DOWL

MEMORANDUM

TO: Corey Wall (Jensen Yorba Wall, Inc.)

FROM: LaQuita Chmielowski, P.E. (DOWL)
Cynthia Roe (DOWL)

DATE: May 12, 2023

SUBJECT: Traffic Impact Analysis for Aak'w Landing Development

BACKGROUND

This memorandum evaluates potential traffic impacts associated with the proposed Aak'w Landing multi-use development. The proposed development is located at the southwest corner of Egan Drive and Whittier Street on Lots C1, Juneau Subport, in Downtown Juneau, Alaska. The first two phases of the development will consist of underground bus and passenger vehicle parking garage with approximately 52,000 square feet of retail space and 11,000 square feet of high-turnover restaurant space. Land use for the third phase of development has not been finalized at this time, though for analysis purposes 20,000 square feet of retail space is assumed. Access to the development will be provided via a new driveway at the base level of the parking garage on Whittier Street. Opening year for the development is expected to be 2025. The proposed development site plan is included in the Appendix.

This study examines existing intersection operations in the study area, along with future operation in 2035 with and without the Aak'w Landing multi-use development.

EXISTING CONDITIONS

Existing conditions were analyzed in the study area including existing roadway characteristics, traffic volumes, intersection operations, and crash history.

Roadway Characteristics & Study Intersections

The proposed development is located on Lot C1; the majority of development traffic is expected to travel via Egan Drive. Figure 1 shows the study area and intersections of interest. Table 1 shows the existing traffic control at each study intersection, while Table 2 provides the functional classification, posted speed limit, and cross section for the roadways in the study area. The Egan Drive / 10th Street, Egan Drive / Whittier Street, and Egan Drive / Main Street intersections are signalized with protected permitted left-turn phasing, along with pedestrian-only phases for the east and west legs.

Table 1: Traffic Control at Study Intersections

Intersection	Traffic Control
Egan Drive & W 10th Street	Traffic Signal
Egan Drive & Glacier Avenue	None - Free Movement from Side Street onto Egan Drive
Egan Drive & Whittier Street	Traffic Signal
Egan Drive & Willoughby Avenue	None - Free Movement from Side Street onto Egan Drive
Willoughby Avenue & Whittier Street	Stop Controlled on Whittier Street and Warrior Street
Egan Drive & Main Street	Traffic Signal

Figure 1: Study Area Intersections Map

Table 2: Study Area Roadway Characteristics

Roadway	Functional Classification	Posted Speed (mph)	Number of Lanes	Pedestrian Facilities	Bike Facilities
Egan Drive	Principal Arterial	40 mph	4	Yes	No
W 10th Street	Major Collector	20 mph	2	Yes	Yes
Whittier Street	Major Collector	None Posted	2	Partial[1]	No
Willoughby Street	Major Collector	None Posted	2	Yes	No
Main Street	Major Collector	20 mph	2	Yes	No
Glacier Avenue	Minor Collector	20 mph	2	Yes	No

[1]Non-continuous sidewalks on the west side of Whittier Street

Existing Traffic Volumes

Existing traffic volumes were collected on Tuesday, March 21, 2023. Data was collected at the six existing study intersections using 16-hour turning movement counts (6:00 AM to 10:00 PM). In addition, a 24-hour CountCAM station on Egan Drive collected traffic speed data. The AM peak hour of traffic was identified as 7:30 – 8:30 AM, while the PM peak hour was identified as 4:00 – 5:00 PM.

A seasonal adjustment factor (SAF) of 1.12 was applied to the traffic count data to represent typical traffic conditions. The SAF was calculated using data from the nearby Alaska Department of Transportation & Public Facilities (DOT&PF) permanent count station located on Egan Drive, northwest of Glacier Highway Access Road.[1] Figure 2 shows the seasonally adjusted existing AM and PM peak hour turning movement volumes at the study intersections.

[1] Data from https://alaskatrafficdata.drakewell.com

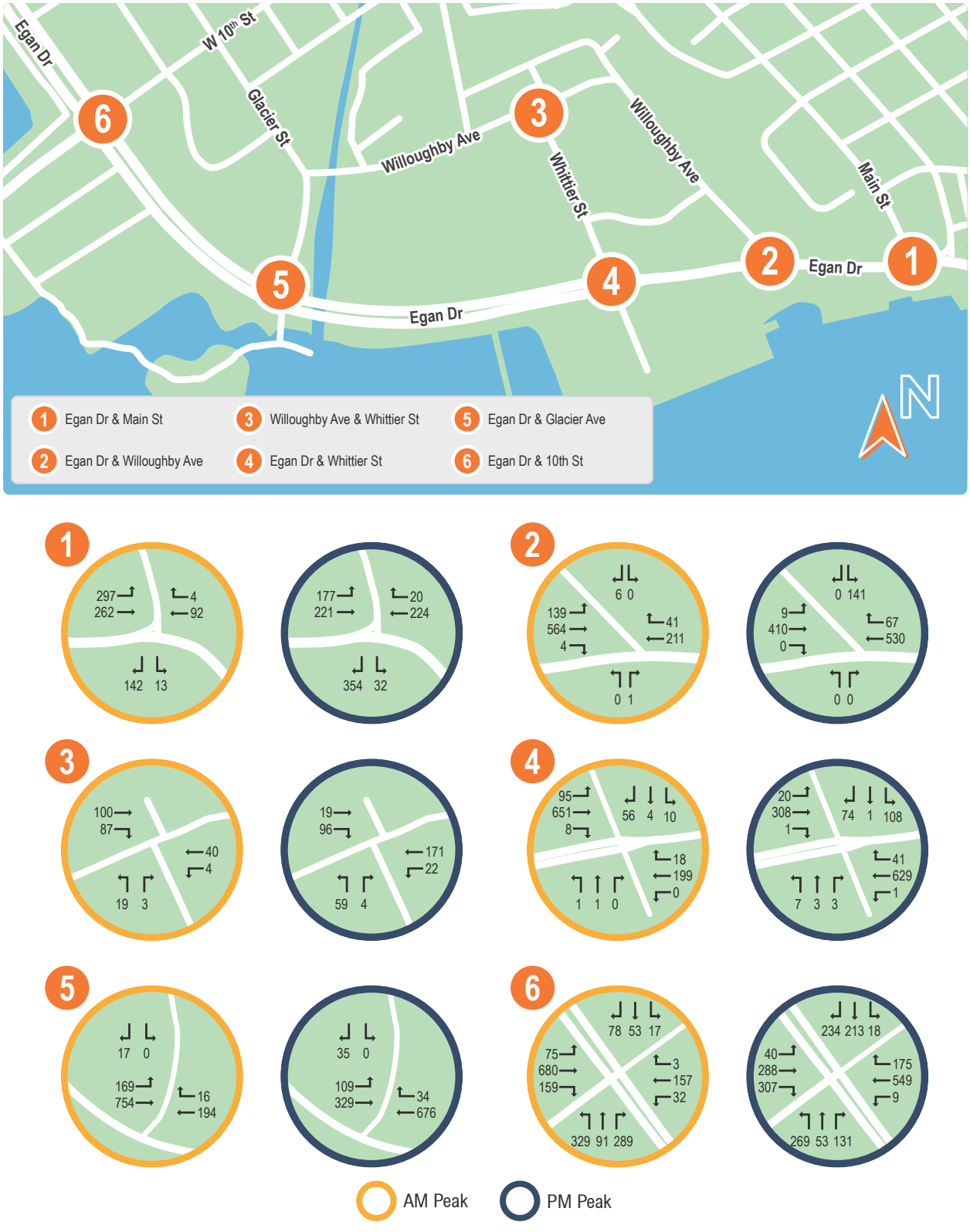


Figure 2: Existing AM and PM Peak Hour Traffic Volumes

Mobility Standards

Traffic operations were modeled in Synchro/SimTraffic version 11. Synchro reports are provided in the Appendix. This study uses the Highway Capacity Manual 6th edition (HCM)[2] methodology to calculate intersection level of service (LOS). The Alaska Administrative Code (AAC)[3] establishes a minimum LOS for the development's construction and design years. These code and policy documents state the following minimum acceptable LOS for the construction and design years:

- LOS C is acceptable if the existing conditions are LOS C or better
- LOS D is acceptable if the existing conditions are LOS D
- If the existing conditions are poorer than LOS D, a lower LOS is acceptable if the operation does not deteriorate more than ten percent (10%) in terms of delay time or any other appropriate measure of effectiveness compared with the background condition (i.e., without the development).

Existing Intersection Traffic Operations

Table 4 shows the existing delay and LOS at study intersections (reported using the 6th Edition HCM delay methodology). Overall intersection delay is reported at the signalized intersections, while delay is only reported for the critical movements (or highest delay approach) at stop-controlled intersections.

The only intersection operating at LOS C or worse is the Egan Drive / Whittier Street intersection which operates at LOS E with existing signal timing and turn movement configuration during the PM peak hour.

Table 3: Existing Conditions Traffic Operations

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay	Critical Movement	LOS	Delay	Critical Movement
Egan Drive & W 10th Street	C	25	—	B	17	—
Egan Drive & Glacier Avenue	A/A	9	SBR	A/B	12	SBR
Egan Drive & Whittier Street	A	7	—	**E**	**56**	**—**
Egan Drive & Willoughby Avenue	A/B	14	NBR	A/A	0	EBL
Willoughby Avenue & Whittier Street	A/B	10	NBL	A/B	12	NBL
Egan Drive & Main Street	A	5	—	A	6	—

[2] HCM 6th Edition: Highway Capacity Manual, Transportation Research Board, 2016.

[3] Section 17 Alaska Administrative Code 10.070, https://www.akleg.gov/basis/aac.asp#17.10.070

Crash History

Tables 5 and 6 show crash history for the study intersections for the seven most recent years of available crash data (January 1, 2015, to December 31, 2021). The Egan Drive and Whittier Street intersection had six crashes occur over this period. Table 5 shows the crash rate at each study intersection, along with the statewide crash rate (based on intersection traffic control and number of approaches). The statewide averages are based on data from 2008 to 2012 and represent the most recent data available.[4] All of the intersections have crash rates that are below the statewide average for intersection types. Table 6 shows the breakdown of crashes by crash type at the intersections.

Table 4: Total Crashes and Crash Rate by Intersection (2015 – 2021)

Intersection	Crash Rate [a]		Crash Severity			Total Crashes
	Intersection	Statewide Average	Fatal	Injury	PDO	
Egan Drive & W 10th Street	0.63	1.57	0	7	21	28
Egan Drive & Glacier Avenue	0.06	—	0	1	1	2
Egan Drive & Whittier Street	0.15	1.57	0	2	4	6
Egan Drive & Willoughby Street	0	—	0	0	0	0
Willoughby Avenue & Whittier Street	0	0.52	0	0	0	0

[a] Crash rate for intersections = Crashes per million entering vehicles (MEV).

Table 5: Crash Type by Intersection (2015 – 2021)

Intersection	Angle	Single Vehicle Run-off	Rear End	Sideswipe	Bicycle	Motorcycle
Egan Drive & W 10th Street	12	1	12	2	0	1
Egan Drive & Glacier Avenue	0	0	1	0	1	0
Egan Drive & Whittier Street	2	0	4	0	0	0
Egan Drive & Willoughby Avenue	0	0	0	0	0	0
Willoughby Avenue & Whittier Street	0	0	0	0	0	0

FUTURE CONDITIONS

2035 No-Build Traffic Operations

Figure 3 shows the expected AM and PM peak hour turning movement counts in 2035, without the proposed Aak'w Landing development. Future traffic volumes were generated using an annual growth rate of 2.0% per year. This growth rate was assumed based on prior experience then concurred by DOT&PF staff.[5] Table 7 shows the expected delay and LOS at study

[4] Alaska Highway Safety Improvement Program Handbook, Alaska DOT&PF, January 2017.

[5] Email from DOT&PF staff on March 28, 2023.

intersections in 2035, without the Aak'w Landing development. The Egan Drive / Whittier Street intersection continues to degrade and operates at LOS F with existing signal timing and turn movement configuration during the PM peak hour. All other intersections operate within an acceptable level for mobility standards.

Table 6: 2035 No-Build Traffic Operations

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay	Critical Movement	LOS	Delay	Critical Movement
Egan Drive & W 10th Street	C	26	—	C	22	—
Egan Drive & Glacier Avenue	A/B	10	SBR	A/B	14	SBR
Egan Drive & Whittier Street	B	17	—	**F**	**84**	**—**
Egan Drive & Willoughby Avenue	A/C	18	NBR	A/A	0	EBL
Willoughby Avenue & Whittier Street	A/B	11	NBL	A/C	15	NBL
Egan Drive & Main Street	A	5	—	A	7	—

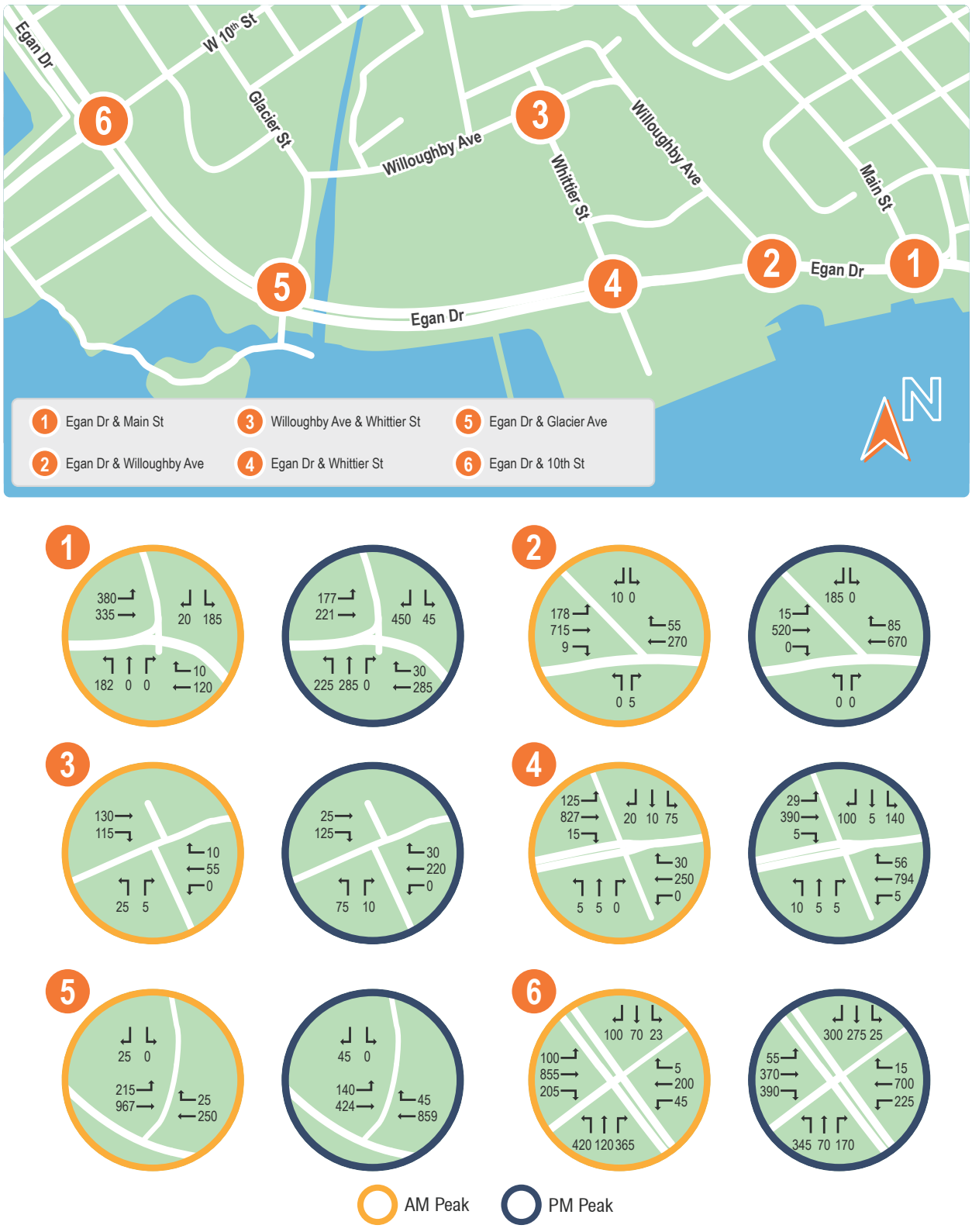


Figure 3: Future 2035 No-Build Traffic Volumes

Trip Generation

Trip generation rates for the proposed development are based on the data published in the *Institute of Transportation Engineers (ITE) Trip Generation Manual (Trip Generation Manual), 11th Edition* [6] and data provided by Jensen Yorba Wall (Client) related to expected cruise ship behavior. [7] Table 8 shows the size and type of unit expected at the development by land use code and development phase.[8] This information was used to calculate the expected number of vehicle trips during a typical weekday and the entering and exiting vehicle trips during the AM peak and PM peak hours as shown in Table 9.

Table 7: Development Land Use Types and Units

Development Phase	Description	ITE Code	Quantity	Units
1	Cruise Ship	-	1	Berth
1	Shopping Plaza (40-150k)	821	32	KSF
1	High-Turnover (Sit-Down Restaurant)	932	11	KSF
2	Shopping Plaza (40-150k)	821	20	KSF
3	Shopping Plaza (40-150k)	821	20	KSF

Table 9: Development Vehicle Trips

Development Phase	Description	Qty.	Daily		AM Peak Hour				PM Peak Hour			
			Rate	Total	Rate	Enter	Exit	Total	Rate	Enter	Exit	Total
1	Cruise Ship	1	-	188	-	45	45	90	-	45	45	90
1	Shopping Plaza (40-150k)	32	94.49	3024	3.53	57	56	113	9.03	139	150	289
1	High-Turnover (Sit-Down Restaurant)	11	107.2	1179	9.57	53	52	105	9.05	61	39	100
2	Shopping Plaza (40-150k)	20	94.49	1890	3.53	36	35	71	9.03	87	94	181
3	Shopping Plaza (40-150k)	20	94.49	1890	3.53	36	35	71	9.03	87	94	181

Due to the high number of passengers associated with cruise ships in addition to the planned volume of scheduled vehicle trips, all development trips were converted to their person trip equivalent before conducting an internal trip capture analysis using the *ITE Trip Generation Handbook*. [9] For land uses similar to the development site the *Trip Generation Handbook* provides vehicle occupancy rates ranging from 1.13 to 1.69. Given the multiple land uses associated with the development site and cruise ship passengers' dependency on ride-share options to leave the site a conservative vehicle occupancy rate of 1.2 was used to estimate the

[6] *ITE Trip Generation Manual*, 11th Edition, Institute of Transportation Engineers, September 2021.

[7] Due to a lack of data related to recreational port land use in the *ITE Trip Generation Manual* data provided by the Client was used. Email from Jensen Yorba Wall, April 25, 2023.

[8] Estimated from concept drawing provided by Jensen Yorba Wall, Concept Drawings Email January 6,2023

[9] *ITE Trip Generation Handbook*, 3rd Edition, Institute of Transportation Engineers, September 2017.

number of people per vehicle trip. With guidance from the National Cooperative Highway Research Program (NCHRP) Report 684[10] and Client provided data[11] for known development trips being added to the system (e.g., busses for tours) the total number of person trips, internal person trips, and external person trips were estimated. Table 9 shows the total person trips less the number of internal trips and walking trips associated with cruise ship passengers resulting in the total external trips generated by the development.

Table 8: Peak Hour Development Trips

Vehicle Trip Inventory	AM Peak Hour			PM Peak Hour		
	Enter	Exit	Total	Enter	Exit	Total
All Person Trips – All Phases	413	408	821	846	851	1,697
Less Internal Trip Capture	-50	-50	-100	-202	-202	-404
Person Trips Subtotal - All Phases	363	358	721	644	649	1,293
Less Cruise Ship Passengers	-189	-180	-369	-284	-350	-634
Off-Site Person Trips (W/O Cruise Ship Passengers)	174	178	352	360	299	659
Off-Site Vehicle Trips (W/O Cruise Ship)	145	149	294	300	250	550
Off-Site Cruise Ship Trips	45	45	90	45	45	90
Total External Vehicle Trips	**190**	**194**	**384**	**345**	**295**	**640**

The development is expected to add 384 AM peak hour and 640 PM peak hour trips to the transportation network.

Trip Distribution

Trip distribution involves estimating where traffic is coming from and going to when accessing the development. The trip distribution was established based on PM peak hour volumes on Egan Drive and adjusted based on Client provided data and concurrence with DOT&PF staff. [12] Development traffic was distributed using the following assumptions for trip origins and destinations:

- 60% to/from Egan Drive from the West
- 30% to/from Egan Drive from the East
- 10% to/from Egan Drive from the North

Figure 4 shows the expected development-related traffic expected at study intersections during the AM and PM peak hours.

[10] *NCHRP Report 684: Enhancing Internal Trip Capture Estimation for Mixed-Use Developments*, Transportation Research Board, 2011.

[11] Email from Jensen Yorba Wall, April 25, 2023. A follow up call with Jensen Yorba Wall confirmed 15% of daily person trips occur in the AM and PM peak hours.

[12] Email from DOT&PF staff on May 5, 2023.

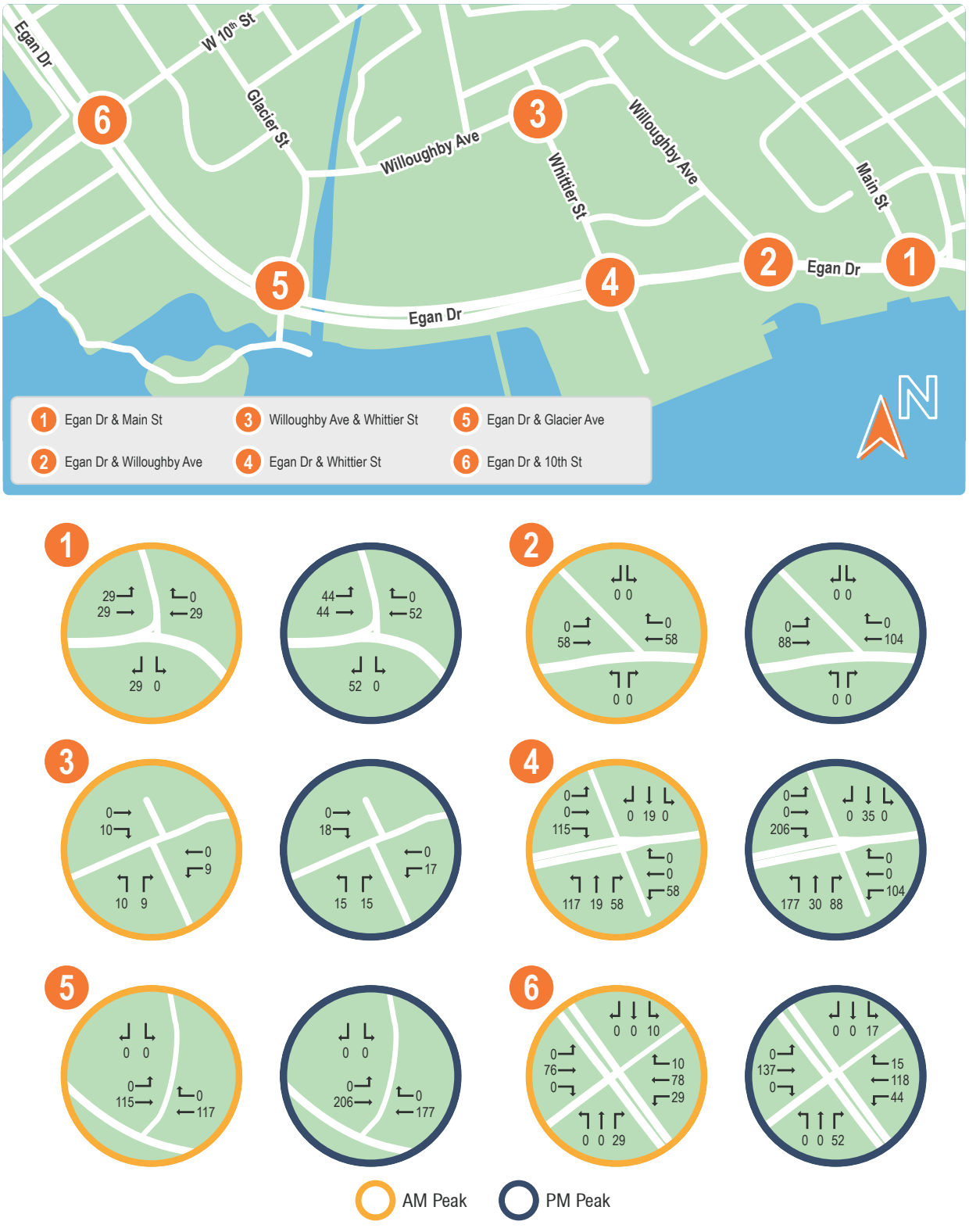


Figure 4: Added Development Traffic Volumes

2035 Traffic Operations with Development

2035 Future Baseline

Figure 5 shows the total traffic expected at study intersections in 2035, with the development. Table 10 shows the expected traffic operations at each study intersection under existing signal timing and turn movement configuration conditions. These conditions result in LOS F at the Egan Drive / Whittier Street intersection during the PM peak hour and LOS D at the Egan Drive / 10th Street intersection during the AM peak hour. All other intersections operate within an acceptable level for mobility standards.

Table 10: 2035 Traffic Operations with Development

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay	Critical Movement	LOS	Delay	Critical Movement
Egan Drive & W 10th Street	**D**	**40**	**—**	C	25	—
Egan Drive & Glacier Avenue	A/B	10	SBR	A/C	16	SBR
Egan Drive & Whittier Street	**F**	**95**	**—**	**F**	**239**	**—**
Egan Drive & Willoughby Avenue	A/C	18	NB	A/A	0	EBL
Willoughby Avenue & Whittier Street	A/B	11	NB	A/C	15	NBL
Egan Drive & Main Street	A	5	—	A	7	—

As required by AAC, mitigation is required due to unacceptable levels of operation (LOS D or worse) at the Egan Drive / Whittier Street and Egan Drive / W 10th Street intersections under baseline operation conditions. Although the Egan Drive / Whittier Street intersection experienced LOS F before adding development traffic, the left-turn traffic volumes for the north and southbound legs of the intersection significantly increase delay at the intersection during the AM and PM peak hours. Similarly, left-turn traffic volume from Egan Drive onto W 10th Street increases delay at the intersection during the AM peak hour.

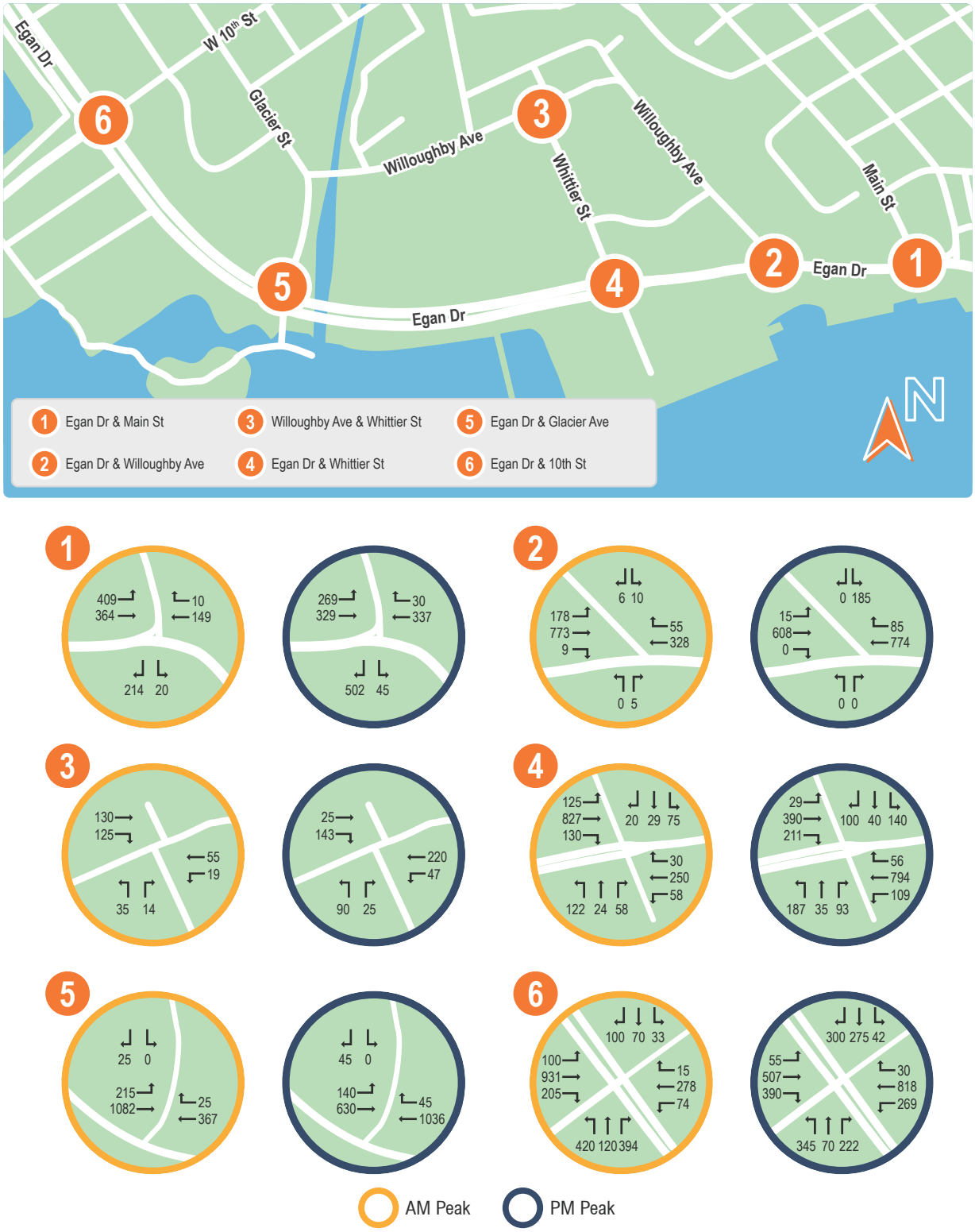


Figure 5: Future 2035 Build Volumes

2035 Future Alternative

Based upon the needs shown in the 2035 Future Baseline scenario, the following improvements to Egan Drive intersections were included in the 2035 Future Alternative:

- Re-striping of the north and south legs of the Egan Drive / Whittier Street intersection to include a single left-turn lane and a single shared through-right-turn lane
- Update and optimize maximum green times at the Egan Drive / 10th Street and Egan Drive / Whittier Street intersections to allow 120 second maximum cycle length.

With these changes, as shown in Table 11, all intersections now operating within an acceptable LOS.

Table 11: 2035 Traffic Operations with Development (With Mitigation)

Intersection	AM Peak Hour			PM Peak Hour		
	LOS	Delay	Critical Movement	LOS	Delay	Critical Movement
Egan Drive & W 10th Street	C	26	—	C	30	—
Egan Drive & Glacier Avenue	A/B	10	SBR	A/C	16	SBR
Egan Drive & Whittier Street	B	17	—	C	30	—
Egan Drive & Willoughby Avenue	A/C	18	NBR	A/B	11	EBL
Willoughby Avenue & Whittier Street	A/B	11	NBL	A/C	15	NBL
Egan Drive & Main Street	A	5	—	A	7	—

CONCLUSIONS

The proposed Aak'w Landing development is a three-phase multi-use development opening in Downtown Juneau during the year 2025. The first two phases of the development will consist of underground bus and passenger vehicle parking garage with approximately 52,000 square feet of retail space and 11,000 square feet of high-turnover restaurant space. Land use for the third phase of development has not been finalized at this time, though is assumed 20,000 square feet of retail space will be constructed. Access to the development will be provided via a new driveway at the base level of the parking garage on Whittier Street. The proposed development as currently planned will add approximately 83,000 square feet of multi-use space off Egan Drive, generating 384 trips in the AM and 640 trips in the PM peak hours. During the evaluation of the development, operational concerns led to the following mitigation requirements:

- **Egan Drive / W 10th Street Intersection**
  - Update and optimize maximum green times at the Egan Drive / 10th Street and Egan Drive / Whittier Street intersections to allow 120 second maximum cycle length.
- **Egan Drive / Whittier Street Intersection**
  - Re-striping of the north and south legs of the Egan Drive / Whittier Street intersection to include a single left-turn lane and a single shared through-right-turn lane
  - Update and optimize maximum green times at the Egan Drive / 10th Street and Egan Drive / Whittier Street intersections to allow 120 second maximum cycle length.

Appendix

Site Information

HCM Analysis – Existing

HCM Analysis –No-Build

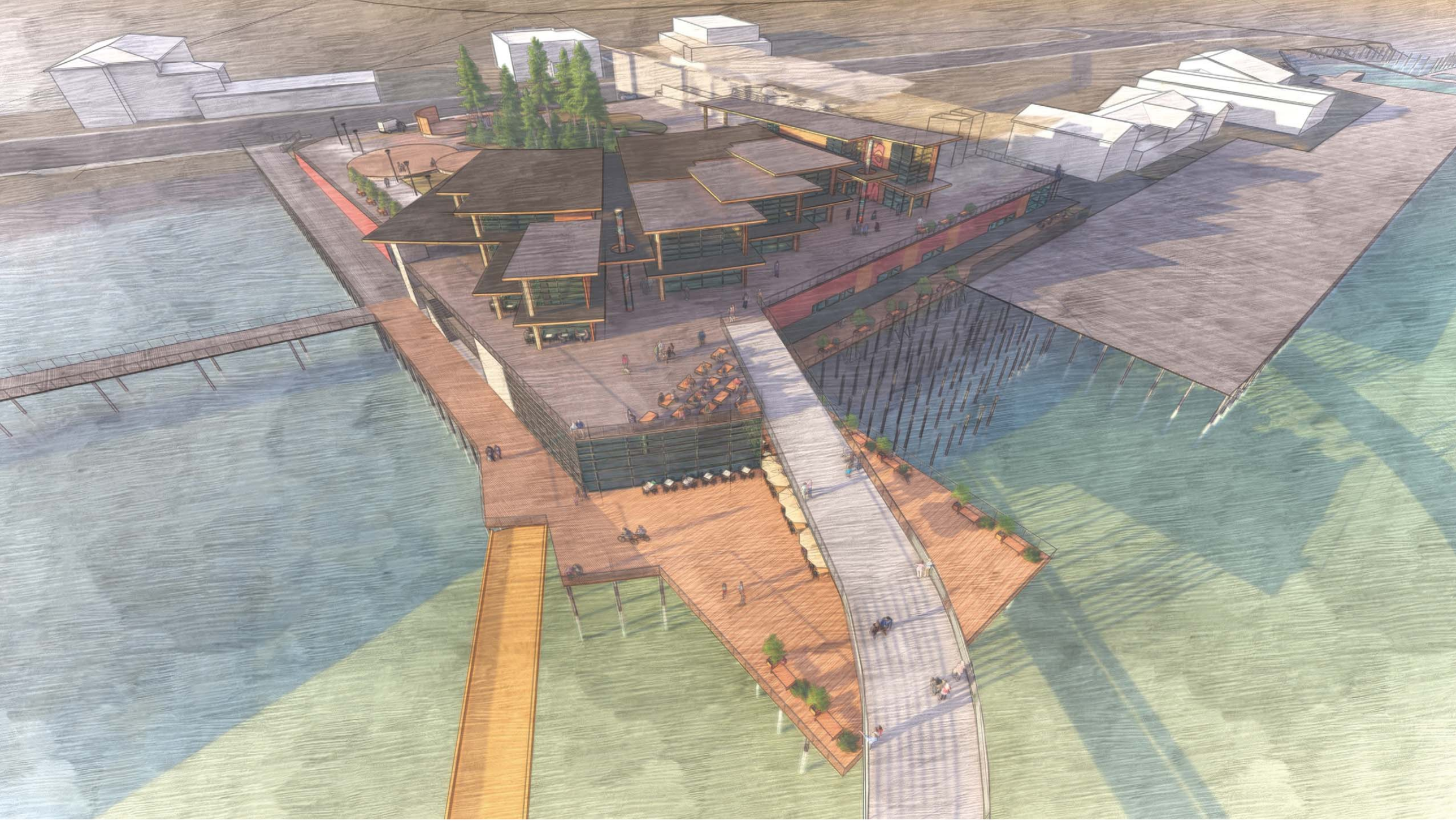
HCM Analysis – Build

Site Information

Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Overhead View



Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Aerial View from Southwest

Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

View from Southwest
Pedestrain Skybridge to right
Service Gangway below to left

Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Skybridge

Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Upper Plaza from South
Welcome Center to right
Phase 2 Retail to left

Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Upper Plaza from Southeast
Welcome Center to left
Phase 2 Retail ahead
Future Phase Development beyond

Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

South Seawalk from Whittier St.
Seawalk-Level Retail
Future Phase Development above

Aak'w Landing
Huna Totem Corporation

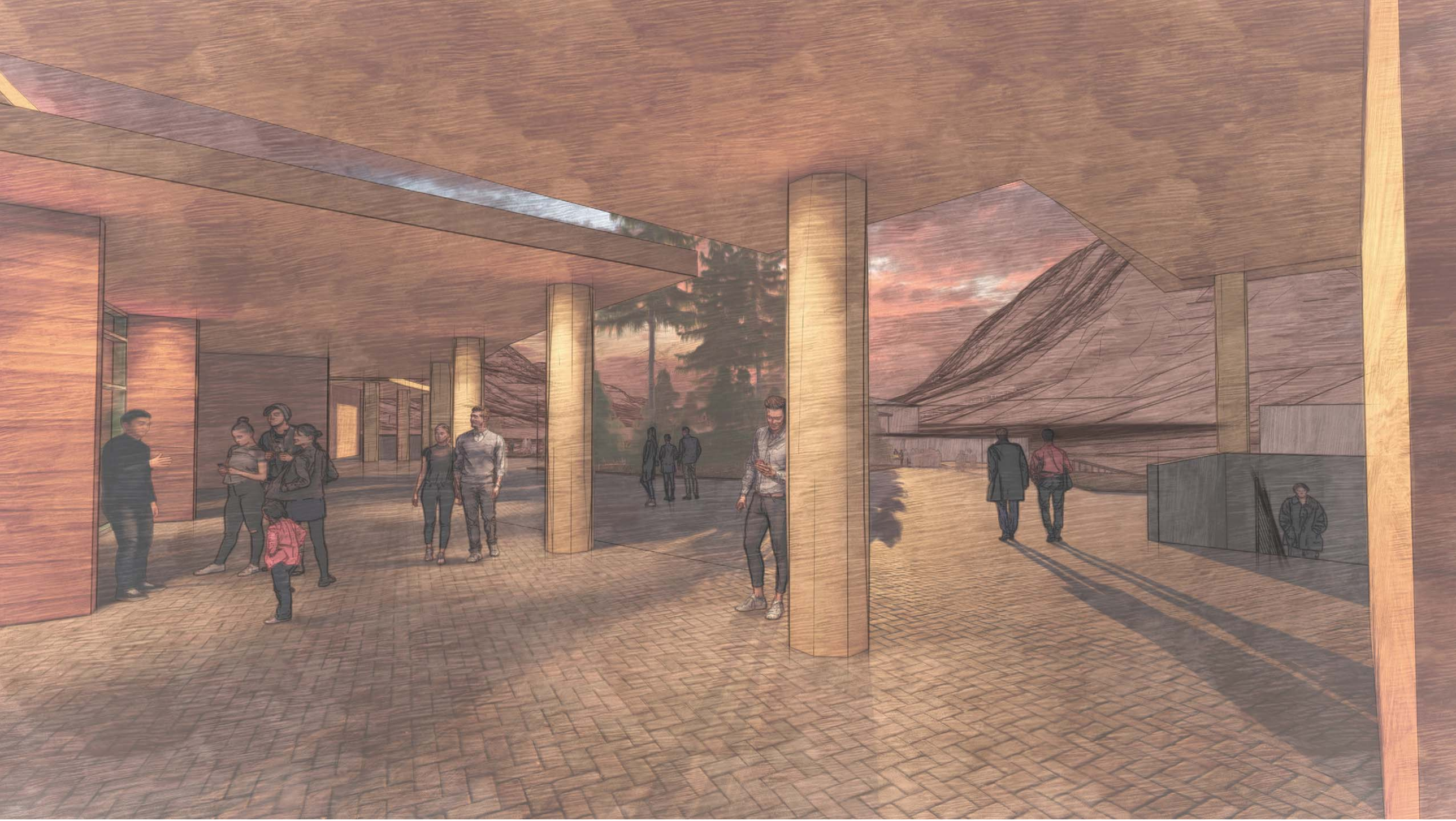
Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

South Seawalk

Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Seawalk Deck
Seawalk-Level Retail / Dining
Skybridge above



Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Top of Park
Welcome Center to left
Stairs / Escalators to Tour Arrival/Departure ahead

Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Tour Arrival / Departure Area

Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Lower Park

Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Park
Welcome Center beyond to left

Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Upper Plaza fromWest
Phase 2 Retail / Dining to left

Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Upper Plaza fromWest
Phase 2 Retail / Dining to left

Aak'w Landing

Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

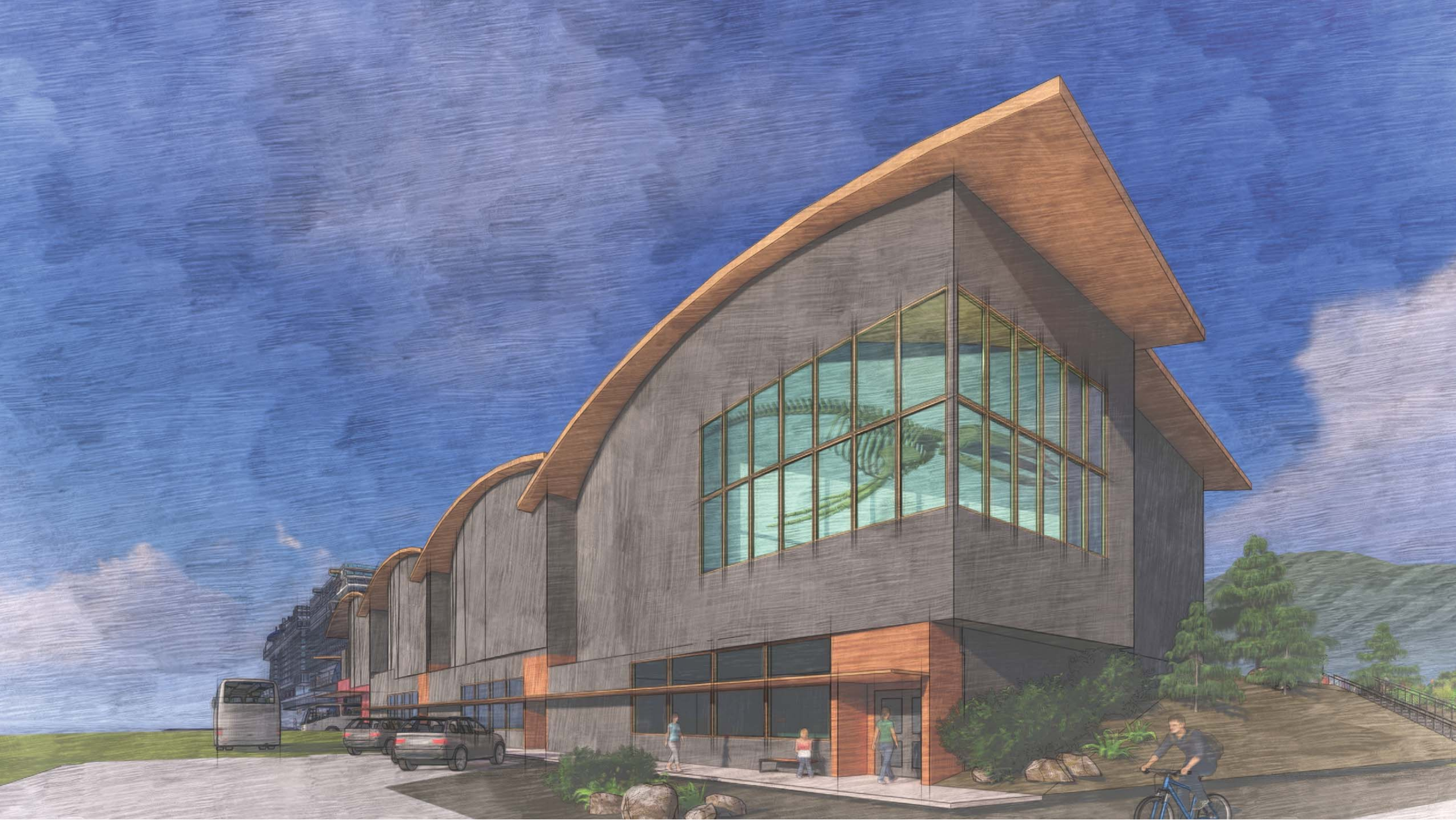
Corner of Egan and Whittier

Whittier-Level Retail

Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Corner of Egan and Whittier
Future Phase Development Option - Housing



Aak'w Landing
Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Corner of Egan and Whittier
Future Phase Development Option - Cultural / Museum

Aak'w Landing

Huna Totem Corporation

Jensen Yorba Wall, Inc. Conditional Use Concept January 6, 2023

Corner of Egan and Whittier

Future Phase Development Option - Assembly / Conference

Aak'w Landing

Huna Totem Corporation
Conditional Use Concept
November 22, 2022

Existing Site Plan

N

20' 40'

Jensen Yorba Wall Inc.

C2 Parcel

USCG

Whittier Street

355.75'

USCG Dock

Egan Drive

311.17'

220.00'

Lot 2C USS 3566

C1 Parcel
125,337 sf
2.88 Acres

Lot 7 USS 3566

ATS 3

99.73'

79.99'

Floating Dock

523.84'

CBJ Tidelands Property
Lot 1A

25' 20' 15'

10'

Aak'w Landing

Huna Totem Corporation
Conditional Use Concept
November 22, 2022

Seawalk Level & Site Plan

with bus parking

N
20' 40'

Jensen Yorba Wall Inc.

Whittier Street

Egan Drive

Commercial Entry

Car Entry

USCG Dock

Retail
(4,700 sf)

u

slope

Circulator

Bus & Van Loading

u

Service

Car Parking
(two levels)

u

Seawalk

Coach Loading

u

ramp up

slope

Retail
(13,300sf)

Dock SkyBridge Above

Deck
(outdoor dining)

u
u

Seawalk

CBJ Tidelands Property

Dock

Aak'w Landing

Huna Totem Corporation
Conditional Use Concept
November 22, 2022

Seawalk Level & Site Plan

with off-season parking

N

20' 40'

Jensen Yorba Wall Inc.

Whittier Street

Egan Drive

USCG Dock

Car Entry

Car Entry

Retail (4,700 sf)

u

Service

slope

u

Car Parking (two levels)

u

Seawalk

ramp up

u

Retail (13,300sf)

Dock SkyBridge Above

Deck (outdoor dining)

slope

u

u

Seawalk

CBJ Tidelands Property

Dock

Aak'w Landing

Huna Totem Corporation
Conditional Use Concept
November 22, 2022

Upper Plaza Level

N
20' 40'

Jensen Yorba Wall Inc.

Whittier Street

Egan Drive

USCG Dock

Phase 3
Use To Be Determined
(20,000 sf @ this level
20,000 sf @ level above)

Plaza

Phase 2
Add'l Retail

Phase 1
Retail - Welcome Center
(7,500sf @ this level)

Seawalk Below

Perform

Perform

Phase 2
Additional Retail
(14,000sf total @ this level
10,000 sf @ level above)

Park

Skywalk Bridge

Plaza

Deck
Below

slope

Seawalk Below

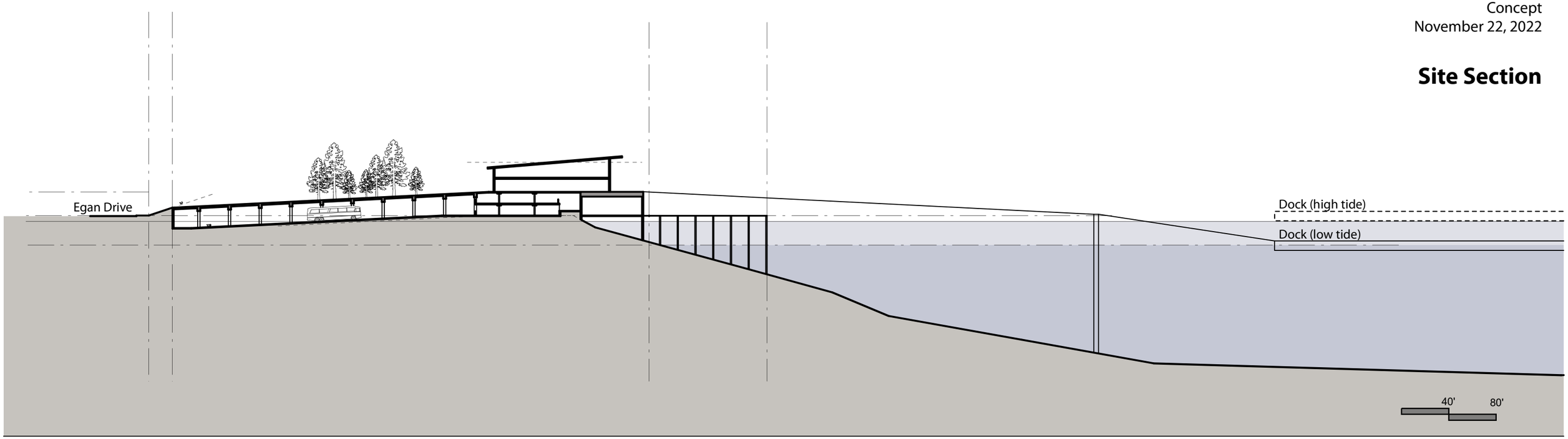
CBJ Tidelands Property

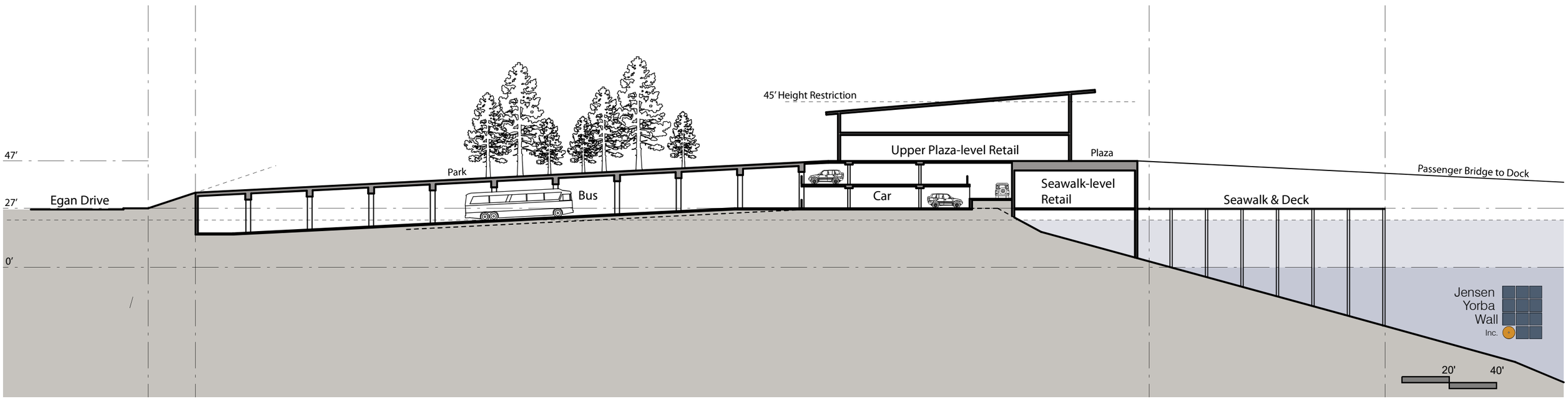
d

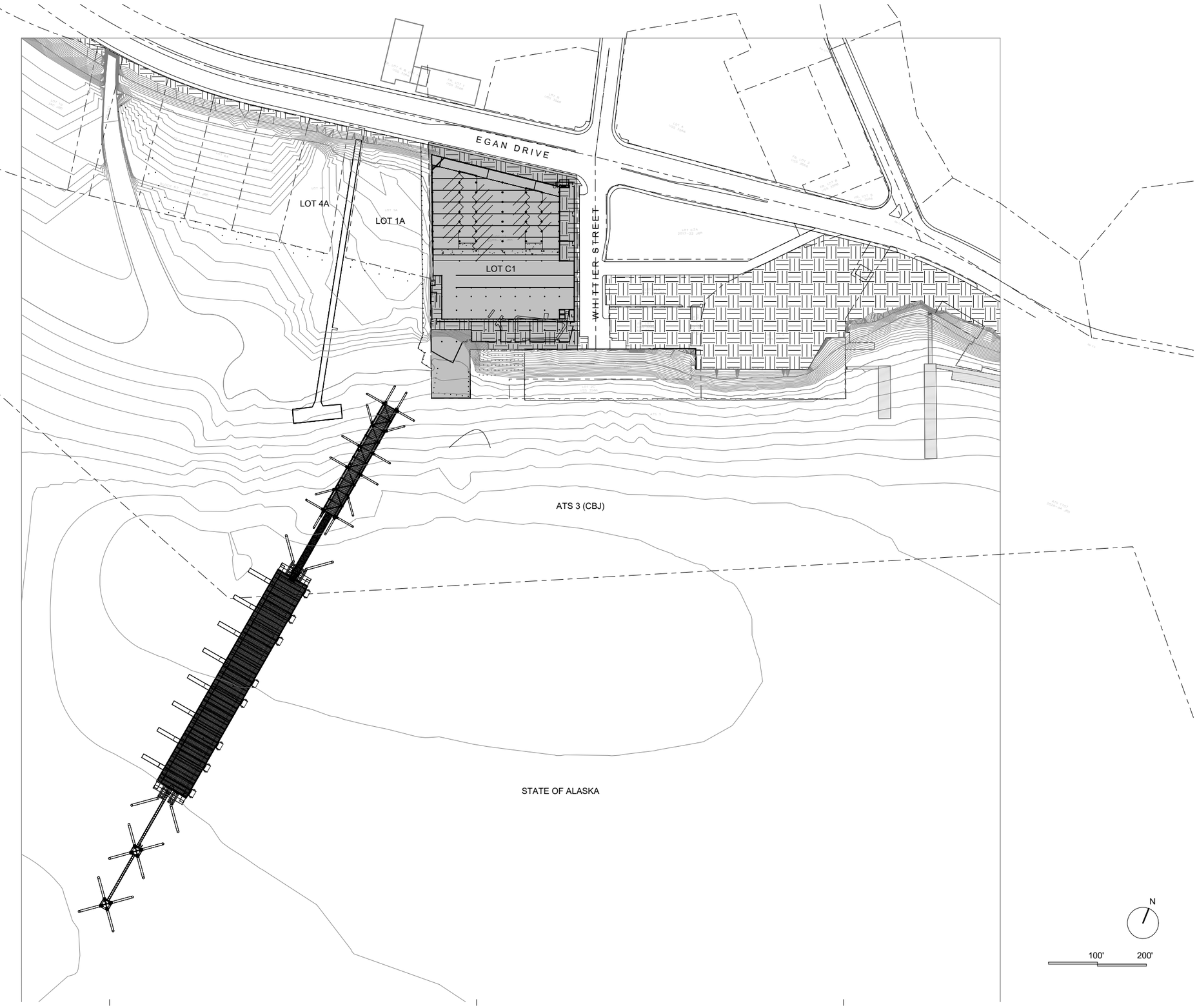
Aak'w Landing

Huna Totem Corporation Conditional Use
Concept
November 22, 2022

Site Section







Jensen Yorba Wall Inc.
522 West 10th Steet
Juneau, Alaska 99801
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AECC137
jensenyorbawall.com

Huna Totem Corporation

Aak'w Landing

Conceptual Design

REVISIONS

SHEET TITLE

Property Location

DATE: 1.3.2023

FILE: 21022

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1/3/2023 12:28:18 PM G:_Projects\21022\CAD\7 Revised Concept\21022 Aak'w Landing - R22.rvt

Jensen Yorba Wall Inc.
522 West 10th Street, Juneau, Alaska 99801 907.586.1070 jensenyorbawall.com

Designing Community Since 1935

Aak'w Landing Estimates for Traffic Impact Analysis
4.19.2023

TRAFFIC
Busses (Coaches):

- 30 arrivals and departures daily.
- Staggered, with 10-15 coaches leaving per hour in the morning and then 10-15 arriving per hour in the afternoon.
- A maximum of 3 busses leaving at the same time.
- An average of 60 people per coach, for a total of 1800 people per day.
- All of this traffic would turn left onto Egan to go to/from the glacier and Auke Bay.

Private Operators

- 30 arrivals and departures daily
- A mix of smaller school busses and vans. 20 school busses and 10 vans.
- Staggered, with 5-10 busses and 4-6 vans per hour departing in the morning and then returning in the afternoon.
- A maximum of 2 busses and two vans leaving at the same time.
- An average of 30 people per school bus and 15 per van for a total of 750 people per day.
- 75% of this traffic would go left on Egan and 25% would go right towards downtown/Thane.

Taxis

- 30 arrivals and departures daily.
- Spread throughout the day, so 10 departures per hour in the morning, 10 arrivals per hour in the afternoon.
- An average of 5 people per taxi for a total of 150 people per day.
- Half of this traffic would go left on Egan and half would go right towards downtown/Thane.

Downtown Circulator

- 4 arrivals/departures per hour throughout the day.
- An average of 15 people per trip, so 60 per hour or around 300 per day.
- All of this traffic would turn right on Egan towards downtown.

Pedestrian Traffic

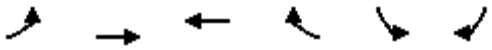
- The above vehicle totals accommodate 2,700 people per day. The remaining passengers, along with significant number (50%) of those that do a coach or bus tour will also walk off the site.
- 3,000 pedestrians walk off and back to the site each day.
- Staggered throughout the day, so an average of 600 pedestrians trips to or from the site per hour.
- 70% of the pedestrians walk right down Egan or the Seawalk towards downtown, 20% walk straight down Whittier to the State Museum, and 10% walk left along Egan towards Whale Park.

SITE USE

The site will primarily be used by cruise ship passengers when ships are docked, not by locals visiting the site in personal vehicles. The Welcome Center will be entirely used by cruise ship passengers with no private vehicles except those used by staff. Other shops and restaurants will be a mix—50% locals and 50% cruise ship passengers.

- 10,000 sf Welcome Center
- 11,000 sf Restaurants and Coffee Shops
- 22,000 sf Retail
- 20,000 sf future Retail
- 20,000 sf Museum / Cultural Center space

HCM Analysis – Existing



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	297	262	92	4	13	142
Future Volume (veh/h)	297	262	92	4	13	142
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	1841	1707	1618	1900	1900
Adj Flow Rate, veh/h	362	320	112	5	16	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	4	13	19	0	0
Cap, veh/h	940	1230	544	24	38	
Arrive On Green	0.18	0.67	0.34	0.34	0.02	0.00
Sat Flow, veh/h	1810	1841	1622	72	1810	1610
Grp Volume(v), veh/h	362	320	0	117	16	0
Grp Sat Flow(s),veh/h/ln	1810	1841	0	1694	1810	1610
Q Serve(g_s), s	3.6	2.1	0.0	1.5	0.3	0.0
Cycle Q Clear(g_c), s	3.6	2.1	0.0	1.5	0.3	0.0
Prop In Lane	1.00			0.04	1.00	1.00
Lane Grp Cap(c), veh/h	940	1230	0	569	38	
V/C Ratio(X)	0.38	0.26	0.00	0.21	0.42	
Avail Cap(c_a), veh/h	1247	1570	0	1995	1090	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.4	2.0	0.0	7.1	14.5	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.1	2.8	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	0.3	0.0	0.0	0.3	0.1	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.5	2.0	0.0	7.2	17.3	0.0
LnGrp LOS	A	A	A	A	B	
Approach Vol, veh/h		682	117		16	
Approach Delay, s/veh		3.3	7.2		17.3	
Approach LOS		A	A		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.9	14.8		5.1		24.8
Change Period (Y+Rc), s	4.5	* 4.8		4.5		* 4.8
Max Green Setting (Gmax), s	10.5	* 35		18.0		* 26
Max Q Clear Time (g_c+I1), s	5.6	3.5		2.3		4.1
Green Ext Time (p_c), s	0.1	0.1		0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	4.2
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	139	564	4	0	211	41	0	0	1	0	0	6
Future Vol, veh/h	139	564	4	0	211	41	0	0	1	0	0	6
Conflicting Peds, #/hr	10	0	19	19	0	10	0	0	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	0	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	92	80	80	92	92	92
Heavy Vehicles, %	0	0	10	0	19	0	2	12	0	2	2	2
Mvmt Flow	174	705	5	0	264	51	0	0	1	0	0	7

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	325	0	0	729	0	0	1365	1400	730
Stage 1	-	-	-	-	-	-	1075	1075	-
Stage 2	-	-	-	-	-	-	290	325	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.42	6.62	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.62	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4.108	3.3
Pot Cap-1 Maneuver	1246	-	-	884	-	-	162	134	426
Stage 1	-	-	-	-	-	-	328	284	-
Stage 2	-	-	-	-	-	-	759	632	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1246	-	-	868	-	-	137	0	417
Mov Cap-2 Maneuver	-	-	-	-	-	-	137	0	-
Stage 1	-	-	-	-	-	-	277	0	-
Stage 2	-	-	-	-	-	-	759	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.6	0	13.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	417	1246	-	-	868	-	-
HCM Lane V/C Ratio	0.003	0.139	-	-	-	-	-
HCM Control Delay (s)	13.7	8.4	-	-	0	-	-
HCM Lane LOS	B	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0	0.5	-	-	0	-	-

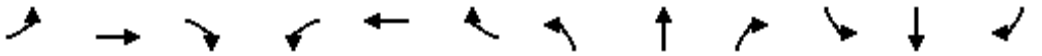
Intersection	
Int Delay, s/veh	1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	100	87	4	40	19	3
Future Vol, veh/h	100	87	4	40	19	3
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	0	0	11	0	0
Mvmt Flow	137	119	5	55	26	4

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	258	0	264	199
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	65	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1318	-	729	847
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	963	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1315	-	725	845
Mov Cap-2 Maneuver	-	-	-	-	725	-
Stage 1	-	-	-	-	837	-
Stage 2	-	-	-	-	959	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	739	-	-	1315	-
HCM Lane V/C Ratio	0.041	-	-	0.004	-
HCM Control Delay (s)	10.1	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	95	651	8	0	199	18	1	1	0	56	4	10
Future Volume (veh/h)	95	651	8	0	199	18	1	1	0	56	4	10
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.98		1.00	0.98		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1707	1900	1900	1900	1900	1900	1900	1796
Adj Flow Rate, veh/h	119	814	10	0	249	22	1	1	0	70	5	12
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	0	2	0	0	13	0	0	0	0	0	0	7
Cap, veh/h	870	2755	34	551	1969	173	108	89	163	221	13	151
Arrive On Green	0.05	0.77	0.77	0.00	0.65	0.65	0.10	0.10	0.00	0.10	0.10	0.10
Sat Flow, veh/h	1810	3595	44	1810	3017	264	491	884	1610	1444	132	1491
Grp Volume(v), veh/h	119	402	422	0	133	138	2	0	0	75	0	12
Grp Sat Flow(s),veh/h/ln	1810	1777	1862	1810	1622	1659	1376	0	1610	1576	0	1491
Q Serve(g_s), s	1.9	6.3	6.3	0.0	2.9	2.9	0.0	0.0	0.0	0.0	0.0	0.7
Cycle Q Clear(g_c), s	1.9	6.3	6.3	0.0	2.9	2.9	3.6	0.0	0.0	3.6	0.0	0.7
Prop In Lane	1.00		0.02	1.00		0.16	0.50		1.00	0.93		1.00
Lane Grp Cap(c), veh/h	870	1362	1427	551	1059	1083	198	0	163	235	0	151
V/C Ratio(X)	0.14	0.30	0.30	0.00	0.13	0.13	0.01	0.00	0.00	0.32	0.00	0.08
Avail Cap(c_a), veh/h	960	1362	1427	732	1059	1083	560	0	525	559	0	486
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	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	4.4	3.2	3.2	0.0	6.0	6.1	37.2	0.0	0.0	38.8	0.0	37.5
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	0.2	0.2	0.0	0.0	0.0	0.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	1.4	1.5	0.0	0.9	0.9	0.0	0.0	0.0	1.6	0.0	0.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	4.4	3.3	3.3	0.0	6.3	6.3	37.2	0.0	0.0	39.1	0.0	37.6
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	D
Approach Vol, veh/h		943			271			2			87	
Approach Delay, s/veh		3.5			6.3			37.2			38.9	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.5	65.7		15.8	0.0	76.2		15.8				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.5	* 5.7	* 5.7		6.5				
Max Green Setting (Gmax), s	* 9.3	* 34		30.0	* 9.3	* 34		30.0				
Max Q Clear Time (g_c+I1), s	3.9	4.9		5.6	0.0	8.3		5.6				
Green Ext Time (p_c), s	0.0	0.6		0.1	0.0	1.9		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	6.5
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

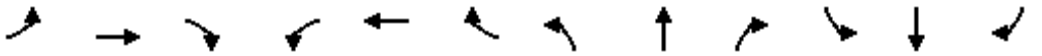
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	169	754	194	16	0	17
Future Vol, veh/h	169	754	194	16	0	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	200	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	92	92
Heavy Vehicles, %	4	2	15	33	2	2
Mvmt Flow	217	967	249	21	0	18

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	270	0	-	0	-	135
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	-	-	3.32
Pot Cap-1 Maneuver	1276	-	-	-	0	889
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1276	-	-	-	-	889
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	9.1
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1276	-	-	-	889
HCM Lane V/C Ratio	0.17	-	-	-	0.021
HCM Control Delay (s)	8.4	-	-	-	9.1
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.6	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	75	680	159	17	53	78	32	157	3	75	680	159
Future Volume (veh/h)	75	680	159	17	53	78	32	157	3	75	680	159
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	82	739	0	18	70	103	35	171	3	82	739	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.76	0.76	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0	2	2	2	2	2	2
Cap, veh/h	196	835		93	319	719	202	812	14	431	885	
Arrive On Green	0.45	0.45	0.00	0.45	0.45	0.45	0.03	0.23	0.23	0.05	0.25	0.00
Sat Flow, veh/h	1212	1870	1585	56	715	1610	1781	3573	63	1781	3554	1585
Grp Volume(v), veh/h	82	739	0	88	0	103	35	85	89	82	739	0
Grp Sat Flow(s),veh/h/ln	1212	1870	1585	770	0	1610	1781	1777	1859	1781	1777	1585
Q Serve(g_s), s	4.3	23.1	0.0	1.0	0.0	2.4	0.9	2.5	2.5	2.2	12.6	0.0
Cycle Q Clear(g_c), s	28.4	23.1	0.0	24.1	0.0	2.4	0.9	2.5	2.5	2.2	12.6	0.0
Prop In Lane	1.00		1.00	0.20		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	196	835		412	0	719	202	404	422	431	885	
V/C Ratio(X)	0.42	0.89		0.21	0.00	0.14	0.17	0.21	0.21	0.19	0.84	
Avail Cap(c_a), veh/h	196	835		412	0	719	761	818	856	589	1002	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.7	16.2	0.0	12.3	0.0	10.5	18.3	20.0	20.0	17.5	22.7	0.0
Incr Delay (d2), s/veh	0.5	10.8	0.0	0.1	0.0	0.0	0.1	0.1	0.1	0.1	5.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.2	11.3	0.0	0.7	0.0	0.8	0.3	0.9	1.0	0.8	5.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.2	27.0	0.0	12.4	0.0	10.5	18.4	20.1	20.1	17.6	27.7	0.0
LnGrp LOS	C	C		B	A	B	B	C	C	B	C	
Approach Vol, veh/h		821			191			209			821	
Approach Delay, s/veh		27.3			11.4			19.8			26.7	
Approach LOS		C			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.3	20.5		35.0	6.9	21.9		35.0				
Change Period (Y+Rc), s	5.1	* 6		6.5	5.1	6.0		* 6.5				
Max Green Setting (Gmax), s	8.9	* 29		28.5	21.9	18.0		* 22				
Max Q Clear Time (g_c+I1), s	4.2	4.5		30.4	2.9	14.6		26.1				
Green Ext Time (p_c), s	0.0	0.7		0.0	0.0	1.3		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		24.8	
HCM 6th LOS		C	

Notes

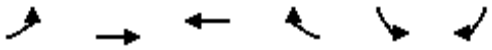
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

PM Peak Analysis



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	177	221	224	20	32	354
Future Volume (veh/h)	177	221	224	20	32	354
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	1841	1707	1618	1900	1900
Adj Flow Rate, veh/h	216	270	273	24	39	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	4	13	19	0	0
Cap, veh/h	700	1155	544	48	84	
Arrive On Green	0.12	0.63	0.35	0.35	0.05	0.00
Sat Flow, veh/h	1810	1841	1547	136	1810	1610
Grp Volume(v), veh/h	216	270	0	297	39	0
Grp Sat Flow(s),veh/h/ln	1810	1841	0	1683	1810	1610
Q Serve(g_s), s	2.1	1.8	0.0	4.0	0.6	0.0
Cycle Q Clear(g_c), s	2.1	1.8	0.0	4.0	0.6	0.0
Prop In Lane	1.00			0.08	1.00	1.00
Lane Grp Cap(c), veh/h	700	1155	0	592	84	
V/C Ratio(X)	0.31	0.23	0.00	0.50	0.46	
Avail Cap(c_a), veh/h	1152	1645	0	2076	1141	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.9	2.3	0.0	7.3	13.3	0.0
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.2	1.5	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	0.2	0.0	0.0	0.7	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.0	2.4	0.0	7.5	14.7	0.0
LnGrp LOS	A	A	A	A	B	
Approach Vol, veh/h		486	297		39	
Approach Delay, s/veh		3.5	7.5		14.7	
Approach LOS		A	A		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	7.9	14.8		5.8		22.7
Change Period (Y+Rc), s	4.5	* 4.8		4.5		* 4.8
Max Green Setting (Gmax), s	10.5	* 35		18.0		* 26
Max Q Clear Time (g_c+I1), s	4.1	6.0		2.6		3.8
Green Ext Time (p_c), s	0.1	0.1		0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	5.5
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	410	0	0	530	67	0	0	0	0	0	141
Future Vol, veh/h	9	410	0	0	530	67	0	0	0	0	0	141
Conflicting Peds, #/hr	10	0	19	19	0	10	0	0	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	0	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	92	80	80	92	92	92
Heavy Vehicles, %	0	0	10	0	19	0	2	12	0	2	2	2
Mvmt Flow	11	513	0	0	663	84	0	0	0	0	0	153

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	757	0	0	532	0	0	1259	1311	535
Stage 1	-	-	-	-	-	-	554	554	-
Stage 2	-	-	-	-	-	-	705	757	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.42	6.62	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.62	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4.108	3.3
Pot Cap-1 Maneuver	863	-	-	1046	-	-	188	152	549
Stage 1	-	-	-	-	-	-	575	498	-
Stage 2	-	-	-	-	-	-	490	401	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	863	-	-	1027	-	-	182	0	538
Mov Cap-2 Maneuver	-	-	-	-	-	-	182	0	-
Stage 1	-	-	-	-	-	-	557	0	-
Stage 2	-	-	-	-	-	-	490	0	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	-	863	-	-	1027	-	-
HCM Lane V/C Ratio	-	0.013	-	-	-	-	-
HCM Control Delay (s)	0	9.2	-	-	0	-	-
HCM Lane LOS	A	A	-	-	A	-	-
HCM 95th %tile Q(veh)	-	0	-	-	0	-	-

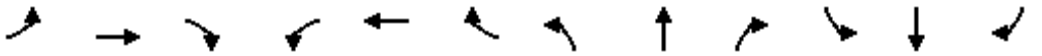
Intersection	
Int Delay, s/veh	2.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	19	96	22	171	59	4
Future Vol, veh/h	19	96	22	171	59	4
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	0	0	11	0	0
Mvmt Flow	26	132	30	234	81	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	160	0	388	94
Stage 1	-	-	-	-	94	-
Stage 2	-	-	-	-	294	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1432	-	619	968
Stage 1	-	-	-	-	935	-
Stage 2	-	-	-	-	761	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1429	-	603	966
Mov Cap-2 Maneuver	-	-	-	-	603	-
Stage 1	-	-	-	-	933	-
Stage 2	-	-	-	-	743	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	618	-	-	1429	-
HCM Lane V/C Ratio	0.14	-	-	0.021	-
HCM Control Delay (s)	11.8	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	308	1	1	629	41	7	3	3	108	1	74
Future Volume (veh/h)	20	308	1	1	629	41	7	3	3	108	1	74
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1707	1900	1900	1900	1900	1900	1900	1796
Adj Flow Rate, veh/h	25	385	1	1	786	51	9	4	4	135	1	92
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	0	2	0	0	13	0	0	0	0	0	0	7
Cap, veh/h	303	1738	5	502	1403	91	66	18	522	78	0	493
Arrive On Green	0.03	0.48	0.48	0.00	0.45	0.45	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1810	3636	9	1810	3092	201	0	56	1600	0	1	1512
Grp Volume(v), veh/h	25	188	198	1	412	425	13	0	4	136	0	92
Grp Sat Flow(s),veh/h/ln	1810	1777	1869	1810	1622	1670	56	0	1600	1	0	1512
Q Serve(g_s), s	0.7	5.7	5.7	0.0	17.1	17.1	0.0	0.0	0.2	0.0	0.0	4.0
Cycle Q Clear(g_c), s	0.7	5.7	5.7	0.0	17.1	17.1	30.0	0.0	0.2	30.0	0.0	4.0
Prop In Lane	1.00		0.01	1.00		0.12	0.69		1.00	0.99		1.00
Lane Grp Cap(c), veh/h	303	849	893	502	736	758	85	0	522	78	0	493
V/C Ratio(X)	0.08	0.22	0.22	0.00	0.56	0.56	0.15	0.00	0.01	1.74	0.00	0.19
Avail Cap(c_a), veh/h	440	849	893	682	736	758	85	0	522	78	0	493
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	14.3	14.0	14.0	12.7	18.4	18.4	25.6	0.0	20.9	45.9	0.0	22.2
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	3.1	3.0	0.3	0.0	0.0	379.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	2.1	2.2	0.0	6.5	6.7	0.2	0.0	0.1	10.0	0.0	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.3	14.1	14.1	12.7	21.5	21.4	26.0	0.0	20.9	425.1	0.0	22.3
LnGrp LOS	B	B	B	B	C	C	C	A	C	F	A	C
Approach Vol, veh/h		411			838			17			228	
Approach Delay, s/veh		14.1			21.4			24.8			262.6	
Approach LOS		B			C			C			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.1	47.4		36.5	5.8	49.7		36.5				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.5	* 5.7	* 5.7		6.5				
Max Green Setting (Gmax), s	* 9.3	* 34		30.0	* 9.3	* 34		30.0				
Max Q Clear Time (g_c+I1), s	2.7	19.1		32.0	2.0	7.7		32.0				
Green Ext Time (p_c), s	0.0	1.9		0.0	0.0	0.8		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	56.3
HCM 6th LOS	E

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

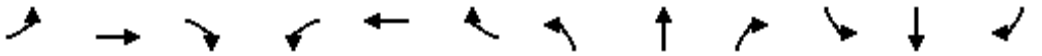
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	109	329	676	34	0	35
Future Vol, veh/h	109	329	676	34	0	35
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	200	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	92	92
Heavy Vehicles, %	4	2	15	33	2	2
Mvmt Flow	140	422	867	44	0	38

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	911	0	-	0	-	456
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	-	-	3.32
Pot Cap-1 Maneuver	731	-	-	-	0	551
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	731	-	-	-	-	551
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	2.8	0	12
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	731	-	-	-	551
HCM Lane V/C Ratio	0.191	-	-	-	0.069
HCM Control Delay (s)	11.1	-	-	-	12
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	0.7	-	-	-	0.2



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	269	53	131	18	213	234	175	549	9	40	288	307
Future Volume (veh/h)	269	53	131	18	213	234	175	549	9	40	288	307
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	333	0	0	20	280	308	190	597	10	43	313	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.76	0.76	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0	2	2	2	2	2	2
Cap, veh/h	677	0		91	667	586	458	960	16	298	671	
Arrive On Green	0.36	0.00	0.00	0.36	0.36	0.36	0.11	0.27	0.27	0.04	0.19	0.00
Sat Flow, veh/h	1656	0	1585	51	1833	1610	1781	3577	60	1781	3554	1585
Grp Volume(v), veh/h	333	0	0	300	0	308	190	296	311	43	313	0
Grp Sat Flow(s),veh/h/ln	828	0	1585	1884	0	1610	1781	1777	1860	1781	1777	1585
Q Serve(g_s), s	10.1	0.0	0.0	0.0	0.0	8.0	4.4	7.8	7.8	0.9	4.2	0.0
Cycle Q Clear(g_c), s	16.4	0.0	0.0	6.3	0.0	8.0	4.4	7.8	7.8	0.9	4.2	0.0
Prop In Lane	1.00		1.00	0.07		1.00	1.00		0.03	1.00		1.00
Lane Grp Cap(c), veh/h	677	0		758	0	586	458	477	499	298	671	
V/C Ratio(X)	0.49	0.00		0.40	0.00	0.53	0.41	0.62	0.62	0.14	0.47	
Avail Cap(c_a), veh/h	965	0		854	0	669	990	986	1032	534	1208	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	18.9	0.0	0.0	12.7	0.0	13.2	14.6	17.0	17.0	13.8	19.1	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.3	0.2	0.5	0.5	0.1	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	1.8	0.0	0.0	2.4	0.0	2.6	1.5	2.7	2.8	0.3	1.5	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.1	0.0	0.0	12.8	0.0	13.5	14.8	17.5	17.5	13.8	19.3	0.0
LnGrp LOS	B	A		B	A	B	B	B	B	B	B	
Approach Vol, veh/h		333			608			797			356	
Approach Delay, s/veh		19.1			13.2			16.9			18.6	
Approach LOS		B			B			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.0	20.2		25.8	11.2	16.0		25.8				
Change Period (Y+Rc), s	5.1	* 6		6.5	5.1	6.0		* 6.5				
Max Green Setting (Gmax), s	8.9	* 29		28.5	21.9	18.0		* 22				
Max Q Clear Time (g_c+I1), s	2.9	9.8		18.4	6.4	6.2		10.0				
Green Ext Time (p_c), s	0.0	2.6		0.9	0.1	1.1		0.6				

Intersection Summary		
HCM 6th Ctrl Delay		16.5
HCM 6th LOS		B

Notes

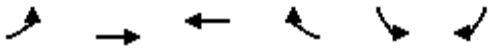
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

HCM Analysis – No-Build



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	380	335	120	10	20	185
Future Volume (veh/h)	380	335	120	10	20	185
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	1841	1707	1618	1900	1900
Adj Flow Rate, veh/h	463	409	146	12	24	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	4	13	19	0	0
Cap, veh/h	932	1248	490	40	54	
Arrive On Green	0.22	0.68	0.31	0.31	0.03	0.00
Sat Flow, veh/h	1810	1841	1556	128	1810	1610
Grp Volume(v), veh/h	463	409	0	158	24	0
Grp Sat Flow(s),veh/h/ln	1810	1841	0	1684	1810	1610
Q Serve(g_s), s	5.1	2.9	0.0	2.3	0.4	0.0
Cycle Q Clear(g_c), s	5.1	2.9	0.0	2.3	0.4	0.0
Prop In Lane	1.00			0.08	1.00	1.00
Lane Grp Cap(c), veh/h	932	1248	0	530	54	
V/C Ratio(X)	0.50	0.33	0.00	0.30	0.44	
Avail Cap(c_a), veh/h	1126	1473	0	1860	1022	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.7	2.1	0.0	8.3	15.2	0.0
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.1	2.1	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	0.5	0.0	0.0	0.5	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	4.9	2.2	0.0	8.4	17.3	0.0
LnGrp LOS	A	A	A	A	B	
Approach Vol, veh/h		872	158		24	
Approach Delay, s/veh		3.6	8.4		17.3	
Approach LOS		A	A		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	11.6	14.8		5.5		26.4
Change Period (Y+Rc), s	4.5	* 4.8		4.5		* 4.8
Max Green Setting (Gmax), s	10.5	* 35		18.0		* 26
Max Q Clear Time (g_c+I1), s	7.1	4.3		2.4		4.9
Green Ext Time (p_c), s	0.1	0.1		0.0		0.2

Intersection Summary	
HCM 6th Ctrl Delay	4.6
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	178	715	9	0	270	55	0	0	5	0	0	10
Future Vol, veh/h	178	715	9	0	270	55	0	0	5	0	0	10
Conflicting Peds, #/hr	10	0	19	19	0	10	0	0	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	0	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	92	80	80	92	92	92
Heavy Vehicles, %	0	0	10	0	19	0	2	12	0	2	2	2
Mvmt Flow	223	894	11	0	338	69	0	0	6	0	0	11

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	417	0	0	924	0	0	1738	1782	922
Stage 1	-	-	-	-	-	-	1365	1365	-
Stage 2	-	-	-	-	-	-	373	417	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.42	6.62	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.62	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4.108	3.3
Pot Cap-1 Maneuver	1153	-	-	748	-	-	96	77	330
Stage 1	-	-	-	-	-	-	237	205	-
Stage 2	-	-	-	-	-	-	696	574	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1153	-	-	734	-	-	76	0	323
Mov Cap-2 Maneuver	-	-	-	-	-	-	76	0	-
Stage 1	-	-	-	-	-	-	188	0	-
Stage 2	-	-	-	-	-	-	696	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.7	0	16.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	323	1153	-	-	734	-	-
HCM Lane V/C Ratio	0.019	0.193	-	-	-	-	-
HCM Control Delay (s)	16.4	8.9	-	-	0	-	-
HCM Lane LOS	C	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.1	0.7	-	-	0	-	-

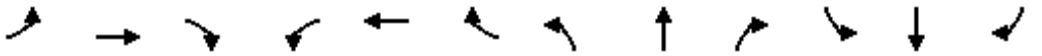
Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	115	10	55	25	5
Future Vol, veh/h	130	115	10	55	25	5
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	0	0	11	0	0
Mvmt Flow	178	158	14	75	34	7

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	338	0	362	259
Stage 1	-	-	-	-	259	-
Stage 2	-	-	-	-	103	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1232	-	641	785
Stage 1	-	-	-	-	789	-
Stage 2	-	-	-	-	926	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1230	-	632	784
Mov Cap-2 Maneuver	-	-	-	-	632	-
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	915	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	653	-	-	1230	-
HCM Lane V/C Ratio	0.063	-	-	0.011	-
HCM Control Delay (s)	10.9	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.2	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	825	15	0	250	30	5	5	0	75	10	20
Future Volume (veh/h)	125	825	15	0	250	30	5	5	0	75	10	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		1.00	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1707	1900	1900	1900	1900	1900	1900	1796
Adj Flow Rate, veh/h	156	1031	19	0	312	38	6	6	0	94	12	25
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	0	2	0	0	13	0	0	0	0	0	0	7
Cap, veh/h	776	2627	48	423	1808	218	107	89	212	235	26	197
Arrive On Green	0.05	0.74	0.74	0.00	0.62	0.62	0.13	0.13	0.00	0.13	0.13	0.13
Sat Flow, veh/h	1810	3569	66	1810	2913	352	366	676	1610	1230	197	1498
Grp Volume(v), veh/h	156	513	537	0	173	177	12	0	0	106	0	25
Grp Sat Flow(s),veh/h/ln	1810	1777	1858	1810	1622	1643	1043	0	1610	1427	0	1498
Q Serve(g_s), s	2.8	9.9	9.9	0.0	4.2	4.2	0.0	0.0	0.0	0.0	0.0	1.4
Cycle Q Clear(g_c), s	2.8	9.9	9.9	0.0	4.2	4.2	6.6	0.0	0.0	6.5	0.0	1.4
Prop In Lane	1.00		0.04	1.00		0.21	0.50		1.00	0.89		1.00
Lane Grp Cap(c), veh/h	776	1308	1368	423	1007	1020	196	0	212	261	0	197
V/C Ratio(X)	0.20	0.39	0.39	0.00	0.17	0.17	0.06	0.00	0.00	0.41	0.00	0.13
Avail Cap(c_a), veh/h	862	1308	1368	604	1007	1020	507	0	525	545	0	488
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	0.00	1.00	1.00	1.00	0.00	0.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	5.5	4.5	4.5	0.0	7.4	7.4	35.0	0.0	0.0	37.5	0.0	35.3
Incr Delay (d2), s/veh	0.0	0.1	0.1	0.0	0.4	0.4	0.0	0.0	0.0	0.4	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.9	2.5	2.6	0.0	1.3	1.4	0.2	0.0	0.0	2.3	0.0	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	5.5	4.7	4.6	0.0	7.8	7.8	35.1	0.0	0.0	37.9	0.0	35.4
LnGrp LOS	A	A	A	A	A	A	D	A	A	D	A	D
Approach Vol, veh/h		1206			350			12			131	
Approach Delay, s/veh		4.8			7.8			35.1			37.4	
Approach LOS		A			A			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.6	62.8		18.6	0.0	73.4		18.6				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.5	* 5.7	* 5.7		6.5				
Max Green Setting (Gmax), s	* 9.3	* 34		30.0	* 9.3	* 34		30.0				
Max Q Clear Time (g_c+I1), s	4.8	6.2		8.5	0.0	11.9		8.6				
Green Ext Time (p_c), s	0.0	0.8		0.2	0.0	2.6		0.0				

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

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

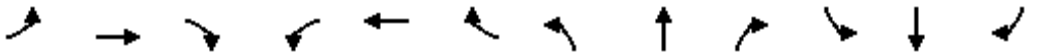
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	215	965	250	25	0	25
Future Vol, veh/h	215	965	250	25	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	200	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	92	92
Heavy Vehicles, %	4	2	15	33	2	2
Mvmt Flow	276	1237	321	32	0	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	353	0	-	0	-	177
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	-	-	3.32
Pot Cap-1 Maneuver	1188	-	-	-	0	835
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1188	-	-	-	-	835
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	9.5
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1188	-	-	-	835
HCM Lane V/C Ratio	0.232	-	-	-	0.033
HCM Control Delay (s)	8.9	-	-	-	9.5
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0.9	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	120	370	25	70	100	45	200	5	100	865	205
Future Volume (veh/h)	420	120	370	25	70	100	45	200	5	100	865	205
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	294	359	0	27	92	132	49	217	5	109	940	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.76	0.76	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0	2	2	2	2	2	2
Cap, veh/h	432	783		170	540	674	183	875	20	455	979	
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.04	0.25	0.25	0.07	0.28	0.00
Sat Flow, veh/h	1157	1870	1585	243	1288	1610	1781	3551	82	1781	3554	1585
Grp Volume(v), veh/h	294	359	0	119	0	132	49	108	114	109	940	0
Grp Sat Flow(s),veh/h/ln	1157	1870	1585	1532	0	1610	1781	1777	1856	1781	1777	1585
Q Serve(g_s), s	16.1	9.0	0.0	0.2	0.0	3.4	1.3	3.2	3.2	2.9	17.0	0.0
Cycle Q Clear(g_c), s	25.2	9.0	0.0	9.2	0.0	3.4	1.3	3.2	3.2	2.9	17.0	0.0
Prop In Lane	1.00		1.00	0.23		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	432	783		709	0	674	183	438	457	455	979	
V/C Ratio(X)	0.68	0.46		0.17	0.00	0.20	0.27	0.25	0.25	0.24	0.96	
Avail Cap(c_a), veh/h	453	816		709	0	674	716	800	835	582	979	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	22.8	13.6	0.0	11.8	0.0	12.0	18.3	19.7	19.8	16.6	23.3	0.0
Incr Delay (d2), s/veh	3.1	0.2	0.0	0.0	0.0	0.1	0.3	0.1	0.1	0.1	19.5	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	4.5	3.5	0.0	1.0	0.0	1.1	0.5	1.2	1.3	1.1	8.9	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	25.9	13.8	0.0	11.9	0.0	12.1	18.6	19.9	19.9	16.7	42.8	0.0
LnGrp LOS	C	B		B	A	B	B	B	B	B	D	
Approach Vol, veh/h		653			251			271			1049	
Approach Delay, s/veh		19.2			12.0			19.6			40.1	
Approach LOS		B			B			B			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	22.1		33.9	7.5	24.0		33.9				
Change Period (Y+Rc), s	5.1	* 6		6.5	5.1	6.0		* 6.5				
Max Green Setting (Gmax), s	8.9	* 29		28.5	21.9	18.0		* 22				
Max Q Clear Time (g_c+I1), s	4.9	5.2		27.2	3.3	19.0		11.2				
Green Ext Time (p_c), s	0.0	0.9		0.1	0.0	0.0		0.2				

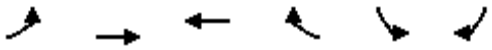
Intersection Summary			
HCM 6th Ctrl Delay		28.3	
HCM 6th LOS		C	

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

PM Peak Analysis



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	225	285	285	30	45	450
Future Volume (veh/h)	225	285	285	30	45	450
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	1841	1707	1618	1900	1900
Adj Flow Rate, veh/h	274	348	348	37	55	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	4	13	19	0	0
Cap, veh/h	641	1158	506	54	111	
Arrive On Green	0.15	0.63	0.33	0.33	0.06	0.00
Sat Flow, veh/h	1810	1841	1517	161	1810	1610
Grp Volume(v), veh/h	274	348	0	385	55	0
Grp Sat Flow(s),veh/h/ln	1810	1841	0	1678	1810	1610
Q Serve(g_s), s	2.8	2.6	0.0	6.0	0.9	0.0
Cycle Q Clear(g_c), s	2.8	2.6	0.0	6.0	0.9	0.0
Prop In Lane	1.00			0.10	1.00	1.00
Lane Grp Cap(c), veh/h	641	1158	0	560	111	
V/C Ratio(X)	0.43	0.30	0.00	0.69	0.50	
Avail Cap(c_a), veh/h	1009	1562	0	1965	1084	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	5.6	2.5	0.0	8.7	13.7	0.0
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.6	1.3	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	0.3	0.0	0.0	1.2	0.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.8	2.6	0.0	9.2	14.9	0.0
LnGrp LOS	A	A	A	A	B	
Approach Vol, veh/h		622	385		55	
Approach Delay, s/veh		4.0	9.2		14.9	
Approach LOS		A	A		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	8.9	14.8		6.3		23.7
Change Period (Y+Rc), s	4.5	* 4.8		4.5		* 4.8
Max Green Setting (Gmax), s	10.5	* 35		18.0		* 26
Max Q Clear Time (g_c+I1), s	4.8	8.0		2.9		4.6
Green Ext Time (p_c), s	0.1	0.2		0.0		0.1

Intersection Summary	
HCM 6th Ctrl Delay	6.5
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	520	0	0	670	85	0	0	0	0	0	185
Future Vol, veh/h	15	520	0	0	670	85	0	0	0	0	0	185
Conflicting Peds, #/hr	10	0	19	19	0	10	0	0	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	0	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	92	80	80	92	92	92
Heavy Vehicles, %	0	0	10	0	19	0	2	12	0	2	2	2
Mvmt Flow	19	650	0	0	838	106	0	0	0	0	0	201

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	954	0	0	669	0	0	1598	1661	672
Stage 1	-	-	-	-	-	-	707	707	-
Stage 2	-	-	-	-	-	-	891	954	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.42	6.62	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.62	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4.108	3.3
Pot Cap-1 Maneuver	729	-	-	931	-	-	117	92	459
Stage 1	-	-	-	-	-	-	489	423	-
Stage 2	-	-	-	-	-	-	401	324	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	729	-	-	914	-	-	112	0	449
Mov Cap-2 Maneuver	-	-	-	-	-	-	112	0	-
Stage 1	-	-	-	-	-	-	467	0	-
Stage 2	-	-	-	-	-	-	401	0	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	-	729	-	-	914	-	-
HCM Lane V/C Ratio	-	0.026	-	-	-	-	-
HCM Control Delay (s)	0	10.1	-	-	0	-	-
HCM Lane LOS	A	B	-	-	A	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-

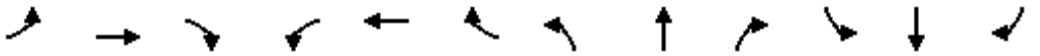
Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	25	125	30	220	75	10
Future Vol, veh/h	25	125	30	220	75	10
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	0	0	11	0	0
Mvmt Flow	34	171	41	301	103	14

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	207	0	505	122
Stage 1	-	-	-	-	122	-
Stage 2	-	-	-	-	383	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1376	-	530	935
Stage 1	-	-	-	-	908	-
Stage 2	-	-	-	-	694	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1373	-	510	933
Mov Cap-2 Maneuver	-	-	-	-	510	-
Stage 1	-	-	-	-	906	-
Stage 2	-	-	-	-	669	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	539	-	-	1373	-
HCM Lane V/C Ratio	0.216	-	-	0.03	-
HCM Control Delay (s)	13.5	-	-	7.7	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	390	5	5	794	56	10	5	5	140	5	100
Future Volume (veh/h)	29	390	5	5	794	56	10	5	5	140	5	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1707	1900	1900	1900	1900	1900	1900	1796
Adj Flow Rate, veh/h	36	488	6	6	992	70	12	6	6	175	6	125
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	0	2	0	0	13	0	0	0	0	0	0	7
Cap, veh/h	236	1695	21	448	1372	97	65	21	522	77	1	493
Arrive On Green	0.03	0.47	0.47	0.01	0.45	0.45	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1810	3595	44	1810	3073	217	0	63	1600	0	4	1512
Grp Volume(v), veh/h	36	241	253	6	524	538	18	0	6	181	0	125
Grp Sat Flow(s),veh/h/ln	1810	1777	1862	1810	1622	1667	63	0	1600	4	0	1512
Q Serve(g_s), s	1.0	7.6	7.6	0.2	24.3	24.3	0.0	0.0	0.2	0.0	0.0	5.6
Cycle Q Clear(g_c), s	1.0	7.6	7.6	0.2	24.3	24.3	30.0	0.0	0.2	30.0	0.0	5.6
Prop In Lane	1.00		0.02	1.00		0.13	0.67		1.00	0.97		1.00
Lane Grp Cap(c), veh/h	236	838	878	448	724	745	86	0	522	78	0	493
V/C Ratio(X)	0.15	0.29	0.29	0.01	0.72	0.72	0.21	0.00	0.01	2.31	0.00	0.25
Avail Cap(c_a), veh/h	360	838	878	617	724	745	86	0	522	78	0	493
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	14.9	14.9	12.8	20.8	20.8	25.7	0.0	21.0	45.5	0.0	22.8
Incr Delay (d2), s/veh	0.1	0.1	0.1	0.0	6.2	6.0	0.4	0.0	0.0	627.2	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	2.9	3.0	0.1	9.6	9.8	0.3	0.0	0.1	15.4	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.3	15.0	15.0	12.8	27.0	26.8	26.1	0.0	21.0	672.7	0.0	22.9
LnGrp LOS	B	B	B	B	C	C	C	A	C	F	A	C
Approach Vol, veh/h		530			1068			24			306	
Approach Delay, s/veh		15.1			26.8			24.8			407.2	
Approach LOS		B			C			C			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	46.8		36.5	6.4	49.1		36.5				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.5	* 5.7	* 5.7		6.5				
Max Green Setting (Gmax), s	* 9.3	* 34		30.0	* 9.3	* 34		30.0				
Max Q Clear Time (g_c+I1), s	3.0	26.3		32.0	2.2	9.6		32.0				
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	1.1		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	83.9
HCM 6th LOS	F

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

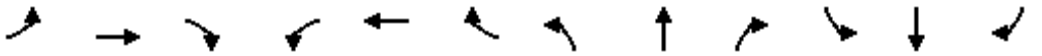
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	140	424	859	45	0	45
Future Vol, veh/h	140	424	859	45	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	200	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	92	92
Heavy Vehicles, %	4	2	15	33	2	2
Mvmt Flow	179	544	1101	58	0	49

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1159	0	-	0	-	580
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	-	-	3.32
Pot Cap-1 Maneuver	587	-	-	-	0	458
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	587	-	-	-	-	458
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	3.4	0	13.8
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	587	-	-	-	458
HCM Lane V/C Ratio	0.306	-	-	-	0.107
HCM Control Delay (s)	13.8	-	-	-	13.8
HCM Lane LOS	B	-	-	-	B
HCM 95th %tile Q(veh)	1.3	-	-	-	0.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	345	70	170	25	275	300	225	700	15	55	370	390
Future Volume (veh/h)	345	70	170	25	275	300	225	700	15	55	370	390
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	429	0	0	27	362	395	245	761	16	60	402	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.76	0.76	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0	2	2	2	2	2	2
Cap, veh/h	605	0		84	771	683	423	974	20	232	620	
Arrive On Green	0.42	0.00	0.00	0.42	0.42	0.42	0.14	0.27	0.27	0.04	0.17	0.00
Sat Flow, veh/h	1415	0	1585	63	1817	1610	1781	3559	75	1781	3554	1585
Grp Volume(v), veh/h	429	0	0	389	0	395	245	380	397	60	402	0
Grp Sat Flow(s),veh/h/ln	708	0	1585	1880	0	1610	1781	1777	1857	1781	1777	1585
Q Serve(g_s), s	18.5	0.0	0.0	0.0	0.0	12.6	7.4	13.3	13.3	1.6	7.1	0.0
Cycle Q Clear(g_c), s	28.5	0.0	0.0	10.0	0.0	12.6	7.4	13.3	13.3	1.6	7.1	0.0
Prop In Lane	1.00		1.00	0.07		1.00	1.00		0.04	1.00		1.00
Lane Grp Cap(c), veh/h	605	0		855	0	683	423	486	508	232	620	
V/C Ratio(X)	0.71	0.00		0.46	0.00	0.58	0.58	0.78	0.78	0.26	0.65	
Avail Cap(c_a), veh/h	605	0		855	0	683	756	777	813	396	952	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	25.2	0.0	0.0	14.0	0.0	14.8	18.8	22.5	22.5	17.8	25.8	0.0
Incr Delay (d2), s/veh	3.3	0.0	0.0	0.1	0.0	0.8	0.5	1.0	1.0	0.2	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	3.6	0.0	0.0	4.0	0.0	4.4	2.7	5.1	5.3	0.6	2.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	28.5	0.0	0.0	14.1	0.0	15.6	19.3	23.6	23.5	18.0	26.2	0.0
LnGrp LOS	C	A		B	A	B	B	C	C	B	C	
Approach Vol, veh/h		429			784			1022			462	
Approach Delay, s/veh		28.5			14.9			22.5			25.2	
Approach LOS		C			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.8	24.4		35.0	14.5	17.7		35.0				
Change Period (Y+Rc), s	5.1	* 6		6.5	5.1	6.0		* 6.5				
Max Green Setting (Gmax), s	8.9	* 29		28.5	21.9	18.0		* 22				
Max Q Clear Time (g_c+I1), s	3.6	15.3		30.5	9.4	9.1		14.6				
Green Ext Time (p_c), s	0.0	3.1		0.0	0.1	1.3		0.7				

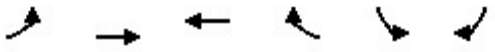
Intersection Summary		
HCM 6th Ctrl Delay		21.7
HCM 6th LOS		C

Notes

User approved pedestrian interval to be less than phase max green.
User approved volume balancing among the lanes for turning movement.
* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

HCM Analysis – Build



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	409	364	149	10	20	214
Future Volume (veh/h)	409	364	149	10	20	214
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	1841	1707	1618	1900	1900
Adj Flow Rate, veh/h	499	444	182	12	24	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	4	13	19	0	0
Cap, veh/h	913	1258	490	32	54	
Arrive On Green	0.24	0.68	0.31	0.31	0.03	0.00
Sat Flow, veh/h	1810	1841	1584	104	1810	1610
Grp Volume(v), veh/h	499	444	0	194	24	0
Grp Sat Flow(s),veh/h/ln	1810	1841	0	1688	1810	1610
Q Serve(g_s), s	5.6	3.3	0.0	2.9	0.4	0.0
Cycle Q Clear(g_c), s	5.6	3.3	0.0	2.9	0.4	0.0
Prop In Lane	1.00			0.06	1.00	1.00
Lane Grp Cap(c), veh/h	913	1258	0	522	54	
V/C Ratio(X)	0.55	0.35	0.00	0.37	0.44	
Avail Cap(c_a), veh/h	1071	1445	0	1830	1003	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.9	2.1	0.0	8.8	15.5	0.0
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.2	2.1	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	0.6	0.0	0.0	0.7	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.1	2.2	0.0	8.9	17.6	0.0
LnGrp LOS	A	A	A	A	B	
Approach Vol, veh/h		943	194		24	
Approach Delay, s/veh		3.7	8.9		17.6	
Approach LOS		A	A		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.2	14.8		5.5		27.0
Change Period (Y+Rc), s	4.5	* 4.8		4.5		* 4.8
Max Green Setting (Gmax), s	10.5	* 35		18.0		* 26
Max Q Clear Time (g_c+I1), s	7.6	4.9		2.4		5.3
Green Ext Time (p_c), s	0.1	0.1		0.0		0.2

Intersection Summary	
HCM 6th Ctrl Delay	4.9
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	178	773	9	0	328	55	0	0	5	0	0	10
Future Vol, veh/h	178	773	9	0	328	55	0	0	5	0	0	10
Conflicting Peds, #/hr	10	0	19	19	0	10	0	0	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	0	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	92	80	80	92	92	92
Heavy Vehicles, %	0	0	10	0	19	0	2	12	0	2	2	2
Mvmt Flow	223	966	11	0	410	69	0	0	6	0	0	11

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	489	0	0	996	0	0	1882	1926	994
Stage 1	-	-	-	-	-	-	1437	1437	-
Stage 2	-	-	-	-	-	-	445	489	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.42	6.62	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.62	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4.108	3.3
Pot Cap-1 Maneuver	1085	-	-	703	-	-	78	63	300
Stage 1	-	-	-	-	-	-	219	189	-
Stage 2	-	-	-	-	-	-	646	533	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1085	-	-	690	-	-	61	0	294
Mov Cap-2 Maneuver	-	-	-	-	-	-	61	0	-
Stage 1	-	-	-	-	-	-	171	0	-
Stage 2	-	-	-	-	-	-	646	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.7	0	17.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	294	1085	-	-	690	-	-
HCM Lane V/C Ratio	0.021	0.205	-	-	-	-	-
HCM Control Delay (s)	17.5	9.2	-	-	0	-	-
HCM Lane LOS	C	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.1	0.8	-	-	0	-	-

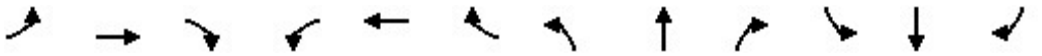
Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	125	19	55	35	14
Future Vol, veh/h	130	125	19	55	35	14
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	0	0	11	0	0
Mvmt Flow	178	171	26	75	48	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	351	0	393	266
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	127	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1219	-	615	778
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	904	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1217	-	600	777
Mov Cap-2 Maneuver	-	-	-	-	600	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	884	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	642	-	-	1217	-
HCM Lane V/C Ratio	0.105	-	-	0.021	-
HCM Control Delay (s)	11.3	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	827	130	58	250	30	122	24	58	75	29	20
Future Volume (veh/h)	125	827	130	58	250	30	122	24	58	75	29	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1707	1900	1900	1900	1900	1900	1900	1796
Adj Flow Rate, veh/h	156	1034	162	72	312	38	152	30	72	94	36	25
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	0	2	0	0	13	0	0	0	0	0	0	7
Cap, veh/h	558	1334	209	231	1193	144	72	8	522	67	16	493
Arrive On Green	0.07	0.43	0.43	0.05	0.41	0.41	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1810	3077	481	1810	2913	352	0	25	1600	0	49	1512
Grp Volume(v), veh/h	156	596	600	72	173	177	182	0	72	130	0	25
Grp Sat Flow(s),veh/h/ln	1810	1777	1782	1810	1622	1643	25	0	1600	49	0	1512
Q Serve(g_s), s	4.5	26.3	26.4	2.0	6.5	6.6	0.0	0.0	2.9	0.0	0.0	1.0
Cycle Q Clear(g_c), s	4.5	26.3	26.4	2.0	6.5	6.6	30.0	0.0	2.9	30.0	0.0	1.0
Prop In Lane	1.00		0.27	1.00		0.21	0.84		1.00	0.72		1.00
Lane Grp Cap(c), veh/h	558	770	773	231	664	673	80	0	522	83	0	493
V/C Ratio(X)	0.28	0.77	0.78	0.31	0.26	0.26	2.28	0.00	0.14	1.56	0.00	0.05
Avail Cap(c_a), veh/h	615	770	773	331	664	673	80	0	522	83	0	493
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.9	22.2	22.2	17.5	17.9	18.0	43.0	0.0	21.9	40.4	0.0	21.2
Incr Delay (d2), s/veh	0.1	4.7	4.8	0.3	0.9	1.0	611.9	0.0	0.0	302.9	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	11.0	11.1	0.8	2.4	2.5	15.4	0.0	1.1	8.9	0.0	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.0	27.0	27.0	17.7	18.9	18.9	654.9	0.0	21.9	343.3	0.0	21.3
LnGrp LOS	B	C	C	B	B	B	F	A	C	F	A	C
Approach Vol, veh/h		1352			422			254			155	
Approach Delay, s/veh		25.5			18.7			475.4			291.4	
Approach LOS		C			B			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	12.1	43.4		36.5	9.9	45.6		36.5				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.5	* 5.7	* 5.7		6.5				
Max Green Setting (Gmax), s	* 9.3	* 34		30.0	* 9.3	* 34		30.0				
Max Q Clear Time (g_c+I1), s	6.5	8.6		32.0	4.0	28.4		32.0				
Green Ext Time (p_c), s	0.0	0.8		0.0	0.0	1.9		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		95.4	
HCM 6th LOS		F	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

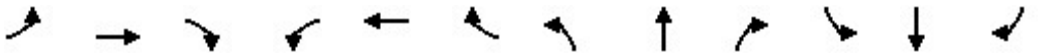
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	215	1082	367	25	0	25
Future Vol, veh/h	215	1082	367	25	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	200	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	92	92
Heavy Vehicles, %	4	2	15	33	2	2
Mvmt Flow	276	1387	471	32	0	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	503	0	-	0	-	252
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	-	-	3.32
Pot Cap-1 Maneuver	1044	-	-	-	0	748
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1044	-	-	-	-	748
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1044	-	-	-	748
HCM Lane V/C Ratio	0.264	-	-	-	0.036
HCM Control Delay (s)	9.7	-	-	-	10
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	1.1	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	120	394	33	70	100	74	278	15	100	931	205
Future Volume (veh/h)	420	120	394	33	70	100	74	278	15	100	931	205
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	294	359	0	36	92	132	80	302	16	109	1012	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.76	0.76	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0	2	2	2	2	2	2
Cap, veh/h	428	786		191	456	677	194	866	46	414	955	
Arrive On Green	0.42	0.42	0.00	0.42	0.42	0.42	0.05	0.25	0.25	0.06	0.27	0.00
Sat Flow, veh/h	1157	1870	1585	291	1086	1610	1781	3433	181	1781	3554	1585
Grp Volume(v), veh/h	294	359	0	128	0	132	80	156	162	109	1012	0
Grp Sat Flow(s),veh/h/ln	1157	1870	1585	1378	0	1610	1781	1777	1838	1781	1777	1585
Q Serve(g_s), s	16.5	9.2	0.0	0.4	0.0	3.5	2.2	4.8	4.9	3.0	18.0	0.0
Cycle Q Clear(g_c), s	26.1	9.2	0.0	9.6	0.0	3.5	2.2	4.8	4.9	3.0	18.0	0.0
Prop In Lane	1.00		1.00	0.28		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	428	786		648	0	677	194	448	464	414	955	
V/C Ratio(X)	0.69	0.46		0.20	0.00	0.20	0.41	0.35	0.35	0.26	1.06	
Avail Cap(c_a), veh/h	434	796		648	0	677	690	780	807	535	955	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	23.5	13.9	0.0	12.2	0.0	12.3	18.8	20.5	20.5	16.8	24.5	0.0
Incr Delay (d2), s/veh	3.6	0.2	0.0	0.1	0.0	0.1	0.5	0.2	0.2	0.1	46.3	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	4.7	3.6	0.0	1.1	0.0	1.2	0.8	1.8	1.9	1.1	12.8	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.1	14.1	0.0	12.3	0.0	12.3	19.3	20.7	20.7	17.0	70.8	0.0
LnGrp LOS	C	B		B	A	B	B	C	C	B	F	
Approach Vol, veh/h		653			260			398			1121	
Approach Delay, s/veh		20.0			12.3			20.4			65.5	
Approach LOS		B			B			C			E	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	9.4	22.9		34.6	8.3	24.0		34.6				
Change Period (Y+Rc), s	5.1	* 6		6.5	5.1	6.0		* 6.5				
Max Green Setting (Gmax), s	8.9	* 29		28.5	21.9	18.0		* 22				
Max Q Clear Time (g_c+I1), s	5.0	6.9		28.1	4.2	20.0		11.6				
Green Ext Time (p_c), s	0.0	1.3		0.1	0.0	0.0		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		40.2
HCM 6th LOS		D

Notes

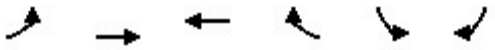
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

PM Peak Analysis



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	269	329	337	30	45	502
Future Volume (veh/h)	269	329	337	30	45	502
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	1841	1707	1618	1900	1900
Adj Flow Rate, veh/h	328	401	411	37	55	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	4	13	19	0	0
Cap, veh/h	614	1176	500	45	110	
Arrive On Green	0.17	0.64	0.32	0.32	0.06	0.00
Sat Flow, veh/h	1810	1841	1543	139	1810	1610
Grp Volume(v), veh/h	328	401	0	448	55	0
Grp Sat Flow(s),veh/h/ln	1810	1841	0	1682	1810	1610
Q Serve(g_s), s	3.5	3.1	0.0	7.6	0.9	0.0
Cycle Q Clear(g_c), s	3.5	3.1	0.0	7.6	0.9	0.0
Prop In Lane	1.00			0.08	1.00	1.00
Lane Grp Cap(c), veh/h	614	1176	0	545	110	
V/C Ratio(X)	0.53	0.34	0.00	0.82	0.50	
Avail Cap(c_a), veh/h	922	1516	0	1912	1052	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.2	2.6	0.0	9.6	14.1	0.0
Incr Delay (d2), s/veh	0.3	0.1	0.0	1.2	1.3	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	0.4	0.0	0.0	1.7	0.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.5	2.6	0.0	10.8	15.4	0.0
LnGrp LOS	A	A	A	B	B	
Approach Vol, veh/h		729	448		55	
Approach Delay, s/veh		4.4	10.8		15.4	
Approach LOS		A	B		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.7	14.8		6.4		24.6
Change Period (Y+Rc), s	4.5	* 4.8		4.5		* 4.8
Max Green Setting (Gmax), s	10.5	* 35		18.0		* 26
Max Q Clear Time (g_c+I1), s	5.5	9.6		2.9		5.1
Green Ext Time (p_c), s	0.1	0.2		0.0		0.2

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

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	608	0	0	774	85	0	0	0	0	0	185
Future Vol, veh/h	15	608	0	0	774	85	0	0	0	0	0	185
Conflicting Peds, #/hr	10	0	19	19	0	10	0	0	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	0	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	92	80	80	92	92	92
Heavy Vehicles, %	0	0	10	0	19	0	2	12	0	2	2	2
Mvmt Flow	19	760	0	0	968	106	0	0	0	0	0	201

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1084	0	0	779	0	0	1838	1901	782
Stage 1	-	-	-	-	-	-	817	817	-
Stage 2	-	-	-	-	-	-	1021	1084	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.42	6.62	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.62	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4.108	3.3
Pot Cap-1 Maneuver	651	-	-	847	-	-	83	65	397
Stage 1	-	-	-	-	-	-	434	376	-
Stage 2	-	-	-	-	-	-	348	281	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	651	-	-	832	-	-	79	0	389
Mov Cap-2 Maneuver	-	-	-	-	-	-	79	0	-
Stage 1	-	-	-	-	-	-	414	0	-
Stage 2	-	-	-	-	-	-	348	0	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	-	651	-	-	832	-	-
HCM Lane V/C Ratio	-	0.029	-	-	-	-	-
HCM Control Delay (s)	0	10.7	-	-	0	-	-
HCM Lane LOS	A	B	-	-	A	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-

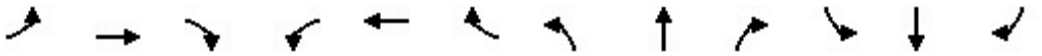
Intersection	
Int Delay, s/veh	3.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	25	143	47	220	90	25
Future Vol, veh/h	25	143	47	220	90	25
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	0	0	11	0	0
Mvmt Flow	34	196	64	301	123	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	232	0	563	134
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1348	-	491	920
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	661	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1345	-	462	918
Mov Cap-2 Maneuver	-	-	-	-	462	-
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	623	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	15
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	518	-	-	1345	-
HCM Lane V/C Ratio	0.304	-	-	0.048	-
HCM Control Delay (s)	15	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.3	-	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	390	211	109	794	56	187	35	93	140	40	100
Future Volume (veh/h)	29	390	211	109	794	56	187	35	93	140	40	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1707	1900	1900	1900	1900	1900	1900	1796
Adj Flow Rate, veh/h	36	488	264	136	992	70	234	44	116	175	50	125
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	0	2	0	0	13	0	0	0	0	0	0	7
Cap, veh/h	236	929	500	373	1372	97	72	0	522	70	6	493
Arrive On Green	0.03	0.42	0.42	0.06	0.45	0.45	0.33	0.33	0.33	0.33	0.33	0.33
Sat Flow, veh/h	1810	2227	1199	1810	3073	217	0	0	1600	0	17	1512
Grp Volume(v), veh/h	36	389	363	136	524	538	278	0	116	225	0	125
Grp Sat Flow(s),veh/h/ln	1810	1777	1649	1810	1622	1667	0	0	1600	17	0	1512
Q Serve(g_s), s	1.0	15.0	15.1	3.9	24.3	24.3	0.0	0.0	4.8	0.0	0.0	5.6
Cycle Q Clear(g_c), s	1.0	15.0	15.1	3.9	24.3	24.3	30.0	0.0	4.8	30.0	0.0	5.6
Prop In Lane	1.00		0.73	1.00		0.13	0.84		1.00	0.78		1.00
Lane Grp Cap(c), veh/h	236	741	688	373	724	745	72	0	522	75	0	493
V/C Ratio(X)	0.15	0.52	0.53	0.36	0.72	0.72	3.86	0.00	0.22	2.99	0.00	0.25
Avail Cap(c_a), veh/h	360	741	688	444	724	745	72	0	522	75	0	493
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	16.2	20.0	20.0	15.0	20.8	20.8	46.0	0.0	22.5	43.8	0.0	22.8
Incr Delay (d2), s/veh	0.1	0.5	0.6	0.2	6.2	6.0	1318.7	0.0	0.1	932.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	5.9	5.5	1.5	9.6	9.8	28.0	0.0	1.8	21.2	0.0	2.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.3	20.5	20.6	15.2	27.0	26.8	1364.7	0.0	22.6	976.1	0.0	22.9
LnGrp LOS	B	C	C	B	C	C	F	A	C	F	A	C
Approach Vol, veh/h		788			1198			394			350	
Approach Delay, s/veh		20.4			25.6			969.6			635.6	
Approach LOS		C			C			F			F	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	46.8		36.5	11.4	44.1		36.5				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.5	* 5.7	* 5.7		6.5				
Max Green Setting (Gmax), s	* 9.3	* 34		30.0	* 9.3	* 34		30.0				
Max Q Clear Time (g_c+I1), s	3.0	26.3		32.0	5.9	17.1		32.0				
Green Ext Time (p_c), s	0.0	2.0		0.0	0.0	1.8		0.0				

Intersection Summary			
HCM 6th Ctrl Delay		238.5	
HCM 6th LOS		F	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

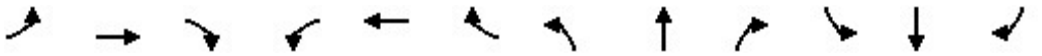
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	140	630	1036	45	0	45
Future Vol, veh/h	140	630	1036	45	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	200	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	92	92
Heavy Vehicles, %	4	2	15	33	2	2
Mvmt Flow	179	808	1328	58	0	49

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1386	0	-	0	-	693
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	-	-	3.32
Pot Cap-1 Maneuver	480	-	-	-	0	386
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	480	-	-	-	-	386
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	480	-	-	-	386
HCM Lane V/C Ratio	0.374	-	-	-	0.127
HCM Control Delay (s)	16.9	-	-	-	15.7
HCM Lane LOS	C	-	-	-	C
HCM 95th %tile Q(veh)	1.7	-	-	-	0.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	345	70	222	42	275	300	269	818	30	55	507	390
Future Volume (veh/h)	345	70	222	42	275	300	269	818	30	55	507	390
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	429	0	0	46	362	395	292	889	33	60	551	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.76	0.76	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0	2	2	2	2	2	2
Cap, veh/h	537	0		109	693	645	421	1092	41	218	694	
Arrive On Green	0.40	0.00	0.00	0.40	0.40	0.40	0.16	0.31	0.31	0.04	0.20	0.00
Sat Flow, veh/h	1415	0	1585	131	1728	1610	1781	3494	130	1781	3554	1585
Grp Volume(v), veh/h	429	0	0	408	0	395	292	452	470	60	551	0
Grp Sat Flow(s),veh/h/ln	708	0	1585	1858	0	1610	1781	1777	1847	1781	1777	1585
Q Serve(g_s), s	16.8	0.0	0.0	1.2	0.0	13.8	9.0	16.7	16.7	1.6	10.5	0.0
Cycle Q Clear(g_c), s	28.5	0.0	0.0	11.7	0.0	13.8	9.0	16.7	16.7	1.6	10.5	0.0
Prop In Lane	1.00		1.00	0.11		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	537	0		801	0	645	421	555	577	218	694	
V/C Ratio(X)	0.80	0.00		0.51	0.00	0.61	0.69	0.81	0.81	0.28	0.79	
Avail Cap(c_a), veh/h	537	0		801	0	645	691	735	764	372	900	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	29.0	0.0	0.0	16.3	0.0	16.9	19.0	22.5	22.5	17.6	27.3	0.0
Incr Delay (d2), s/veh	7.8	0.0	0.0	0.2	0.0	1.3	0.8	4.0	3.8	0.3	2.8	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	4.2	0.0	0.0	4.8	0.0	5.0	3.4	6.8	7.0	0.6	4.4	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	36.8	0.0	0.0	16.5	0.0	18.2	19.8	26.5	26.3	17.9	30.0	0.0
LnGrp LOS	D	A		B	A	B	B	C	C	B	C	
Approach Vol, veh/h		429			803			1214			611	
Approach Delay, s/veh		36.8			17.3			24.8			28.9	
Approach LOS		D			B			C			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	7.9	28.2		35.0	16.2	19.9		35.0				
Change Period (Y+Rc), s	5.1	* 6		6.5	5.1	6.0		* 6.5				
Max Green Setting (Gmax), s	8.9	* 29		28.5	21.9	18.0		* 22				
Max Q Clear Time (g_c+I1), s	3.6	18.7		30.5	11.0	12.5		15.8				
Green Ext Time (p_c), s	0.0	3.4		0.0	0.1	1.4		0.6				

Intersection Summary		
HCM 6th Ctrl Delay		25.3
HCM 6th LOS		C

Notes

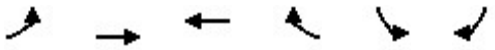
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

HCM Analysis – Build with Mitigation



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	409	364	149	10	20	214
Future Volume (veh/h)	409	364	149	10	20	214
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	1841	1707	1618	1900	1900
Adj Flow Rate, veh/h	499	444	182	12	24	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	4	13	19	0	0
Cap, veh/h	913	1258	490	32	54	
Arrive On Green	0.24	0.68	0.31	0.31	0.03	0.00
Sat Flow, veh/h	1810	1841	1584	104	1810	1610
Grp Volume(v), veh/h	499	444	0	194	24	0
Grp Sat Flow(s),veh/h/ln	1810	1841	0	1688	1810	1610
Q Serve(g_s), s	5.6	3.3	0.0	2.9	0.4	0.0
Cycle Q Clear(g_c), s	5.6	3.3	0.0	2.9	0.4	0.0
Prop In Lane	1.00			0.06	1.00	1.00
Lane Grp Cap(c), veh/h	913	1258	0	522	54	
V/C Ratio(X)	0.55	0.35	0.00	0.37	0.44	
Avail Cap(c_a), veh/h	1071	1445	0	1830	1003	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	4.9	2.1	0.0	8.8	15.5	0.0
Incr Delay (d2), s/veh	0.2	0.1	0.0	0.2	2.1	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	0.6	0.0	0.0	0.7	0.2	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	5.1	2.2	0.0	8.9	17.6	0.0
LnGrp LOS	A	A	A	A	B	
Approach Vol, veh/h		943	194		24	
Approach Delay, s/veh		3.7	8.9		17.6	
Approach LOS		A	A		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	12.2	14.8		5.5		27.0
Change Period (Y+Rc), s	4.5	* 4.8		4.5		* 4.8
Max Green Setting (Gmax), s	10.5	* 35		18.0		* 26
Max Q Clear Time (g_c+I1), s	7.6	4.9		2.4		5.3
Green Ext Time (p_c), s	0.1	0.1		0.0		0.2

Intersection Summary	
HCM 6th Ctrl Delay	4.9
HCM 6th LOS	A

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	178	773	9	0	328	55	0	0	5	0	0	10
Future Vol, veh/h	178	773	9	0	328	55	0	0	5	0	0	10
Conflicting Peds, #/hr	10	0	19	19	0	10	0	0	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	0	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	92	80	80	92	92	92
Heavy Vehicles, %	0	0	10	0	19	0	2	12	0	2	2	2
Mvmt Flow	223	966	11	0	410	69	0	0	6	0	0	11

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	489	0	0	996	0	0	1882	1926	994
Stage 1	-	-	-	-	-	-	1437	1437	-
Stage 2	-	-	-	-	-	-	445	489	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.42	6.62	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.62	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4.108	3.3
Pot Cap-1 Maneuver	1085	-	-	703	-	-	78	63	300
Stage 1	-	-	-	-	-	-	219	189	-
Stage 2	-	-	-	-	-	-	646	533	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	1085	-	-	690	-	-	61	0	294
Mov Cap-2 Maneuver	-	-	-	-	-	-	61	0	-
Stage 1	-	-	-	-	-	-	171	0	-
Stage 2	-	-	-	-	-	-	646	0	-

Approach	EB	WB	NB
HCM Control Delay, s	1.7	0	17.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	294	1085	-	-	690	-	-
HCM Lane V/C Ratio	0.021	0.205	-	-	-	-	-
HCM Control Delay (s)	17.5	9.2	-	-	0	-	-
HCM Lane LOS	C	A	-	-	A	-	-
HCM 95th %tile Q(veh)	0.1	0.8	-	-	0	-	-

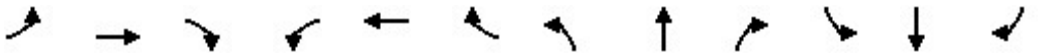
Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	125	19	55	35	14
Future Vol, veh/h	130	125	19	55	35	14
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	0	0	11	0	0
Mvmt Flow	178	171	26	75	48	19

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	351	0	393	266
Stage 1	-	-	-	-	266	-
Stage 2	-	-	-	-	127	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1219	-	615	778
Stage 1	-	-	-	-	783	-
Stage 2	-	-	-	-	904	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1217	-	600	777
Mov Cap-2 Maneuver	-	-	-	-	600	-
Stage 1	-	-	-	-	781	-
Stage 2	-	-	-	-	884	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.1	11.3
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	642	-	-	1217	-
HCM Lane V/C Ratio	0.105	-	-	0.021	-
HCM Control Delay (s)	11.3	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	827	130	58	250	30	122	24	58	75	29	20
Future Volume (veh/h)	125	827	130	58	250	30	122	24	58	75	29	20
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	0.99		0.99	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1707	1900	1900	1900	1900	1900	1900	1796
Adj Flow Rate, veh/h	156	1034	162	72	312	38	152	30	72	94	36	25
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	0	2	0	0	13	0	0	0	0	0	0	7
Cap, veh/h	711	1757	275	329	1630	197	294	93	223	256	196	136
Arrive On Green	0.06	0.57	0.57	0.05	0.56	0.56	0.19	0.19	0.19	0.19	0.19	0.19
Sat Flow, veh/h	1810	3078	481	1810	2913	352	1350	492	1180	1302	1039	722
Grp Volume(v), veh/h	156	596	600	72	173	177	152	0	102	94	0	61
Grp Sat Flow(s),veh/h/ln	1810	1777	1782	1810	1622	1643	1350	0	1672	1302	0	1761
Q Serve(g_s), s	3.3	19.9	20.0	1.5	4.8	4.9	9.8	0.0	4.8	6.2	0.0	2.7
Cycle Q Clear(g_c), s	3.3	19.9	20.0	1.5	4.8	4.9	12.5	0.0	4.8	11.0	0.0	2.7
Prop In Lane	1.00		0.27	1.00		0.21	1.00		0.71	1.00		0.41
Lane Grp Cap(c), veh/h	711	1014	1017	329	907	919	294	0	316	256	0	333
V/C Ratio(X)	0.22	0.59	0.59	0.22	0.19	0.19	0.52	0.00	0.32	0.37	0.00	0.18
Avail Cap(c_a), veh/h	791	1014	1017	429	907	919	479	0	545	434	0	574
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	7.6	12.8	12.8	9.6	10.0	10.0	36.6	0.0	32.2	37.0	0.0	31.3
Incr Delay (d2), s/veh	0.1	0.8	0.8	0.1	0.5	0.5	0.5	0.0	0.2	0.3	0.0	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.1	7.0	7.1	0.5	1.6	1.7	3.3	0.0	2.0	2.0	0.0	1.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	7.6	13.5	13.6	9.7	10.5	10.5	37.1	0.0	32.4	37.3	0.0	31.4
LnGrp LOS	A	B	B	A	B	B	D	A	C	D	A	C
Approach Vol, veh/h		1352			422			254			155	
Approach Delay, s/veh		12.9			10.3			35.2			35.0	
Approach LOS		B			B			D			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	10.9	57.2		23.9	9.9	58.2		23.9				
Change Period (Y+Rc), s	* 5.7	* 5.7		6.5	* 5.7	* 5.7		6.5				
Max Green Setting (Gmax), s	* 9.3	* 34		30.0	* 9.3	* 34		30.0				
Max Q Clear Time (g_c+I1), s	5.3	6.9		13.0	3.5	22.0		14.5				
Green Ext Time (p_c), s	0.0	0.8		0.2	0.0	2.8		0.4				

Intersection Summary			
HCM 6th Ctrl Delay		16.6	
HCM 6th LOS		B	

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

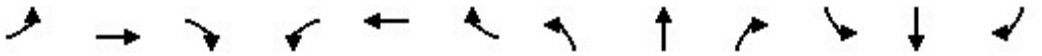
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	215	1082	367	25	0	25
Future Vol, veh/h	215	1082	367	25	0	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	200	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	92	92
Heavy Vehicles, %	4	2	15	33	2	2
Mvmt Flow	276	1387	471	32	0	27

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	503	0	-	0	-	252
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	-	-	3.32
Pot Cap-1 Maneuver	1044	-	-	-	0	748
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %			-	-	-	
Mov Cap-1 Maneuver	1044	-	-	-	-	748
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	10
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1044	-	-	-	748
HCM Lane V/C Ratio	0.264	-	-	-	0.036
HCM Control Delay (s)	9.7	-	-	-	10
HCM Lane LOS	A	-	-	-	B
HCM 95th %tile Q(veh)	1.1	-	-	-	0.1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	420	120	394	33	70	100	74	278	15	100	931	205
Future Volume (veh/h)	420	120	394	33	70	100	74	278	15	100	931	205
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	294	359	0	36	92	132	80	302	16	109	1012	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.76	0.76	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0	2	2	2	2	2	2
Cap, veh/h	300	598		148	335	515	245	1076	57	498	1157	
Arrive On Green	0.32	0.32	0.00	0.32	0.32	0.32	0.05	0.31	0.31	0.06	0.33	0.00
Sat Flow, veh/h	1157	1870	1585	215	1048	1610	1781	3433	181	1781	3554	1585
Grp Volume(v), veh/h	294	359	0	128	0	132	80	156	162	109	1012	0
Grp Sat Flow(s),veh/h/ln	1157	1870	1585	1263	0	1610	1781	1777	1838	1781	1777	1585
Q Serve(g_s), s	8.8	9.3	0.0	0.4	0.0	3.5	1.7	3.8	3.8	2.4	15.5	0.0
Cycle Q Clear(g_c), s	18.5	9.3	0.0	9.7	0.0	3.5	1.7	3.8	3.8	2.4	15.5	0.0
Prop In Lane	1.00		1.00	0.28		1.00	1.00		0.10	1.00		1.00
Lane Grp Cap(c), veh/h	300	598		484	0	515	245	557	576	498	1157	
V/C Ratio(X)	0.98	0.60		0.26	0.00	0.26	0.33	0.28	0.28	0.22	0.87	
Avail Cap(c_a), veh/h	300	598		497	0	529	280	578	598	556	1223	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	26.3	16.5	0.0	14.5	0.0	14.6	14.2	14.9	15.0	12.1	18.4	0.0
Incr Delay (d2), s/veh	46.5	1.2	0.0	0.1	0.0	0.1	0.3	0.1	0.1	0.1	6.6	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	7.8	3.9	0.0	1.1	0.0	1.2	0.6	1.3	1.4	0.8	6.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	72.8	17.7	0.0	14.6	0.0	14.7	14.5	15.0	15.0	12.2	25.0	0.0
LnGrp LOS	E	B		B	A	B	B	B	B	B	C	
Approach Vol, veh/h		653			260			398			1121	
Approach Delay, s/veh		42.5			14.6			14.9			23.8	
Approach LOS		D			B			B			C	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.7	24.1		25.0	8.0	24.8		25.0				
Change Period (Y+Rc), s	5.1	* 6		6.5	5.1	6.0		* 6.5				
Max Green Setting (Gmax), s	5.5	* 19		18.5	4.0	19.9		* 19				
Max Q Clear Time (g_c+I1), s	4.4	5.8		20.5	3.7	17.5		11.7				
Green Ext Time (p_c), s	0.0	1.1		0.0	0.0	1.3		0.2				

Intersection Summary		
HCM 6th Ctrl Delay		26.4
HCM 6th LOS		C

Notes

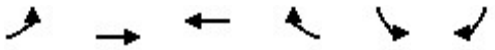
User approved pedestrian interval to be less than phase max green.

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

PM Peak Analysis



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	269	329	337	30	45	502
Future Volume (veh/h)	269	329	337	30	45	502
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	1841	1707	1618	1900	1900
Adj Flow Rate, veh/h	328	401	411	37	55	0
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82
Percent Heavy Veh, %	0	4	13	19	0	0
Cap, veh/h	614	1176	500	45	110	
Arrive On Green	0.17	0.64	0.32	0.32	0.06	0.00
Sat Flow, veh/h	1810	1841	1543	139	1810	1610
Grp Volume(v), veh/h	328	401	0	448	55	0
Grp Sat Flow(s),veh/h/ln	1810	1841	0	1682	1810	1610
Q Serve(g_s), s	3.5	3.1	0.0	7.6	0.9	0.0
Cycle Q Clear(g_c), s	3.5	3.1	0.0	7.6	0.9	0.0
Prop In Lane	1.00			0.08	1.00	1.00
Lane Grp Cap(c), veh/h	614	1176	0	545	110	
V/C Ratio(X)	0.53	0.34	0.00	0.82	0.50	
Avail Cap(c_a), veh/h	864	2052	0	1098	965	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	6.2	2.6	0.0	9.6	14.1	0.0
Incr Delay (d2), s/veh	0.3	0.1	0.0	1.2	1.3	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	0.4	0.0	0.0	1.7	0.3	0.0
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	6.5	2.6	0.0	10.8	15.4	0.0
LnGrp LOS	A	A	A	B	B	
Approach Vol, veh/h		729	448		55	
Approach Delay, s/veh		4.4	10.8		15.4	
Approach LOS		A	B		B	

Timer - Assigned Phs	1	2		4		6
Phs Duration (G+Y+Rc), s	9.7	14.8		6.4		24.6
Change Period (Y+Rc), s	4.5	* 4.8		4.5		* 4.8
Max Green Setting (Gmax), s	9.5	* 20		16.5		* 35
Max Q Clear Time (g_c+I1), s	5.5	9.6		2.9		5.1
Green Ext Time (p_c), s	0.1	0.2		0.0		0.2

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

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	608	0	0	774	85	0	0	0	0	0	185
Future Vol, veh/h	15	608	0	0	774	85	0	0	0	0	0	185
Conflicting Peds, #/hr	10	0	19	19	0	10	0	0	3	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	Free
Storage Length	0	-	-	-	-	-	-	-	-	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	92	80	80	92	92	92
Heavy Vehicles, %	0	0	10	0	19	0	2	12	0	2	2	2
Mvmt Flow	19	760	0	0	968	106	0	0	0	0	0	201

Major/Minor	Major1			Major2			Minor1		
Conflicting Flow All	1084	0	0	779	0	0	1838	1901	782
Stage 1	-	-	-	-	-	-	817	817	-
Stage 2	-	-	-	-	-	-	1021	1084	-
Critical Hdwy	4.1	-	-	4.1	-	-	6.42	6.62	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	5.42	5.62	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.42	5.62	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.518	4.108	3.3
Pot Cap-1 Maneuver	651	-	-	847	-	-	83	65	397
Stage 1	-	-	-	-	-	-	434	376	-
Stage 2	-	-	-	-	-	-	348	281	-
Platoon blocked, %		-	-		-	-			
Mov Cap-1 Maneuver	651	-	-	832	-	-	79	0	389
Mov Cap-2 Maneuver	-	-	-	-	-	-	79	0	-
Stage 1	-	-	-	-	-	-	414	0	-
Stage 2	-	-	-	-	-	-	348	0	-

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

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	-	651	-	-	832	-	-
HCM Lane V/C Ratio	-	0.029	-	-	-	-	-
HCM Control Delay (s)	0	10.7	-	-	0	-	-
HCM Lane LOS	A	B	-	-	A	-	-
HCM 95th %tile Q(veh)	-	0.1	-	-	0	-	-

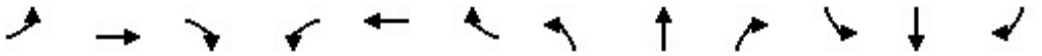
Intersection	
Int Delay, s/veh	3.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	25	143	47	220	90	25
Future Vol, veh/h	25	143	47	220	90	25
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	73	73	73	73	73	73
Heavy Vehicles, %	2	0	0	11	0	0
Mvmt Flow	34	196	64	301	123	34

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	232	0	563	134
Stage 1	-	-	-	-	134	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1348	-	491	920
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	661	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1345	-	462	918
Mov Cap-2 Maneuver	-	-	-	-	462	-
Stage 1	-	-	-	-	895	-
Stage 2	-	-	-	-	623	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.4	15
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	518	-	-	1345	-
HCM Lane V/C Ratio	0.304	-	-	0.048	-
HCM Control Delay (s)	15	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	1.3	-	-	0.2	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	390	211	109	794	56	187	35	93	140	40	100
Future Volume (veh/h)	29	390	211	109	794	56	187	35	93	140	40	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.91	0.99		0.92	0.96		0.94	0.96		0.92
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1870	1900	1900	1707	1900	1900	1900	1900	1900	1900	1796
Adj Flow Rate, veh/h	36	488	264	136	992	70	234	44	116	175	50	125
Peak Hour Factor	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80	0.80
Percent Heavy Veh, %	0	2	0	0	13	0	0	0	0	0	0	7
Cap, veh/h	167	696	374	293	1100	78	469	124	328	420	107	268
Arrive On Green	0.03	0.32	0.32	0.07	0.36	0.36	0.12	0.28	0.28	0.05	0.24	0.24
Sat Flow, veh/h	1810	2148	1153	1810	3052	215	1810	440	1159	1810	453	1133
Grp Volume(v), veh/h	36	403	349	136	527	535	234	0	160	175	0	175
Grp Sat Flow(s),veh/h/ln	1810	1777	1524	1810	1622	1646	1810	0	1598	1810	0	1586
Q Serve(g_s), s	1.1	18.0	18.2	4.5	27.9	27.9	8.6	0.0	7.2	0.0	0.0	8.6
Cycle Q Clear(g_c), s	1.1	18.0	18.2	4.5	27.9	27.9	8.6	0.0	7.2	0.0	0.0	8.6
Prop In Lane	1.00		0.76	1.00		0.13	1.00		0.73	1.00		0.71
Lane Grp Cap(c), veh/h	167	576	494	293	585	593	469	0	452	420	0	375
V/C Ratio(X)	0.22	0.70	0.71	0.46	0.90	0.90	0.50	0.00	0.35	0.42	0.00	0.47
Avail Cap(c_a), veh/h	214	791	678	474	901	914	736	0	598	483	0	375
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	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	21.6	26.8	26.8	20.3	27.4	27.4	21.9	0.0	25.9	29.3	0.0	29.7
Incr Delay (d2), s/veh	0.2	1.3	1.6	0.4	7.3	7.3	0.8	0.0	0.2	0.7	0.0	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	7.3	6.4	1.8	11.2	11.3	3.7	0.0	2.8	3.4	0.0	3.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.8	28.0	28.4	20.7	34.8	34.7	22.7	0.0	26.1	29.9	0.0	30.0
LnGrp LOS	C	C	C	C	C	C	C	A	C	C	A	C
Approach Vol, veh/h		788			1198			394			350	
Approach Delay, s/veh		27.9			33.2			24.1			30.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	8.7	38.3	15.7	27.9	12.0	35.1	11.4	32.1
Change Period (Y+Rc), s	* 5.7	* 5.7	4.5	6.5	* 5.7	* 5.7	6.5	* 6.5
Max Green Setting (Gmax), s	* 5.3	* 50	24.5	17.5	* 15	* 40	8.1	* 34
Max Q Clear Time (g_c+I1), s	3.1	29.9	10.6	10.6	6.5	20.2	2.0	9.2
Green Ext Time (p_c), s	0.0	2.7	0.6	0.2	0.0	1.9	0.2	0.3

Intersection Summary	
HCM 6th Ctrl Delay	29.9
HCM 6th LOS	C

Notes

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

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

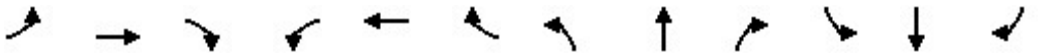
Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	140	630	1036	45	0	45
Future Vol, veh/h	140	630	1036	45	0	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	200	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	78	78	78	78	92	92
Heavy Vehicles, %	4	2	15	33	2	2
Mvmt Flow	179	808	1328	58	0	49

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	1386	0	-	0	-	693
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	4.18	-	-	-	-	6.94
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	2.24	-	-	-	-	3.32
Pot Cap-1 Maneuver	480	-	-	-	0	386
Stage 1	-	-	-	-	0	-
Stage 2	-	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	480	-	-	-	-	386
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	3.1	0	15.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	480	-	-	-	386
HCM Lane V/C Ratio	0.374	-	-	-	0.127
HCM Control Delay (s)	16.9	-	-	-	15.7
HCM Lane LOS	C	-	-	-	C
HCM 95th %tile Q(veh)	1.7	-	-	-	0.4



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	345	70	222	42	275	300	269	818	30	55	507	390
Future Volume (veh/h)	345	70	222	42	275	300	269	818	30	55	507	390
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1900	1900	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	429	0	0	46	362	395	292	889	33	60	551	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.76	0.76	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	0	0	2	2	2	2	2	2
Cap, veh/h	615	0		109	811	762	382	1080	40	181	689	
Arrive On Green	0.47	0.00	0.00	0.47	0.47	0.47	0.15	0.31	0.31	0.03	0.19	0.00
Sat Flow, veh/h	1415	0	1585	142	1713	1610	1781	3494	130	1781	3554	1585
Grp Volume(v), veh/h	429	0	0	408	0	395	292	452	470	60	551	0
Grp Sat Flow(s),veh/h/ln	708	0	1585	1855	0	1610	1781	1777	1847	1781	1777	1585
Q Serve(g_s), s	28.1	0.0	0.0	0.0	0.0	16.5	12.4	22.7	22.7	2.2	14.2	0.0
Cycle Q Clear(g_c), s	42.0	0.0	0.0	13.9	0.0	16.5	12.4	22.7	22.7	2.2	14.2	0.0
Prop In Lane	1.00		1.00	0.11		1.00	1.00		0.07	1.00		1.00
Lane Grp Cap(c), veh/h	615	0		919	0	762	382	549	571	181	689	
V/C Ratio(X)	0.70	0.00		0.44	0.00	0.52	0.77	0.82	0.82	0.33	0.80	
Avail Cap(c_a), veh/h	732	0		1080	0	903	445	819	852	210	1144	
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	31.1	0.0	0.0	17.0	0.0	17.7	26.3	30.8	30.8	24.4	37.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.1	0.0	0.2	5.4	2.6	2.5	0.4	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	4.8	0.0	0.0	6.0	0.0	6.0	5.5	9.6	9.9	0.9	6.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.7	0.0	0.0	17.1	0.0	17.9	31.6	33.4	33.3	24.8	37.8	0.0
LnGrp LOS	C	A		B	A	B	C	C	C	C	D	
Approach Vol, veh/h		429			803			1214			611	
Approach Delay, s/veh		32.7			17.5			32.9			36.6	
Approach LOS		C			B			C			D	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	8.5	35.8		52.1	19.5	24.7		52.1				
Change Period (Y+Rc), s	5.1	* 6		6.5	5.1	6.0		* 6.5				
Max Green Setting (Gmax), s	4.9	* 44		53.5	17.9	31.0		* 54				
Max Q Clear Time (g_c+I1), s	4.2	24.7		44.0	14.4	16.2		18.5				
Green Ext Time (p_c), s	0.0	4.3		1.6	0.1	2.4		0.8				

Intersection Summary		
HCM 6th Ctrl Delay		29.6
HCM 6th LOS		C

Notes

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

User approved volume balancing among the lanes for turning movement.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

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