lane Grp Cap(c), veh/h	224	361	343	103	698		151	866	889	302	2530	
V/C Ratio(X)	0.73	0.74	0.76	0.79	0.44		0.60	0.47	0.47	0.81	0.52	
Avail Cap(c_a), veh/h	506	522	496	137	796		151	866	889	486	2530	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.93	0.93	0.00
Uniform Delay (d), s/veh	59.7	48.7	48.9	60.5	46.1	0.0	57.4	22.2	22.2	52.6	0.3	0.0
Incr Delay (d2), s/veh	4.5	3.3	4.0	20.4	0.4	0.0	16.6	1.9	1.8	4.8	0.7	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	2.8	8.4	8.3	3.2	4.4	0.0	3.5	8.5	8.8	3.7	0.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	64.2	52.0	52.9	80.9	46.5	0.0	74.0	24.1	24.0	57.4	1.0	0.0
LnGrp LOS	E	D	D	F	D		E	C	C	E	A	
Approach Vol, veh/h		690			387			922			1558	
Approach Delay, s/veh		55.2			53.8			29.0			9.8	
Approach LOS		E			D			C			A	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.0	70.1	13.5	30.4	17.1	69.1	12.6	31.3
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	11.0	50.3	18.9	28.9	18.3	42.3	9.9	37.9
Max Q Clear Time (g_c+I1), s	8.4	2.6	8.0	11.7	10.8	22.0	7.9	20.7
Green Ext Time (p_c), s	0.0	29.6	0.4	1.1	0.5	10.7	0.0	5.1

Intersection Summary	
HCM 6th Ctrl Delay	28.4
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR, SBR] 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 (vph)	247	13	377	157	28	12	254	515	44	10	1322	50
Future Volume (vph)	247	13	377	157	28	12	254	515	44	10	1322	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	0.99		1.00	1.00		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.86		1.00	0.95		1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1570		1787	1787		1736	5015		1787	3574	1548
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1570		1787	1787		1736	5015		1787	3574	1548
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	265	14	405	169	30	13	273	553	47	11	1419	54
RTOR Reduction (vph)	0	175	0	0	11	0	0	6	0	0	0	39
Lane Group Flow (vph)	265	244	0	169	32	0	273	594	0	11	1419	15
Confl. Peds. (#/hr)	4		3	3		4	4		2	2		4
Heavy Vehicles (%)	0%	0%	2%	1%	1%	1%	4%	2%	2%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7			3			5	2		1	6	
Permitted Phases		4			8							6
Actuated Green, G (s)	19.5	25.2		15.6	20.5		29.9	64.3		2.5	36.9	36.9
Effective Green, g (s)	19.5	25.2		15.6	20.5		29.9	64.3		2.5	36.9	36.9
Actuated g/C Ratio	0.15	0.19		0.12	0.16		0.23	0.49		0.02	0.28	0.28
Clearance Time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	4.0	2.0		2.0	2.0		2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	270	304		214	281		399	2480		34	1014	439
v/s Ratio Prot	c0.15			0.09			c0.16	0.12		0.01	c0.40	
v/s Ratio Perm		c0.16			0.02							0.01
v/c Ratio	0.98	0.80		0.79	0.11		0.68	0.24		0.32	1.40	0.03
Uniform Delay, d1	55.1	50.0		55.6	47.0		45.7	18.8		62.9	46.5	33.7
Progression Factor	1.00	1.00		1.00	1.00		0.80	0.43		1.00	1.00	1.00
Incremental Delay, d2	49.5	13.4		16.2	0.1		4.4	0.2		2.0	185.8	0.1
Delay (s)	104.6	63.4		71.8	47.0		41.1	8.4		64.9	232.3	33.8
Level of Service	F	E		E	D		D	A		E	F	C
Approach Delay (s)		79.4			66.8			18.6			223.8	
Approach LOS		E			E			B			F	

Intersection Summary			
HCM 2000 Control Delay	128.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.03		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	104.5%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	17	0	12	40	0	10	3	735	15	49	14	1859
Future Volume (vph)	17	0	12	40	0	10	3	735	15	49	14	1859
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	0.99	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	1.00
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1665	1665	2760	1757	1583		3433	3471	1548		1787	5135
Flt Permitted	0.95	0.75	1.00	0.48	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1665	1315	2760	891	1583		3433	3471	1548		1787	5135
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
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	19	0	13	44	0	11	3	815	17	54	16	2061
RTOR Reduction (vph)	0	0	0	0	10	0	0	0	6	0	0	0
Lane Group Flow (vph)	9	10	13	44	1	0	3	815	11	0	70	2063
Confl. Peds. (#/hr)			3	3					1		1	
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	4%	2%	1%	1%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	6.2	6.2	4.1	8.3	6.2		1.4	87.5	87.5		9.5	95.6
Effective Green, g (s)	6.2	6.2	4.1	8.3	6.2		1.4	87.5	87.5		9.5	95.6
Actuated g/C Ratio	0.05	0.05	0.03	0.06	0.05		0.01	0.67	0.67		0.07	0.74
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	79	62	87	56	75		36	2336	1041		130	3776
v/s Ratio Prot	0.01		0.00		0.00		0.00	0.23			c0.04	c0.40
v/s Ratio Perm		c0.01		c0.05					0.01			
v/c Ratio	0.11	0.16	0.15	0.79	0.01		0.08	0.35	0.01		0.54	0.55
Uniform Delay, d1	59.3	59.4	61.3	60.0	59.0		63.7	9.1	7.0		58.1	7.6
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.22	0.76	1.00		1.05	0.77
Incremental Delay, d2	0.9	1.7	0.8	52.7	0.1		1.3	0.4	0.0		3.7	0.4
Delay (s)	60.1	61.1	62.1	112.7	59.0		78.8	7.3	7.0		64.7	6.3
Level of Service	E	E	E	F	E		E	A	A		E	A
Approach Delay (s)		61.2			102.0			7.6				8.2
Approach LOS		E			F			A				A

Intersection Summary			
HCM 2000 Control Delay	10.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		

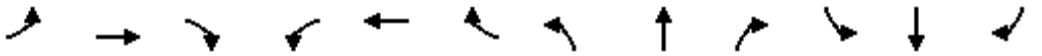
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	2
Future Volume (vph)	2
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Growth Factor (vph)	102%
Adj. Flow (vph)	2
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	1%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	10	85	8	20	760	1908	5
Future Volume (vph)	10	85	8	20	760	1908	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.88	0.85		1.00	1.00	1.00	
Flt Protected	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3176	1455		3400	4988	5083	
Flt Permitted	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3176	1455		3400	4988	5083	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	11	93	9	22	834	2093	5
RTOR Reduction (vph)	42	41	0	0	0	0	0
Lane Group Flow (vph)	16	5	0	31	834	2098	0
Confl. Peds. (#/hr)				2			2
Confl. Bikes (#/hr)							2
Heavy Vehicles (%)	1%	1%	3%	3%	4%	2%	1%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	13.0	13.0		4.7	106.7	96.3	
Effective Green, g (s)	13.0	13.0		4.7	106.7	96.3	
Actuated g/C Ratio	0.10	0.10		0.04	0.82	0.74	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	317	145		122	4093	3765	
v/s Ratio Prot	c0.00			0.01	c0.17	c0.41	
v/s Ratio Perm		0.00					
v/c Ratio	0.05	0.03		0.25	0.20	0.56	
Uniform Delay, d1	52.9	52.8		60.9	2.5	7.4	
Progression Factor	1.00	1.00		0.96	0.53	1.02	
Incremental Delay, d2	0.1	0.1		1.3	0.1	0.5	
Delay (s)	53.0	52.9		59.8	1.4	8.1	
Level of Service	D	D		E	A	A	
Approach Delay (s)	53.0				3.5	8.1	
Approach LOS	D				A	A	

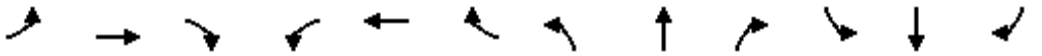
Intersection Summary			
HCM 2000 Control Delay	8.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	54.6%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



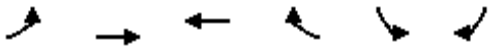
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	0	477	2	0	0	435	679	1	3	1860	184
Future Volume (vph)	112	0	477	2	0	0	435	679	1	3	1860	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1787	2682	1203			3303	4987		1787	5060	
Flt Permitted		0.95	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1787	2682	1267			3303	4987		1787	5060	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	122	0	518	2	0	0	472	737	1	3	2018	200
RTOR Reduction (vph)	0	0	269	0	0	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	122	249	2	0	0	472	738	0	3	2211	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	1%	1%	6%	50%	50%	50%	6%	4%	2%	1%	1%	1%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		24.9	55.2	1.7			32.0	89.1		1.3	57.7	
Effective Green, g (s)		24.9	50.2	1.7			32.0	89.1		1.3	57.7	
Actuated g/C Ratio		0.19	0.39	0.01			0.25	0.69		0.01	0.44	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		342	1035	16			813	3418		17	2245	
v/s Ratio Prot			0.09				c0.14	0.15		0.00	c0.44	
v/s Ratio Perm		c0.07		0.00								
v/c Ratio		0.36	0.24	0.12			0.58	0.22		0.18	0.99	
Uniform Delay, d1		45.6	27.0	63.4			43.1	7.6		63.8	35.7	
Progression Factor		1.00	1.00	1.00			1.34	0.46		1.16	0.47	
Incremental Delay, d2		0.9	0.1	3.5			1.0	0.1		4.3	14.6	
Delay (s)		46.5	27.1	66.9			58.6	3.7		78.5	31.5	
Level of Service		D	C	E			E	A		E	C	
Approach Delay (s)		30.8			66.9			25.1			31.6	
Approach LOS		C			E			C			C	

Intersection Summary			
HCM 2000 Control Delay	29.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	79.3%	ICU Level of Service	D
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 (vph)	0	0	8	143	0	434	0	811	361	503	1367	13
Future Volume (vph)	0	0	8	143	0	434	0	811	361	503	1367	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			0.88	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1285	3467		2814		5307	1652	3242	5127	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1285	3467		2814		5307	1652	3242	5127	
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
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	9	159	0	481	0	899	400	558	1516	14
RTOR Reduction (vph)	0	0	9	0	0	419	0	0	189	0	1	0
Lane Group Flow (vph)	0	0	0	159	0	62	0	899	211	558	1529	0
Confl. Peds. (#/hr)			3				3					3
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	8%	1%	1%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			1.1	10.5		16.8		68.5	68.5	29.3	103.5	
Effective Green, g (s)			1.1	10.5		16.8		68.5	68.5	29.3	103.5	
Actuated g/C Ratio			0.01	0.08		0.13		0.53	0.53	0.23	0.80	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			10	280		363		2796	870	730	4081	
v/s Ratio Prot				c0.05		c0.02		0.17		c0.17	c0.30	
v/s Ratio Perm			0.00						0.13			
v/c Ratio			0.01	0.57		0.17		0.32	0.24	0.76	0.37	
Uniform Delay, d1			63.9	57.6		50.4		17.5	16.7	47.1	3.8	
Progression Factor			1.00	1.00		1.00		0.85	0.86	1.05	0.65	
Incremental Delay, d2			0.3	2.6		0.2		0.2	0.5	5.1	0.2	
Delay (s)			64.2	60.2		50.6		15.1	14.8	54.6	2.8	
Level of Service			E	E		D		B	B	D	A	
Approach Delay (s)		64.2			53.0			15.0			16.6	
Approach LOS		E			D			B			B	

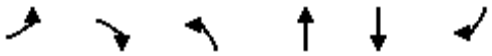
Intersection Summary			
HCM 2000 Control Delay	22.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	53.0%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	59	21	309	552	9
Future Volume (Veh/h)	3	59	21	309	552	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93
Hourly flow rate (vph)	3	65	23	339	605	10
Pedestrians		1			3	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			485			
pX, platoon unblocked						
vC, conflicting volume	365				97	27
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	365				97	27
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				33	99
cM capacity (veh/h)	1190				900	1047

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	68	23	339	615
Volume Left	3	0	0	605
Volume Right	0	0	339	10
cSH	1190	1700	1700	902
Volume to Capacity	0.00	0.01	0.20	0.68
Queue Length 95th (ft)	0	0	0	139
Control Delay (s)	0.4	0.0	0.0	17.1
Lane LOS	A			C
Approach Delay (s)	0.4	0.0		17.1
Approach LOS				C

Intersection Summary			
Average Delay	10.1		
Intersection Capacity Utilization	44.1%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	5	317	892	2000	6
Future Volume (veh/h)	80	5	317	892	2000	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1870	1885	1885
Adj Flow Rate, veh/h	90	6	358	1008	2261	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	3	2	1	1
Cap, veh/h	114	452	385	4380	3157	10
Arrive On Green	0.06	0.06	0.44	1.00	1.00	1.00
Sat Flow, veh/h	1810	1610	1767	5274	5467	16
Grp Volume(v), veh/h	90	6	358	1008	1464	804
Grp Sat Flow(s),veh/h/ln	1810	1610	1767	1702	1716	1882
Q Serve(g_s), s	6.4	0.3	25.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.4	0.3	25.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	114	452	385	4380	2045	1122
V/C Ratio(X)	0.79	0.01	0.93	0.23	0.72	0.72
Avail Cap(c_a), veh/h	145	480	493	4380	2045	1122
HCM Platoon Ratio	1.00	1.00	2.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.25	0.25
Uniform Delay (d), s/veh	60.1	33.7	35.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	22.9	0.0	22.4	0.1	0.6	1.0
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	10.6	0.0	0.2	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	83.0	33.8	58.1	0.1	0.6	1.0
LnGrp LOS	F	C	E	A	A	A
Approach Vol, veh/h	96			1366	2268	
Approach Delay, s/veh	79.9			15.3	0.7	
Approach LOS	E			B	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	34.0	83.2				117.2	12.8
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	36.3	67.3				109.3	10.4
Max Q Clear Time (g_c+I1), s	27.0	2.0				2.0	8.4
Green Ext Time (p_c), s	1.4	62.3				34.9	0.1

Intersection Summary		
HCM 6th Ctrl Delay	8.1	
HCM 6th LOS	A	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	87	106	1286	269	112	1600
Future Volume (veh/h)	87	106	1286	269	112	1600
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1811	1811	1885	1870	1885	1885
Adj Flow Rate, veh/h	98	120	1454	0	127	1809
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	1	2	1	1
Cap, veh/h	328	231	4603		182	4168
Arrive On Green	0.10	0.10	1.00	0.00	0.05	0.81
Sat Flow, veh/h	3346	1535	6749	1585	3483	5316
Grp Volume(v), veh/h	98	120	1454	0	127	1809
Grp Sat Flow(s),veh/h/ln	1673	1535	1621	1585	1742	1716
Q Serve(g_s), s	3.5	9.4	0.0	0.0	4.7	13.4
Cycle Q Clear(g_c), s	3.5	9.4	0.0	0.0	4.7	13.4
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	328	231	4603		182	4168
V/C Ratio(X)	0.30	0.52	0.32		0.70	0.43
Avail Cap(c_a), veh/h	1125	596	4603		370	4168
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.84	0.00	1.00	1.00
Uniform Delay (d), s/veh	54.5	50.9	0.0	0.0	60.6	3.6
Incr Delay (d2), s/veh	0.7	2.6	0.2	0.0	4.7	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.2	0.0	0.0	2.2	3.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.2	53.5	0.2	0.0	65.3	4.0
LnGrp LOS	E	D	A		E	A
Approach Vol, veh/h	218		1454			1936
Approach Delay, s/veh	54.3		0.2			8.0
Approach LOS	D		A			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		111.0		19.0	13.0	98.0
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		74.3		43.7	13.8	54.3
Max Q Clear Time (g_c+I1), s		15.4		11.4	6.7	2.0
Green Ext Time (p_c), s		54.0		1.4	0.2	39.5

Intersection Summary	
HCM 6th Ctrl Delay	7.6
HCM 6th LOS	A

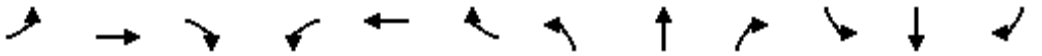
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	329	360	1186	0	0	1694
Future Volume (veh/h)	329	360	1186	0	0	1694
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1841	1856	1870	0	0	1885
Adj Flow Rate, veh/h	372	407	1341	0	0	1915
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	3	2	0	0	1
Cap, veh/h	1011	468	3163	0	0	3188
Arrive On Green	0.30	0.30	0.82	0.00	0.00	1.00
Sat Flow, veh/h	3401	1572	5443	0	0	5486
Grp Volume(v), veh/h	372	407	1341	0	0	1915
Grp Sat Flow(s),veh/h/ln	1700	1572	1702	0	0	1716
Q Serve(g_s), s	11.2	31.9	9.2	0.0	0.0	0.0
Cycle Q Clear(g_c), s	11.2	31.9	9.2	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	1011	468	3163	0	0	3188
V/C Ratio(X)	0.37	0.87	0.42	0.00	0.00	0.60
Avail Cap(c_a), veh/h	1332	616	3163	0	0	3188
HCM Platoon Ratio	1.00	1.00	1.33	1.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.91
Uniform Delay (d), s/veh	36.0	43.3	5.2	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	11.5	0.4	0.0	0.0	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.7	13.7	2.6	0.0	0.0	0.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	36.3	54.8	5.6	0.0	0.0	0.8
LnGrp LOS	D	D	A	A	A	A
Approach Vol, veh/h	779		1341			1915
Approach Delay, s/veh	46.0		5.6			0.8
Approach LOS	D		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		86.2		43.8		86.2
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		68.3		50.9		68.3
Max Q Clear Time (g_c+I1), s		2.0		33.9		11.2
Green Ext Time (p_c), s		59.0		4.8		39.0

Intersection Summary	
HCM 6th Ctrl Delay	11.1
HCM 6th LOS	B



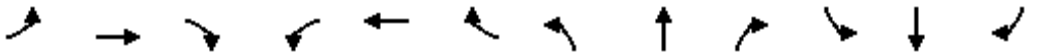
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	155	347	123	73	272	382	81	796	52	225	1235	134
Future Volume (veh/h)	155	347	123	73	272	382	81	796	52	225	1235	134
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	175	392	139	83	307	0	92	900	59	254	1396	0
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, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	230	510	178	105	678		178	1648	108	316	2470	
Arrive On Green	0.07	0.20	0.20	0.06	0.19	0.00	0.10	0.49	0.49	0.03	0.16	0.00
Sat Flow, veh/h	3483	2587	904	1795	3676	0	1781	3385	222	3456	5274	0
Grp Volume(v), veh/h	175	270	261	83	307	0	92	472	487	254	1396	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1700	1795	1791	0	1781	1777	1830	1728	1702	0
Q Serve(g_s), s	6.4	18.5	19.0	5.9	9.9	0.0	6.4	24.2	24.2	9.5	32.8	0.0
Cycle Q Clear(g_c), s	6.4	18.5	19.0	5.9	9.9	0.0	6.4	24.2	24.2	9.5	32.8	0.0
Prop In Lane	1.00		0.53	1.00		0.00	1.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	230	353	335	105	678		178	865	891	316	2470	
V/C Ratio(X)	0.76	0.76	0.78	0.79	0.45		0.52	0.55	0.55	0.80	0.57	
Avail Cap(c_a), veh/h	316	453	430	177	934		178	865	891	428	2470	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.92	0.92	0.00
Uniform Delay (d), s/veh	59.7	49.3	49.5	60.4	46.7	0.0	55.5	23.3	23.3	61.9	42.0	0.0
Incr Delay (d2), s/veh	7.0	5.7	6.9	12.3	0.5	0.0	10.3	2.5	2.4	7.2	0.9	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	3.0	8.8	8.6	3.0	4.4	0.0	3.3	10.4	10.7	4.7	15.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.7	55.1	56.4	72.7	47.2	0.0	65.8	25.8	25.7	69.1	42.9	0.0
LnGrp LOS	E	E	E	E	D		E	C	C	E	D	
Approach Vol, veh/h		706			390			1051			1650	
Approach Delay, s/veh		58.4			52.6			29.3			46.9	
Approach LOS		E			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	68.6	13.7	29.7	17.6	69.0	12.7	30.7
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	13.0	50.4	11.8	33.9	16.1	46.6	12.8	32.9
Max Q Clear Time (g_c+I1), s	8.4	34.8	8.4	11.9	11.5	26.2	7.9	21.0
Green Ext Time (p_c), s	0.1	13.0	0.2	1.2	0.4	12.4	0.1	4.1

Intersection Summary	
HCM 6th Ctrl Delay	44.7
HCM 6th LOS	D

Notes

Unsignalized Delay for [WBR, SBR] 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 (vph)	264	13	350	157	28	12	287	639	44	10	1410	218
Future Volume (vph)	264	13	350	157	28	12	287	639	44	10	1410	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.2	6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1727	1615	1698	1727	1599	1770	5027		1787	5136	1548
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1715	1727	1615	1698	1727	1599	1770	5027		1787	5136	1548
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	298	15	396	177	32	14	324	722	50	11	1594	246
RTOR Reduction (vph)	0	0	40	0	0	13	0	4	0	0	0	129
Lane Group Flow (vph)	155	158	356	104	105	1	324	768	0	11	1594	117
Confl. Peds. (#/hr)	4		3	3		4	4		2	2		4
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	Prot	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	3	3	3	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	23.9	23.9	62.0	12.9	12.9	12.9	31.9	67.5		2.5	38.1	38.1
Effective Green, g (s)	23.9	23.9	62.0	12.9	12.9	12.9	31.9	67.5		2.5	38.1	38.1
Actuated g/C Ratio	0.18	0.18	0.48	0.10	0.10	0.10	0.25	0.52		0.02	0.29	0.29
Clearance Time (s)	6.2	6.2		6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	315	317	770	168	171	158	434	2610		34	1505	453
v/s Ratio Prot	0.09	0.09	c0.22	c0.06	0.06	0.00	c0.18	0.15		0.01	c0.31	
v/s Ratio Perm												0.08
v/c Ratio	0.49	0.50	0.46	0.62	0.61	0.01	0.75	0.29		0.32	1.06	0.26
Uniform Delay, d1	47.6	47.7	22.8	56.2	56.2	52.8	45.3	17.7		62.9	46.0	35.2
Progression Factor	0.55	0.55	0.46	1.00	1.00	1.00	0.67	1.40		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.4	0.1	4.7	4.5	0.0	6.4	0.3		2.0	40.6	1.4
Delay (s)	26.5	26.5	10.5	60.9	60.7	52.8	36.9	25.0		64.9	86.6	36.5
Level of Service	C	C	B	E	E	D	D	C		E	F	D
Approach Delay (s)		17.6			60.3			28.5			79.8	
Approach LOS		B			E			C			E	

Intersection Summary			
HCM 2000 Control Delay	52.8	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	75.5%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	128	0	238	40	0	10	50	1005	15	49	14	1872
Future Volume (vph)	128	0	238	40	0	10	50	1005	15	49	14	1872
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	1.00
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1665	1665	2760	1762	1583		3433	3539	1548		1787	5125
Flt Permitted	0.95	0.75	1.00	0.47	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1665	1315	2760	863	1583		3433	3539	1548		1787	5125
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	145	0	269	45	0	11	57	1136	17	55	16	2116
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	9	0	0	1
Lane Group Flow (vph)	72	73	269	45	0	0	57	1136	8	0	71	2143
Confl. Peds. (#/hr)			3	3					1		1	
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	36.0	36.0	18.7	19.3	2.0		4.5	63.5	63.5		7.9	66.9
Effective Green, g (s)	36.0	36.0	18.7	19.3	2.0		4.5	63.5	63.5		7.9	66.9
Actuated g/C Ratio	0.28	0.28	0.14	0.15	0.02		0.03	0.49	0.49		0.06	0.51
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	461	364	397	128	24		118	1728	756		108	2637
v/s Ratio Prot	0.04		c0.10		0.00		0.02	0.32			c0.04	c0.42
v/s Ratio Perm		0.06		c0.05					0.01			
v/c Ratio	0.16	0.20	0.68	0.35	0.01		0.48	0.66	0.01		0.66	0.81
Uniform Delay, d1	35.5	36.0	52.8	49.7	63.0		61.6	25.1	17.1		59.7	26.3
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.14	0.70	1.00		1.34	0.35
Incremental Delay, d2	0.2	0.4	4.5	2.3	0.2		4.1	1.9	0.0		8.6	1.7
Delay (s)	35.7	36.4	57.3	52.0	63.2		74.0	19.5	17.1		88.9	11.0
Level of Service	D	D	E	D	E		E	B	B		F	B
Approach Delay (s)		49.9			54.2			22.0				13.5
Approach LOS		D			D			C				B

Intersection Summary			
HCM 2000 Control Delay	20.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.72		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	67.9%	ICU Level of Service	C
Analysis Period (min)	15		

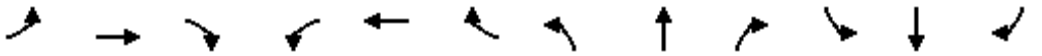
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	25
Future Volume (vph)	25
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Growth Factor (vph)	104%
Adj. Flow (vph)	28
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	1%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	10	85	8	20	1077	2148	5
Future Volume (vph)	10	85	8	20	1077	2148	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.88	0.85		1.00	1.00	1.00	
Flt Protected	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3175	1455		3400	5085	5134	
Flt Permitted	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3175	1455		3400	5085	5134	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	11	96	9	23	1217	2428	6
RTOR Reduction (vph)	43	43	0	0	0	0	0
Lane Group Flow (vph)	16	5	0	32	1217	2434	0
Confl. Peds. (#/hr)				2			2
Confl. Bikes (#/hr)							2
Heavy Vehicles (%)	1%	1%	3%	3%	2%	1%	1%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	13.0	13.0		4.1	106.7	96.9	
Effective Green, g (s)	13.0	13.0		4.1	106.7	96.9	
Actuated g/C Ratio	0.10	0.10		0.03	0.82	0.75	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	317	145		107	4173	3826	
v/s Ratio Prot	c0.00			0.01	c0.24	c0.47	
v/s Ratio Perm		0.00					
v/c Ratio	0.05	0.03		0.30	0.29	0.64	
Uniform Delay, d1	52.9	52.8		61.5	2.7	8.0	
Progression Factor	1.00	1.00		1.21	0.42	0.16	
Incremental Delay, d2	0.1	0.1		1.8	0.2	0.5	
Delay (s)	53.0	53.0		76.3	1.3	1.8	
Level of Service	D	D		E	A	A	
Approach Delay (s)	53.0				3.2	1.8	
Approach LOS	D				A	A	

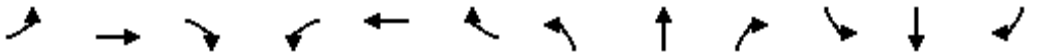
Intersection Summary			
HCM 2000 Control Delay	3.7	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	60.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	0	350	2	0	0	330	1047	1	3	2140	144
Future Volume (vph)	61	0	350	2	0	0	330	1047	1	3	2140	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1787	2814	1203			3433	5135		1787	5082	
Flt Permitted		0.95	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1787	2814	1267			3433	5135		1787	5082	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	69	0	396	2	0	0	373	1184	1	3	2419	163
RTOR Reduction (vph)	0	0	270	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	69	126	2	0	0	373	1185	0	3	2578	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	1%	1%	1%	50%	50%	50%	2%	1%	2%	1%	1%	1%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		17.2	43.9	1.7			28.4	96.8		1.3	69.0	
Effective Green, g (s)		17.2	38.9	1.7			28.4	96.8		1.3	69.0	
Actuated g/C Ratio		0.13	0.30	0.01			0.22	0.74		0.01	0.53	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		236	842	16			749	3823		17	2697	
v/s Ratio Prot			0.04				c0.11	0.23		0.00	c0.51	
v/s Ratio Perm		c0.04		0.00								
v/c Ratio		0.29	0.15	0.12			0.50	0.31		0.18	0.96	
Uniform Delay, d1		50.9	33.4	63.4			44.5	5.5		63.8	29.1	
Progression Factor		1.00	1.00	1.00			1.08	0.39		1.20	0.26	
Incremental Delay, d2		0.9	0.1	3.5			0.5	0.2		4.1	8.4	
Delay (s)		51.8	33.5	66.9			48.8	2.3		80.4	15.9	
Level of Service		D	C	E			D	A		F	B	
Approach Delay (s)		36.2			66.9			13.5			16.0	
Approach LOS		D			E			B			B	

Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.78		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	79.2%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



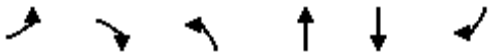
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	8	143	0	511	0	938	361	518	1438	13
Future Volume (vph)	0	0	8	143	0	511	0	938	361	518	1438	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			0.88	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1285	3467		2814		5307	1652	3467	5127	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1285	3467		2814		5307	1652	3467	5127	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	0	0	9	162	0	578	0	1060	408	586	1626	15
RTOR Reduction (vph)	0	0	9	0	0	499	0	0	157	0	0	0
Lane Group Flow (vph)	0	0	0	162	0	79	0	1060	251	586	1641	0
Confl. Peds. (#/hr)			3				3					3
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			1.1	11.4		17.7		66.9	66.9	30.0	102.6	
Effective Green, g (s)			1.1	11.4		17.7		66.9	66.9	30.0	102.6	
Actuated g/C Ratio			0.01	0.09		0.14		0.51	0.51	0.23	0.79	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			10	304		383		2731	850	800	4046	
v/s Ratio Prot				c0.05		c0.03		0.20		c0.17	c0.32	
v/s Ratio Perm			0.00						0.15			
v/c Ratio			0.01	0.53		0.21		0.39	0.29	0.73	0.41	
Uniform Delay, d1			63.9	56.8		49.9		19.1	18.1	46.3	4.2	
Progression Factor			1.00	1.00		1.00		0.99	2.14	0.95	0.90	
Incremental Delay, d2			0.3	1.8		0.3		0.3	0.7	3.6	0.3	
Delay (s)			64.2	58.5		50.2		19.3	39.3	47.5	4.1	
Level of Service			E	E		D		B	D	D	A	
Approach Delay (s)		64.2			52.0			24.9			15.5	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	24.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	53.8%	ICU Level of Service	A
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 (vph)	3	87	0	163	82	309	0	0	74	477	30	9
Future Volume (vph)	3	87	0	163	82	309	0	0	74	477	30	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.98			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.88			0.86			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.96	
Satd. Flow (prot)	1764	1693		1770	1618			1611			1792	
Flt Permitted	0.36	1.00		0.69	1.00			1.00			0.96	
Satd. Flow (perm)	665	1693		1292	1618			1611			1792	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	3	98	0	184	93	349	0	0	84	539	34	10
RTOR Reduction (vph)	0	0	0	0	77	0	0	80	0	0	1	0
Lane Group Flow (vph)	3	98	0	184	365	0	0	4	0	0	582	0
Confl. Peds. (#/hr)	3					3						1
Heavy Vehicles (%)	2%	1%	2%	2%	1%	1%	2%	2%	2%	1%	2%	1%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA			NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	61.1	61.1		61.1	61.1			5.5			49.9	
Effective Green, g (s)	61.1	61.1		61.1	61.1			5.5			49.9	
Actuated g/C Ratio	0.47	0.47		0.47	0.47			0.04			0.38	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	312	795		607	760			68			687	
v/s Ratio Prot		0.06			c0.23			c0.00			c0.32	
v/s Ratio Perm	0.00			0.14								
v/c Ratio	0.01	0.12		0.30	0.48			0.05			0.85	
Uniform Delay, d1	18.3	19.4		21.3	23.6			59.7			36.6	
Progression Factor	1.00	1.00		0.42	0.24			1.00			1.00	
Incremental Delay, d2	0.1	0.3		1.1	1.8			0.3			9.5	
Delay (s)	18.4	19.7		10.0	7.5			60.1			46.1	
Level of Service	B	B		A	A			E			D	
Approach Delay (s)		19.7			8.2			60.1			46.1	
Approach LOS		B			A			E			D	

Intersection Summary			
HCM 2000 Control Delay	28.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	68.4%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	5	317	947	2044	6
Future Volume (veh/h)	80	5	317	947	2044	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1856	1885	1885
Adj Flow Rate, veh/h	90	6	358	1071	2311	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	3	3	1	1
Cap, veh/h	114	457	391	4346	3140	10
Arrive On Green	0.06	0.06	0.29	1.00	1.00	1.00
Sat Flow, veh/h	1810	1610	1767	5233	5467	16
Grp Volume(v), veh/h	90	6	358	1071	1497	821
Grp Sat Flow(s),veh/h/ln	1810	1610	1767	1689	1716	1882
Q Serve(g_s), s	6.4	0.3	25.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.4	0.3	25.4	0.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	114	457	391	4346	2034	1116
V/C Ratio(X)	0.79	0.01	0.92	0.25	0.74	0.74
Avail Cap(c_a), veh/h	145	485	493	4346	2034	1116
HCM Platoon Ratio	1.00	1.00	1.33	1.33	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.19	0.19
Uniform Delay (d), s/veh	60.1	33.4	44.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	22.9	0.0	20.2	0.1	0.5	0.8
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	12.5	0.1	0.1	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	83.0	33.5	64.9	0.1	0.5	0.8
LnGrp LOS	F	C	E	A	A	A
Approach Vol, veh/h	96			1429	2318	
Approach Delay, s/veh	79.9			16.4	0.6	
Approach LOS	E			B	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	34.5	82.8				117.2	12.8
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	36.3	67.3				109.3	10.4
Max Q Clear Time (g_c+I1), s	27.4	2.0				2.0	8.4
Green Ext Time (p_c), s	1.3	62.7				38.8	0.1

Intersection Summary	
HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	87	112	1374	269	120	1673
Future Volume (veh/h)	87	112	1374	269	120	1673
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1811	1811	1870	1870	1885	1885
Adj Flow Rate, veh/h	98	127	1553	0	136	1891
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	2	2	1	1
Cap, veh/h	342	241	4521		192	4146
Arrive On Green	0.10	0.10	1.00	0.00	0.06	0.81
Sat Flow, veh/h	3346	1535	6696	1585	3483	5316
Grp Volume(v), veh/h	98	127	1553	0	136	1891
Grp Sat Flow(s),veh/h/ln	1673	1535	1609	1585	1742	1716
Q Serve(g_s), s	3.5	9.9	0.0	0.0	5.0	14.7
Cycle Q Clear(g_c), s	3.5	9.9	0.0	0.0	5.0	14.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	342	241	4521		192	4146
V/C Ratio(X)	0.29	0.53	0.34		0.71	0.46
Avail Cap(c_a), veh/h	1125	601	4521		370	4146
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.81	0.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	50.3	0.0	0.0	60.4	3.9
Incr Delay (d2), s/veh	0.6	2.5	0.2	0.0	4.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.6	0.1	0.0	2.3	3.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.6	52.8	0.2	0.0	65.1	4.3
LnGrp LOS	D	D	A		E	A
Approach Vol, veh/h	225		1553			2027
Approach Delay, s/veh	53.6		0.2			8.3
Approach LOS	D		A			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		110.4		19.6	13.4	97.1
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		74.3		43.7	13.8	54.3
Max Q Clear Time (g_c+I1), s		16.7		11.9	7.0	2.0
Green Ext Time (p_c), s		53.9		1.4	0.2	41.8

Intersection Summary	
HCM 6th Ctrl Delay	7.7
HCM 6th LOS	A

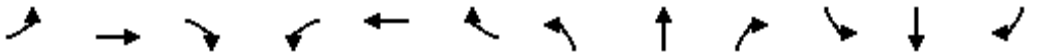
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	329	393	1241	0	0	1767
Future Volume (veh/h)	329	393	1241	0	0	1767
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1841	1811	1870	0	0	1870
Adj Flow Rate, veh/h	372	444	1403	0	0	1997
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	6	2	0	0	2
Cap, veh/h	1107	500	3020	0	0	3020
Arrive On Green	0.33	0.33	0.79	0.00	0.00	1.00
Sat Flow, veh/h	3401	1535	5443	0	0	5443
Grp Volume(v), veh/h	372	444	1403	0	0	1997
Grp Sat Flow(s),veh/h/ln	1700	1535	1702	0	0	1702
Q Serve(g_s), s	10.8	35.7	12.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.8	35.7	12.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	1107	500	3020	0	0	3020
V/C Ratio(X)	0.34	0.89	0.46	0.00	0.00	0.66
Avail Cap(c_a), veh/h	1358	613	3020	0	0	3020
HCM Platoon Ratio	1.00	1.00	1.33	1.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.90
Uniform Delay (d), s/veh	33.2	41.6	7.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.3	13.9	0.5	0.0	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	15.2	3.4	0.0	0.0	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	33.5	55.5	7.5	0.0	0.0	1.0
LnGrp LOS	C	E	A	A	A	A
Approach Vol, veh/h	816		1403			1997
Approach Delay, s/veh	45.5		7.5			1.0
Approach LOS	D		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		82.6		47.4		82.6
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		67.3		51.9		67.3
Max Q Clear Time (g_c+I1), s		2.0		37.7		14.0
Green Ext Time (p_c), s		59.5		4.6		38.8

Intersection Summary		
HCM 6th Ctrl Delay		11.8
HCM 6th LOS		B



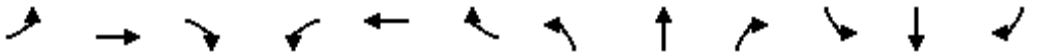
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	347	123	73	272	386	81	818	52	230	1262	137
Future Volume (veh/h)	157	347	123	73	272	386	81	818	52	230	1262	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	177	392	139	83	307	0	92	925	59	260	1427	0
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, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	232	510	178	105	676		178	1645	105	322	2470	
Arrive On Green	0.07	0.20	0.20	0.06	0.19	0.00	0.10	0.49	0.49	0.03	0.16	0.00
Sat Flow, veh/h	3483	2587	904	1795	3676	0	1781	3391	216	3456	5274	0
Grp Volume(v), veh/h	177	270	261	83	307	0	92	485	499	260	1427	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1700	1795	1791	0	1781	1777	1831	1728	1702	0
Q Serve(g_s), s	6.5	18.5	19.0	5.9	9.9	0.0	6.4	25.1	25.1	9.7	33.6	0.0
Cycle Q Clear(g_c), s	6.5	18.5	19.0	5.9	9.9	0.0	6.4	25.1	25.1	9.7	33.6	0.0
Prop In Lane	1.00		0.53	1.00		0.00	1.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	232	353	335	105	676		178	862	888	322	2470	
V/C Ratio(X)	0.76	0.76	0.78	0.79	0.45		0.52	0.56	0.56	0.81	0.58	
Avail Cap(c_a), veh/h	316	453	430	177	934		178	862	888	428	2470	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.92	0.92	0.00
Uniform Delay (d), s/veh	59.7	49.3	49.5	60.4	46.8	0.0	55.5	23.7	23.7	61.8	42.3	0.0
Incr Delay (d2), s/veh	7.2	5.7	6.9	12.3	0.5	0.0	10.3	2.6	2.6	7.6	0.9	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	3.1	8.8	8.6	3.0	4.4	0.0	3.3	10.8	11.1	4.8	15.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.9	55.1	56.4	72.7	47.3	0.0	65.8	26.3	26.3	69.5	43.2	0.0
LnGrp LOS	E	E	E	E	D		E	C	C	E	D	
Approach Vol, veh/h		708			390			1076			1687	
Approach Delay, s/veh		58.5			52.7			29.7			47.3	
Approach LOS		E			D			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	68.6	13.8	29.6	17.8	68.8	12.7	30.7
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	13.0	50.4	11.8	33.9	16.1	46.6	12.8	32.9
Max Q Clear Time (g_c+I1), s	8.4	35.6	8.5	11.9	11.7	27.1	7.9	21.0
Green Ext Time (p_c), s	0.1	12.5	0.2	1.2	0.4	12.2	0.1	4.1

Intersection Summary	
HCM 6th Ctrl Delay	45.0
HCM 6th LOS	D

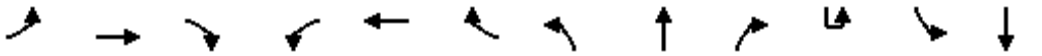
Notes

Unsignalized Delay for [WBR, SBR] 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 (vph)	264	13	354	157	28	12	291	690	44	10	1450	218
Future Volume (vph)	264	13	354	157	28	12	291	690	44	10	1450	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.2	6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1727	1599	1698	1727	1599	1770	5039		1787	5136	1557
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1715	1727	1599	1698	1727	1599	1770	5039		1787	5136	1557
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	298	15	400	177	32	14	329	780	50	11	1639	246
RTOR Reduction (vph)	0	0	40	0	0	13	0	4	0	0	0	125
Lane Group Flow (vph)	155	158	360	104	105	1	329	826	0	11	1639	121
Confl. Peds. (#/hr)	2		6	6		2	2					2
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%	2%	2%	2%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	Prot	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	3	3	3	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	24.4	24.4	62.1	12.9	12.9	12.9	31.5	67.0		2.5	38.0	38.0
Effective Green, g (s)	24.4	24.4	62.1	12.9	12.9	12.9	31.5	67.0		2.5	38.0	38.0
Actuated g/C Ratio	0.19	0.19	0.48	0.10	0.10	0.10	0.24	0.52		0.02	0.29	0.29
Clearance Time (s)	6.2	6.2		6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	321	324	763	168	171	158	428	2597		34	1501	455
v/s Ratio Prot	0.09	0.09	c0.23	c0.06	0.06	0.00	c0.19	0.16		0.01	c0.32	
v/s Ratio Perm												0.08
v/c Ratio	0.48	0.49	0.47	0.62	0.61	0.01	0.77	0.32		0.32	1.09	0.27
Uniform Delay, d1	47.2	47.2	22.9	56.2	56.2	52.8	45.9	18.3		62.9	46.0	35.3
Progression Factor	0.76	0.76	0.34	1.00	1.00	1.00	0.57	0.97		1.00	1.00	1.00
Incremental Delay, d2	0.4	0.4	0.1	4.7	4.5	0.0	7.6	0.3		2.0	52.6	1.4
Delay (s)	36.4	36.5	8.0	60.9	60.7	52.8	33.7	18.0		64.9	98.6	36.7
Level of Service	D	D	A	E	E	D	C	B		E	F	D
Approach Delay (s)		20.5			60.3			22.4			90.4	
Approach LOS		C			E			C			F	

Intersection Summary			
HCM 2000 Control Delay	56.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.81		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	77.6%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	128	0	238	40	0	10	50	1060	15	49	14	1916
Future Volume (vph)	128	0	238	40	0	10	50	1060	15	49	14	1916
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	1.00
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1665	1665	2760	1762	1583		3433	3505	1548		1787	5125
Flt Permitted	0.95	0.75	1.00	0.47	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1665	1315	2760	863	1583		3433	3505	1548		1787	5125
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	145	0	269	45	0	11	57	1198	17	55	16	2166
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	9	0	0	1
Lane Group Flow (vph)	72	73	269	45	0	0	57	1198	8	0	71	2193
Confl. Peds. (#/hr)			3	3					1		1	
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	3%	2%	1%	1%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	35.9	35.9	18.6	19.3	2.0		4.5	62.7	62.7		8.8	67.0
Effective Green, g (s)	35.9	35.9	18.6	19.3	2.0		4.5	62.7	62.7		8.8	67.0
Actuated g/C Ratio	0.28	0.28	0.14	0.15	0.02		0.03	0.48	0.48		0.07	0.52
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	459	363	394	128	24		118	1690	746		120	2641
v/s Ratio Prot	0.04		c0.10		0.00		0.02	0.34			c0.04	c0.43
v/s Ratio Perm		0.06		c0.05					0.01			
v/c Ratio	0.16	0.20	0.68	0.35	0.01		0.48	0.71	0.01		0.59	0.83
Uniform Delay, d1	35.6	36.1	52.9	49.7	63.0		61.6	26.5	17.5		58.9	26.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.84	1.03	1.00		1.43	0.06
Incremental Delay, d2	0.2	0.4	4.8	2.3	0.2		4.1	2.5	0.0		4.6	1.8
Delay (s)	35.8	36.4	57.7	52.0	63.2		55.9	29.6	17.5		89.0	3.5
Level of Service	D	D	E	D	E		E	C	B		F	A
Approach Delay (s)		50.2			54.2			30.7				6.2
Approach LOS		D			D			C				A

Intersection Summary			
HCM 2000 Control Delay	19.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	68.8%	ICU Level of Service	C
Analysis Period (min)	15		

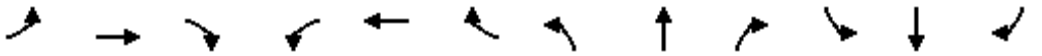
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	25
Future Volume (vph)	25
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Growth Factor (vph)	104%
Adj. Flow (vph)	28
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	1%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	10	85	8	20	1132	2192	5
Future Volume (vph)	10	85	8	20	1132	2192	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.88	0.85		1.00	1.00	1.00	
Flt Protected	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3175	1455		3400	5085	5134	
Flt Permitted	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3175	1455		3400	5085	5134	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	11	96	9	23	1280	2478	6
RTOR Reduction (vph)	43	43	0	0	0	0	0
Lane Group Flow (vph)	16	5	0	32	1280	2484	0
Confl. Peds. (#/hr)				2			2
Confl. Bikes (#/hr)							2
Heavy Vehicles (%)	1%	1%	3%	3%	2%	1%	1%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	13.0	13.0		4.1	106.7	96.9	
Effective Green, g (s)	13.0	13.0		4.1	106.7	96.9	
Actuated g/C Ratio	0.10	0.10		0.03	0.82	0.75	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	317	145		107	4173	3826	
v/s Ratio Prot	c0.00			0.01	c0.25	c0.48	
v/s Ratio Perm		0.00					
v/c Ratio	0.05	0.03		0.30	0.31	0.65	
Uniform Delay, d1	52.9	52.8		61.5	2.8	8.2	
Progression Factor	1.00	1.00		1.10	0.71	0.38	
Incremental Delay, d2	0.1	0.1		1.8	0.2	0.5	
Delay (s)	53.0	53.0		69.6	2.2	3.6	
Level of Service	D	D		E	A	A	
Approach Delay (s)	53.0				3.8	3.6	
Approach LOS	D				A	A	

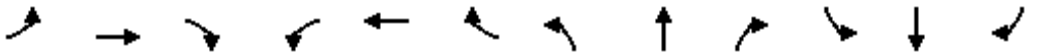
Intersection Summary			
HCM 2000 Control Delay	5.0	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	0	462	2	0	0	420	1051	1	3	2144	184
Future Volume (vph)	112	0	462	2	0	0	420	1051	1	3	2144	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1787	2760	1203			3433	5085		1787	5069	
Flt Permitted		0.95	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1787	2760	1267			3433	5085		1787	5069	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	127	0	522	2	0	0	475	1188	1	3	2424	208
RTOR Reduction (vph)	0	0	271	0	0	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	127	251	2	0	0	475	1189	0	3	2626	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	1%	1%	3%	50%	50%	50%	2%	2%	2%	1%	1%	1%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		25.8	54.7	1.7			30.6	88.2		1.3	58.2	
Effective Green, g (s)		25.8	49.7	1.7			30.6	88.2		1.3	58.2	
Actuated g/C Ratio		0.20	0.38	0.01			0.24	0.68		0.01	0.45	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		354	1055	16			808	3449		17	2269	
v/s Ratio Prot			0.09				c0.14	0.23		0.00	c0.52	
v/s Ratio Perm		c0.07		0.00								
v/c Ratio		0.36	0.24	0.12			0.59	0.34		0.18	1.16	
Uniform Delay, d1		45.0	27.3	63.4			44.1	8.8		63.8	35.9	
Progression Factor		1.00	1.00	1.00			1.04	0.50		1.18	0.40	
Incremental Delay, d2		0.9	0.1	3.5			1.0	0.3		4.0	75.4	
Delay (s)		45.8	27.4	66.9			46.8	4.6		79.5	89.9	
Level of Service		D	C	E			D	A		E	F	
Approach Delay (s)		31.0			66.9			16.6			89.8	
Approach LOS		C			E			B			F	

Intersection Summary				
HCM 2000 Control Delay	57.5	HCM 2000 Level of Service	E	
HCM 2000 Volume to Capacity ratio	0.86			
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.4	
Intersection Capacity Utilization	85.8%	ICU Level of Service	E	
Analysis Period (min)	15			
c Critical Lane Group				



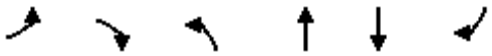
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	8	143	0	538	0	966	361	556	1473	13
Future Volume (vph)	0	0	8	143	0	538	0	966	361	556	1473	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			0.88	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1285	3467		2814		5307	1652	3400	5127	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1285	3467		2814		5307	1652	3400	5127	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	0	0	9	162	0	608	0	1092	408	629	1665	15
RTOR Reduction (vph)	0	0	9	0	0	525	0	0	158	0	0	0
Lane Group Flow (vph)	0	0	0	162	0	83	0	1092	250	629	1680	0
Confl. Peds. (#/hr)			3				3					3
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	3%	1%	1%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			1.1	11.4		17.7		64.6	64.6	32.3	102.6	
Effective Green, g (s)			1.1	11.4		17.7		64.6	64.6	32.3	102.6	
Actuated g/C Ratio			0.01	0.09		0.14		0.50	0.50	0.25	0.79	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			10	304		383		2637	820	844	4046	
v/s Ratio Prot				c0.05		c0.03		0.21		c0.19	c0.33	
v/s Ratio Perm			0.00						0.15			
v/c Ratio			0.01	0.53		0.22		0.41	0.30	0.75	0.42	
Uniform Delay, d1			63.9	56.8		50.0		20.7	19.4	45.1	4.3	
Progression Factor			1.00	1.00		1.00		0.99	2.03	0.84	1.84	
Incremental Delay, d2			0.3	1.8		0.3		0.4	0.7	3.5	0.3	
Delay (s)			64.2	58.5		50.3		20.9	40.0	41.2	8.2	
Level of Service			E	E		D		C	D	D	A	
Approach Delay (s)		64.2			52.0			26.1			17.2	
Approach LOS		E			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	54.9%	ICU Level of Service	A
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 (vph)	3	91	0	163	86	309	0	0	74	477	30	9
Future Volume (vph)	3	91	0	163	86	309	0	0	74	477	30	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.97			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.88			0.86			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.96	
Satd. Flow (prot)	1770	1644		1770	1599			1611			1792	
Flt Permitted	0.35	1.00		0.69	1.00			1.00			0.96	
Satd. Flow (perm)	660	1644		1286	1599			1611			1792	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	3	103	0	184	97	349	0	0	84	539	34	10
RTOR Reduction (vph)	0	0	0	0	74	0	0	80	0	0	1	0
Lane Group Flow (vph)	3	103	0	184	372	0	0	4	0	0	582	0
Confl. Peds. (#/hr)	4					4						1
Heavy Vehicles (%)	2%	4%	2%	2%	6%	1%	2%	2%	2%	1%	2%	1%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA			NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	61.1	61.1		61.1	61.1			5.5			49.9	
Effective Green, g (s)	61.1	61.1		61.1	61.1			5.5			49.9	
Actuated g/C Ratio	0.47	0.47		0.47	0.47			0.04			0.38	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	310	772		604	751			68			687	
v/s Ratio Prot		0.06			c0.23			c0.00			c0.32	
v/s Ratio Perm	0.00			0.14								
v/c Ratio	0.01	0.13		0.30	0.50			0.05			0.85	
Uniform Delay, d1	18.3	19.5		21.3	23.8			59.7			36.6	
Progression Factor	1.00	1.00		0.45	0.33			1.00			1.00	
Incremental Delay, d2	0.1	0.4		1.1	1.9			0.3			9.5	
Delay (s)	18.4	19.8		10.6	9.7			60.1			46.1	
Level of Service	B	B		B	A			E			D	
Approach Delay (s)		19.8			10.0			60.1			46.1	
Approach LOS		B			A			E			D	

Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	68.7%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	80	5	317	952	2049	6
Future Volume (veh/h)	80	5	317	952	2049	6
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1856	1856	1885	1885
Adj Flow Rate, veh/h	90	6	358	1076	2316	7
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	0	0	3	3	1	1
Cap, veh/h	114	457	391	4346	3140	9
Arrive On Green	0.06	0.06	0.29	1.00	1.00	1.00
Sat Flow, veh/h	1810	1610	1767	5233	5467	16
Grp Volume(v), veh/h	90	6	358	1076	1500	823
Grp Sat Flow(s),veh/h/ln	1810	1610	1767	1689	1716	1882
Q Serve(g_s), s	6.4	0.3	25.4	0.0	0.0	0.0
Cycle Q Clear(g_c), s	6.4	0.3	25.4	0.0	0.0	0.0
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	114	457	391	4346	2034	1116
V/C Ratio(X)	0.79	0.01	0.92	0.25	0.74	0.74
Avail Cap(c_a), veh/h	145	485	493	4346	2034	1116
HCM Platoon Ratio	1.00	1.00	1.33	1.33	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	0.18	0.18
Uniform Delay (d), s/veh	60.1	33.4	44.7	0.0	0.0	0.0
Incr Delay (d2), s/veh	22.9	0.0	20.2	0.1	0.4	0.8
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	12.5	0.1	0.1	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	83.0	33.5	64.9	0.1	0.4	0.8
LnGrp LOS	F	C	E	A	A	A
Approach Vol, veh/h	96			1434	2323	
Approach Delay, s/veh	79.9			16.3	0.6	
Approach LOS	E			B	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	34.5	82.8				117.2	12.8
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	36.3	67.3				109.3	10.4
Max Q Clear Time (g_c+I1), s	27.4	2.0				2.0	8.4
Green Ext Time (p_c), s	1.3	62.7				39.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	87	112	1394	269	120	1693
Future Volume (veh/h)	87	112	1394	269	120	1693
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1811	1811	1856	1870	1885	1870
Adj Flow Rate, veh/h	98	127	1576	0	136	1914
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	6	6	3	2	1	2
Cap, veh/h	342	241	4485		192	4113
Arrive On Green	0.10	0.10	1.00	0.00	0.06	0.81
Sat Flow, veh/h	3346	1535	6643	1585	3483	5274
Grp Volume(v), veh/h	98	127	1576	0	136	1914
Grp Sat Flow(s),veh/h/ln	1673	1535	1596	1585	1742	1702
Q Serve(g_s), s	3.5	9.9	0.0	0.0	5.0	15.2
Cycle Q Clear(g_c), s	3.5	9.9	0.0	0.0	5.0	15.2
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	342	241	4485		192	4113
V/C Ratio(X)	0.29	0.53	0.35		0.71	0.47
Avail Cap(c_a), veh/h	1125	601	4485		370	4113
HCM Platoon Ratio	1.00	1.00	2.00	2.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.78	0.00	1.00	1.00
Uniform Delay (d), s/veh	54.0	50.3	0.0	0.0	60.4	3.9
Incr Delay (d2), s/veh	0.6	2.5	0.2	0.0	4.8	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.5	8.6	0.1	0.0	2.3	3.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	54.6	52.8	0.2	0.0	65.1	4.3
LnGrp LOS	D	D	A		E	A
Approach Vol, veh/h	225		1576			2050
Approach Delay, s/veh	53.6		0.2			8.3
Approach LOS	D		A			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		110.4		19.6	13.4	97.1
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		74.3		43.7	13.8	54.3
Max Q Clear Time (g_c+I1), s		17.2		11.9	7.0	2.0
Green Ext Time (p_c), s		53.7		1.4	0.2	42.3

Intersection Summary	
HCM 6th Ctrl Delay	7.6
HCM 6th LOS	A

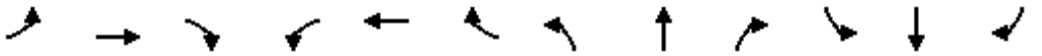
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	329	413	1241	0	0	1787
Future Volume (veh/h)	329	413	1241	0	0	1787
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1841	1752	1870	0	0	1856
Adj Flow Rate, veh/h	372	467	1403	0	0	2020
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	4	10	2	0	0	3
Cap, veh/h	1184	517	2904	0	0	2881
Arrive On Green	0.35	0.35	1.00	0.00	0.00	1.00
Sat Flow, veh/h	3401	1485	5443	0	0	5400
Grp Volume(v), veh/h	372	467	1403	0	0	2020
Grp Sat Flow(s),veh/h/ln	1700	1485	1702	0	0	1689
Q Serve(g_s), s	10.4	38.9	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	10.4	38.9	0.0	0.0	0.0	0.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	1184	517	2904	0	0	2881
V/C Ratio(X)	0.31	0.90	0.48	0.00	0.00	0.70
Avail Cap(c_a), veh/h	1384	604	2904	0	0	2881
HCM Platoon Ratio	1.00	1.00	2.00	1.00	1.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	0.89
Uniform Delay (d), s/veh	31.0	40.3	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.2	16.3	0.6	0.0	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	16.3	0.2	0.0	0.0	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	31.2	56.5	0.6	0.0	0.0	1.3
LnGrp LOS	C	E	A	A	A	A
Approach Vol, veh/h	839		1403			2020
Approach Delay, s/veh	45.3		0.6			1.3
Approach LOS	D		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		79.6		50.4		79.6
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		66.3		52.9		66.3
Max Q Clear Time (g_c+I1), s		2.0		40.9		2.0
Green Ext Time (p_c), s		59.0		4.4		44.4

Intersection Summary	
HCM 6th Ctrl Delay	9.7
HCM 6th LOS	A



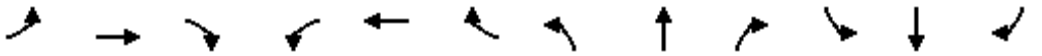
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	157	347	123	73	272	386	81	818	52	230	1272	137
Future Volume (veh/h)	157	347	123	73	272	386	81	818	52	230	1272	137
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	177	392	139	83	307	0	92	925	59	260	1438	0
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, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	232	510	178	105	676		178	1653	105	315	2470	
Arrive On Green	0.07	0.20	0.20	0.06	0.19	0.00	0.10	0.49	0.49	0.18	0.97	0.00
Sat Flow, veh/h	3483	2587	904	1795	3676	0	1781	3391	216	3456	5274	0
Grp Volume(v), veh/h	177	270	261	83	307	0	92	485	499	260	1438	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1700	1795	1791	0	1781	1777	1831	1728	1702	0
Q Serve(g_s), s	6.5	18.5	19.0	5.9	9.9	0.0	6.4	25.0	25.0	9.4	2.7	0.0
Cycle Q Clear(g_c), s	6.5	18.5	19.0	5.9	9.9	0.0	6.4	25.0	25.0	9.4	2.7	0.0
Prop In Lane	1.00		0.53	1.00		0.00	1.00		0.12	1.00		0.00
Lane Grp Cap(c), veh/h	232	353	335	105	676		178	866	892	315	2470	
V/C Ratio(X)	0.76	0.76	0.78	0.79	0.45		0.52	0.56	0.56	0.83	0.58	
Avail Cap(c_a), veh/h	316	453	430	177	934		178	866	892	428	2470	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	0.92	0.92	0.00
Uniform Delay (d), s/veh	59.7	49.3	49.5	60.4	46.8	0.0	55.5	23.5	23.5	52.2	1.1	0.0
Incr Delay (d2), s/veh	7.2	5.7	6.9	12.3	0.5	0.0	10.3	2.6	2.5	8.7	0.9	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	3.1	8.8	8.6	3.0	4.4	0.0	3.3	10.8	11.0	4.1	0.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	66.9	55.1	56.4	72.7	47.3	0.0	65.8	26.1	26.0	60.9	2.1	0.0
LnGrp LOS	E	E	E	E	D		E	C	C	E	A	
Approach Vol, veh/h		708			390			1076			1698	
Approach Delay, s/veh		58.5			52.7			29.5			11.1	
Approach LOS		E			D			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	18.0	68.6	13.8	29.6	17.5	69.1	12.7	30.7
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	13.0	50.4	11.8	33.9	16.1	46.6	12.8	32.9
Max Q Clear Time (g_c+I1), s	8.4	4.7	8.5	11.9	11.4	27.0	7.9	21.0
Green Ext Time (p_c), s	0.1	31.6	0.2	1.2	0.4	12.3	0.1	4.1

Intersection Summary	
HCM 6th Ctrl Delay	29.0
HCM 6th LOS	C

Notes

Unsignalized Delay for [WBR, SBR] 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 (vph)	264	13	359	157	28	12	296	690	44	10	1450	218
Future Volume (vph)	264	13	359	157	28	12	296	690	44	10	1450	218
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.2	6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1727	1568	1698	1727	1599	1736	5039		1787	5136	1557
Flt Permitted	0.95	0.96	1.00	0.95	0.97	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1715	1727	1568	1698	1727	1599	1736	5039		1787	5136	1557
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	298	15	406	177	32	14	335	780	50	11	1639	246
RTOR Reduction (vph)	0	0	40	0	0	13	0	4	0	0	0	125
Lane Group Flow (vph)	155	158	366	104	105	1	335	826	0	11	1639	121
Confl. Peds. (#/hr)	2		6	6		2	2					2
Heavy Vehicles (%)	0%	0%	3%	1%	1%	1%	4%	2%	2%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	Prot	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	3	3	3	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	25.2	25.2	62.0	12.9	12.9	12.9	30.6	66.2		2.5	38.1	38.1
Effective Green, g (s)	25.2	25.2	62.0	12.9	12.9	12.9	30.6	66.2		2.5	38.1	38.1
Actuated g/C Ratio	0.19	0.19	0.48	0.10	0.10	0.10	0.24	0.51		0.02	0.29	0.29
Clearance Time (s)	6.2	6.2		6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	332	334	747	168	171	158	408	2566		34	1505	456
v/s Ratio Prot	0.09	0.09	c0.23	c0.06	0.06	0.00	c0.19	0.16		0.01	c0.32	
v/s Ratio Perm												0.08
v/c Ratio	0.47	0.47	0.49	0.62	0.61	0.01	0.82	0.32		0.32	1.09	0.27
Uniform Delay, d1	46.4	46.5	23.2	56.2	56.2	52.8	47.1	18.7		62.9	46.0	35.2
Progression Factor	0.53	0.53	0.51	1.00	1.00	1.00	0.51	0.85		1.00	1.00	1.00
Incremental Delay, d2	0.3	0.3	0.2	4.7	4.5	0.0	11.9	0.3		2.0	51.5	1.4
Delay (s)	25.0	25.1	12.0	60.9	60.7	52.8	36.1	16.3		64.9	97.4	36.6
Level of Service	C	C	B	E	E	D	D	B		E	F	D
Approach Delay (s)		17.7			60.3			22.0			89.3	
Approach LOS		B			E			C			F	

Intersection Summary			
HCM 2000 Control Delay	55.2	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	77.9%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	128	0	238	40	0	10	50	1065	15	49	14	1921
Future Volume (vph)	128	0	238	40	0	10	50	1065	15	49	14	1921
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	1.00
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1665	1665	2760	1762	1583		3433	3471	1548		1787	5125
Flt Permitted	0.95	0.75	1.00	0.47	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1665	1315	2760	863	1583		3433	3471	1548		1787	5125
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	145	0	269	45	0	11	57	1204	17	55	16	2172
RTOR Reduction (vph)	0	0	0	0	11	0	0	0	9	0	0	1
Lane Group Flow (vph)	72	73	269	45	0	0	57	1204	8	0	71	2199
Confl. Peds. (#/hr)			3	3					1		1	
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	3%	3%	3%	2%	2%	2%	2%	4%	2%	1%	1%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	35.9	35.9	18.6	19.3	2.0		4.5	62.7	62.7		8.8	67.0
Effective Green, g (s)	35.9	35.9	18.6	19.3	2.0		4.5	62.7	62.7		8.8	67.0
Actuated g/C Ratio	0.28	0.28	0.14	0.15	0.02		0.03	0.48	0.48		0.07	0.52
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	459	363	394	128	24		118	1674	746		120	2641
v/s Ratio Prot	0.04		c0.10		0.00		0.02	0.35			c0.04	c0.43
v/s Ratio Perm		0.06		c0.05					0.01			
v/c Ratio	0.16	0.20	0.68	0.35	0.01		0.48	0.72	0.01		0.59	0.83
Uniform Delay, d1	35.6	36.1	52.9	49.7	63.0		61.6	26.7	17.5		58.9	26.7
Progression Factor	1.00	1.00	1.00	1.00	1.00		0.87	1.30	1.00		1.42	0.09
Incremental Delay, d2	0.2	0.4	4.8	2.3	0.2		4.1	2.6	0.0		4.6	1.9
Delay (s)	35.8	36.4	57.7	52.0	63.2		57.5	37.4	17.5		88.1	4.4
Level of Service	D	D	E	D	E		E	D	B		F	A
Approach Delay (s)		50.2			54.2			38.0				7.0
Approach LOS		D			D			D				A

Intersection Summary			
HCM 2000 Control Delay	21.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	68.9%	ICU Level of Service	C
Analysis Period (min)	15		

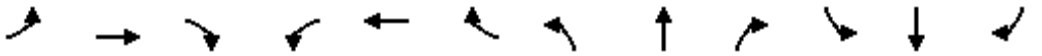
c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	25
Future Volume (vph)	25
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Growth Factor (vph)	104%
Adj. Flow (vph)	28
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	1%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	10	85	8	20	1137	2197	5
Future Volume (vph)	10	85	8	20	1137	2197	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.88	0.85		1.00	1.00	1.00	
Flt Protected	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3175	1455		3400	5085	5083	
Flt Permitted	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3175	1455		3400	5085	5083	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	11	96	9	23	1285	2484	6
RTOR Reduction (vph)	42	42	0	0	0	0	0
Lane Group Flow (vph)	17	6	0	32	1285	2490	0
Confl. Peds. (#/hr)				2			2
Confl. Bikes (#/hr)							2
Heavy Vehicles (%)	1%	1%	3%	3%	2%	2%	1%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	13.0	13.0		4.0	106.7	97.0	
Effective Green, g (s)	13.0	13.0		4.0	106.7	97.0	
Actuated g/C Ratio	0.10	0.10		0.03	0.82	0.75	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	317	145		104	4173	3792	
v/s Ratio Prot	c0.01			0.01	c0.25	c0.49	
v/s Ratio Perm		0.00					
v/c Ratio	0.05	0.04		0.31	0.31	0.66	
Uniform Delay, d1	52.9	52.9		61.6	2.8	8.2	
Progression Factor	1.00	1.00		0.95	0.55	1.48	
Incremental Delay, d2	0.1	0.2		1.9	0.2	0.6	
Delay (s)	53.0	53.0		60.6	1.7	12.7	
Level of Service	D	D		E	A	B	
Approach Delay (s)	53.0				3.2	12.7	
Approach LOS	D				A	B	

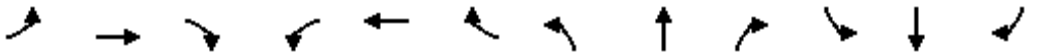
Intersection Summary			
HCM 2000 Control Delay	10.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	16.0
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



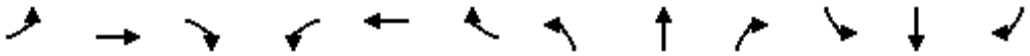
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	0	477	2	0	0	435	1056	1	3	2149	184
Future Volume (vph)	112	0	477	2	0	0	435	1056	1	3	2149	184
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7	4.0			5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88	1.00			0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00	1.00			1.00	1.00		1.00	1.00	
Frt		1.00	0.85	1.00			1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00	0.95			0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1787	2682	1203			3303	5035		1787	5069	
Flt Permitted		0.95	1.00	1.00			0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1787	2682	1267			3303	5035		1787	5069	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	127	0	539	2	0	0	492	1194	1	3	2429	208
RTOR Reduction (vph)	0	0	259	0	0	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	127	280	2	0	0	492	1195	0	3	2631	0
Confl. Peds. (#/hr)							2					2
Heavy Vehicles (%)	1%	1%	6%	50%	50%	50%	6%	3%	2%	1%	1%	1%
Turn Type	Prot	NA	custom	custom			Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		26.0	58.2	1.7			33.9	88.0		1.3	54.7	
Effective Green, g (s)		26.0	53.2	1.7			33.9	88.0		1.3	54.7	
Actuated g/C Ratio		0.20	0.41	0.01			0.26	0.68		0.01	0.42	
Clearance Time (s)		4.0		4.0			5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0		3.0			3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		357	1097	16			861	3408		17	2132	
v/s Ratio Prot			0.10				c0.15	0.24		0.00	c0.52	
v/s Ratio Perm		c0.07		0.00								
v/c Ratio		0.36	0.25	0.12			0.57	0.35		0.18	1.23	
Uniform Delay, d1		44.8	25.3	63.4			41.7	8.9		63.8	37.6	
Progression Factor		1.00	1.00	1.00			1.35	0.88		0.81	0.58	
Incremental Delay, d2		0.8	0.1	3.5			0.9	0.3		4.0	108.8	
Delay (s)		45.6	25.5	66.9			57.2	8.1		55.8	130.6	
Level of Service		D	C	E			E	A		E	F	
Approach Delay (s)		29.3			66.9			22.4			130.5	
Approach LOS		C			E			C			F	

Intersection Summary			
HCM 2000 Control Delay	80.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	86.3%	ICU Level of Service	E
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 (vph)	0	0	8	143	0	538	0	966	361	576	1473	13
Future Volume (vph)	0	0	8	143	0	538	0	966	361	576	1473	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			0.88	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1285	3467		2814		5307	1652	3303	5127	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1285	3467		2814		5307	1652	3303	5127	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	0	0	9	162	0	608	0	1092	408	651	1665	15
RTOR Reduction (vph)	0	0	9	0	0	525	0	0	162	0	1	0
Lane Group Flow (vph)	0	0	0	162	0	83	0	1092	246	651	1679	0
Confl. Peds. (#/hr)			3				3					3
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	1%	1%	1%	6%	1%	1%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			1.1	11.4		17.7		63.0	63.0	33.9	102.6	
Effective Green, g (s)			1.1	11.4		17.7		63.0	63.0	33.9	102.6	
Actuated g/C Ratio			0.01	0.09		0.14		0.48	0.48	0.26	0.79	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			10	304		383		2571	800	861	4046	
v/s Ratio Prot				c0.05		c0.03		0.21		c0.20	c0.33	
v/s Ratio Perm			0.00						0.15			
v/c Ratio			0.01	0.53		0.22		0.42	0.31	0.76	0.42	
Uniform Delay, d1			63.9	56.8		50.0		21.7	20.3	44.2	4.3	
Progression Factor			1.00	1.00		1.00		0.80	0.74	1.05	1.55	
Incremental Delay, d2			0.3	1.8		0.3		0.4	0.7	3.5	0.2	
Delay (s)			64.2	58.5		50.3		17.7	15.8	49.8	6.9	
Level of Service			E	E		D		B	B	D	A	
Approach Delay (s)		64.2			52.0			17.2			18.9	
Approach LOS		E			D			B			B	

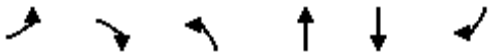
Intersection Summary			
HCM 2000 Control Delay	24.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	55.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	96	0	163	91	309	0	0	74	477	30	9
Future Volume (vph)	3	96	0	163	91	309	0	0	74	477	30	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.97			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.88			0.86			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.96	
Satd. Flow (prot)	1770	1569		1770	1584			1611			1792	
Flt Permitted	0.35	1.00		0.69	1.00			1.00			0.96	
Satd. Flow (perm)	650	1569		1279	1584			1611			1792	
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
Growth Factor (vph)	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%	104%
Adj. Flow (vph)	3	109	0	184	103	349	0	0	84	539	34	10
RTOR Reduction (vph)	0	0	0	0	70	0	0	80	0	0	1	0
Lane Group Flow (vph)	3	109	0	184	382	0	0	4	0	0	582	0
Confl. Peds. (#/hr)	4					4						1
Heavy Vehicles (%)	2%	9%	2%	2%	11%	1%	2%	2%	2%	1%	2%	1%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA			NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	61.1	61.1		61.1	61.1			5.5			49.9	
Effective Green, g (s)	61.1	61.1		61.1	61.1			5.5			49.9	
Actuated g/C Ratio	0.47	0.47		0.47	0.47			0.04			0.38	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	305	737		601	744			68			687	
v/s Ratio Prot		0.07			c0.24			c0.00			c0.32	
v/s Ratio Perm	0.00			0.14								
v/c Ratio	0.01	0.15		0.31	0.51			0.05			0.85	
Uniform Delay, d1	18.3	19.6		21.3	24.1			59.7			36.6	
Progression Factor	1.00	1.00		0.41	0.34			1.00			1.00	
Incremental Delay, d2	0.1	0.4		1.0	2.0			0.3			9.5	
Delay (s)	18.4	20.0		9.8	10.2			60.1			46.1	
Level of Service	B	C		A	B			E			D	
Approach Delay (s)		20.0			10.1			60.1			46.1	
Approach LOS		C			B			E			D	

Intersection Summary			
HCM 2000 Control Delay	28.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.63		
Actuated Cycle Length (s)	130.0	Sum of lost time (s)	13.5
Intersection Capacity Utilization	69.0%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	0	2	824	866	4
Future Volume (veh/h)	4	0	2	824	866	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1900	1900
Adj Flow Rate, veh/h	4	0	2	905	952	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	1	1	0	0
Cap, veh/h	14	18	7	4002	2415	10
Arrive On Green	0.01	0.00	0.00	0.78	0.65	0.65
Sat Flow, veh/h	1810	1610	1795	5316	3782	15
Grp Volume(v), veh/h	4	0	2	905	466	490
Grp Sat Flow(s),veh/h/ln	1810	1610	1795	1716	1805	1897
Q Serve(g_s), s	0.1	0.0	0.1	2.3	5.8	5.8
Cycle Q Clear(g_c), s	0.1	0.0	0.1	2.3	5.8	5.8
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	14	18	7	4002	1182	1243
V/C Ratio(X)	0.29	0.00	0.29	0.23	0.39	0.39
Avail Cap(c_a), veh/h	279	255	266	4002	1182	1243
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	23.8	1.4	3.8	3.8
Incr Delay (d2), s/veh	15.9	0.0	30.1	0.1	1.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.0	1.1	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.5	0.0	53.9	1.6	4.8	4.8
LnGrp LOS	D	A	D	A	A	A
Approach Vol, veh/h	4			907	956	
Approach Delay, s/veh	39.5			1.7	4.8	
Approach LOS	D			A	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	5.9	37.1				43.0	5.0
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	7.1	24.5				37.3	7.4
Max Q Clear Time (g_c+I1), s	2.1	7.8				4.3	2.1
Green Ext Time (p_c), s	0.0	11.8				18.3	0.0

Intersection Summary		
HCM 6th Ctrl Delay		3.4
HCM 6th LOS		A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	71	82	1087	253	49	704
Future Volume (veh/h)	71	82	1087	253	49	704
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1885	1885	1885	1885
Adj Flow Rate, veh/h	73	85	1121	0	51	726
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	1	1	1	1
Cap, veh/h	350	246	2621		187	3129
Arrive On Green	0.10	0.10	0.40	0.00	0.05	0.61
Sat Flow, veh/h	3456	1585	6749	1598	3483	5316
Grp Volume(v), veh/h	73	85	1121	0	51	726
Grp Sat Flow(s),veh/h/ln	1728	1585	1621	1598	1742	1716
Q Serve(g_s), s	0.8	2.0	5.1	0.0	0.6	2.7
Cycle Q Clear(g_c), s	0.8	2.0	5.1	0.0	0.6	2.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	350	246	2621		187	3129
V/C Ratio(X)	0.21	0.35	0.43		0.27	0.23
Avail Cap(c_a), veh/h	3599	1736	2953		422	3740
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	17.0	15.6	8.9	0.0	18.8	3.7
Incr Delay (d2), s/veh	0.4	1.2	0.2	0.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.9	1.2	0.0	0.2	0.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.4	16.8	9.1	0.0	19.5	3.8
LnGrp LOS	B	B	A		B	A
Approach Vol, veh/h	158		1121			777
Approach Delay, s/veh	17.1		9.1			4.8
Approach LOS	B		A			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		30.8		10.5	8.4	22.4
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		30.0		43.0	5.0	18.8
Max Q Clear Time (g_c+I1), s		4.7		4.0	2.6	7.1
Green Ext Time (p_c), s		14.2		1.0	0.0	9.5

Intersection Summary	
HCM 6th Ctrl Delay	8.1
HCM 6th LOS	A

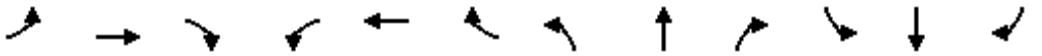
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	195	254	1014	0	0	677
Future Volume (veh/h)	195	254	1014	0	0	677
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1885	1885	0	0	1885
Adj Flow Rate, veh/h	203	265	1056	0	0	705
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	1	1	0	0	1
Cap, veh/h	881	404	2465	0	0	2465
Arrive On Green	0.25	0.25	0.48	0.00	0.00	0.48
Sat Flow, veh/h	3483	1598	5486	0	0	5486
Grp Volume(v), veh/h	203	265	1056	0	0	705
Grp Sat Flow(s),veh/h/ln	1742	1598	1716	0	0	1716
Q Serve(g_s), s	1.9	6.0	5.4	0.0	0.0	3.3
Cycle Q Clear(g_c), s	1.9	6.0	5.4	0.0	0.0	3.3
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	881	404	2465	0	0	2465
V/C Ratio(X)	0.23	0.66	0.43	0.00	0.00	0.29
Avail Cap(c_a), veh/h	1720	789	2465	0	0	2465
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	11.9	13.5	6.9	0.0	0.0	6.3
Incr Delay (d2), s/veh	0.2	2.6	0.5	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.0	1.2	0.0	0.0	0.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	12.1	16.0	7.4	0.0	0.0	6.6
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	468		1056			705
Approach Delay, s/veh	14.3		7.4			6.6
Approach LOS	B		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		25.0		15.3		25.0
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		19.3		19.9		19.3
Max Q Clear Time (g_c+I1), s		5.3		8.0		7.4
Green Ext Time (p_c), s		8.1		2.3		9.4

Intersection Summary	
HCM 6th Ctrl Delay	8.6
HCM 6th LOS	A



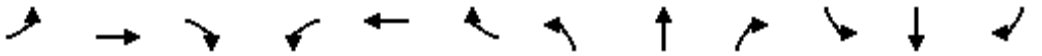
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	114	81	49	141	175	79	682	28	97	441	90
Future Volume (veh/h)	92	114	81	49	141	175	79	682	28	97	441	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	101	125	89	54	155	0	87	749	31	107	485	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	210	358	236	82	573		175	1463	61	214	2013	
Arrive On Green	0.06	0.17	0.17	0.05	0.16	0.00	0.10	0.42	0.42	0.06	0.39	0.00
Sat Flow, veh/h	3483	2054	1351	1795	3676	0	1795	3505	145	3483	5316	0
Grp Volume(v), veh/h	101	108	106	54	155	0	87	383	397	107	485	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1614	1795	1791	0	1795	1791	1859	1742	1716	0
Q Serve(g_s), s	2.0	3.8	4.2	2.1	2.7	0.0	3.3	11.4	11.4	2.1	4.5	0.0
Cycle Q Clear(g_c), s	2.0	3.8	4.2	2.1	2.7	0.0	3.3	11.4	11.4	2.1	4.5	0.0
Prop In Lane	1.00		0.84	1.00		0.00	1.00		0.08	1.00		0.00
Lane Grp Cap(c), veh/h	210	312	282	82	573		175	748	776	214	2013	
V/C Ratio(X)	0.48	0.34	0.38	0.66	0.27		0.50	0.51	0.51	0.50	0.24	
Avail Cap(c_a), veh/h	242	723	652	125	1446		175	748	776	247	2013	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.7	26.0	26.2	33.7	26.5	0.0	30.7	15.5	15.5	32.6	14.7	0.0
Incr Delay (d2), s/veh	1.7	0.7	0.8	8.5	0.3	0.0	9.8	2.5	2.4	1.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.6	1.6	1.1	1.1	0.0	1.8	4.5	4.7	0.9	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	26.7	27.0	42.2	26.7	0.0	40.5	18.0	17.9	34.5	15.0	0.0
LnGrp LOS	C	C	C	D	C		D	B	B	C	B	
Approach Vol, veh/h		315			209			867			592	
Approach Delay, s/veh		29.3			30.7			20.2			18.5	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	33.8	9.4	16.6	10.1	35.7	8.4	17.6
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	7.0	28.1	5.0	29.0	5.1	29.3	5.0	29.0
Max Q Clear Time (g_c+I1), s	5.3	6.5	4.0	4.7	4.1	13.4	4.1	6.2
Green Ext Time (p_c), s	0.0	6.6	0.0	0.5	0.0	8.5	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Notes

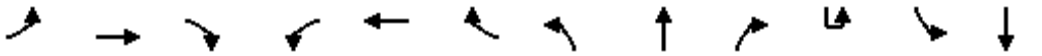
Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	13	397	57	21	23	315	308	75	24	377	115
Future Volume (vph)	300	13	397	57	21	23	315	308	75	24	377	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.92		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1624		1787	1721		1805	5012		1787	3574	1559
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1624		1787	1721		1805	5012		1787	3574	1559
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	345	15	456	66	24	26	362	354	86	28	433	132
RTOR Reduction (vph)	0	336	0	0	23	0	0	27	0	0	0	104
Lane Group Flow (vph)	345	135	0	66	27	0	362	413	0	28	433	28
Confl. Peds. (#/hr)	3					3	2		1	1		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7			3			5	2		1	6	
Permitted Phases		4			8							6
Actuated Green, G (s)	23.2	28.1		7.8	11.9		25.9	45.3		3.6	23.0	23.0
Effective Green, g (s)	23.2	28.1		7.8	11.9		25.9	45.3		3.6	23.0	23.0
Actuated g/C Ratio	0.22	0.26		0.07	0.11		0.24	0.42		0.03	0.21	0.21
Clearance Time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	4.0	2.0		2.0	2.0		2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	390	425		130	191		436	2117		60	766	334
v/s Ratio Prot	c0.19			0.04			c0.20	0.08		0.02	c0.12	
v/s Ratio Perm		c0.08			0.02							0.02
v/c Ratio	0.88	0.32		0.51	0.14		0.83	0.20		0.47	0.57	0.08
Uniform Delay, d1	40.7	31.8		47.9	43.0		38.6	19.5		50.9	37.6	33.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	21.0	0.2		1.1	0.1		12.4	0.0		2.1	0.6	0.0
Delay (s)	61.7	32.0		49.0	43.2		51.0	19.5		52.9	38.2	33.7
Level of Service	E	C		D	D		D	B		D	D	C
Approach Delay (s)		44.5			46.5			33.7			37.9	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	107.2	Sum of lost time (s)	23.2
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	0	2	14	0	7	3	764	25	29	4	866
Future Volume (vph)	1	0	2	14	0	7	3	764	25	29	4	866
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor		0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	1.00
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1715	2842	1719	1538		3465	3574	1599		1805	5186
Flt Permitted		1.00	1.00	1.00	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)		1805	2842	1810	1538		3465	3574	1599		1805	5186
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	1	0	2	15	0	8	3	822	27	31	4	931
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	10	0	0	0
Lane Group Flow (vph)	0	1	2	15	0	0	3	822	17	0	35	932
Confl. Peds. (#/hr)							2					
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)		1.1	1.0	1.6	1.5		0.8	44.1	44.1		2.3	45.6
Effective Green, g (s)		1.1	1.0	1.6	1.5		0.8	44.1	44.1		2.3	45.6
Actuated g/C Ratio		0.02	0.01	0.02	0.02		0.01	0.63	0.63		0.03	0.66
Clearance Time (s)		4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)		4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)		28	40	41	33		39	2264	1013		59	3397
v/s Ratio Prot			c0.00		0.00		0.00	c0.23			c0.02	0.18
v/s Ratio Perm		0.00		c0.01					0.01			
v/c Ratio		0.04	0.05	0.37	0.01		0.08	0.36	0.02		0.59	0.27
Uniform Delay, d1		33.7	33.8	33.5	33.3		34.0	6.1	4.7		33.2	5.0
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.7	0.5	7.4	0.1		1.2	0.5	0.0		15.8	0.2
Delay (s)		34.4	34.4	40.9	33.4		35.2	6.5	4.8		49.0	5.2
Level of Service		C	C	D	C		D	A	A		D	A
Approach Delay (s)		34.4			38.3			6.6				6.8
Approach LOS		C			D			A				A

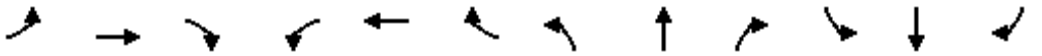
Intersection Summary			
HCM 2000 Control Delay	7.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	20.6
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Growth Factor (vph)	100%
Adj. Flow (vph)	1
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	2
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

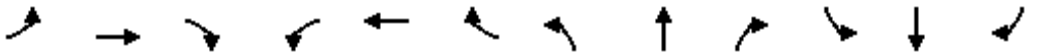
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	5	22	10	28	824	815	17
Future Volume (vph)	5	22	10	28	824	815	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.89	0.85		1.00	1.00	1.00	
Flt Protected	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3248	1470		3467	5136	5169	
Flt Permitted	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3248	1470		3467	5136	5169	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	5	23	10	29	858	849	18
RTOR Reduction (vph)	11	10	0	0	0	1	0
Lane Group Flow (vph)	6	1	0	39	858	866	0
Confl. Peds. (#/hr)				3			3
Heavy Vehicles (%)	0%	0%	1%	1%	1%	0%	0%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	3.8	3.8		2.0	54.0	46.3	
Effective Green, g (s)	3.8	3.8		2.0	54.0	46.3	
Actuated g/C Ratio	0.06	0.06		0.03	0.79	0.68	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	181	82		101	4072	3514	
v/s Ratio Prot	c0.00			0.01	c0.17	c0.17	
v/s Ratio Perm		0.00					
v/c Ratio	0.03	0.01		0.39	0.21	0.25	
Uniform Delay, d1	30.4	30.4		32.4	1.8	4.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.0		2.9	0.1	0.2	
Delay (s)	30.5	30.4		35.3	1.9	4.4	
Level of Service	C	C		D	A	A	
Approach Delay (s)	30.5				3.3	4.4	
Approach LOS	C				A	A	

Intersection Summary			
HCM 2000 Control Delay	4.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.24		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
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 (vph)	94	0	373	0	0	1	411	779	1	1	774	100
Future Volume (vph)	94	0	373	0	0	1	411	779	1	1	774	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7		4.0		5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88		1.00		0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.85		1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785	2814		1594		3467	5135		1786	5040	
Flt Permitted		0.76	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1423	2814		1594		3467	5135		1786	5040	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	98	0	389	0	0	1	428	811	1	1	806	104
RTOR Reduction (vph)	0	0	187	0	1	0	0	0	0	0	10	0
Lane Group Flow (vph)	0	98	202	0	0	0	428	812	0	1	900	0
Confl. Peds. (#/hr)	2					2	2		2	2		2
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		10.8	33.7		5.2		9.7	47.8		0.7	38.1	
Effective Green, g (s)		10.8	28.7		5.2		9.7	47.8		0.7	38.1	
Actuated g/C Ratio		0.13	0.34		0.06		0.12	0.57		0.01	0.46	
Clearance Time (s)		4.0			4.0		5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		184	970		99		404	2950		15	2307	
v/s Ratio Prot			c0.07		0.00		c0.12	0.16		0.00	c0.18	
v/s Ratio Perm		c0.07										
v/c Ratio		0.53	0.21		0.00		1.06	0.28		0.07	0.39	
Uniform Delay, d1		33.8	19.2		36.6		36.8	8.9		40.9	14.9	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		3.7	0.1		0.0		61.4	0.2		1.9	0.5	
Delay (s)		37.6	19.3		36.6		98.1	9.2		42.8	15.4	
Level of Service		D	B		D		F	A		D	B	
Approach Delay (s)		23.0			36.6			39.9			15.4	
Approach LOS		C			D			D			B	

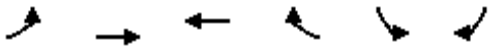
Intersection Summary			
HCM 2000 Control Delay	28.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	83.2	Sum of lost time (s)	20.4
Intersection Capacity Utilization	63.1%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	5	104	0	553	0	604	321	282	648	10
Future Volume (vph)	0	0	5	104	0	553	0	604	321	282	648	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1454	3502		2842		5307	1652	3467	5124	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1454	3502		2842		5307	1652	3467	5124	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	0	0	5	108	0	576	0	629	334	294	675	10
RTOR Reduction (vph)	0	0	5	0	0	472	0	0	192	0	2	0
Lane Group Flow (vph)	0	0	0	108	0	104	0	629	142	294	683	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			1.0	4.6		10.8		25.5	25.5	8.3	39.5	
Effective Green, g (s)			1.0	4.6		10.8		25.5	25.5	8.3	39.5	
Actuated g/C Ratio			0.02	0.08		0.18		0.42	0.42	0.14	0.66	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			24	268		511		2255	702	479	3373	
v/s Ratio Prot				c0.03		c0.04		c0.12		c0.08	0.13	
v/s Ratio Perm			0.00						0.09			
v/c Ratio			0.00	0.40		0.20		0.28	0.20	0.61	0.20	
Uniform Delay, d1			29.0	26.4		20.9		11.3	10.9	24.3	4.0	
Progression Factor			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2			0.1	1.0		0.2		0.3	0.6	3.4	0.1	
Delay (s)			29.1	27.4		21.1		11.6	11.5	27.7	4.2	
Level of Service			C	C		C		B	B	C	A	
Approach Delay (s)		29.1			22.1			11.5			11.2	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.38		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

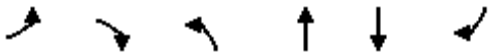
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	15	12	468	683	9
Future Volume (Veh/h)	1	15	12	468	683	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1	16	13	498	727	10
Pedestrians					5	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			485			
pX, platoon unblocked						
vC, conflicting volume	516				36	18
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	516				36	18
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	100				26	99
cM capacity (veh/h)	1025				976	1061

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	17	13	498	737
Volume Left	1	0	0	727
Volume Right	0	0	498	10
cSH	1025	1700	1700	977
Volume to Capacity	0.00	0.01	0.29	0.75
Queue Length 95th (ft)	0	0	0	185
Control Delay (s)	0.5	0.0	0.0	19.0
Lane LOS	A			C
Approach Delay (s)	0.5	0.0		19.0
Approach LOS				C

Intersection Summary			
Average Delay	11.1		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	0	2	828	870	4
Future Volume (veh/h)	4	0	2	828	870	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1885	1900
Adj Flow Rate, veh/h	4	0	2	910	956	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	1	1	1	0
Cap, veh/h	14	18	7	4002	2396	10
Arrive On Green	0.01	0.00	0.00	0.78	0.65	0.65
Sat Flow, veh/h	1810	1610	1795	5316	3752	15
Grp Volume(v), veh/h	4	0	2	910	468	492
Grp Sat Flow(s),veh/h/ln	1810	1610	1795	1716	1791	1882
Q Serve(g_s), s	0.1	0.0	0.1	2.3	5.9	5.9
Cycle Q Clear(g_c), s	0.1	0.0	0.1	2.3	5.9	5.9
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	14	18	7	4002	1173	1233
V/C Ratio(X)	0.29	0.00	0.29	0.23	0.40	0.40
Avail Cap(c_a), veh/h	279	255	266	4002	1173	1233
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	23.8	1.4	3.9	3.9
Incr Delay (d2), s/veh	15.9	0.0	30.1	0.1	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.0	1.1	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.5	0.0	53.9	1.6	4.9	4.8
LnGrp LOS	D	A	D	A	A	A
Approach Vol, veh/h	4			912	960	
Approach Delay, s/veh	39.5			1.7	4.9	
Approach LOS	D			A	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	5.9	37.1				43.0	5.0
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	7.1	24.5				37.3	7.4
Max Q Clear Time (g_c+I1), s	2.1	7.9				4.3	2.1
Green Ext Time (p_c), s	0.0	11.8				18.4	0.0

Intersection Summary			
HCM 6th Ctrl Delay		3.4	
HCM 6th LOS		A	

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	71	82	1101	253	49	718
Future Volume (veh/h)	71	82	1101	253	49	718
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1870	1885	1885	1856
Adj Flow Rate, veh/h	73	85	1135	0	51	740
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	1	1	3
Cap, veh/h	350	245	2609		187	3084
Arrive On Green	0.10	0.10	0.41	0.00	0.05	0.61
Sat Flow, veh/h	3456	1585	6696	1598	3483	5233
Grp Volume(v), veh/h	73	85	1135	0	51	740
Grp Sat Flow(s),veh/h/ln	1728	1585	1609	1598	1742	1689
Q Serve(g_s), s	0.8	2.0	5.3	0.0	0.6	2.8
Cycle Q Clear(g_c), s	0.8	2.0	5.3	0.0	0.6	2.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	350	245	2609		187	3084
V/C Ratio(X)	0.21	0.35	0.44		0.27	0.24
Avail Cap(c_a), veh/h	3590	1732	2923		421	3672
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	17.1	15.6	8.9	0.0	18.8	3.7
Incr Delay (d2), s/veh	0.4	1.2	0.2	0.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	1.9	1.3	0.0	0.2	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.5	16.8	9.1	0.0	19.6	3.8
LnGrp LOS	B	B	A		B	A
Approach Vol, veh/h	158		1135			791
Approach Delay, s/veh	17.1		9.1			4.8
Approach LOS	B		A			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		30.9		10.5	8.4	22.5
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		30.0		43.0	5.0	18.8
Max Q Clear Time (g_c+I1), s		4.8		4.0	2.6	7.3
Green Ext Time (p_c), s		14.4		1.0	0.0	9.5

Intersection Summary	
HCM 6th Ctrl Delay	8.1
HCM 6th LOS	A

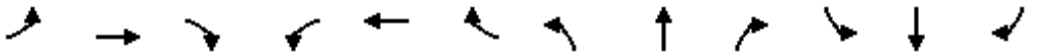
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	195	268	1014	0	0	691
Future Volume (veh/h)	195	268	1014	0	0	691
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1811	1885	0	0	1856
Adj Flow Rate, veh/h	203	279	1056	0	0	720
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	6	1	0	0	3
Cap, veh/h	927	409	2422	0	0	2384
Arrive On Green	0.27	0.27	0.47	0.00	0.00	0.47
Sat Flow, veh/h	3483	1535	5486	0	0	5400
Grp Volume(v), veh/h	203	279	1056	0	0	720
Grp Sat Flow(s),veh/h/ln	1742	1535	1716	0	0	1689
Q Serve(g_s), s	1.9	6.7	5.6	0.0	0.0	3.6
Cycle Q Clear(g_c), s	1.9	6.7	5.6	0.0	0.0	3.6
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	927	409	2422	0	0	2384
V/C Ratio(X)	0.22	0.68	0.44	0.00	0.00	0.30
Avail Cap(c_a), veh/h	1690	745	2422	0	0	2384
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	11.7	13.5	7.2	0.0	0.0	6.7
Incr Delay (d2), s/veh	0.2	2.9	0.6	0.0	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.1	1.3	0.0	0.0	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.9	16.4	7.8	0.0	0.0	7.0
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	482		1056			720
Approach Delay, s/veh	14.5		7.8			7.0
Approach LOS	B		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		25.0		16.0		25.0
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		19.3		19.9		19.3
Max Q Clear Time (g_c+I1), s		5.6		8.7		7.6
Green Ext Time (p_c), s		8.2		2.3		9.3

Intersection Summary	
HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A



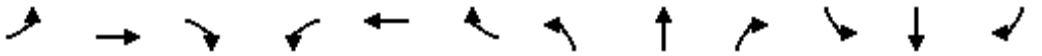
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	114	81	49	141	175	79	682	28	97	441	90
Future Volume (veh/h)	92	114	81	49	141	175	79	682	28	97	441	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	101	125	89	54	155	0	87	749	31	107	485	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	210	358	236	82	573		175	1463	61	214	2013	
Arrive On Green	0.06	0.17	0.17	0.05	0.16	0.00	0.10	0.42	0.42	0.06	0.39	0.00
Sat Flow, veh/h	3483	2054	1351	1795	3676	0	1795	3505	145	3483	5316	0
Grp Volume(v), veh/h	101	108	106	54	155	0	87	383	397	107	485	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1614	1795	1791	0	1795	1791	1859	1742	1716	0
Q Serve(g_s), s	2.0	3.8	4.2	2.1	2.7	0.0	3.3	11.4	11.4	2.1	4.5	0.0
Cycle Q Clear(g_c), s	2.0	3.8	4.2	2.1	2.7	0.0	3.3	11.4	11.4	2.1	4.5	0.0
Prop In Lane	1.00		0.84	1.00		0.00	1.00		0.08	1.00		0.00
Lane Grp Cap(c), veh/h	210	312	282	82	573		175	748	776	214	2013	
V/C Ratio(X)	0.48	0.34	0.38	0.66	0.27		0.50	0.51	0.51	0.50	0.24	
Avail Cap(c_a), veh/h	242	723	652	125	1446		175	748	776	247	2013	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.7	26.0	26.2	33.7	26.5	0.0	30.7	15.5	15.5	32.6	14.7	0.0
Incr Delay (d2), s/veh	1.7	0.7	0.8	8.5	0.3	0.0	9.8	2.5	2.4	1.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.6	1.6	1.1	1.1	0.0	1.8	4.5	4.7	0.9	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	26.7	27.0	42.2	26.7	0.0	40.5	18.0	17.9	34.5	15.0	0.0
LnGrp LOS	C	C	C	D	C		D	B	B	C	B	
Approach Vol, veh/h		315			209			867			592	
Approach Delay, s/veh		29.3			30.7			20.2			18.5	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	33.8	9.4	16.6	10.1	35.7	8.4	17.6
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	7.0	28.1	5.0	29.0	5.1	29.3	5.0	29.0
Max Q Clear Time (g_c+I1), s	5.3	6.5	4.0	4.7	4.1	13.4	4.1	6.2
Green Ext Time (p_c), s	0.0	6.6	0.0	0.5	0.0	8.5	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Notes

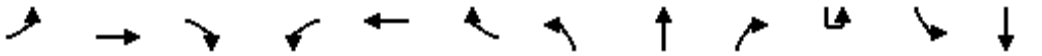
Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	13	401	57	21	23	319	308	75	24	377	115
Future Volume (vph)	300	13	401	57	21	23	319	308	75	24	377	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.92		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1608		1787	1721		1805	5012		1787	3574	1559
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1608		1787	1721		1805	5012		1787	3574	1559
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	345	15	461	66	24	26	367	354	86	28	433	132
RTOR Reduction (vph)	0	340	0	0	23	0	0	27	0	0	0	104
Lane Group Flow (vph)	345	136	0	66	27	0	367	413	0	28	433	28
Confl. Peds. (#/hr)	3					3	2		1	1		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7			3			5	2		1	6	
Permitted Phases		4			8							6
Actuated Green, G (s)	23.2	28.1		7.8	11.9		25.9	45.3		3.6	23.0	23.0
Effective Green, g (s)	23.2	28.1		7.8	11.9		25.9	45.3		3.6	23.0	23.0
Actuated g/C Ratio	0.22	0.26		0.07	0.11		0.24	0.42		0.03	0.21	0.21
Clearance Time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	4.0	2.0		2.0	2.0		2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	390	421		130	191		436	2117		60	766	334
v/s Ratio Prot	c0.19			0.04			c0.20	0.08		0.02	c0.12	
v/s Ratio Perm		c0.08			0.02							0.02
v/c Ratio	0.88	0.32		0.51	0.14		0.84	0.20		0.47	0.57	0.08
Uniform Delay, d1	40.7	31.9		47.9	43.0		38.7	19.5		50.9	37.6	33.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	21.0	0.2		1.1	0.1		13.5	0.0		2.1	0.6	0.0
Delay (s)	61.7	32.0		49.0	43.2		52.2	19.5		52.9	38.2	33.7
Level of Service	E	C		D	D		D	B		D	D	C
Approach Delay (s)		44.5			46.5			34.4			37.9	
Approach LOS		D			D			C			D	

Intersection Summary			
HCM 2000 Control Delay	39.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.71		
Actuated Cycle Length (s)	107.2	Sum of lost time (s)	23.2
Intersection Capacity Utilization	86.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	0	2	14	0	7	3	768	25	29	4	870
Future Volume (vph)	1	0	2	14	0	7	3	768	25	29	4	870
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor		0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	1.00
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1715	2842	1719	1538		3465	3574	1599		1805	5135
Flt Permitted		1.00	1.00	1.00	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)		1805	2842	1810	1538		3465	3574	1599		1805	5135
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	1	0	2	15	0	8	3	826	27	31	4	935
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	10	0	0	0
Lane Group Flow (vph)	0	1	2	15	0	0	3	826	17	0	35	936
Confl. Peds. (#/hr)							2					
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	1%	1%	1%	0%	0%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)		1.1	1.0	1.6	1.5		0.8	44.1	44.1		2.3	45.6
Effective Green, g (s)		1.1	1.0	1.6	1.5		0.8	44.1	44.1		2.3	45.6
Actuated g/C Ratio		0.02	0.01	0.02	0.02		0.01	0.63	0.63		0.03	0.66
Clearance Time (s)		4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)		4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)		28	40	41	33		39	2264	1013		59	3364
v/s Ratio Prot			c0.00		0.00		0.00	c0.23			c0.02	0.18
v/s Ratio Perm		0.00		c0.01					0.01			
v/c Ratio		0.04	0.05	0.37	0.01		0.08	0.36	0.02		0.59	0.28
Uniform Delay, d1		33.7	33.8	33.5	33.3		34.0	6.1	4.7		33.2	5.1
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.7	0.5	7.4	0.1		1.2	0.5	0.0		15.8	0.2
Delay (s)		34.4	34.4	40.9	33.4		35.2	6.5	4.8		49.0	5.3
Level of Service		C	C	D	C		D	A	A		D	A
Approach Delay (s)		34.4			38.3			6.6				6.8
Approach LOS		C			D			A				A

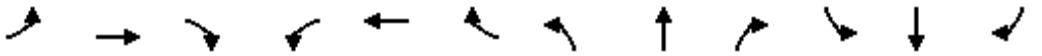
Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	20.6
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Growth Factor (vph)	100%
Adj. Flow (vph)	1
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	2
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

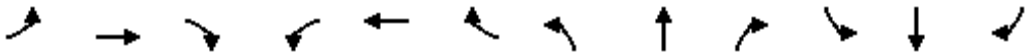
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	5	22	10	28	828	819	17
Future Volume (vph)	5	22	10	28	828	819	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.89	0.85		1.00	1.00	1.00	
Flt Protected	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3248	1470		3467	5136	5119	
Flt Permitted	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3248	1470		3467	5136	5119	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	5	23	10	29	862	853	18
RTOR Reduction (vph)	11	10	0	0	0	1	0
Lane Group Flow (vph)	6	1	0	39	863	870	0
Confl. Peds. (#/hr)				3			3
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%	0%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	3.8	3.8		2.0	54.0	46.3	
Effective Green, g (s)	3.8	3.8		2.0	54.0	46.3	
Actuated g/C Ratio	0.06	0.06		0.03	0.79	0.68	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	181	82		101	4072	3480	
v/s Ratio Prot	c0.00			0.01	c0.17	c0.17	
v/s Ratio Perm		0.00					
v/c Ratio	0.03	0.01		0.39	0.21	0.25	
Uniform Delay, d1	30.4	30.4		32.4	1.8	4.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.0		2.9	0.1	0.2	
Delay (s)	30.5	30.4		35.3	1.9	4.4	
Level of Service	C	C		D	A	A	
Approach Delay (s)	30.5				3.3	4.4	
Approach LOS	C				A	A	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
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 (vph)	94	0	383	0	0	1	421	783	1	1	778	100
Future Volume (vph)	94	0	383	0	0	1	421	783	1	1	778	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7		4.0		5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88		1.00		0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.85		1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785	2760		1594		3400	5135		1786	5040	
Flt Permitted		0.76	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1423	2760		1594		3400	5135		1786	5040	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	98	0	399	0	0	1	439	816	1	1	810	104
RTOR Reduction (vph)	0	0	185	0	1	0	0	0	0	0	10	0
Lane Group Flow (vph)	0	98	214	0	0	0	439	817	0	1	904	0
Confl. Peds. (#/hr)	2					2	2		2	2		2
Heavy Vehicles (%)	1%	1%	3%	0%	0%	0%	3%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		10.2	34.2		5.3		10.7	48.8		0.7	38.1	
Effective Green, g (s)		10.2	29.2		5.3		10.7	48.8		0.7	38.1	
Actuated g/C Ratio		0.12	0.35		0.06		0.13	0.58		0.01	0.46	
Clearance Time (s)		4.0			4.0		5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		173	962		100		434	2993		14	2294	
v/s Ratio Prot			c0.08		0.00		c0.13	0.16		0.00	c0.18	
v/s Ratio Perm		c0.07										
v/c Ratio		0.57	0.22		0.00		1.01	0.27		0.07	0.39	
Uniform Delay, d1		34.7	19.2		36.7		36.5	8.7		41.2	15.1	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.1	0.1		0.0		46.1	0.2		2.2	0.5	
Delay (s)		39.8	19.4		36.7		82.6	8.9		43.3	15.6	
Level of Service		D	B		D		F	A		D	B	
Approach Delay (s)		23.4			36.7			34.7			15.7	
Approach LOS		C			D			C			B	

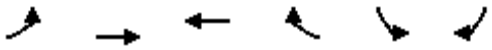
Intersection Summary			
HCM 2000 Control Delay	26.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	83.7	Sum of lost time (s)	20.4
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	5	104	0	553	0	604	321	296	648	10
Future Volume (vph)	0	0	5	104	0	553	0	604	321	296	648	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1454	3502		2842		5307	1652	3335	5124	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1454	3502		2842		5307	1652	3335	5124	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	0	0	5	108	0	576	0	629	334	308	675	10
RTOR Reduction (vph)	0	0	5	0	0	472	0	0	192	0	2	0
Lane Group Flow (vph)	0	0	0	108	0	104	0	629	142	308	683	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	5%	1%	1%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			1.0	4.6		10.8		25.5	25.5	8.3	39.5	
Effective Green, g (s)			1.0	4.6		10.8		25.5	25.5	8.3	39.5	
Actuated g/C Ratio			0.02	0.08		0.18		0.42	0.42	0.14	0.66	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			24	268		511		2255	702	461	3373	
v/s Ratio Prot				c0.03		c0.04		c0.12		c0.09	0.13	
v/s Ratio Perm			0.00						0.09			
v/c Ratio			0.00	0.40		0.20		0.28	0.20	0.67	0.20	
Uniform Delay, d1			29.0	26.4		20.9		11.3	10.9	24.5	4.0	
Progression Factor			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2			0.1	1.0		0.2		0.3	0.6	4.8	0.1	
Delay (s)			29.1	27.4		21.1		11.6	11.5	29.4	4.2	
Level of Service			C	C		C		B	B	C	A	
Approach Delay (s)		29.1			22.1			11.5			12.0	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	14.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

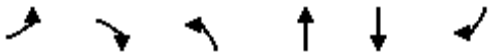
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	19	16	468	683	9
Future Volume (Veh/h)	1	19	16	468	683	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1	20	17	498	727	10
Pedestrians					5	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			485			
pX, platoon unblocked						
vC, conflicting volume	520				44	22
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	520				44	22
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	100				25	99
cM capacity (veh/h)	1021				966	1056

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	21	17	498	737
Volume Left	1	0	0	727
Volume Right	0	0	498	10
cSH	1021	1700	1700	967
Volume to Capacity	0.00	0.01	0.29	0.76
Queue Length 95th (ft)	0	0	0	190
Control Delay (s)	0.4	0.0	0.0	19.5
Lane LOS	A			C
Approach Delay (s)	0.4	0.0		19.5
Approach LOS				C

Intersection Summary			
Average Delay	11.3		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	0	2	833	875	4
Future Volume (veh/h)	4	0	2	833	875	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1870	1885	1900
Adj Flow Rate, veh/h	4	0	2	915	962	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	1	2	1	0
Cap, veh/h	14	18	7	3971	2396	10
Arrive On Green	0.01	0.00	0.00	0.78	0.65	0.65
Sat Flow, veh/h	1810	1610	1795	5274	3752	15
Grp Volume(v), veh/h	4	0	2	915	471	495
Grp Sat Flow(s),veh/h/ln	1810	1610	1795	1702	1791	1882
Q Serve(g_s), s	0.1	0.0	0.1	2.3	5.9	5.9
Cycle Q Clear(g_c), s	0.1	0.0	0.1	2.3	5.9	5.9
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	14	18	7	3971	1173	1233
V/C Ratio(X)	0.29	0.00	0.29	0.23	0.40	0.40
Avail Cap(c_a), veh/h	279	255	266	3971	1173	1233
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	23.8	1.4	3.9	3.9
Incr Delay (d2), s/veh	15.9	0.0	30.1	0.1	1.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.0	1.1	1.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.5	0.0	53.9	1.6	4.9	4.8
LnGrp LOS	D	A	D	A	A	A
Approach Vol, veh/h	4			917	966	
Approach Delay, s/veh	39.5			1.7	4.9	
Approach LOS	D			A	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	5.9	37.1				43.0	5.0
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	7.1	24.5				37.3	7.4
Max Q Clear Time (g_c+I1), s	2.1	7.9				4.3	2.1
Green Ext Time (p_c), s	0.0	11.8				18.5	0.0

Intersection Summary		
HCM 6th Ctrl Delay		3.4
HCM 6th LOS		A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	71	82	1121	253	49	738
Future Volume (veh/h)	71	82	1121	253	49	738
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1841	1885	1885	1826
Adj Flow Rate, veh/h	73	85	1156	0	51	761
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	4	1	1	5
Cap, veh/h	349	245	2580		186	3042
Arrive On Green	0.10	0.10	0.41	0.00	0.05	0.61
Sat Flow, veh/h	3456	1585	6590	1598	3483	5149
Grp Volume(v), veh/h	73	85	1156	0	51	761
Grp Sat Flow(s),veh/h/ln	1728	1585	1583	1598	1742	1662
Q Serve(g_s), s	0.8	2.0	5.5	0.0	0.6	2.9
Cycle Q Clear(g_c), s	0.8	2.0	5.5	0.0	0.6	2.9
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	349	245	2580		186	3042
V/C Ratio(X)	0.21	0.35	0.45		0.27	0.25
Avail Cap(c_a), veh/h	3577	1725	2865		419	3599
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	17.2	15.7	8.9	0.0	18.9	3.7
Incr Delay (d2), s/veh	0.4	1.2	0.3	0.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	1.3	0.0	0.2	0.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	17.6	16.9	9.2	0.0	19.7	3.8
LnGrp LOS	B	B	A		B	A
Approach Vol, veh/h	158		1156			812
Approach Delay, s/veh	17.2		9.2			4.8
Approach LOS	B		A			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		31.1		10.5	8.4	22.6
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		30.0		43.0	5.0	18.8
Max Q Clear Time (g_c+I1), s		4.9		4.0	2.6	7.5
Green Ext Time (p_c), s		14.7		1.0	0.0	9.4

Intersection Summary	
HCM 6th Ctrl Delay	8.1
HCM 6th LOS	A

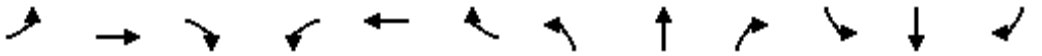
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	195	288	1014	0	0	711
Future Volume (veh/h)	195	288	1014	0	0	711
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1707	1885	0	0	1811
Adj Flow Rate, veh/h	203	300	1056	0	0	741
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	13	1	0	0	6
Cap, veh/h	998	415	2354	0	0	2262
Arrive On Green	0.29	0.29	0.46	0.00	0.00	0.46
Sat Flow, veh/h	3483	1447	5486	0	0	5270
Grp Volume(v), veh/h	203	300	1056	0	0	741
Grp Sat Flow(s),veh/h/ln	1742	1447	1716	0	0	1648
Q Serve(g_s), s	1.9	7.9	5.9	0.0	0.0	4.0
Cycle Q Clear(g_c), s	1.9	7.9	5.9	0.0	0.0	4.0
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	998	415	2354	0	0	2262
V/C Ratio(X)	0.20	0.72	0.45	0.00	0.00	0.33
Avail Cap(c_a), veh/h	1643	682	2354	0	0	2262
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	11.4	13.5	7.8	0.0	0.0	7.3
Incr Delay (d2), s/veh	0.1	3.4	0.6	0.0	0.0	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.6	2.4	1.5	0.0	0.0	1.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	11.5	16.9	8.4	0.0	0.0	7.7
LnGrp LOS	B	B	A	A	A	A
Approach Vol, veh/h	503		1056			741
Approach Delay, s/veh	14.8		8.4			7.7
Approach LOS	B		A			A

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		25.0		17.2		25.0
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		19.3		19.9		19.3
Max Q Clear Time (g_c+I1), s		6.0		9.9		7.9
Green Ext Time (p_c), s		8.2		2.3		9.1

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A



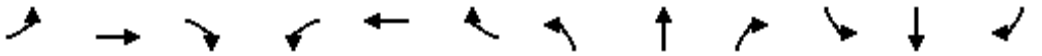
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	92	114	81	49	141	175	79	682	28	97	441	90
Future Volume (veh/h)	92	114	81	49	141	175	79	682	28	97	441	90
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	101	125	89	54	155	0	87	749	31	107	485	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	210	358	236	82	573		175	1463	61	214	2013	
Arrive On Green	0.06	0.17	0.17	0.05	0.16	0.00	0.10	0.42	0.42	0.06	0.39	0.00
Sat Flow, veh/h	3483	2054	1351	1795	3676	0	1795	3505	145	3483	5316	0
Grp Volume(v), veh/h	101	108	106	54	155	0	87	383	397	107	485	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1614	1795	1791	0	1795	1791	1859	1742	1716	0
Q Serve(g_s), s	2.0	3.8	4.2	2.1	2.7	0.0	3.3	11.4	11.4	2.1	4.5	0.0
Cycle Q Clear(g_c), s	2.0	3.8	4.2	2.1	2.7	0.0	3.3	11.4	11.4	2.1	4.5	0.0
Prop In Lane	1.00		0.84	1.00		0.00	1.00		0.08	1.00		0.00
Lane Grp Cap(c), veh/h	210	312	282	82	573		175	748	776	214	2013	
V/C Ratio(X)	0.48	0.34	0.38	0.66	0.27		0.50	0.51	0.51	0.50	0.24	
Avail Cap(c_a), veh/h	242	723	652	125	1446		175	748	776	247	2013	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.7	26.0	26.2	33.7	26.5	0.0	30.7	15.5	15.5	32.6	14.7	0.0
Incr Delay (d2), s/veh	1.7	0.7	0.8	8.5	0.3	0.0	9.8	2.5	2.4	1.8	0.3	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	1.6	1.6	1.1	1.1	0.0	1.8	4.5	4.7	0.9	1.6	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.4	26.7	27.0	42.2	26.7	0.0	40.5	18.0	17.9	34.5	15.0	0.0
LnGrp LOS	C	C	C	D	C		D	B	B	C	B	
Approach Vol, veh/h		315			209			867			592	
Approach Delay, s/veh		29.3			30.7			20.2			18.5	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	33.8	9.4	16.6	10.1	35.7	8.4	17.6
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	7.0	28.1	5.0	29.0	5.1	29.3	5.0	29.0
Max Q Clear Time (g_c+I1), s	5.3	6.5	4.0	4.7	4.1	13.4	4.1	6.2
Green Ext Time (p_c), s	0.0	6.6	0.0	0.5	0.0	8.5	0.0	2.1

Intersection Summary	
HCM 6th Ctrl Delay	22.2
HCM 6th LOS	C

Notes

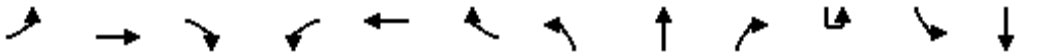
Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	300	13	406	57	21	23	324	308	75	24	377	115
Future Volume (vph)	300	13	406	57	21	23	324	308	75	24	377	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	0.91		1.00	0.95	1.00
Frpb, ped/bikes	1.00	1.00		1.00	0.99		1.00	1.00		1.00	1.00	0.97
Flpb, ped/bikes	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Frt	1.00	0.85		1.00	0.92		1.00	0.97		1.00	1.00	0.85
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1805	1593		1787	1721		1752	5012		1787	3574	1559
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1805	1593		1787	1721		1752	5012		1787	3574	1559
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	345	15	467	66	24	26	372	354	86	28	433	132
RTOR Reduction (vph)	0	345	0	0	23	0	0	27	0	0	0	104
Lane Group Flow (vph)	345	137	0	66	27	0	372	413	0	28	433	28
Confl. Peds. (#/hr)	3					3	2		1	1		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	2%	1%	1%	1%	3%	0%	0%	1%	1%	1%
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	Perm
Protected Phases	7			3			5	2		1	6	
Permitted Phases		4			8							6
Actuated Green, G (s)	23.2	28.1		7.8	11.9		25.9	45.3		3.6	23.0	23.0
Effective Green, g (s)	23.2	28.1		7.8	11.9		25.9	45.3		3.6	23.0	23.0
Actuated g/C Ratio	0.22	0.26		0.07	0.11		0.24	0.42		0.03	0.21	0.21
Clearance Time (s)	6.2	6.2		5.4	6.2		4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	4.0	2.0		2.0	2.0		2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	390	417		130	191		423	2117		60	766	334
v/s Ratio Prot	c0.19			0.04			c0.21	0.08		0.02	c0.12	
v/s Ratio Perm		c0.09			0.02							0.02
v/c Ratio	0.88	0.33		0.51	0.14		0.88	0.20		0.47	0.57	0.08
Uniform Delay, d1	40.7	31.9		47.9	43.0		39.1	19.5		50.9	37.6	33.7
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	21.0	0.2		1.1	0.1		18.3	0.0		2.1	0.6	0.0
Delay (s)	61.7	32.1		49.0	43.2		57.4	19.5		52.9	38.2	33.7
Level of Service	E	C		D	D		E	B		D	D	C
Approach Delay (s)		44.4			46.5			36.9			37.9	
Approach LOS		D			D			D			D	

Intersection Summary			
HCM 2000 Control Delay	40.3	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.73		
Actuated Cycle Length (s)	107.2	Sum of lost time (s)	23.2
Intersection Capacity Utilization	87.5%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	1	0	2	14	0	7	3	773	25	29	4	875
Future Volume (vph)	1	0	2	14	0	7	3	773	25	29	4	875
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor		0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt		1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	1.00
Flt Protected		0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)		1715	2842	1719	1538		3465	3539	1599		1805	5135
Flt Permitted		1.00	1.00	1.00	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)		1805	2842	1810	1538		3465	3539	1599		1805	5135
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	1	0	2	15	0	8	3	831	27	31	4	941
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	10	0	0	0
Lane Group Flow (vph)	0	1	2	15	0	0	3	831	17	0	35	942
Confl. Peds. (#/hr)							2					
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	1%	2%	1%	0%	0%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)		1.1	1.0	1.6	1.5		0.8	44.1	44.1		2.3	45.6
Effective Green, g (s)		1.1	1.0	1.6	1.5		0.8	44.1	44.1		2.3	45.6
Actuated g/C Ratio		0.02	0.01	0.02	0.02		0.01	0.63	0.63		0.03	0.66
Clearance Time (s)		4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)		4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)		28	40	41	33		39	2242	1013		59	3364
v/s Ratio Prot			c0.00		0.00		0.00	c0.23			c0.02	0.18
v/s Ratio Perm		0.00		c0.01					0.01			
v/c Ratio		0.04	0.05	0.37	0.01		0.08	0.37	0.02		0.59	0.28
Uniform Delay, d1		33.7	33.8	33.5	33.3		34.0	6.1	4.7		33.2	5.1
Progression Factor		1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2		0.7	0.5	7.4	0.1		1.2	0.5	0.0		15.8	0.2
Delay (s)		34.4	34.4	40.9	33.4		35.2	6.6	4.8		49.0	5.3
Level of Service		C	C	D	C		D	A	A		D	A
Approach Delay (s)		34.4			38.3			6.6				6.8
Approach LOS		C			D			A				A

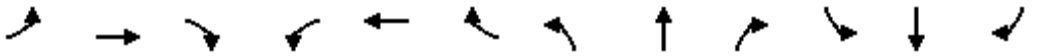
Intersection Summary			
HCM 2000 Control Delay	7.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	69.6	Sum of lost time (s)	20.6
Intersection Capacity Utilization	49.1%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	1
Future Volume (vph)	1
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Growth Factor (vph)	100%
Adj. Flow (vph)	1
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	2
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	

Intersection Summary

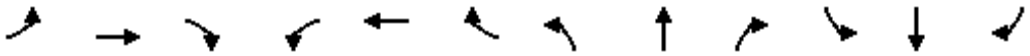
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	5	22	10	28	833	824	17
Future Volume (vph)	5	22	10	28	833	824	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.89	0.85		1.00	1.00	1.00	
Flt Protected	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3248	1470		3467	5085	5070	
Flt Permitted	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3248	1470		3467	5085	5070	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	5	23	10	29	868	858	18
RTOR Reduction (vph)	11	10	0	0	0	1	0
Lane Group Flow (vph)	6	1	0	39	868	875	0
Confl. Peds. (#/hr)				3			3
Heavy Vehicles (%)	0%	0%	1%	1%	2%	2%	0%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	3.8	3.8		2.0	54.0	46.3	
Effective Green, g (s)	3.8	3.8		2.0	54.0	46.3	
Actuated g/C Ratio	0.06	0.06		0.03	0.79	0.68	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	181	82		101	4032	3447	
v/s Ratio Prot	c0.00			0.01	c0.17	c0.17	
v/s Ratio Perm		0.00					
v/c Ratio	0.03	0.01		0.39	0.22	0.25	
Uniform Delay, d1	30.4	30.4		32.4	1.8	4.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.1	0.0		2.9	0.1	0.2	
Delay (s)	30.5	30.4		35.3	1.9	4.4	
Level of Service	C	C		D	A	A	
Approach Delay (s)	30.5				3.3	4.4	
Approach LOS	C				A	A	

Intersection Summary			
HCM 2000 Control Delay	4.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.25		
Actuated Cycle Length (s)	68.1	Sum of lost time (s)	16.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
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 (vph)	94	0	398	0	0	1	436	788	1	1	783	100
Future Volume (vph)	94	0	398	0	0	1	436	788	1	1	783	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7		4.0		5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88		1.00		0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.85		1.00	1.00		1.00	0.98	
Flt Protected		0.95	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785	2656		1594		3303	5084		1786	4997	
Flt Permitted		0.76	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1423	2656		1594		3303	5084		1786	4997	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	98	0	415	0	0	1	454	821	1	1	816	104
RTOR Reduction (vph)	0	0	183	0	1	0	0	0	0	0	10	0
Lane Group Flow (vph)	0	98	232	0	0	0	454	822	0	1	910	0
Confl. Peds. (#/hr)	2					2	2		2	2		2
Heavy Vehicles (%)	1%	1%	7%	0%	0%	0%	6%	2%	1%	1%	2%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		9.6	34.6		5.3		11.7	49.7		0.7	38.0	
Effective Green, g (s)		9.6	29.6		5.3		11.7	49.7		0.7	38.0	
Actuated g/C Ratio		0.11	0.35		0.06		0.14	0.59		0.01	0.45	
Clearance Time (s)		4.0			4.0		5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		162	935		100		460	3008		14	2260	
v/s Ratio Prot			c0.09		0.00		c0.14	0.16		0.00	c0.18	
v/s Ratio Perm		c0.07										
v/c Ratio		0.60	0.25		0.00		0.99	0.27		0.07	0.40	
Uniform Delay, d1		35.4	19.3		36.9		36.1	8.4		41.3	15.4	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		7.2	0.1		0.0		38.2	0.2		2.2	0.5	
Delay (s)		42.6	19.4		36.9		74.3	8.6		43.5	15.9	
Level of Service		D	B		D		E	A		D	B	
Approach Delay (s)		23.9			36.9			31.9			16.0	
Approach LOS		C			D			C			B	

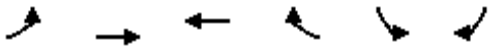
Intersection Summary			
HCM 2000 Control Delay	25.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	84.0	Sum of lost time (s)	20.4
Intersection Capacity Utilization	63.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	5	104	0	553	0	604	321	316	648	10
Future Volume (vph)	0	0	5	104	0	553	0	604	321	316	648	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1454	3502		2842		5307	1652	3155	5124	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1454	3502		2842		5307	1652	3155	5124	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Adj. Flow (vph)	0	0	5	108	0	576	0	629	334	329	675	10
RTOR Reduction (vph)	0	0	5	0	0	472	0	0	192	0	2	0
Lane Group Flow (vph)	0	0	0	108	0	104	0	629	142	329	683	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	11%	1%	1%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			1.0	4.6		10.8		25.5	25.5	8.3	39.5	
Effective Green, g (s)			1.0	4.6		10.8		25.5	25.5	8.3	39.5	
Actuated g/C Ratio			0.02	0.08		0.18		0.42	0.42	0.14	0.66	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			24	268		511		2255	702	436	3373	
v/s Ratio Prot				c0.03		c0.04		c0.12		c0.10	0.13	
v/s Ratio Perm			0.00						0.09			
v/c Ratio			0.00	0.40		0.20		0.28	0.20	0.75	0.20	
Uniform Delay, d1			29.0	26.4		20.9		11.3	10.9	24.9	4.0	
Progression Factor			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2			0.1	1.0		0.2		0.3	0.6	8.6	0.1	
Delay (s)			29.1	27.4		21.1		11.6	11.5	33.5	4.2	
Level of Service			C	C		C		B	B	C	A	
Approach Delay (s)		29.1			22.1			11.5			13.7	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	15.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.41		
Actuated Cycle Length (s)	60.0	Sum of lost time (s)	20.6
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

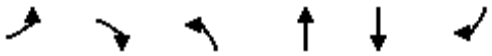
c Critical Lane Group



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	1	24	21	468	683	9
Future Volume (Veh/h)	1	24	21	468	683	9
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	1	26	22	498	727	10
Pedestrians					5	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)			485			
pX, platoon unblocked						
vC, conflicting volume	525				55	27
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	525				55	27
tC, single (s)	4.2				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.3				3.5	3.3
p0 queue free %	100				24	99
cM capacity (veh/h)	1017				952	1049

Direction, Lane #	EB 1	WB 1	WB 2	SB 1
Volume Total	27	22	498	737
Volume Left	1	0	0	727
Volume Right	0	0	498	10
cSH	1017	1700	1700	954
Volume to Capacity	0.00	0.01	0.29	0.77
Queue Length 95th (ft)	0	0	0	198
Control Delay (s)	0.3	0.0	0.0	20.3
Lane LOS	A			C
Approach Delay (s)	0.3	0.0		20.3
Approach LOS				C

Intersection Summary			
Average Delay	11.7		
Intersection Capacity Utilization	49.9%	ICU Level of Service	A
Analysis Period (min)	15		



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	0	2	1274	954	4
Future Volume (veh/h)	4	0	2	1274	954	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1900	1900	1900
Adj Flow Rate, veh/h	4	0	2	1428	1069	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	1	0	0	0
Cap, veh/h	14	18	7	4034	3494	13
Arrive On Green	0.01	0.00	0.00	0.78	0.65	0.65
Sat Flow, veh/h	1810	1610	1795	5358	5505	20
Grp Volume(v), veh/h	4	0	2	1428	693	380
Grp Sat Flow(s),veh/h/ln	1810	1610	1795	1729	1729	1896
Q Serve(g_s), s	0.1	0.0	0.1	4.1	4.1	4.1
Cycle Q Clear(g_c), s	0.1	0.0	0.1	4.1	4.1	4.1
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	14	18	7	4034	2265	1242
V/C Ratio(X)	0.29	0.00	0.29	0.35	0.31	0.31
Avail Cap(c_a), veh/h	279	255	266	4034	2265	1242
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	23.8	1.6	3.6	3.6
Incr Delay (d2), s/veh	15.9	0.0	30.1	0.2	0.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.1	0.7	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.5	0.0	53.9	1.9	3.9	4.2
LnGrp LOS	D	A	D	A	A	A
Approach Vol, veh/h	4			1430	1073	
Approach Delay, s/veh	39.5			2.0	4.0	
Approach LOS	D			A	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	5.9	37.1				43.0	5.0
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	7.1	24.5				37.3	7.4
Max Q Clear Time (g_c+I1), s	2.1	6.1				6.1	2.1
Green Ext Time (p_c), s	0.0	13.6				25.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	2.9
HCM 6th LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	71	89	1453	253	75	891
Future Volume (veh/h)	71	89	1453	253	75	891
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1900	1885	1885	1885
Adj Flow Rate, veh/h	75	94	1528	0	79	937
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	0	1	1	1
Cap, veh/h	366	279	2695		245	3205
Arrive On Green	0.11	0.11	0.41	0.00	0.07	0.62
Sat Flow, veh/h	3456	1585	6802	1598	3483	5316
Grp Volume(v), veh/h	75	94	1528	0	79	937
Grp Sat Flow(s),veh/h/ln	1728	1585	1634	1598	1742	1716
Q Serve(g_s), s	0.9	2.3	7.9	0.0	1.0	3.7
Cycle Q Clear(g_c), s	0.9	2.3	7.9	0.0	1.0	3.7
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	366	279	2695		245	3205
V/C Ratio(X)	0.21	0.34	0.57		0.32	0.29
Avail Cap(c_a), veh/h	3360	1653	2779		394	3492
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	16.0	10.0	0.0	19.6	3.8
Incr Delay (d2), s/veh	0.4	1.0	0.5	0.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	2.0	0.0	0.4	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.5	17.0	10.4	0.0	20.3	4.0
LnGrp LOS	B	B	B		C	A
Approach Vol, veh/h	169		1528			1016
Approach Delay, s/veh	17.6		10.4			5.2
Approach LOS	B		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		33.2		11.0	9.3	23.9
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		30.0		43.0	5.0	18.8
Max Q Clear Time (g_c+I1), s		5.7		4.3	3.0	9.9
Green Ext Time (p_c), s		17.0		1.1	0.0	8.3

Intersection Summary	
HCM 6th Ctrl Delay	8.9
HCM 6th LOS	A

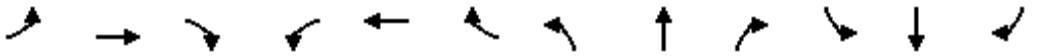
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	195	554	1276	0	0	864
Future Volume (veh/h)	195	554	1276	0	0	864
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1900	1885	0	0	1885
Adj Flow Rate, veh/h	207	589	1356	0	0	918
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	0	1	0	0	1
Cap, veh/h	1448	669	1851	0	0	1851
Arrive On Green	0.42	0.42	0.36	0.00	0.00	0.36
Sat Flow, veh/h	3483	1610	5486	0	0	5486
Grp Volume(v), veh/h	207	589	1356	0	0	918
Grp Sat Flow(s),veh/h/ln	1742	1610	1716	0	0	1716
Q Serve(g_s), s	1.8	16.2	11.0	0.0	0.0	6.7
Cycle Q Clear(g_c), s	1.8	16.2	11.0	0.0	0.0	6.7
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	1448	669	1851	0	0	1851
V/C Ratio(X)	0.14	0.88	0.73	0.00	0.00	0.50
Avail Cap(c_a), veh/h	1586	733	1851	0	0	1851
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	8.7	12.9	13.4	0.0	0.0	12.0
Incr Delay (d2), s/veh	0.1	11.8	2.6	0.0	0.0	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	6.5	3.6	0.0	0.0	2.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.8	24.7	16.0	0.0	0.0	13.0
LnGrp LOS	A	C	B	A	A	B
Approach Vol, veh/h	796		1356			918
Approach Delay, s/veh	20.6		16.0			13.0
Approach LOS	C		B			B

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		23.0		25.1		23.0
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		17.3		21.9		17.3
Max Q Clear Time (g_c+I1), s		8.7		18.2		13.0
Green Ext Time (p_c), s		6.5		1.8		4.0

Intersection Summary	
HCM 6th Ctrl Delay	16.3
HCM 6th LOS	B



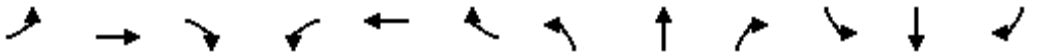
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	114	81	49	141	189	79	813	28	109	533	100
Future Volume (veh/h)	105	114	81	49	141	189	79	813	28	109	533	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	118	128	91	55	158	0	89	911	31	122	597	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	219	362	238	83	572		174	1464	50	221	2008	
Arrive On Green	0.06	0.18	0.18	0.05	0.16	0.00	0.10	0.41	0.41	0.06	0.39	0.00
Sat Flow, veh/h	3483	2055	1351	1795	3676	0	1795	3534	120	3483	5316	0
Grp Volume(v), veh/h	118	110	109	55	158	0	89	462	480	122	597	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1614	1795	1791	0	1795	1791	1864	1742	1716	0
Q Serve(g_s), s	2.4	3.9	4.3	2.2	2.8	0.0	3.4	14.7	14.7	2.4	5.8	0.0
Cycle Q Clear(g_c), s	2.4	3.9	4.3	2.2	2.8	0.0	3.4	14.7	14.7	2.4	5.8	0.0
Prop In Lane	1.00		0.84	1.00		0.00	1.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	219	316	285	83	572		174	742	772	221	2008	
V/C Ratio(X)	0.54	0.35	0.38	0.66	0.28		0.51	0.62	0.62	0.55	0.30	
Avail Cap(c_a), veh/h	247	721	650	125	1437		174	742	772	256	2008	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.7	26.0	26.2	33.8	26.6	0.0	30.9	16.7	16.7	32.7	15.2	0.0
Incr Delay (d2), s/veh	2.1	0.7	0.8	8.6	0.3	0.0	10.3	3.9	3.8	2.2	0.4	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	1.0	1.6	1.6	1.1	1.2	0.0	1.9	6.0	6.2	1.0	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	26.7	27.0	42.4	26.9	0.0	41.2	20.6	20.4	34.9	15.5	0.0
LnGrp LOS	C	C	C	D	C		D	C	C	C	B	
Approach Vol, veh/h		337			213			1031			719	
Approach Delay, s/veh		29.6			30.9			22.3			18.8	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	33.8	9.6	16.6	10.3	35.5	8.4	17.8
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	7.0	28.1	5.1	28.9	5.3	29.1	5.0	29.0
Max Q Clear Time (g_c+I1), s	5.4	7.8	4.4	4.8	4.4	16.7	4.2	6.3
Green Ext Time (p_c), s	0.0	7.9	0.0	0.6	0.0	8.4	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

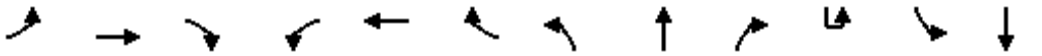
Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	318	13	379	57	21	23	358	487	75	24	508	287
Future Volume (vph)	318	13	379	57	21	23	358	487	75	24	508	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.2	6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1725	1615	1698	1747	1599	1805	5067		1787	5136	1560
Flt Permitted	0.95	0.96	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1715	1725	1615	1698	1747	1599	1805	5067		1787	5136	1560
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	373	15	444	67	25	27	420	571	88	28	596	336
RTOR Reduction (vph)	0	0	76	0	0	25	0	15	0	0	0	247
Lane Group Flow (vph)	194	194	368	46	46	2	420	644	0	28	596	89
Confl. Peds. (#/hr)	3					3	2		1	1		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	0%	1%	1%	1%	0%	0%	0%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	Prot	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	3	3	3	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	18.9	18.9	43.8	7.6	7.6	7.6	18.7	41.2		2.1	24.6	24.6
Effective Green, g (s)	18.9	18.9	43.8	7.6	7.6	7.6	18.7	41.2		2.1	24.6	24.6
Actuated g/C Ratio	0.20	0.20	0.47	0.08	0.08	0.08	0.20	0.44		0.02	0.26	0.26
Clearance Time (s)	6.2	6.2		6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	348	350	760	138	142	130	362	2244		40	1358	412
v/s Ratio Prot	0.11	0.11	c0.23	c0.03	0.03	0.00	c0.23	0.13		0.02	c0.12	
v/s Ratio Perm												0.06
v/c Ratio	0.56	0.55	0.48	0.33	0.32	0.02	1.16	0.29		0.70	0.44	0.22
Uniform Delay, d1	33.3	33.3	16.9	40.3	40.3	39.3	37.1	16.5		45.1	28.5	26.7
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.1	1.1	0.2	0.5	0.5	0.0	98.5	0.0		35.2	0.1	0.1
Delay (s)	34.4	34.3	17.0	40.8	40.8	39.3	135.6	16.6		80.3	28.5	26.8
Level of Service	C	C	B	D	D	D	F	B		F	C	C
Approach Delay (s)		25.1			40.5			62.9			29.4	
Approach LOS		C			D			E			C	

Intersection Summary			
HCM 2000 Control Delay	40.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	23.2
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	115	0	233	14	0	7	51	1100	25	29	4	930
Future Volume (vph)	115	0	233	14	0	7	51	1100	25	29	4	930
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	1.00
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1715	1715	2842	1719	1538		3467	3574	1599		1805	5165
Flt Permitted	0.95	0.75	1.00	1.00	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1715	1358	2842	1810	1538		3467	3574	1599		1805	5165
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	126	0	256	15	0	8	56	1206	27	32	4	1020
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	13	0	0	3
Lane Group Flow (vph)	63	63	256	15	0	0	56	1206	14	0	36	1044
Confl. Peds. (#/hr)							2					
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	1%	1%	1%	0%	0%	0%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	7.7	7.7	9.6	1.7	3.6		2.8	34.5	34.5		1.8	33.5
Effective Green, g (s)	7.7	7.7	9.6	1.7	3.6		2.8	34.5	34.5		1.8	33.5
Actuated g/C Ratio	0.11	0.11	0.14	0.02	0.05		0.04	0.51	0.51		0.03	0.49
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	193	153	400	45	81		142	1807	808		47	2537
v/s Ratio Prot	0.04		c0.09		0.00		0.02	c0.34			c0.02	0.20
v/s Ratio Perm		0.05		c0.01					0.01			
v/c Ratio	0.33	0.41	0.64	0.33	0.01		0.39	0.67	0.02		0.77	0.41
Uniform Delay, d1	27.9	28.1	27.7	32.7	30.6		31.9	12.6	8.4		33.0	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	2.4	3.5	5.9	0.0		2.5	2.0	0.0		53.5	0.5
Delay (s)	29.2	30.6	31.1	38.6	30.6		34.3	14.5	8.4		86.5	11.6
Level of Service	C	C	C	D	C		C	B	A		F	B
Approach Delay (s)		30.7			35.8			15.3				14.1
Approach LOS		C			D			B				B

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	20.6
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	25
Future Volume (vph)	25
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Growth Factor (vph)	102%
Adj. Flow (vph)	27
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	2
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

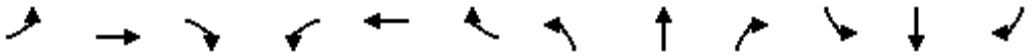
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	5	22	10	28	1208	1110	17
Future Volume (vph)	5	22	10	28	1208	1110	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.89	0.85		1.00	1.00	1.00	
Flt Protected	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3248	1470		3467	5136	5174	
Flt Permitted	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3248	1470		3467	5136	5174	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	5	23	11	30	1284	1179	18
RTOR Reduction (vph)	11	10	0	0	0	1	0
Lane Group Flow (vph)	6	1	0	41	1284	1196	0
Confl. Peds. (#/hr)				3			3
Confl. Bikes (#/hr)							2
Heavy Vehicles (%)	0%	0%	1%	1%	1%	0%	0%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	7.3	7.3		1.9	55.7	48.1	
Effective Green, g (s)	7.3	7.3		1.9	55.7	48.1	
Actuated g/C Ratio	0.10	0.10		0.03	0.76	0.66	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	323	146		89	3902	3395	
v/s Ratio Prot	c0.00			0.01	c0.25	c0.23	
v/s Ratio Perm		0.00					
v/c Ratio	0.02	0.01		0.46	0.33	0.35	
Uniform Delay, d1	29.8	29.7		35.2	2.8	5.6	
Progression Factor	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.0		4.4	0.2	0.3	
Delay (s)	29.8	29.8		39.6	3.0	5.9	
Level of Service	C	C		D	A	A	
Approach Delay (s)	29.8				4.2	5.9	
Approach LOS	C				A	A	

Intersection Summary			
HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
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 (vph)	94	0	373	0	0	1	411	1211	1	1	1069	100
Future Volume (vph)	94	0	373	0	0	1	411	1211	1	1	1069	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7		4.0		5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88		1.00		0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.85		1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785	2814		1594		3467	5135		1787	5064	
Flt Permitted		0.76	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1423	2814		1594		3467	5135		1787	5064	
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
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	104	0	414	0	0	1	456	1343	1	1	1185	111
RTOR Reduction (vph)	0	0	179	0	1	0	0	0	0	0	7	0
Lane Group Flow (vph)	0	104	235	0	0	0	456	1344	0	1	1289	0
Confl. Peds. (#/hr)	2					2	2		2	2		2
Heavy Vehicles (%)	1%	1%	1%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		10.1	29.4		1.0		10.3	46.6		0.9	36.5	
Effective Green, g (s)		10.1	24.4		1.0		10.3	46.6		0.9	36.5	
Actuated g/C Ratio		0.13	0.32		0.01		0.13	0.60		0.01	0.47	
Clearance Time (s)		4.0			4.0		5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		185	888		20		461	3095		20	2391	
v/s Ratio Prot			c0.08		0.00		c0.13	0.26		0.00	c0.25	
v/s Ratio Perm		c0.07										
v/c Ratio		0.56	0.27		0.00		0.99	0.43		0.05	0.54	
Uniform Delay, d1		31.5	19.8		37.7		33.4	8.3		37.8	14.4	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.7	0.2		0.0		38.6	0.4		1.0	0.9	
Delay (s)		36.2	19.9		37.7		72.1	8.7		38.8	15.3	
Level of Service		D	B		D		E	A		D	B	
Approach Delay (s)		23.2			37.7			24.8			15.3	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	21.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.64		
Actuated Cycle Length (s)	77.3	Sum of lost time (s)	20.4
Intersection Capacity Utilization	63.4%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			



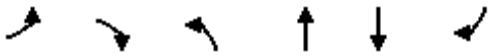
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	0	5	104	0	659	0	762	321	357	761	10
Future Volume (vph)	0	0	5	104	0	659	0	762	321	357	761	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			0.93	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1358	3502		2842		5307	1652	3467	5124	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1358	3502		2842		5307	1652	3467	5124	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	5	110	0	700	0	810	341	379	809	11
RTOR Reduction (vph)	0	0	5	0	0	450	0	0	200	0	2	0
Lane Group Flow (vph)	0	0	0	111	0	250	0	810	141	379	818	0
Confl. Peds. (#/hr)			3				3					3
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	1%	1%	1%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			1.0	6.3		12.5		25.5	25.5	8.3	39.5	
Effective Green, g (s)			1.0	6.3		12.5		25.5	25.5	8.3	39.5	
Actuated g/C Ratio			0.02	0.10		0.20		0.41	0.41	0.13	0.64	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			22	357		575		2193	682	466	3280	
v/s Ratio Prot				0.03		c0.09		c0.15		c0.11	0.16	
v/s Ratio Perm			0.00						0.09			
v/c Ratio			0.00	0.31		0.44		0.37	0.21	0.81	0.25	
Uniform Delay, d1			29.9	25.7		21.5		12.5	11.6	25.9	4.8	
Progression Factor			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2			0.1	0.5		0.5		0.5	0.7	11.7	0.2	
Delay (s)			29.9	26.2		22.0		13.0	12.3	37.6	4.9	
Level of Service			C	C		C		B	B	D	A	
Approach Delay (s)		29.9			22.6			12.8			15.3	
Approach LOS		C			C			B			B	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	20.6
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
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 (vph)	4	53	0	168	84	468	0	0	75	683	0	9
Future Volume (vph)	4	53	0	168	84	468	0	0	75	683	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.97			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.87			0.86			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	
Satd. Flow (prot)	1703	1676		1805	1616			1644			1807	
Flt Permitted	0.17	1.00		0.72	1.00			1.00			0.95	
Satd. Flow (perm)	298	1676		1366	1616			1644			1807	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	4	58	0	182	91	508	0	0	81	741	0	10
RTOR Reduction (vph)	0	0	0	0	208	0	0	76	0	0	40	0
Lane Group Flow (vph)	4	58	0	182	391	0	0	5	0	0	711	0
Confl. Peds. (#/hr)	5					5						
Heavy Vehicles (%)	6%	2%	6%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA			NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	24.1	24.1		24.1	24.1			4.3			34.6	
Effective Green, g (s)	24.1	24.1		24.1	24.1			4.3			34.6	
Actuated g/C Ratio	0.32	0.32		0.32	0.32			0.06			0.45	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	93	527		430	509			92			817	
v/s Ratio Prot		0.03			c0.24			c0.00			c0.39	
v/s Ratio Perm	0.01			0.13								
v/c Ratio	0.04	0.11		0.42	0.77			0.05			0.87	
Uniform Delay, d1	18.2	18.6		20.7	23.7			34.2			18.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	0.4		3.0	10.6			0.2			10.0	
Delay (s)	19.1	19.0		23.7	34.3			34.4			28.9	
Level of Service	B	B		C	C			C			C	
Approach Delay (s)		19.0			31.8			34.4			28.9	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	76.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	87.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	0	2	1278	958	4
Future Volume (veh/h)	4	0	2	1278	958	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1885	1900
Adj Flow Rate, veh/h	4	0	2	1432	1074	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	1	1	1	0
Cap, veh/h	14	18	7	4002	3467	13
Arrive On Green	0.01	0.00	0.00	0.78	0.65	0.65
Sat Flow, veh/h	1810	1610	1795	5316	5463	20
Grp Volume(v), veh/h	4	0	2	1432	696	382
Grp Sat Flow(s),veh/h/ln	1810	1610	1795	1716	1716	1882
Q Serve(g_s), s	0.1	0.0	0.1	4.1	4.2	4.2
Cycle Q Clear(g_c), s	0.1	0.0	0.1	4.1	4.2	4.2
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	14	18	7	4002	2247	1232
V/C Ratio(X)	0.29	0.00	0.29	0.36	0.31	0.31
Avail Cap(c_a), veh/h	279	255	266	4002	2247	1232
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	23.8	1.6	3.6	3.6
Incr Delay (d2), s/veh	15.9	0.0	30.1	0.3	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.1	0.7	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.5	0.0	53.9	1.9	3.9	4.2
LnGrp LOS	D	A	D	A	A	A
Approach Vol, veh/h	4			1434	1078	
Approach Delay, s/veh	39.5			2.0	4.0	
Approach LOS	D			A	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	5.9	37.1				43.0	5.0
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	7.1	24.5				37.3	7.4
Max Q Clear Time (g_c+I1), s	2.1	6.2				6.1	2.1
Green Ext Time (p_c), s	0.0	13.6				25.7	0.0

Intersection Summary	
HCM 6th Ctrl Delay	2.9
HCM 6th LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	71	89	1467	253	75	905
Future Volume (veh/h)	71	89	1467	253	75	905
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1885	1885	1885	1870
Adj Flow Rate, veh/h	75	94	1543	0	79	952
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	1	1	1	2
Cap, veh/h	366	279	2677		244	3182
Arrive On Green	0.11	0.11	0.41	0.00	0.07	0.62
Sat Flow, veh/h	3456	1585	6749	1598	3483	5274
Grp Volume(v), veh/h	75	94	1543	0	79	952
Grp Sat Flow(s),veh/h/ln	1728	1585	1621	1598	1742	1702
Q Serve(g_s), s	0.9	2.3	8.1	0.0	1.0	3.8
Cycle Q Clear(g_c), s	0.9	2.3	8.1	0.0	1.0	3.8
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	366	279	2677		244	3182
V/C Ratio(X)	0.21	0.34	0.58		0.32	0.30
Avail Cap(c_a), veh/h	3357	1651	2754		393	3461
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	16.0	10.0	0.0	19.6	3.9
Incr Delay (d2), s/veh	0.4	1.0	0.5	0.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.2	2.0	0.0	0.4	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.5	17.0	10.5	0.0	20.3	4.0
LnGrp LOS	B	B	B		C	A
Approach Vol, veh/h	169		1543			1031
Approach Delay, s/veh	17.6		10.5			5.2
Approach LOS	B		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		33.3		11.0	9.3	24.0
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		30.0		43.0	5.0	18.8
Max Q Clear Time (g_c+I1), s		5.8		4.3	3.0	10.1
Green Ext Time (p_c), s		17.1		1.1	0.0	8.2

Intersection Summary	
HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

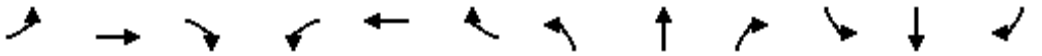
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	195	568	1276	0	0	878
Future Volume (veh/h)	195	568	1276	0	0	878
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1856	1885	0	0	1870
Adj Flow Rate, veh/h	207	604	1356	0	0	933
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	3	1	0	0	2
Cap, veh/h	1480	668	1822	0	0	1808
Arrive On Green	0.42	0.42	0.35	0.00	0.00	0.35
Sat Flow, veh/h	3483	1572	5486	0	0	5443
Grp Volume(v), veh/h	207	604	1356	0	0	933
Grp Sat Flow(s),veh/h/ln	1742	1572	1716	0	0	1702
Q Serve(g_s), s	1.8	17.5	11.3	0.0	0.0	7.1
Cycle Q Clear(g_c), s	1.8	17.5	11.3	0.0	0.0	7.1
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	1480	668	1822	0	0	1808
V/C Ratio(X)	0.14	0.90	0.74	0.00	0.00	0.52
Avail Cap(c_a), veh/h	1561	705	1822	0	0	1808
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	8.6	13.1	13.8	0.0	0.0	12.5
Incr Delay (d2), s/veh	0.1	15.1	2.8	0.0	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	7.4	3.8	0.0	0.0	2.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.7	28.2	16.6	0.0	0.0	13.5
LnGrp LOS	A	C	B	A	A	B
Approach Vol, veh/h	811		1356			933
Approach Delay, s/veh	23.2		16.6			13.5
Approach LOS	C		B			B

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		23.0		25.9		23.0
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		17.3		21.9		17.3
Max Q Clear Time (g_c+I1), s		9.1		19.5		13.3
Green Ext Time (p_c), s		6.4		1.2		3.7

Intersection Summary		
HCM 6th Ctrl Delay		17.4
HCM 6th LOS		B



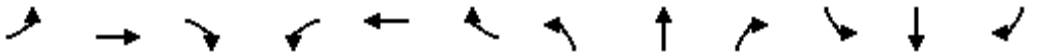
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	114	81	49	141	189	79	813	28	109	533	100
Future Volume (veh/h)	105	114	81	49	141	189	79	813	28	109	533	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	118	128	91	55	158	0	89	911	31	122	597	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	219	362	238	83	572		174	1464	50	221	2008	
Arrive On Green	0.06	0.18	0.18	0.05	0.16	0.00	0.10	0.41	0.41	0.06	0.39	0.00
Sat Flow, veh/h	3483	2055	1351	1795	3676	0	1795	3534	120	3483	5316	0
Grp Volume(v), veh/h	118	110	109	55	158	0	89	462	480	122	597	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1614	1795	1791	0	1795	1791	1864	1742	1716	0
Q Serve(g_s), s	2.4	3.9	4.3	2.2	2.8	0.0	3.4	14.7	14.7	2.4	5.8	0.0
Cycle Q Clear(g_c), s	2.4	3.9	4.3	2.2	2.8	0.0	3.4	14.7	14.7	2.4	5.8	0.0
Prop In Lane	1.00		0.84	1.00		0.00	1.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	219	316	285	83	572		174	742	772	221	2008	
V/C Ratio(X)	0.54	0.35	0.38	0.66	0.28		0.51	0.62	0.62	0.55	0.30	
Avail Cap(c_a), veh/h	247	721	650	125	1437		174	742	772	256	2008	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.7	26.0	26.2	33.8	26.6	0.0	30.9	16.7	16.7	32.7	15.2	0.0
Incr Delay (d2), s/veh	2.1	0.7	0.8	8.6	0.3	0.0	10.3	3.9	3.8	2.2	0.4	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	1.0	1.6	1.6	1.1	1.2	0.0	1.9	6.0	6.2	1.0	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	26.7	27.0	42.4	26.9	0.0	41.2	20.6	20.4	34.9	15.5	0.0
LnGrp LOS	C	C	C	D	C		D	C	C	C	B	
Approach Vol, veh/h		337			213			1031			719	
Approach Delay, s/veh		29.6			30.9			22.3			18.8	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	33.8	9.6	16.6	10.3	35.5	8.4	17.8
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	7.0	28.1	5.1	28.9	5.3	29.1	5.0	29.0
Max Q Clear Time (g_c+I1), s	5.4	7.8	4.4	4.8	4.4	16.7	4.2	6.3
Green Ext Time (p_c), s	0.0	7.9	0.0	0.6	0.0	8.4	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

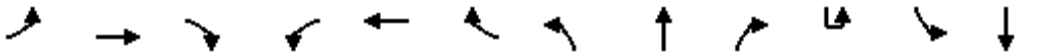
Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	318	13	383	57	21	23	362	487	75	24	508	287
Future Volume (vph)	318	13	383	57	21	23	362	487	75	24	508	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.2	6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1725	1599	1698	1747	1599	1787	5067		1787	5136	1560
Flt Permitted	0.95	0.96	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1715	1725	1599	1698	1747	1599	1787	5067		1787	5136	1560
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	373	15	449	67	25	27	424	571	88	28	596	336
RTOR Reduction (vph)	0	0	76	0	0	25	0	15	0	0	0	247
Lane Group Flow (vph)	194	194	373	46	46	2	424	644	0	28	596	89
Confl. Peds. (#/hr)	3					3	2		1	1		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%	1%	0%	0%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	Prot	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	3	3	3	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	19.2	19.2	44.1	7.5	7.5	7.5	18.7	41.2		2.1	24.6	24.6
Effective Green, g (s)	19.2	19.2	44.1	7.5	7.5	7.5	18.7	41.2		2.1	24.6	24.6
Actuated g/C Ratio	0.21	0.21	0.47	0.08	0.08	0.08	0.20	0.44		0.02	0.26	0.26
Clearance Time (s)	6.2	6.2		6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	353	355	756	136	140	128	358	2239		40	1355	411
v/s Ratio Prot	0.11	0.11	c0.23	c0.03	0.03	0.00	c0.24	0.13		0.02	c0.12	
v/s Ratio Perm												0.06
v/c Ratio	0.55	0.55	0.49	0.34	0.33	0.02	1.18	0.29		0.70	0.44	0.22
Uniform Delay, d1	33.1	33.1	16.9	40.5	40.5	39.5	37.2	16.6		45.2	28.6	26.8
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.9	0.2	0.5	0.5	0.0	107.8	0.0		35.2	0.1	0.1
Delay (s)	34.1	34.0	17.1	41.0	41.0	39.5	145.1	16.6		80.4	28.6	26.9
Level of Service	C	C	B	D	D	D	F	B		F	C	C
Approach Delay (s)		24.9			40.7			66.9			29.5	
Approach LOS		C			D			E			C	

Intersection Summary			
HCM 2000 Control Delay	42.2	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.67		
Actuated Cycle Length (s)	93.2	Sum of lost time (s)	23.2
Intersection Capacity Utilization	67.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	115	0	233	14	0	7	51	1104	25	29	4	934
Future Volume (vph)	115	0	233	14	0	7	51	1104	25	29	4	934
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	1.00
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1715	1715	2842	1719	1538		3467	3574	1599		1805	5115
Flt Permitted	0.95	0.75	1.00	1.00	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1715	1358	2842	1810	1538		3467	3574	1599		1805	5115
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	126	0	256	15	0	8	56	1211	27	32	4	1024
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	13	0	0	3
Lane Group Flow (vph)	63	63	256	15	0	0	56	1211	14	0	36	1048
Confl. Peds. (#/hr)							2					
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	1%	1%	1%	0%	0%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	7.7	7.7	9.6	1.7	3.6		2.8	34.5	34.5		1.8	33.5
Effective Green, g (s)	7.7	7.7	9.6	1.7	3.6		2.8	34.5	34.5		1.8	33.5
Actuated g/C Ratio	0.11	0.11	0.14	0.02	0.05		0.04	0.51	0.51		0.03	0.49
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	193	153	400	45	81		142	1807	808		47	2512
v/s Ratio Prot	0.04		c0.09		0.00		0.02	c0.34			c0.02	0.20
v/s Ratio Perm		0.05		c0.01					0.01			
v/c Ratio	0.33	0.41	0.64	0.33	0.01		0.39	0.67	0.02		0.77	0.42
Uniform Delay, d1	27.9	28.1	27.7	32.7	30.6		31.9	12.6	8.4		33.0	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	2.4	3.5	5.9	0.0		2.5	2.0	0.0		53.5	0.5
Delay (s)	29.2	30.6	31.1	38.6	30.6		34.3	14.6	8.4		86.5	11.6
Level of Service	C	C	C	D	C		C	B	A		F	B
Approach Delay (s)		30.7			35.8			15.3				14.1
Approach LOS		C			D			B				B

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	20.6
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	25
Future Volume (vph)	25
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Growth Factor (vph)	102%
Adj. Flow (vph)	27
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	2
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

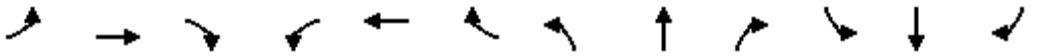
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	5	22	10	28	1212	1114	17
Future Volume (vph)	5	22	10	28	1212	1114	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.89	0.85		1.00	1.00	1.00	
Flt Protected	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3248	1470		3467	5136	5124	
Flt Permitted	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3248	1470		3467	5136	5124	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	5	23	11	30	1288	1184	18
RTOR Reduction (vph)	11	10	0	0	0	1	0
Lane Group Flow (vph)	6	1	0	41	1288	1201	0
Confl. Peds. (#/hr)				3			3
Confl. Bikes (#/hr)							2
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%	0%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	7.3	7.3		1.9	55.7	48.1	
Effective Green, g (s)	7.3	7.3		1.9	55.7	48.1	
Actuated g/C Ratio	0.10	0.10		0.03	0.76	0.66	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	323	146		89	3902	3362	
v/s Ratio Prot	c0.00			0.01	c0.25	c0.23	
v/s Ratio Perm		0.00					
v/c Ratio	0.02	0.01		0.46	0.33	0.36	
Uniform Delay, d1	29.8	29.7		35.2	2.8	5.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.0		4.4	0.2	0.3	
Delay (s)	29.8	29.8		39.6	3.0	6.0	
Level of Service	C	C		D	A	A	
Approach Delay (s)	29.8				4.2	6.0	
Approach LOS	C				A	A	

Intersection Summary			
HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

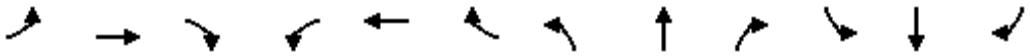
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	0	383	0	0	1	421	1215	1	1	1073	100
Future Volume (vph)	94	0	383	0	0	1	421	1215	1	1	1073	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7		4.0		5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88		1.00		0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.85		1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785	2760		1594		3400	5135		1787	5064	
Flt Permitted		0.76	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1423	2760		1594		3400	5135		1787	5064	
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
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	104	0	425	0	0	1	467	1347	1	1	1190	111
RTOR Reduction (vph)	0	0	178	0	1	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	104	247	0	0	0	467	1348	0	1	1295	0
Confl. Peds. (#/hr)	2					2	2		2	2		2
Heavy Vehicles (%)	1%	1%	3%	0%	0%	0%	3%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		10.2	29.5		1.0		10.3	46.6		0.9	36.5	
Effective Green, g (s)		10.2	24.5		1.0		10.3	46.6		0.9	36.5	
Actuated g/C Ratio		0.13	0.32		0.01		0.13	0.60		0.01	0.47	
Clearance Time (s)		4.0			4.0		5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		187	873		20		452	3091		20	2388	
v/s Ratio Prot			c0.09		0.00		c0.14	0.26		0.00	c0.26	
v/s Ratio Perm		c0.07										
v/c Ratio		0.56	0.28		0.00		1.03	0.44		0.05	0.54	
Uniform Delay, d1		31.5	19.9		37.7		33.6	8.3		37.8	14.5	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		4.4	0.2		0.0		51.1	0.4		1.0	0.9	
Delay (s)		35.8	20.0		37.7		84.7	8.8		38.9	15.4	
Level of Service		D	C		D		F	A		D	B	
Approach Delay (s)		23.1			37.7			28.3			15.4	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	23.0	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.65		
Actuated Cycle Length (s)	77.4	Sum of lost time (s)	20.4
Intersection Capacity Utilization	63.7%	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 (vph)	0	0	5	104	0	659	0	762	321	371	761	10
Future Volume (vph)	0	0	5	104	0	659	0	762	321	371	761	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			0.93	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1358	3502		2842		5307	1652	3367	5124	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1358	3502		2842		5307	1652	3367	5124	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	5	110	0	700	0	810	341	394	809	11
RTOR Reduction (vph)	0	0	5	0	0	450	0	0	200	0	2	0
Lane Group Flow (vph)	0	0	0	111	0	250	0	810	141	394	818	0
Confl. Peds. (#/hr)			3				3					3
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	4%	1%	1%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			1.0	6.3		12.5		25.5	25.5	8.3	39.5	
Effective Green, g (s)			1.0	6.3		12.5		25.5	25.5	8.3	39.5	
Actuated g/C Ratio			0.02	0.10		0.20		0.41	0.41	0.13	0.64	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			22	357		575		2193	682	452	3280	
v/s Ratio Prot				0.03		c0.09		c0.15		c0.12	0.16	
v/s Ratio Perm			0.00						0.09			
v/c Ratio			0.00	0.31		0.44		0.37	0.21	0.87	0.25	
Uniform Delay, d1			29.9	25.7		21.5		12.5	11.6	26.2	4.8	
Progression Factor			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2			0.1	0.5		0.5		0.5	0.7	17.9	0.2	
Delay (s)			29.9	26.2		22.0		13.0	12.3	44.0	4.9	
Level of Service			C	C		C		B	B	D	A	
Approach Delay (s)		29.9			22.6			12.8			17.6	
Approach LOS		C			C			B			B	

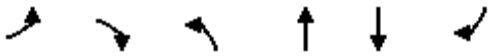
Intersection Summary			
HCM 2000 Control Delay	17.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	61.7	Sum of lost time (s)	20.6
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
Analysis Period (min)	15		
c Critical Lane Group			



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	4	57	0	168	88	468	0	0	75	683	0	9
Future Volume (vph)	4	57	0	168	88	468	0	0	75	683	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.97			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.87			0.86			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	
Satd. Flow (prot)	1703	1569		1805	1605			1644			1807	
Flt Permitted	0.17	1.00		0.72	1.00			1.00			0.95	
Satd. Flow (perm)	298	1569		1362	1605			1644			1807	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	4	62	0	182	95	508	0	0	81	741	0	10
RTOR Reduction (vph)	0	0	0	0	200	0	0	76	0	0	40	0
Lane Group Flow (vph)	4	62	0	182	403	0	0	5	0	0	711	0
Confl. Peds. (#/hr)	5					5						
Heavy Vehicles (%)	6%	9%	6%	0%	5%	0%	0%	0%	0%	0%	0%	0%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA			NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	24.1	24.1		24.1	24.1			4.3			34.6	
Effective Green, g (s)	24.1	24.1		24.1	24.1			4.3			34.6	
Actuated g/C Ratio	0.32	0.32		0.32	0.32			0.06			0.45	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	93	494		429	505			92			817	
v/s Ratio Prot		0.04			c0.25			c0.00			c0.39	
v/s Ratio Perm	0.01			0.13								
v/c Ratio	0.04	0.13		0.42	0.80			0.05			0.87	
Uniform Delay, d1	18.2	18.7		20.7	24.0			34.2			18.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	0.5		3.1	12.4			0.2			10.0	
Delay (s)	19.1	19.2		23.8	36.4			34.4			28.9	
Level of Service	B	B		C	D			C			C	
Approach Delay (s)		19.2			33.4			34.4			28.9	
Approach LOS		B			C			C			C	

Intersection Summary			
HCM 2000 Control Delay	30.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.79		
Actuated Cycle Length (s)	76.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	87.9%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	4	0	2	1283	963	4
Future Volume (veh/h)	4	0	2	1283	963	4
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00	1.00			1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1900	1900	1885	1885	1885	1900
Adj Flow Rate, veh/h	4	0	2	1438	1079	4
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	0	0	1	1	1	0
Cap, veh/h	14	18	7	4002	3467	13
Arrive On Green	0.01	0.00	0.00	0.78	0.65	0.65
Sat Flow, veh/h	1810	1610	1795	5316	5463	20
Grp Volume(v), veh/h	4	0	2	1438	699	384
Grp Sat Flow(s),veh/h/ln	1810	1610	1795	1716	1716	1882
Q Serve(g_s), s	0.1	0.0	0.1	4.1	4.2	4.2
Cycle Q Clear(g_c), s	0.1	0.0	0.1	4.1	4.2	4.2
Prop In Lane	1.00	1.00	1.00			0.01
Lane Grp Cap(c), veh/h	14	18	7	4002	2247	1232
V/C Ratio(X)	0.29	0.00	0.29	0.36	0.31	0.31
Avail Cap(c_a), veh/h	279	255	266	4002	2247	1232
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	23.7	0.0	23.8	1.6	3.6	3.6
Incr Delay (d2), s/veh	15.9	0.0	30.1	0.3	0.4	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	0.1	0.1	0.7	0.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	39.5	0.0	53.9	1.9	3.9	4.2
LnGrp LOS	D	A	D	A	A	A
Approach Vol, veh/h	4			1440	1083	
Approach Delay, s/veh	39.5			2.0	4.1	
Approach LOS	D			A	A	

Timer - Assigned Phs	1	2				6	8
Phs Duration (G+Y+Rc), s	5.9	37.1				43.0	5.0
Change Period (Y+Rc), s	5.7	5.7				5.7	4.6
Max Green Setting (Gmax), s	7.1	24.5				37.3	7.4
Max Q Clear Time (g_c+I1), s	2.1	6.2				6.1	2.1
Green Ext Time (p_c), s	0.0	13.6				25.8	0.0

Intersection Summary	
HCM 6th Ctrl Delay	2.9
HCM 6th LOS	A

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	71	89	1487	253	75	925
Future Volume (veh/h)	71	89	1487	253	75	925
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1870	1870	1856	1885	1885	1841
Adj Flow Rate, veh/h	75	94	1564	0	79	973
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	3	1	1	4
Cap, veh/h	366	279	2639		244	3133
Arrive On Green	0.11	0.11	0.41	0.00	0.07	0.62
Sat Flow, veh/h	3456	1585	6643	1598	3483	5191
Grp Volume(v), veh/h	75	94	1564	0	79	973
Grp Sat Flow(s),veh/h/ln	1728	1585	1596	1598	1742	1675
Q Serve(g_s), s	0.9	2.3	8.4	0.0	1.0	4.0
Cycle Q Clear(g_c), s	0.9	2.3	8.4	0.0	1.0	4.0
Prop In Lane	1.00	1.00		1.00	1.00	
Lane Grp Cap(c), veh/h	366	279	2639		244	3133
V/C Ratio(X)	0.21	0.34	0.59		0.32	0.31
Avail Cap(c_a), veh/h	3352	1649	2707		393	3401
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	18.1	16.0	10.1	0.0	19.6	3.9
Incr Delay (d2), s/veh	0.4	1.0	0.5	0.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.1	2.1	0.0	0.4	0.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	18.5	17.0	10.6	0.0	20.4	4.0
LnGrp LOS	B	B	B		C	A
Approach Vol, veh/h	169		1564			1052
Approach Delay, s/veh	17.7		10.6			5.2
Approach LOS	B		B			A

Timer - Assigned Phs		2		4	5	6
Phs Duration (G+Y+Rc), s		33.3		11.0	9.3	24.0
Change Period (Y+Rc), s		5.7		6.3	6.2	5.7
Max Green Setting (Gmax), s		30.0		43.0	5.0	18.8
Max Q Clear Time (g_c+I1), s		6.0		4.3	3.0	10.4
Green Ext Time (p_c), s		17.3		1.1	0.0	7.9

Intersection Summary	
HCM 6th Ctrl Delay	9.0
HCM 6th LOS	A

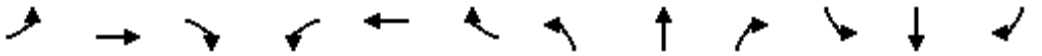
Notes

Unsignalized Delay for [NBR] is excluded from calculations of the approach delay and intersection delay.

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	195	588	1276	0	0	898
Future Volume (veh/h)	195	588	1276	0	0	898
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00	1.00		1.00	1.00	
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No		No			No
Adj Sat Flow, veh/h/ln	1885	1811	1885	0	0	1826
Adj Flow Rate, veh/h	207	625	1356	0	0	954
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	1	6	1	0	0	5
Cap, veh/h	1516	668	1790	0	0	1734
Arrive On Green	0.44	0.44	0.35	0.00	0.00	0.35
Sat Flow, veh/h	3483	1535	5486	0	0	5313
Grp Volume(v), veh/h	207	625	1356	0	0	954
Grp Sat Flow(s),veh/h/ln	1742	1535	1716	0	0	1662
Q Serve(g_s), s	1.8	19.3	11.6	0.0	0.0	7.7
Cycle Q Clear(g_c), s	1.8	19.3	11.6	0.0	0.0	7.7
Prop In Lane	1.00	1.00		0.00	0.00	
Lane Grp Cap(c), veh/h	1516	668	1790	0	0	1734
V/C Ratio(X)	0.14	0.94	0.76	0.00	0.00	0.55
Avail Cap(c_a), veh/h	1533	676	1790	0	0	1734
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.00	0.00	1.00
Uniform Delay (d), s/veh	8.4	13.4	14.4	0.0	0.0	13.1
Incr Delay (d2), s/veh	0.1	20.6	3.1	0.0	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	8.8	4.0	0.0	0.0	2.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	8.5	34.0	17.4	0.0	0.0	14.3
LnGrp LOS	A	C	B	A	A	B
Approach Vol, veh/h	832		1356			954
Approach Delay, s/veh	27.6		17.4			14.3
Approach LOS	C		B			B

Timer - Assigned Phs		2		4		6
Phs Duration (G+Y+Rc), s		23.0		26.7		23.0
Change Period (Y+Rc), s		5.7		5.1		5.7
Max Green Setting (Gmax), s		17.3		21.9		17.3
Max Q Clear Time (g_c+I1), s		9.7		21.3		13.6
Green Ext Time (p_c), s		6.0		0.3		3.4

Intersection Summary		
HCM 6th Ctrl Delay		19.2
HCM 6th LOS		B



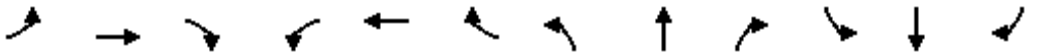
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	105	114	81	49	141	189	79	813	28	109	533	100
Future Volume (veh/h)	105	114	81	49	141	189	79	813	28	109	533	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885	1885
Adj Flow Rate, veh/h	118	128	91	55	158	0	89	911	31	122	597	0
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	1	1	1	1	1	1
Cap, veh/h	219	362	238	83	572		174	1464	50	221	2008	
Arrive On Green	0.06	0.18	0.18	0.05	0.16	0.00	0.10	0.41	0.41	0.06	0.39	0.00
Sat Flow, veh/h	3483	2055	1351	1795	3676	0	1795	3534	120	3483	5316	0
Grp Volume(v), veh/h	118	110	109	55	158	0	89	462	480	122	597	0
Grp Sat Flow(s),veh/h/ln	1742	1791	1614	1795	1791	0	1795	1791	1864	1742	1716	0
Q Serve(g_s), s	2.4	3.9	4.3	2.2	2.8	0.0	3.4	14.7	14.7	2.4	5.8	0.0
Cycle Q Clear(g_c), s	2.4	3.9	4.3	2.2	2.8	0.0	3.4	14.7	14.7	2.4	5.8	0.0
Prop In Lane	1.00		0.84	1.00		0.00	1.00		0.06	1.00		0.00
Lane Grp Cap(c), veh/h	219	316	285	83	572		174	742	772	221	2008	
V/C Ratio(X)	0.54	0.35	0.38	0.66	0.28		0.51	0.62	0.62	0.55	0.30	
Avail Cap(c_a), veh/h	247	721	650	125	1437		174	742	772	256	2008	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	32.7	26.0	26.2	33.8	26.6	0.0	30.9	16.7	16.7	32.7	15.2	0.0
Incr Delay (d2), s/veh	2.1	0.7	0.8	8.6	0.3	0.0	10.3	3.9	3.8	2.2	0.4	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	1.0	1.6	1.6	1.1	1.2	0.0	1.9	6.0	6.2	1.0	2.1	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	34.8	26.7	27.0	42.4	26.9	0.0	41.2	20.6	20.4	34.9	15.5	0.0
LnGrp LOS	C	C	C	D	C		D	C	C	C	B	
Approach Vol, veh/h		337			213			1031			719	
Approach Delay, s/veh		29.6			30.9			22.3			18.8	
Approach LOS		C			C			C			B	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.0	33.8	9.6	16.6	10.3	35.5	8.4	17.8
Change Period (Y+Rc), s	5.0	5.7	5.1	5.1	5.7	5.7	5.1	5.1
Max Green Setting (Gmax), s	7.0	28.1	5.1	28.9	5.3	29.1	5.0	29.0
Max Q Clear Time (g_c+I1), s	5.4	7.8	4.4	4.8	4.4	16.7	4.2	6.3
Green Ext Time (p_c), s	0.0	7.9	0.0	0.6	0.0	8.4	0.0	2.2

Intersection Summary	
HCM 6th Ctrl Delay	23.1
HCM 6th LOS	C

Notes

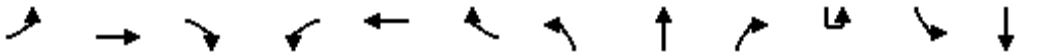
Unsignalized Delay for [WBR, SBR] is excluded from calculations of the approach delay and intersection delay.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	318	13	388	57	21	23	367	487	75	24	508	287
Future Volume (vph)	318	13	388	57	21	23	367	487	75	24	508	287
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.2	6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Lane Util. Factor	0.95	0.95	1.00	0.95	0.95	1.00	1.00	0.91		1.00	0.91	1.00
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	0.98
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.98		1.00	1.00	0.85
Flt Protected	0.95	0.96	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (prot)	1715	1725	1583	1698	1747	1599	1752	5067		1787	5136	1560
Flt Permitted	0.95	0.96	1.00	0.95	0.98	1.00	0.95	1.00		0.95	1.00	1.00
Satd. Flow (perm)	1715	1725	1583	1698	1747	1599	1752	5067		1787	5136	1560
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	373	15	455	67	25	27	430	571	88	28	596	336
RTOR Reduction (vph)	0	0	76	0	0	25	0	15	0	0	0	248
Lane Group Flow (vph)	194	194	379	46	46	2	430	644	0	28	596	88
Confl. Peds. (#/hr)	3					3	2		1	1		2
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	0%	0%	2%	1%	1%	1%	3%	0%	0%	1%	1%	1%
Turn Type	Split	NA	pt+ov	Split	NA	Prot	Prot	NA		Prot	NA	Perm
Protected Phases	4	4	4 5	3	3	3	5	2		1	6	
Permitted Phases												6
Actuated Green, G (s)	19.5	19.5	44.4	7.5	7.5	7.5	18.7	41.2		2.1	24.6	24.6
Effective Green, g (s)	19.5	19.5	44.4	7.5	7.5	7.5	18.7	41.2		2.1	24.6	24.6
Actuated g/C Ratio	0.21	0.21	0.47	0.08	0.08	0.08	0.20	0.44		0.02	0.26	0.26
Clearance Time (s)	6.2	6.2		6.2	6.2	6.2	4.9	5.9		4.9	5.9	5.9
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.5	2.0		2.0	2.0	2.0
Lane Grp Cap (vph)	357	359	751	136	140	128	350	2232		40	1351	410
v/s Ratio Prot	0.11	0.11	c0.24	c0.03	0.03	0.00	c0.25	0.13		0.02	c0.12	
v/s Ratio Perm												0.06
v/c Ratio	0.54	0.54	0.51	0.34	0.33	0.02	1.23	0.29		0.70	0.44	0.22
Uniform Delay, d1	33.0	33.0	17.0	40.7	40.6	39.6	37.4	16.8		45.4	28.7	26.9
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	0.9	0.9	0.2	0.5	0.5	0.0	125.5	0.0		35.2	0.1	0.1
Delay (s)	33.9	33.9	17.2	41.2	41.1	39.6	162.9	16.8		80.5	28.8	27.0
Level of Service	C	C	B	D	D	D	F	B		F	C	C
Approach Delay (s)		24.9			40.8			74.5			29.7	
Approach LOS		C			D			E			C	

Intersection Summary			
HCM 2000 Control Delay	45.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	93.5	Sum of lost time (s)	23.2
Intersection Capacity Utilization	67.6%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBU	SBL	SBT
Lane Configurations												
Traffic Volume (vph)	115	0	233	14	0	7	51	1109	25	29	4	939
Future Volume (vph)	115	0	233	14	0	7	51	1109	25	29	4	939
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Lane Util. Factor	0.95	0.95	0.88	1.00	1.00		0.97	0.95	1.00		1.00	0.91
Frpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Frt	1.00	1.00	0.85	1.00	0.85		1.00	1.00	0.85		1.00	1.00
Flt Protected	0.95	0.95	1.00	0.95	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1715	1715	2842	1719	1538		3467	3574	1599		1805	5115
Flt Permitted	0.95	0.75	1.00	1.00	1.00		0.95	1.00	1.00		0.95	1.00
Satd. Flow (perm)	1715	1358	2842	1810	1538		3467	3574	1599		1805	5115
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	126	0	256	15	0	8	56	1216	27	32	4	1030
RTOR Reduction (vph)	0	0	0	0	8	0	0	0	13	0	0	3
Lane Group Flow (vph)	63	63	256	15	0	0	56	1216	14	0	36	1054
Confl. Peds. (#/hr)							2					
Confl. Bikes (#/hr)												
Heavy Vehicles (%)	0%	0%	0%	5%	5%	5%	1%	1%	1%	0%	0%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA	Perm	Prot	Prot	NA
Protected Phases	3		8		4		1	6		5	5	2
Permitted Phases		3		7					6			
Actuated Green, G (s)	7.7	7.7	9.6	1.7	3.6		2.8	34.5	34.5		1.8	33.5
Effective Green, g (s)	7.7	7.7	9.6	1.7	3.6		2.8	34.5	34.5		1.8	33.5
Actuated g/C Ratio	0.11	0.11	0.14	0.02	0.05		0.04	0.51	0.51		0.03	0.49
Clearance Time (s)	4.6	4.6	4.6	4.6	4.6		5.7	5.7	5.7		5.7	5.7
Vehicle Extension (s)	4.0	4.0	3.0	4.0	4.0		4.0	5.0	5.0		3.5	5.0
Lane Grp Cap (vph)	193	153	400	45	81		142	1807	808		47	2512
v/s Ratio Prot	0.04		c0.09		0.00		0.02	c0.34			c0.02	0.21
v/s Ratio Perm		0.05		c0.01					0.01			
v/c Ratio	0.33	0.41	0.64	0.33	0.01		0.39	0.67	0.02		0.77	0.42
Uniform Delay, d1	27.9	28.1	27.7	32.7	30.6		31.9	12.6	8.4		33.0	11.1
Progression Factor	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	2.4	3.5	5.9	0.0		2.5	2.0	0.0		53.5	0.5
Delay (s)	29.2	30.6	31.1	38.6	30.6		34.3	14.6	8.4		86.5	11.6
Level of Service	C	C	C	D	C		C	B	A		F	B
Approach Delay (s)		30.7			35.8			15.4				14.1
Approach LOS		C			D			B				B

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	68.2	Sum of lost time (s)	20.6
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	25
Future Volume (vph)	25
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frpb, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.93
Growth Factor (vph)	102%
Adj. Flow (vph)	27
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Peds. (#/hr)	2
Confl. Bikes (#/hr)	2
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

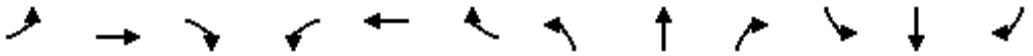
Movement	EBL	EBR	NBU	NBL	NBT	SBT	SBR
Lane Configurations							
Traffic Volume (vph)	5	22	10	28	1217	1119	17
Future Volume (vph)	5	22	10	28	1217	1119	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	4.6		5.7	5.7	5.7	
Lane Util. Factor	0.97	0.91		0.97	0.91	0.91	
Frpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00	1.00	
Frt	0.89	0.85		1.00	1.00	1.00	
Flt Protected	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (prot)	3248	1470		3467	5136	5124	
Flt Permitted	0.99	1.00		0.95	1.00	1.00	
Satd. Flow (perm)	3248	1470		3467	5136	5124	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	5	23	11	30	1293	1189	18
RTOR Reduction (vph)	11	10	0	0	0	1	0
Lane Group Flow (vph)	6	1	0	41	1293	1206	0
Confl. Peds. (#/hr)				3			3
Confl. Bikes (#/hr)							2
Heavy Vehicles (%)	0%	0%	1%	1%	1%	1%	0%
Turn Type	Prot	Perm	Prot	Prot	NA	NA	
Protected Phases	8		1	1	6	2	
Permitted Phases		8					
Actuated Green, G (s)	7.3	7.3		1.9	55.7	48.1	
Effective Green, g (s)	7.3	7.3		1.9	55.7	48.1	
Actuated g/C Ratio	0.10	0.10		0.03	0.76	0.66	
Clearance Time (s)	4.6	4.6		5.7	5.7	5.7	
Vehicle Extension (s)	4.0	4.0		3.5	5.0	5.0	
Lane Grp Cap (vph)	323	146		89	3902	3362	
v/s Ratio Prot	c0.00			0.01	c0.25	c0.24	
v/s Ratio Perm		0.00					
v/c Ratio	0.02	0.01		0.46	0.33	0.36	
Uniform Delay, d1	29.8	29.7		35.2	2.8	5.7	
Progression Factor	1.00	1.00		1.00	1.00	1.00	
Incremental Delay, d2	0.0	0.0		4.4	0.2	0.3	
Delay (s)	29.8	29.8		39.6	3.1	6.0	
Level of Service	C	C		D	A	A	
Approach Delay (s)	29.8				4.2	6.0	
Approach LOS	C				A	A	

Intersection Summary			
HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.33		
Actuated Cycle Length (s)	73.3	Sum of lost time (s)	16.0
Intersection Capacity Utilization	42.8%	ICU Level of Service	A
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 (vph)	94	0	398	0	0	1	436	1220	1	1	1078	100
Future Volume (vph)	94	0	398	0	0	1	436	1220	1	1	1078	100
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.0	5.7		4.0		5.7	5.7		5.0	5.7	
Lane Util. Factor		1.00	0.88		1.00		0.97	0.91		1.00	0.91	
Frpb, ped/bikes		1.00	1.00		0.99		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Frt		1.00	0.85		0.85		1.00	1.00		1.00	0.99	
Flt Protected		0.95	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1785	2656		1594		3303	5135		1787	5064	
Flt Permitted		0.76	1.00		1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)		1423	2656		1594		3303	5135		1787	5064	
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
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	104	0	441	0	0	1	483	1353	1	1	1195	111
RTOR Reduction (vph)	0	0	177	0	1	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	104	264	0	0	0	483	1354	0	1	1300	0
Confl. Peds. (#/hr)	2					2	2		2	2		2
Heavy Vehicles (%)	1%	1%	7%	0%	0%	0%	6%	1%	1%	1%	1%	1%
Turn Type	Prot	NA	custom	custom	NA		Prot	NA		Prot	NA	
Protected Phases	3		1 8		4		1	6		5	2	
Permitted Phases		3		7								
Actuated Green, G (s)		9.7	30.0		1.0		11.3	47.6		0.9	36.5	
Effective Green, g (s)		9.7	25.0		1.0		11.3	47.6		0.9	36.5	
Actuated g/C Ratio		0.12	0.32		0.01		0.15	0.61		0.01	0.47	
Clearance Time (s)		4.0			4.0		5.7	5.7		5.0	5.7	
Vehicle Extension (s)		4.0			3.0		3.0	5.0		3.0	5.0	
Lane Grp Cap (vph)		177	852		20		479	3137		20	2372	
v/s Ratio Prot			c0.10		0.00		c0.15	0.26		0.00	c0.26	
v/s Ratio Perm		c0.07										
v/c Ratio		0.59	0.31		0.00		1.01	0.43		0.05	0.55	
Uniform Delay, d1		32.2	19.9		38.0		33.3	8.0		38.1	14.8	
Progression Factor		1.00	1.00		1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		5.8	0.2		0.0		43.2	0.4		1.0	0.9	
Delay (s)		38.0	20.2		38.0		76.5	8.4		39.1	15.7	
Level of Service		D	C		D		E	A		D	B	
Approach Delay (s)		23.6			38.0			26.3			15.7	
Approach LOS		C			D			C			B	

Intersection Summary			
HCM 2000 Control Delay	22.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	77.9	Sum of lost time (s)	20.4
Intersection Capacity Utilization	64.2%	ICU Level of Service	C
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 (vph)	0	0	5	104	0	659	0	762	321	391	761	10
Future Volume (vph)	0	0	5	104	0	659	0	762	321	391	761	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	12	12	12	12	13	13	12	12	12
Total Lost time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Lane Util. Factor			1.00	0.97		0.88		0.91	1.00	0.97	0.91	
Frpb, ped/bikes			0.93	1.00		1.00		1.00	1.00	1.00	1.00	
Flpb, ped/bikes			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Frt			0.86	1.00		0.85		1.00	0.85	1.00	1.00	
Flt Protected			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (prot)			1358	3502		2842		5307	1652	3213	5124	
Flt Permitted			1.00	0.95		1.00		1.00	1.00	0.95	1.00	
Satd. Flow (perm)			1358	3502		2842		5307	1652	3213	5124	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	0	0	5	110	0	700	0	810	341	415	809	11
RTOR Reduction (vph)	0	0	5	0	0	462	0	0	201	0	2	0
Lane Group Flow (vph)	0	0	0	111	0	238	0	810	140	415	818	0
Confl. Peds. (#/hr)			3				3					3
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	1%	1%	1%	9%	1%	1%
Parking (#/hr)			3									
Turn Type			Perm	Prot		Prot		NA	Perm	Prot	NA	
Protected Phases				4		7		6		5	2	
Permitted Phases			3						6			
Actuated Green, G (s)			1.0	6.1		12.3		25.2	25.2	8.6	39.5	
Effective Green, g (s)			1.0	6.1		12.3		25.2	25.2	8.6	39.5	
Actuated g/C Ratio			0.02	0.10		0.20		0.41	0.41	0.14	0.64	
Clearance Time (s)			4.6	4.6		4.0		5.7	5.7	5.7	5.7	
Vehicle Extension (s)			3.0	3.0		3.0		5.0	5.0	5.0	5.0	
Lane Grp Cap (vph)			22	347		568		2174	676	449	3291	
v/s Ratio Prot				0.03		c0.08		c0.15		c0.13	0.16	
v/s Ratio Perm			0.00						0.08			
v/c Ratio			0.00	0.32		0.42		0.37	0.21	0.92	0.25	
Uniform Delay, d1			29.8	25.8		21.5		12.6	11.7	26.1	4.7	
Progression Factor			1.00	1.00		1.00		1.00	1.00	1.00	1.00	
Incremental Delay, d2			0.1	0.5		0.5		0.5	0.7	25.7	0.2	
Delay (s)			29.8	26.3		22.0		13.1	12.4	51.8	4.9	
Level of Service			C	C		C		B	B	D	A	
Approach Delay (s)		29.8			22.6			12.9			20.6	
Approach LOS		C			C			B			C	

Intersection Summary			
HCM 2000 Control Delay	18.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	61.5	Sum of lost time (s)	20.6
Intersection Capacity Utilization	52.4%	ICU Level of Service	A
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 (vph)	4	62	0	168	93	468	0	0	75	683	0	9
Future Volume (vph)	4	62	0	168	93	468	0	0	75	683	0	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Frpb, ped/bikes	1.00	1.00		1.00	0.97			1.00			1.00	
Flpb, ped/bikes	1.00	1.00		1.00	1.00			1.00			1.00	
Frt	1.00	1.00		1.00	0.87			0.86			1.00	
Flt Protected	0.95	1.00		0.95	1.00			1.00			0.95	
Satd. Flow (prot)	1703	1474		1805	1594			1644			1807	
Flt Permitted	0.17	1.00		0.71	1.00			1.00			0.95	
Satd. Flow (perm)	298	1474		1355	1594			1644			1807	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Growth Factor (vph)	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%	102%
Adj. Flow (vph)	4	67	0	182	101	508	0	0	81	741	0	10
RTOR Reduction (vph)	0	0	0	0	188	0	0	76	0	0	40	0
Lane Group Flow (vph)	4	67	0	182	421	0	0	5	0	0	711	0
Confl. Peds. (#/hr)	5					5						
Heavy Vehicles (%)	6%	16%	6%	0%	10%	0%	0%	0%	0%	0%	0%	0%
Parking (#/hr)		0										
Turn Type	Perm	NA		Perm	NA			NA		Split	NA	
Protected Phases		2			6		8	8		4	4	
Permitted Phases	2			6								
Actuated Green, G (s)	24.1	24.1		24.1	24.1			4.3			34.6	
Effective Green, g (s)	24.1	24.1		24.1	24.1			4.3			34.6	
Actuated g/C Ratio	0.32	0.32		0.32	0.32			0.06			0.45	
Clearance Time (s)	4.5	4.5		4.5	4.5			4.5			4.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0			3.0	
Lane Grp Cap (vph)	93	464		426	502			92			817	
v/s Ratio Prot		0.05			c0.26			c0.00			c0.39	
v/s Ratio Perm	0.01			0.13								
v/c Ratio	0.04	0.14		0.43	0.84			0.05			0.87	
Uniform Delay, d1	18.2	18.8		20.7	24.4			34.2			18.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00			1.00	
Incremental Delay, d2	0.9	0.7		3.1	15.4			0.2			10.0	
Delay (s)	19.1	19.5		23.9	39.8			34.4			28.9	
Level of Service	B	B		C	D			C			C	
Approach Delay (s)		19.4			36.2			34.4			28.9	
Approach LOS		B			D			C			C	

Intersection Summary			
HCM 2000 Control Delay	32.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	76.5	Sum of lost time (s)	13.5
Intersection Capacity Utilization	88.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

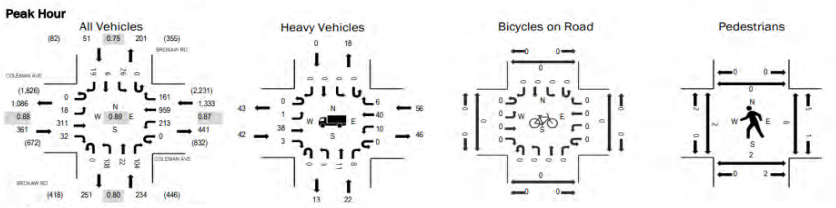
D-5 TRAFFIC COUNT DATA

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
AM Peak Hour	8:00 AM	9:00 AM
Peak 15-Minutes	8:45 AM	9:00 AM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		

Date 11/03/2022



Peak Rolling Hour Flow Rates

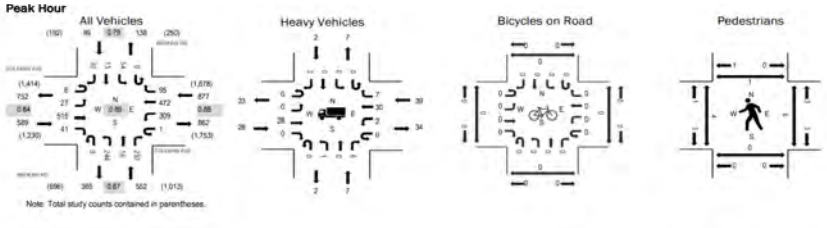
Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	105	11	96	0	17	273	29	0	26	6	19	0	203	919	155	1,859
Mediums (Classes IV, V & VI)	0	1	10	7	0	0	33	3	0	0	0	0	0	10	40	6	110
Articulated (Classes VII - XIII)	0	2	1	56	0	1	5	0	0	0	0	0	0	0	0	0	10
Total	0	108	22	104	0	18	311	32	0	26	6	19	0	213	959	161	1,979
Total Motorized Vehicles	0	108	22	104	0	18	311	32	0	26	6	19	0	213	959	161	1,979

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	9.4%	11.6%	0.0%	4.2%	6.1%
Peak Hour Factor (PHF)	0.80	0.88	0.75	0.87	0.89
Pedestrians on Crosswalk	2	2	0	6	10

Project Manager

	Start	End
Noon Peak Hour	11:55 AM	12:55 PM
Peak 15-Minutes	12:25 PM	12:40 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	03/07/2023	

Peak Hour



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	243	16	286	6	27	487	41	0	54	15	28	1	307	442	88	2,041
Mediums (Classes IV, V & VI)	0	1	0	5	0	0	22	0	0	0	0	2	0	2	27	4	63
Articulated (Classes VII - XIII)	0	0	0	1	0	0	6	0	0	0	0	0	0	0	3	3	13
Total	0	244	16	292	6	27	515	41	0	54	15	30	1	309	472	95	2,117
Total Motorized Vehicles	0	244	16	292	6	27	515	41	0	54	15	30	1	309	472	95	2,117

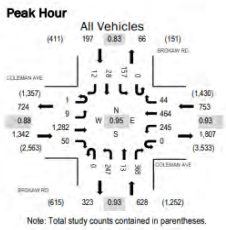
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	1.3%	4.8%	2.0%	4.4%	3.6%
Peak Hour Factor (PHF)	0.87	0.84	0.79	0.88	0.89
Pedestrians on Crosswalk	0	4	1	6	11

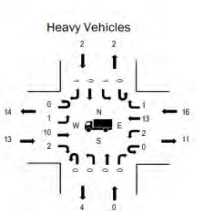
San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

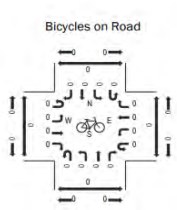
Project
Project Manager

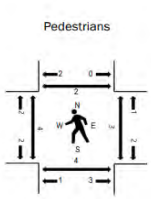
	Start	End
PM Peak Hour	5:00 PM	6:00 PM
Peak 15-Minutes	5:35 PM	5:50 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	11/03/2022	

Peak Hour









Peak Rolling Hour Flow Rates

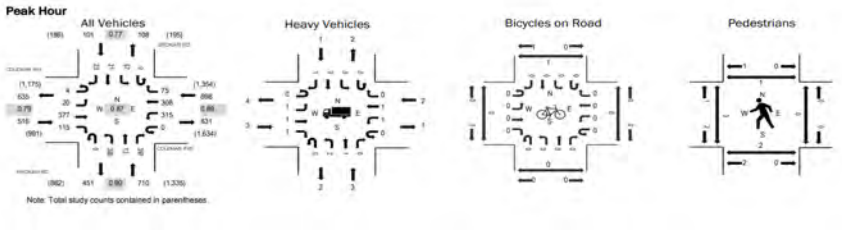
Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	247	13	368	1	8	1272	48	0	156	28	11	0	243	451	43	2,889
Mediums (Classes IV, V & VI)	0	0	0	0	0	1	10	1	0	1	0	1	0	2	13	1	30
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	247	13	368	1	9	1282	50	0	157	28	12	0	245	464	44	2,920
Total Motorized Vehicles	0	247	13	368	1	9	1282	50	0	157	28	12	0	245	464	44	2,920

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	1.0%	1.0%	2.1%	1.1%
Peak Hour Factor (PHF)	0.93	0.88	0.83	0.93	0.95
Pedestrians on Crosswalk	4	4	2	3	13

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
Noon Peak Hour	11:35 AM	12:35 PM
Peak 15-Minutes	11:50 AM	12:05 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	03/04/2023	



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	298	12	397	4	19	376	114	0	57	21	22	0	314	307	75	2,016
Mediums (Classes IV, V & VI)	0	2	1	0	0	0	1	1	0	0	0	0	0	0	1	0	6
Articulated (Classes VII - XIII)	0	0	0	0	0	1	0	0	0	0	0	1	0	1	0	0	3
Total	0	300	13	397	4	20	377	115	0	57	21	23	0	315	308	75	2,025
Total Motorized Vehicles	0	300	13	397	4	20	377	115	0	57	21	23	0	315	308	75	2,025
Heavy Vehicle Percentage (Mediums & Articulated Trucks)		0.4%				0.6%				1.0%				0.3%			0.4%
Peak Hour Factor (PHF)		0.90				0.79				0.77				0.89			0.87
Pedestrians on Crosswalk		2				3				1				0			6

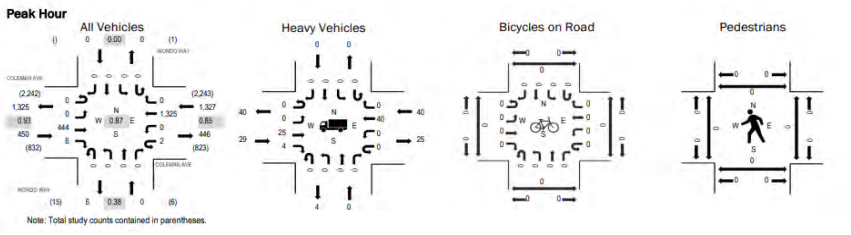
San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
AM Peak Hour	8:00 AM	9:00 AM
Peak 15-Minutes	8:35 AM	8:50 AM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		

Date 11/03/2022

Peak Hour



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	0	0	0	0	0	419	2	0	0	0	0	2	0	1285	0	1,708
Mediums (Classes IV, V & VI)	0	0	0	0	0	0	20	4	0	0	0	0	0	0	37	0	61
Articulated (Classes VII - XIII)	0	0	0	0	0	0	5	0	0	0	0	0	0	0	3	0	8
Total	0	0	0	0	0	0	444	6	0	0	0	0	2	0	1325	0	1,777
Total Motorized Vehicles	0	0	0	0	0	0	444	6	0	0	0	0	2	0	1325	0	1,777

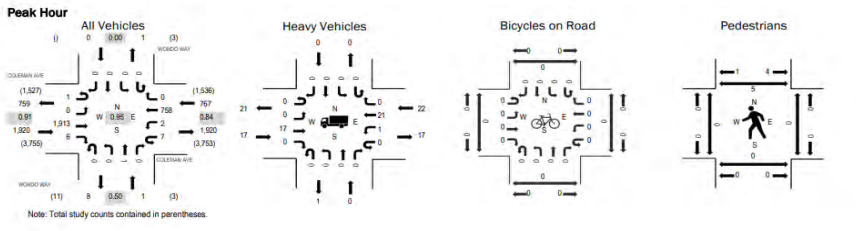
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	6.4%	0.0%	3.0%	3.9%
Peak Hour Factor (PHF)	0.38	0.93	0.00	0.85	0.87
Pedestrians on Crosswalk	0	0	0	0	0

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
PM Peak Hour	4:30 PM	5:30 PM
Peak 15-Minutes	4:30 PM	4:45 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		

Date 11/03/2022



Peak Rolling Hour Flow Rates

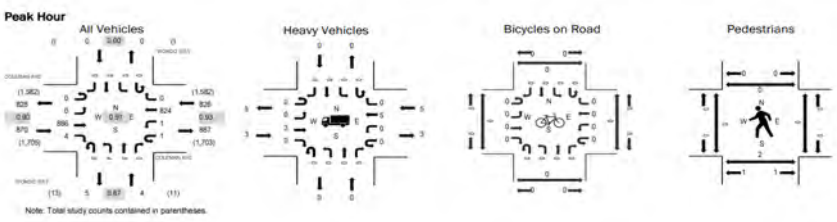
Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	0	1	0	1	0	1896	6	0	0	0	0	7	1	737	0	2,649
Mediums (Classes IV, V & VI)	0	0	0	0	0	0	16	0	0	0	0	0	0	1	19	0	36
Articulated (Classes VII - XIII)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	3
Total	0	0	1	0	1	0	1913	6	0	0	0	0	7	2	758	0	2,688
Total Motorized Vehicles	0	0	1	0	1	0	1913	6	0	0	0	0	7	2	758	0	2,688

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	0.9%	0.0%	2.9%	1.5%
Peak Hour Factor (PHF)	0.50	0.91	0.00	0.84	0.95
Pedestrians on Crosswalk	0	0	5	0	5

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
Noon Peak Hour	11:25 AM	12:25 PM
Peak 15-Minutes	12:00 PM	12:15 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	03/04/2023	



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	4	0	0	0	0	863	4	0	0	0	0	1	1	819	0	1,692
Mediums (Classes IV, V & VI)	0	0	0	0	0	0	3	0	0	0	0	0	0	0	4	0	7
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	4	0	0	0	0	866	4	0	0	0	0	1	1	824	0	1,700
Total Motorized Vehicles	0	4	0	0	0	0	866	4	0	0	0	0	1	1	824	0	1,700

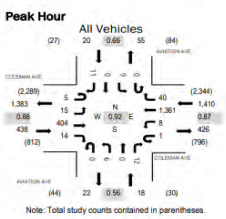
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	0.3%	0.0%	0.6%	0.5%
Peak Hour Factor (PHF)	0.67	0.90	0.00	0.93	0.91
Pedestrians on Crosswalk	2	0	0	0	2

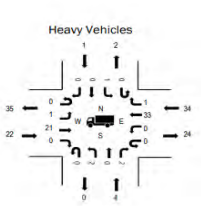
San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

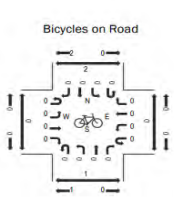
Project
Project Manager

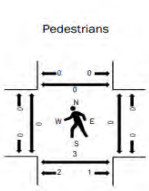
	Start	End
AM Peak Hour	8:00 AM	9:00 AM
Peak 15-Minutes	8:45 AM	9:00 AM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		

Peak Hour









Date 11/03/2022

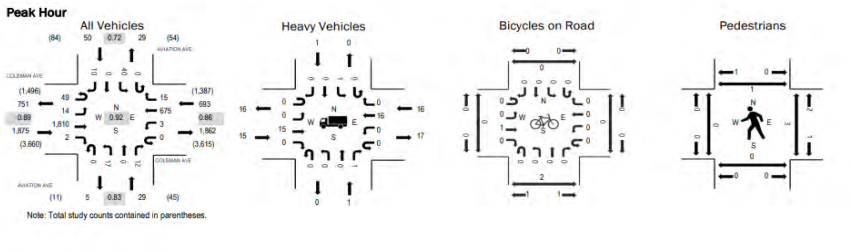
Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	4	0	10	5	14	383	14	0	8	0	11	1	8	1328	39	1,825
Mediums (Classes IV, V & VI)	0	2	0	2	0	1	18	0	0	1	0	0	0	0	30	1	55
Articulated (Classes VII - XIII)	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	6
Total	0	6	0	12	5	15	404	14	0	9	0	11	1	8	1361	40	1,886
Total Motorized Vehicles	0	6	0	12	5	15	404	14	0	9	0	11	1	8	1361	40	1,886

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	22.2%	5.0%	5.0%	2.4%	3.2%
Peak Hour Factor (PHF)	0.56	0.88	0.66	0.87	0.92
Pedestrians on Crosswalk	3	0	0	0	3

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project		
Project Manager		
	Start	**End**
PM Peak Hour	4:35 PM	5:35 PM
Peak 15-Minutes	5:05 PM	5:20 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	11/03/2022	



Peak Rolling Hour Flow Rates

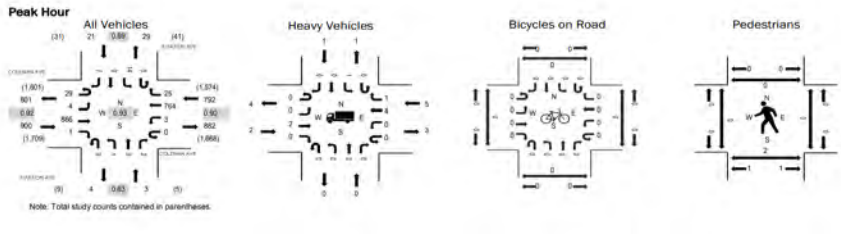
Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Lights (Classes II & III)	0	17	0	11	49	14	1795	2	0	39	0	10	0	3	659	15	2,614
Mediums (Classes IV, V & VI)	0	0	0	1	0	0	15	0	0	1	0	0	0	0	16	0	33
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	17	0	12	49	14	1811	2	0	40	0	10	0	3	675	15	2,648
Total Motorized Vehicles	0	17	0	12	49	14	1810	2	0	40	0	10	0	3	675	15	2,647

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	3.4%	0.8%	2.0%	2.3%	1.2%
Peak Hour Factor (PHF)	0.83	0.89	0.72	0.86	0.92
Pedestrians on Crosswalk	0	0	1	3	4

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
Noon Peak Hour	11:45 AM	12:45 PM
Peak 15-Minutes	12:00 PM	12:15 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	03/04/2023	



Peak Rolling Hour Flow Rates

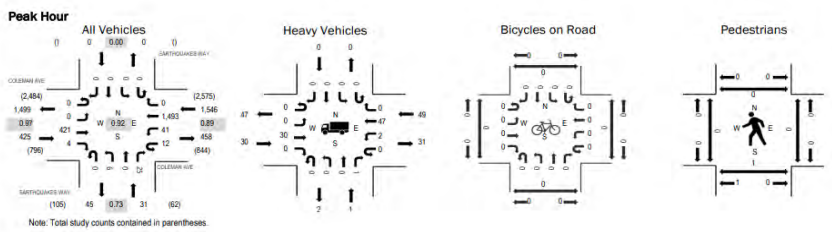
Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	1	0	2	29	4	864	1	0	13	0	7	0	3	760	24	1,708
Mediums (Classes IV, V & VI)	0	0	0	0	0	0	2	0	0	1	0	0	0	0	3	1	7
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	1	0	2	29	4	866	1	0	14	0	7	0	3	764	25	1,716
Total Motorized Vehicles	0	1	0	2	29	4	866	1	0	14	0	7	0	3	764	25	1,716
Heavy Vehicle Percentage (Mediums & Articulated Trucks)		0.0%				0.2%				4.8%				0.6%			0.5%
Peak Hour Factor (PHF)		0.63				0.92				0.69				0.90			0.93
Pedestrians on Crosswalk		2				0				0				0			2

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
AM Peak Hour	8:00 AM	9:00 AM
Peak 15-Minutes	8:45 AM	9:00 AM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	11/03/2022	

Peak Hour



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	6	0	24	0	0	391	4	0	0	0	0	12	39	1446	0	1,922
Mediums (Classes IV, V & VI)	0	0	0	1	0	0	27	0	0	0	0	0	0	2	44	0	74
Articulated (Classes VII - XIII)	0	0	0	0	0	0	3	0	0	0	0	0	0	0	3	0	6
Total	0	6	0	25	0	0	421	4	0	0	0	0	12	41	1493	0	2,002
Total Motorized Vehicles	0	6	0	25	0	0	421	4	0	0	0	0	12	41	1493	0	2,002

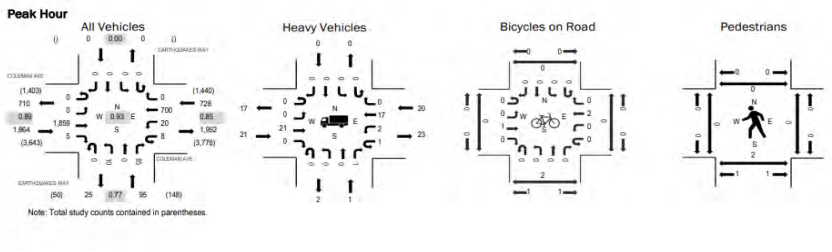
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	3.2%	7.1%	0.0%	3.2%	4.0%
Peak Hour Factor (PHF)	0.73	0.97	0.00	0.89	0.92
Pedestrians on Crosswalk	1	0	0	0	1

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
PM Peak Hour	4:35 PM	5:35 PM
Peak 15-Minutes	5:05 PM	5:20 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		

Date 11/03/2022



Peak Rolling Hour Flow Rates

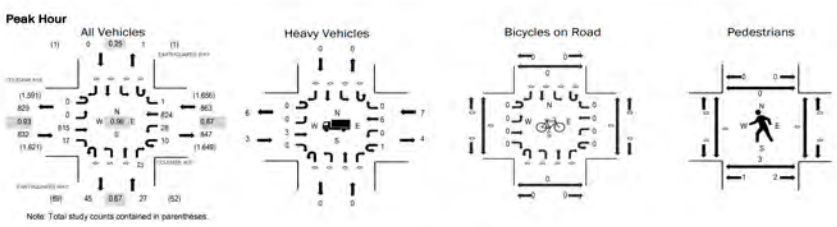
Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	3
Lights (Classes II & III)	0	10	0	84	0	0	1838	5	0	0	0	0	7	18	683	0	2,645
Mediums (Classes IV, V & VI)	0	0	0	1	0	0	20	0	0	0	0	0	1	1	14	0	37
Articulated (Classes VII - XIII)	0	0	0	0	0	0	1	0	0	0	0	0	0	1	3	0	5
Total	0	10	0	85	0	0	1860	5	0	0	0	0	8	20	702	0	2,690
Total Motorized Vehicles	0	10	0	85	0	0	1859	5	0	0	0	0	8	20	700	0	2,687

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	1.1%	1.1%	0.0%	2.7%	1.6%
Peak Hour Factor (PHF)	0.77	0.89	0.00	0.85	0.93
Pedestrians on Crosswalk	2	0	0	0	2

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
Noon Peak Hour	11:40 AM	12:40 PM
Peak 15-Minutes	11:50 AM	12:05 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	03/04/2023	



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	5	0	22	0	0	812	17	0	0	0	0	9	28	818	1	1,712
Mediums (Classes IV, V & VI)	0	0	0	0	0	0	3	0	0	0	0	0	1	0	5	0	9
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	5	0	22	0	0	815	17	0	0	0	0	10	28	824	1	1,722
Total Motorized Vehicles	0	5	0	22	0	0	815	17	0	0	0	0	10	28	824	1	1,722

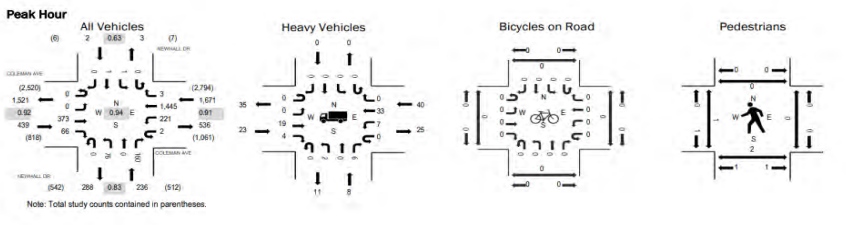
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	0.4%	0.0%	0.8%	0.6%
Peak Hour Factor (PHF)	0.67	0.93	0.25	0.87	0.96
Pedestrians on Crosswalk	3	0	0	0	3

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
AM Peak Hour	8:00 AM	9:00 AM
Peak 15-Minutes	8:25 AM	8:40 AM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		

Peak Hour



Date 11/03/2022

Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	74	0	154	0	0	354	62	0	1	1	0	2	214	1412	3	2,277
Mediums (Classes IV, V & VI)	0	2	0	5	0	0	17	4	0	0	0	0	0	5	30	0	63
Articulated (Classes VII - XIII)	0	0	0	1	0	0	2	0	0	0	0	0	0	2	3	0	8
Total	0	76	0	160	0	0	373	66	0	1	1	0	2	221	1445	3	2,348
Total Motorized Vehicles	0	76	0	160	0	0	373	66	0	1	1	0	2	221	1445	3	2,348

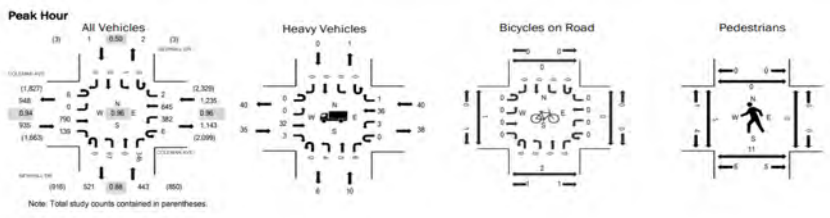
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	3.4%	5.2%	0.0%	2.4%	3.0%
Peak Hour Factor (PHF)	0.83	0.92	0.63	0.91	0.94
Pedestrians on Crosswalk	2	1	0	0	3

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
Noon Peak Hour	11:50 AM	12:50 PM
Peak 15-Minutes	12:20 PM	12:35 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		

Date 03/07/2023



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	93	0	340	6	0	758	136	0	1	0	0	6	379	809	1	2,529
Mediums (Classes IV, V & VI)	0	3	0	3	0	0	27	2	0	0	0	0	0	1	30	1	67
Articulated (Classes VII - XIII)	0	1	0	3	0	0	5	1	0	0	0	0	0	2	6	0	18
Total	0	97	0	346	6	0	790	139	0	1	0	0	6	382	845	2	2,614
Total Motorized Vehicles	0	97	0	346	6	0	790	139	0	1	0	0	6	382	845	2	2,614

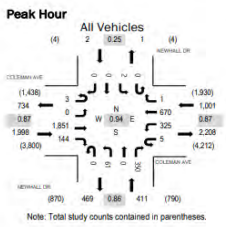
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	2.3%	3.7%	0.0%	3.2%	3.3%
Peak Hour Factor (PHF)	0.88	0.94	0.50	0.96	0.96
Pedestrians on Crosswalk	11	5	0	0	16

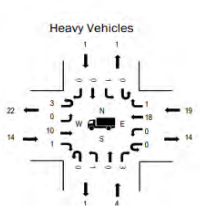
San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

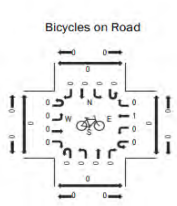
Project
Project Manager

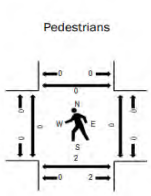
	Start	End
PM Peak Hour	5:00 PM	6:00 PM
Peak 15-Minutes	5:20 PM	5:35 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	11/03/2022	

Peak Hour









Peak Rolling Hour Flow Rates

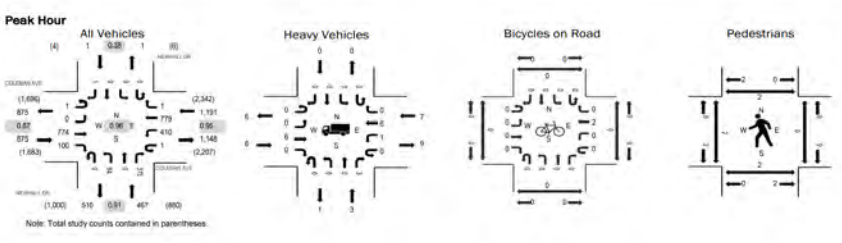
Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Lights (Classes II & III)	0	60	0	347	0	0	1841	143	0	1	0	0	5	325	652	0	3,374
Mediums (Classes IV, V & VI)	0	1	0	3	3	0	10	1	0	1	0	0	0	0	14	1	34
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
Total	0	61	0	350	3	0	1851	144	0	2	0	0	5	325	671	1	3,413
Total Motorized Vehicles	0	61	0	350	3	0	1851	144	0	2	0	0	5	325	670	1	3,412

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	1.0%	0.7%	50.0%	1.9%	1.1%
Peak Hour Factor (PHF)	0.86	0.87	0.25	0.87	0.94
Pedestrians on Crosswalk	2	0	0	0	2

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
Noon Peak Hour	11:50 AM	12:50 PM
Peak 15-Minutes	12:10 PM	12:25 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	03/04/2023	



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Lights (Classes II & III)	0	94	0	370	1	0	768	100	0	0	0	1	1	409	773	1	2,518
Mediums (Classes IV, V & VI)	0	0	0	3	0	0	6	0	0	0	0	0	0	1	4	0	14
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	0	94	0	373	1	0	774	100	0	0	0	1	1	410	781	1	2,536
Total Motorized Vehicles	0	94	0	373	1	0	774	100	0	0	0	1	1	410	779	1	2,534

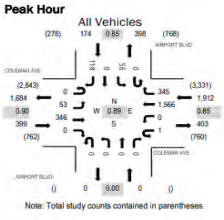
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.6%	0.7%	0.0%	0.6%	0.6%
Peak Hour Factor (PHF)	0.91	0.87	0.38	0.95	0.96
Pedestrians on Crosswalk	2	2	2	0	6

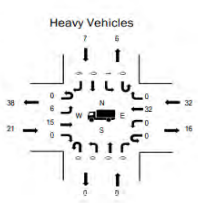
San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

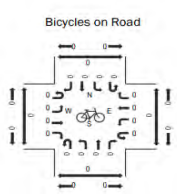
Project
Project Manager

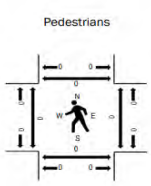
	Start	End
AM Peak Hour	8:00 AM	9:00 AM
Peak 15-Minutes	8:45 AM	9:00 AM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		

Peak Hour









Date 11/03/2022

Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	0	0	0	0	47	331	0	0	55	0	112	1	0	1534	345	2,425
Mediums (Classes IV, V & VI)	0	0	0	0	0	6	12	0	0	1	0	6	0	0	28	0	53
Articulated (Classes VII - XIII)	0	0	0	0	0	0	3	0	0	0	0	0	0	0	4	0	7
Total	0	0	0	0	0	53	346	0	0	56	0	118	1	0	1566	345	2,485
Total Motorized Vehicles	0	0	0	0	0	53	346	0	0	56	0	118	1	0	1566	345	2,485

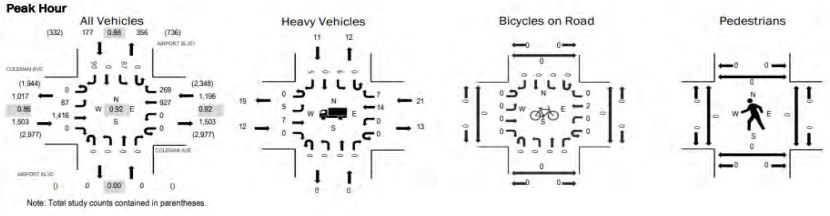
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	5.3%	4.0%	1.7%	2.4%
Peak Hour Factor (PHF)	0.00	0.90	0.85	0.85	0.89
Pedestrians on Crosswalk	0	0	0	0	0

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
PM Peak Hour	4:55 PM	5:55 PM
Peak 15-Minutes	5:40 PM	5:55 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	11/03/2022	

Peak Hour



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Lights (Classes II & III)	0	0	0	0	0	82	1409	0	0	81	0	85	0	0	913	262	2,832
Mediums (Classes IV, V & VI)	0	0	0	0	0	5	7	0	0	5	0	5	0	0	11	7	40
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	0	0	1	0	0	0	0	3	0	4
Total	0	0	0	0	0	87	1416	0	0	87	0	90	0	0	929	269	2,878
Total Motorized Vehicles	0	0	0	0	0	87	1416	0	0	87	0	90	0	0	927	269	2,876

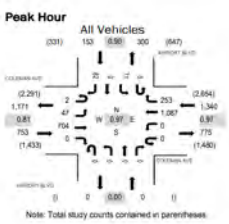
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	0.8%	6.2%	1.8%	1.5%
Peak Hour Factor (PHF)	0.00	0.86	0.88	0.92	0.92
Pedestrians on Crosswalk	0	0	0	0	0

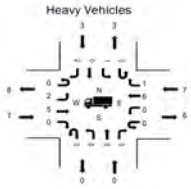
San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
Noon Peak Hour	11:45 AM	12:45 PM
Peak 15-Minutes	12:05 PM	12:20 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	03/04/2023	

Peak Hour





Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Lights (Classes II & III)	0	0	0	0	2	45	699	0	0	70	0	80	0	0	1081	252	2,229
Mediums (Classes IV, V & VI)	0	0	0	0	0	2	5	0	0	1	0	2	0	0	5	1	16
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	2	47	704	0	0	71	0	82	0	0	1089	253	2,248
Total Motorized Vehicles	0	0	0	0	2	47	704	0	0	71	0	82	0	0	1087	253	2,246

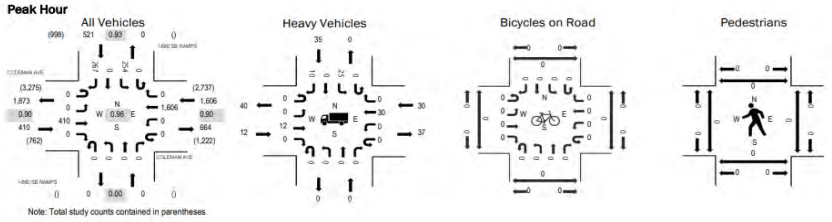
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	0.9%	2.0%	0.5%	0.8%
Peak Hour Factor (PHF)	0.00	0.81	0.90	0.97	0.97
Pedestrians on Crosswalk	0	0	0	0	0

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
AM Peak Hour	8:00 AM	9:00 AM
Peak 15-Minutes	8:45 AM	9:00 AM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	11/03/2022	

Peak Hour



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	0	0	0	0	0	398	0	0	229	0	257	0	0	1576	0	2,460
Mediums (Classes IV, V & VI)	0	0	0	0	0	0	8	0	0	18	0	7	0	0	29	0	62
Articulated (Classes VII - XIII)	0	0	0	0	0	0	4	0	0	7	0	3	0	0	1	0	15
Total	0	0	0	0	0	0	410	0	0	254	0	267	0	0	1606	0	2,537
Total Motorized Vehicles	0	0	0	0	0	0	410	0	0	254	0	267	0	0	1606	0	2,537

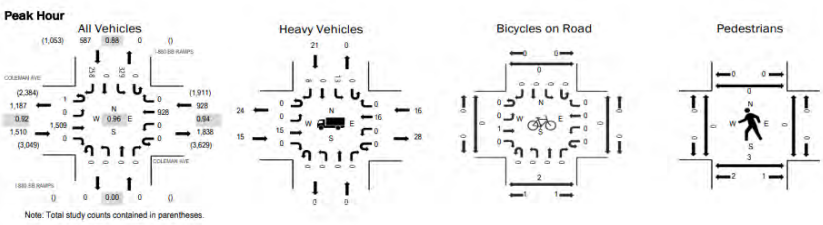
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	2.9%	6.7%	1.9%	3.0%
Peak Hour Factor (PHF)	0.00	0.90	0.93	0.90	0.96
Pedestrians on Crosswalk	0	0	0	0	0

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
PM Peak Hour	4:00 PM	5:00 PM
Peak 15-Minutes	4:00 PM	4:15 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	11/03/2022	

Peak Hour



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Lights (Classes II & III)	0	0	0	0	1	0	1494	0	0	316	0	250	0	0	912	0	2,973
Mediums (Classes IV, V & VI)	0	0	0	0	0	0	13	0	0	11	0	7	0	0	16	0	47
Articulated (Classes VII - XIII)	0	0	0	0	0	0	2	0	0	2	0	1	0	0	0	0	5
Total	0	0	0	0	1	0	1510	0	0	329	0	258	0	0	928	0	3,026
Total Motorized Vehicles	0	0	0	0	1	0	1509	0	0	329	0	258	0	0	928	0	3,025

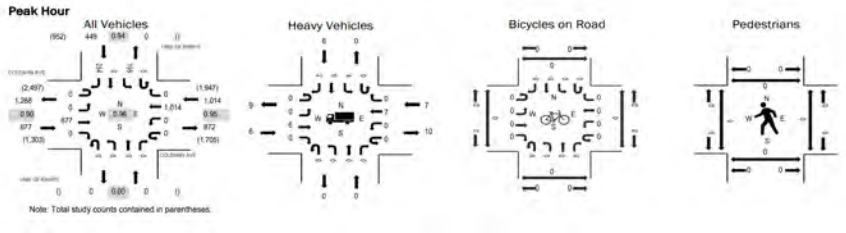
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	1.0%	3.6%	1.7%	1.7%
Peak Hour Factor (PHF)	0.00	0.92	0.88	0.94	0.96
Pedestrians on Crosswalk	3	0	0	0	3

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
Noon Peak Hour	12:00 PM	1:00 PM
Peak 15-Minutes	12:15 PM	12:30 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	03/04/2023	

Peak Hour



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	0	0	0	0	0	671	0	0	191	0	252	0	0	1007	0	2,121
Mediums (Classes IV, V & VI)	0	0	0	0	0	0	6	0	0	4	0	1	0	0	7	0	18
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	0	0	0	0	0	677	0	0	195	0	254	0	0	1014	0	2,140
Total Motorized Vehicles	0	0	0	0	0	0	677	0	0	195	0	254	0	0	1014	0	2,140

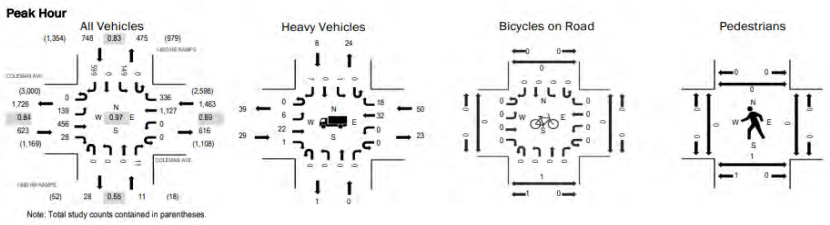
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	0.9%	1.3%	0.7%	0.9%
Peak Hour Factor (PHF)	0.00	0.90	0.94	0.95	0.96
Pedestrians on Crosswalk	0	0	0	0	0

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
AM Peak Hour	8:00 AM	9:00 AM
Peak 15-Minutes	8:45 AM	9:00 AM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	11/03/2022	

Peak Hour



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	0	0	11	0	133	434	27	0	148	0	592	0	0	1095	318	2,758
Mediums (Classes IV, V & VI)	0	0	0	0	0	3	15	1	0	1	0	6	0	0	30	11	67
Articulated (Classes VII - XIII)	0	0	0	0	0	3	7	0	0	0	0	1	0	0	2	7	20
Total	0	0	0	11	0	139	456	28	0	149	0	599	0	0	1127	336	2,845
Total Motorized Vehicles	0	0	0	11	0	139	456	28	0	149	0	599	0	0	1127	336	2,845

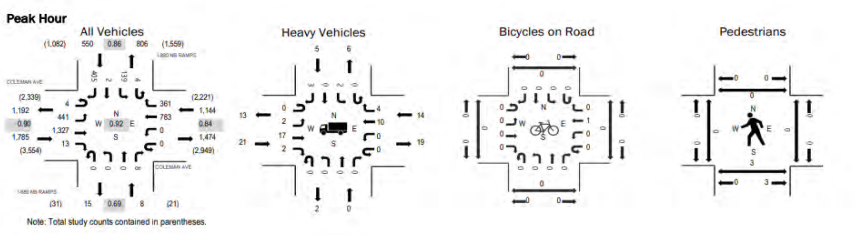
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	4.7%	1.1%	3.4%	3.1%
Peak Hour Factor (PHF)	0.55	0.84	0.83	0.89	0.97
Pedestrians on Crosswalk	1	0	0	0	1

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
PM Peak Hour	4:20 PM	5:20 PM
Peak 15-Minutes	5:05 PM	5:20 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	11/03/2022	

Peak Hour



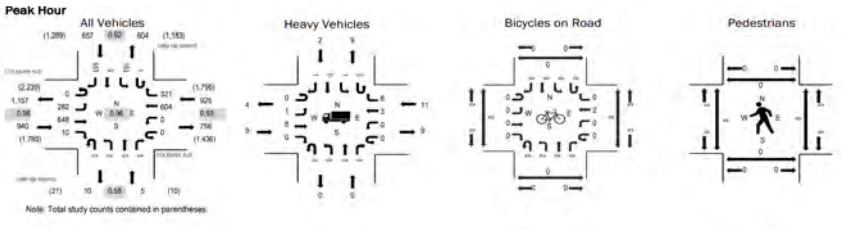
Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Lights (Classes II & III)	0	0	0	8	4	439	1310	11	4	137	2	402	0	0	773	357	3,447
Mediums (Classes IV, V & VI)	0	0	0	0	0	1	16	2	0	2	0	2	0	0	9	4	36
Articulated (Classes VII - XIII)	0	0	0	0	0	1	1	0	0	0	0	1	0	0	1	0	4
Total	0	0	0	8	4	441	1327	13	4	139	2	405	0	0	784	361	3,488
Total Motorized Vehicles	0	0	0	8	4	441	1327	13	4	139	2	405	0	0	783	361	3,487

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.0%	1.2%	0.9%	1.2%	1.1%
Peak Hour Factor (PHF)	0.69	0.90	0.86	0.84	0.92
Pedestrians on Crosswalk	3	0	0	0	3

Project Manager

	Start	End
Noon Peak Hour	11:45 AM	12:45 PM
Peak 15-Minutes	12:15 PM	12:30 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	03/04/2023	



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Lights (Classes II & III)	0	0	0	5	0	281	640	10	1	102	0	552	0	0	601	313	2,505
Mediums (Classes IV, V & VI)	0	0	0	0	0	1	7	0	0	1	0	1	0	0	2	7	19
Articulated (Classes VII - XIII)	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	1	3
Total	0	0	0	5	0	282	648	10	1	103	0	553	0	0	606	321	2,529
Total Motorized Vehicles	0	0	0	5	0	282	648	10	1	103	0	553	0	0	604	321	2,527
Heavy Vehicle Percentage (Mediums & Articulated Trucks)		0.0%				1.0%				0.3%				1.2%			0.9%
Peak Hour Factor (PHF)		0.58				0.96				0.92				0.93			0.96
Pedestrians on Crosswalk		0				0				0				0			0

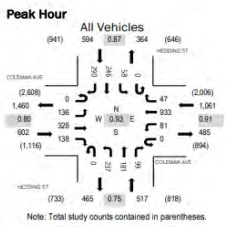
San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

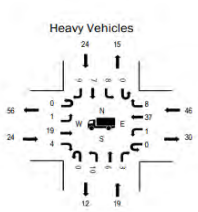
Project
Project Manager

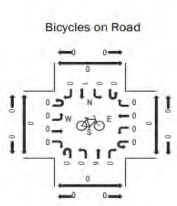
	Start	End
AM Peak Hour	7:55 AM	8:55 AM
Peak 15-Minutes	8:20 AM	8:35 AM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		

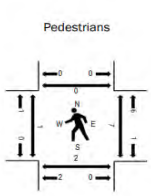
Date 11/03/2022

Peak Hour









Peak Rolling Hour Flow Rates

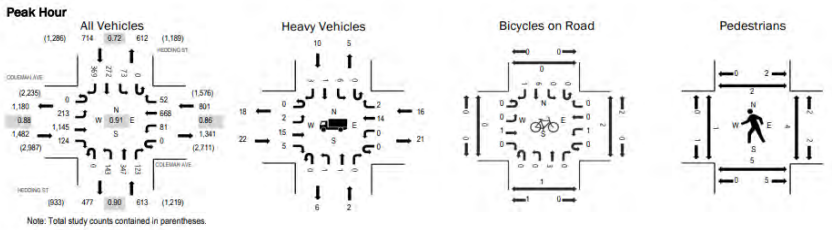
Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	6	0	0	0	0	0	0	0	1	0	0	0	0	0	7
Lights (Classes II & III)	0	227	175	96	0	135	309	134	0	50	239	281	0	80	896	39	2,661
Mediums (Classes IV, V & VI)	0	8	4	3	0	1	13	2	0	8	6	9	0	1	28	7	90
Articulated (Classes VII - XIII)	0	2	2	0	0	0	6	2	0	0	1	0	0	0	9	1	23
Total	0	237	187	99	0	136	328	138	0	58	247	290	0	81	933	47	2,781
Total Motorized Vehicles	0	237	181	99	0	136	328	138	0	58	246	290	0	81	933	47	2,774

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	3.7%	4.0%	4.0%	4.3%	4.1%
Peak Hour Factor (PHF)	0.75	0.80	0.87	0.91	0.93
Pedestrians on Crosswalk	2	1	0	7	10

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project		
Project Manager		
	Start	**End**
PM Peak Hour	4:35 PM	5:35 PM
Peak 15-Minutes	5:10 PM	5:25 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	11/03/2022	

Peak Hour



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	3	0	0	0	1	0	0	0	6	1	0	1	0	0	12
Lights (Classes II & III)	0	142	346	123	0	211	1130	119	0	67	271	366	0	81	654	50	3,560
Mediums (Classes IV, V & VI)	0	1	1	0	0	1	15	5	0	6	1	2	0	0	14	2	48
Articulated (Classes VII - XIII)	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
Total	0	143	350	123	0	213	1146	124	0	73	278	370	0	82	668	52	3,622
Total Motorized Vehicles	0	143	347	123	0	213	1145	124	0	73	272	369	0	81	668	52	3,610

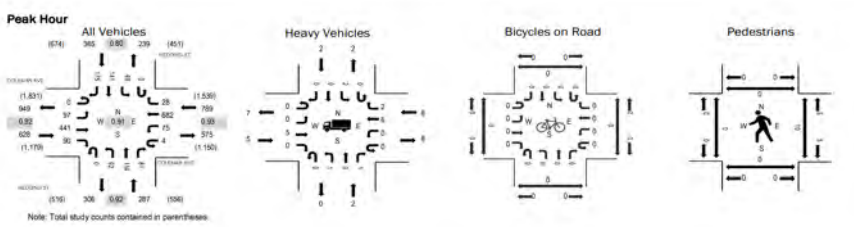
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.3%	1.5%	1.4%	2.0%	1.4%
Peak Hour Factor (PHF)	0.90	0.88	0.72	0.86	0.91
Pedestrians on Crosswalk	5	1	2	4	12

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
Noon Peak Hour	12:00 PM	1:00 PM
Peak 15-Minutes	12:45 PM	1:00 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	03/04/2023	

Peak Hour



Peak Rolling Hour Flow Rates

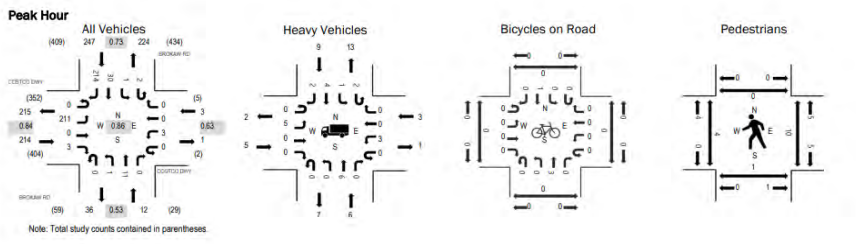
Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lights (Classes II & III)	0	91	114	80	0	97	436	90	0	47	141	175	4	75	676	26	2,052
Mediums (Classes IV, V & VI)	0	0	0	1	0	0	4	0	0	2	0	0	0	0	5	2	14
Articulated (Classes VII - XIII)	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1	0	3
Total	0	92	114	81	0	97	441	90	0	49	141	175	4	75	682	28	2,069
Total Motorized Vehicles	0	92	114	81	0	97	441	90	0	49	141	175	4	75	682	28	2,069

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	0.7%	0.8%	0.5%	1.0%	0.8%
Peak Hour Factor (PHF)	0.92	0.92	0.80	0.93	0.91
Pedestrians on Crosswalk	0	0	0	10	10

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
AM Peak Hour	8:00 AM	9:00 AM
Peak 15-Minutes	8:40 AM	8:55 AM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	11/03/2022	



Peak Rolling Hour Flow Rates

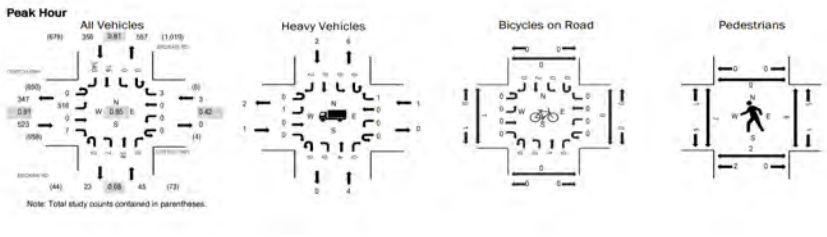
Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	4
Lights (Classes II & III)	0	1	5	0	0	206	0	3	0	0	26	212	0	0	0	0	453
Mediums (Classes IV, V & VI)	0	0	6	0	0	4	0	0	2	1	4	2	0	1	0	0	20
Articulated (Classes VII - XIII)	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	3
Total	0	1	14	0	0	211	0	3	2	1	31	214	0	3	0	0	480
Total Motorized Vehicles	0	1	11	0	0	211	0	3	2	1	30	214	0	3	0	0	476

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	50.0%	2.3%	3.6%	100.0%	4.8%
Peak Hour Factor (PHF)	0.53	0.84	0.73	0.63	0.86
Pedestrians on Crosswalk	1	4	0	10	15

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
Noon Peak Hour	11:55 AM	12:55 PM
Peak 15-Minutes	12:25 PM	12:40 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	03/07/2023	



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	3
Lights (Classes II & III)	0	7	34	0	0	515	0	7	0	0	16	338	0	0	0	2	919
Mediums (Classes IV, V & VI)	0	0	4	0	0	1	0	0	0	0	0	2	0	0	0	1	8
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	7	39	0	0	516	0	7	0	0	18	340	0	0	0	3	930
Total Motorized Vehicles	0	7	38	0	0	516	0	7	0	0	16	340	0	0	0	3	927

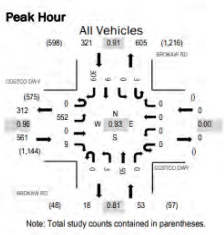
Heavy Vehicle Percentage (Mediums & Articulated Trucks)	8.9%	0.2%	0.6%	33.3%	0.9%
Peak Hour Factor (PHF)	0.68	0.91	0.81	0.42	0.85
Pedestrians on Crosswalk	2	7	0	6	15

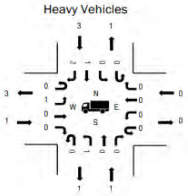
San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

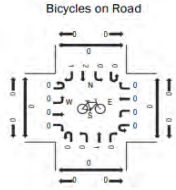
Project
Project Manager

	Start	End
PM Peak Hour	4:55 PM	5:55 PM
Peak 15-Minutes	5:40 PM	5:55 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	11/03/2022	

Peak Hour







Peak Rolling Hour Flow Rates

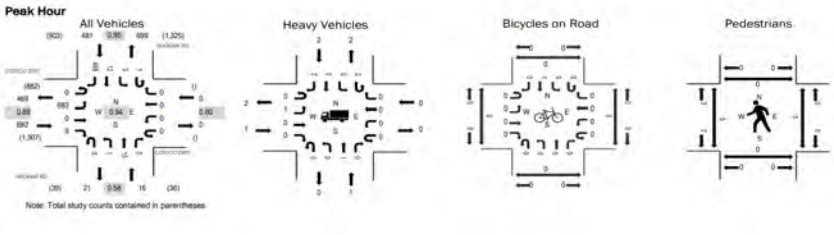
Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	1	0	0	0	0	0	0	0	2	1	0	0	0	0	4
Lights (Classes II & III)	0	2	50	0	0	551	0	9	3	0	8	307	0	0	0	0	930
Mediums (Classes IV, V & VI)	0	1	0	0	0	1	0	0	0	0	1	1	0	0	0	0	4
Articulated (Classes VII - XIII)	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total	0	3	51	0	0	552	0	9	3	0	11	310	0	0	0	0	939
Total Motorized Vehicles	0	3	50	0	0	552	0	9	3	0	9	309	0	0	0	0	935

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	1.9%	0.2%	0.9%	0.0%	0.5%
Peak Hour Factor (PHF)	0.81	0.96	0.91	0.00	0.93
Pedestrians on Crosswalk	1	3	0	2	6

San Jose, CA DOT - Turning Movement Counts - 5-Minute Intervals

Project
Project Manager

	Start	End
Noon Peak Hour	11:40 AM	12:40 PM
Peak 15-Minutes	11:50 AM	12:05 PM
Node		
Shop		
Latitude		
Longitude		
Orientation (N-S)		
Orientation (E-W)		
Date	03/04/2023	



Peak Rolling Hour Flow Rates

Vehicle Type	Northbound				Eastbound				Southbound				Westbound				
(per FHWA Classification)	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Lights (Classes II & III)	0	1	14	0	0	682	0	9	1	0	12	466	0	0	0	0	1,185
Mediums (Classes IV, V & VI)	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	2
Articulated (Classes VII - XIII)	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	2
Total	0	1	15	0	0	683	0	9	1	0	13	468	0	0	0	0	1,190
Total Motorized Vehicles	0	1	15	0	0	683	0	9	1	0	12	468	0	0	0	0	1,189

Heavy Vehicle Percentage (Mediums & Articulated Trucks)	6.3%	0.1%	0.4%	0.0%	0.3%
Peak Hour Factor (PHF)	0.58	0.89	0.95	0.00	0.94
Pedestrians on Crosswalk	0	5	0	0	5

APPENDIX E

CITY PERMIT REQUIREMENTS

City of San José Permit Requirements

Issuing Agency	Name of Permit	Responsible Party	Notes	Link to Permit Instructions	Link to Permit Application
City of San José - Department of Public Works	Public Street Improvement Permit	Contractor	Construction of public improvements, such as construction of sidewalks, curb & gutter, curb ramps, driveways, storm/sanitary sewer, streetlights, traffic signals, roadways, medians, crosswalks, etc.	https://www.sanjoseca.gov/home/showpublisheddocument?id=32905	https://www.sanjoseca.gov/home/showpublisheddocument?id=32907
	Private Utility (Joint Trench) Permit	Utility Owner	For utility companies that allow private contractors to construct the trench and install the facilities with the utility company inspecting and accepting the work.	https://www.sanjoseca.gov/home/showpublisheddocument?id=32774	https://www.sanjoseca.gov/home/showpublisheddocument?id=32781
	Revocable Encroachment Permit	Contractor	For the temp use of public right of way to support private construction work. Typical examples include: full or partial street/sidewalk closure lasting more than one day; covered pedestrian walkways; potholing; tie-backs for retaining wall/shoring; scaffolding, facade improvements; construction of fence/wall or debris chute; crane erection; water monitoring and extraction wells; monitoring well installation or removal; underground storage tank; borings and installation of privately owned trenches across public right of way); revocable encroachment permits are approved for a 3-month, 6-month or 1-year period, depending on the project size and type of construction activities; the revocable encroachment permit shall be tailored to the time frame necessary to perform the specific work activity.	https://www.sanjoseca.gov/home/showpublisheddocument?id=32776	https://www.sanjoseca.gov/home/showpublisheddocument?id=32781
	Sewer Lateral Permit	Contractor	Only required for installation of storm or sewer lateral with no other proposed public improvements.	https://www.sanjoseca.gov/home/showpublisheddocument?id=32778	https://www.sanjoseca.gov/home/showpublisheddocument?id=32781
	Utility Permit	Utility Owner	Permit is applicable when the utility company serves as both the applicant and the permittee performing the work.	https://www.sanjoseca.gov/home/showpublisheddocument?id=33139	Major: https://www.sanjoseca.gov/home/showpublisheddocument?id=33157 Minor: https://www.sanjoseca.gov/home/showpublisheddocument?id=33159
	Grading and Drainage Permit	Contractor		https://www.sanjoseca.gov/home/showpublisheddocument?id=32811	https://www.sanjoseca.gov/home/showpublisheddocument?id=32809
City of San José - Department of Transportation	Transportation Permit	Contractor	Required for extra legal load (weight, width and/or height) vehicles.	Contact : (408) 975-3278	https://www.sanjoseca.gov/your-government/departments/transportation/permits
	Haul Route Permit	Contractor	Required for any haul route for the transportation of more than 10,000 CY; see CSJ Downtown Construction Guidelines for process for notification, application and information necessary.	Contact : (408) 975-3278	https://www.sanjoseca.gov/home/showpublisheddocument?id=40711
	Tow Away Permit	Contractor	Required for removal of metered and non-metered parking spaces.	Contact : (408) 535-3850	https://www.sanjoseca.gov/home/showpublisheddocument?id=61796
	Downtown Lane Closure Permit	Contractor	Applicable for any lane closure prior to approval of a revocable encroachment permit.	Contact : (408) 975-3278	https://www.sanjoseca.gov/home/showpublisheddocument?id=40713
	Bike Share Relocation	Contractor	Coordination with private owner-operator (currently Lyft) and City for relocation of a bike share docking station due to closure of sidewalk or roadway that will impede user or operator access.		
	Zipcar Parking Relocation	Contractor	The location of the on-street parking spaces is subject to change on a temporary or permanent basis at the sole reasonable direction of the Director of DOT upon no less than seven (7) days prior written notice to Zipcar for temporary relocations and fifteen (15) days prior written notice for permanent relocations.		
City of San Jose - Department of Planning, Building & Code Enforcement	Building Demolition Permit	Contractor			
City of San Jose - Environmental Services Department	Industrial Wastewater Discharge Permit	Contractor	Required for discharge into the sanitary sewer.		
	Polychlorinated Biphenyls (PCBs) Screening Assessment	Contractor	Required to be submitted with demolition permit application.		

City of Santa Clara Permit Requirements

Issuing Agency	Name of Permit	Responsible Party	Notes	Link to Permit Application
City of Santa Clara - Public Works Department	Encroachment Permit	Contractor	Regulates all construction in public rights-of-way	https://www.santaclaraca.gov/home/showpublisheddocument?id=70700
	Special Transportation Permit	Contractor	Allows wide loads to be transported on City streets.	https://www.santaclaraca.gov/home/showpublisheddocument?id=70427
	Street License Encroachment Permit	Utility Owner	Allows private underground facilities to be installed and maintained in public easements or rights-of-way.	https://www.santaclaraca.gov/home/showpublisheddocument?id=13749
	Open Trench Permit	Contractor	Included in Encroachment Permit	
	Street Closure Permit	Contractor	Included in the Traffic Control Plans required for the Encroachment Permit	
	New Water Service	Contractor	Included in the Encroachment Permit and subject to a specific fee through the Water and Sewer Utilities Department	
	New Sewer Service	Contractor	Included in the Encroachment Permit and subject to a specific fee through the Water and Sewer Utilities Department	
	Waste Management Plan	Contractor	This is associated with a state mandate to recycle 65% of construction and demolition debris.	
City of Santa Clara - Community Development Department - Building Division	Polychlorinated Biphenyls (PCBs) Assessment	Contractor	Required for demolition of older structures.	