March 14, 2024

J·R ENGINEERING

Clayton Properties Group, Inc., a Tennessee Corporation
4908 Tower Road
Denver, CO 80249

Re: Traffic Letter for Reunion Center – Duet & Commercial & Commercial Phase, a Supplement to Reunion Center – South Traffic Impact Study in Commerce City, CO dated March 6, 2020

To Whom It May Concern:

This Traffic Letter has been prepared to provide a supplement to the approved *Reunion Center – South Traffic Impact Study* (TIS) dated March 6, 2020, prepared by JR Engineering. "Reunion Center – South" is also known as the "Reunion Sports, Entertainment, & Cultural Metropolitan District". The scope of this letter will be limited to the temporary road network for the Duet & Commercial Phase and the effects of the anticipated trip generation.

This traffic letter overrides the *Traffic Letter for Reunion Center – Duet Phase*, submitted by JR Engineering on May 26, 2022, and the *Reunion Center – STEAD School Phase 2 Traffic Letter*, submitted by JR Engineering on August 26, 2022, since the Duet and Commercial parcels are now combined.

Project Site

Reunion Center is located within Sections 9 and 10, Township 2 South, Range 66 West of the 6th Principal Meridian, City of Commerce City, County of Adams, State of Colorado.

The most recent site plans available are the *Reunion Center Duets*, prepared by Terracina Design on January 27, 2023, and the *Reunion Center – Commercial Parcel*, prepared by G3 Architecture on November 28, 2022. Residential townhomes are proposed within the Duet parcel, while mixed-use commercial buildings are proposed within the Commercial Parcel. This conformance letter will analyze the trip generation from these sites and the effects on the surrounding intersections. These site plans are included in **Appendix E.**

The Duet Townhomes & Commercial Parcel developments were shown as Parcels PA-2 and TC-2, respectively, in the *Reunion Center Village Plan*, prepared by Terracina Design on January 22, 2020. These parcels were also labeled as Traffic Analysis Zones (TAZ) 1-2, 1-3, and Future-2 in the *Reunion Center – South TIS*. Relevant figures are included in **Appendix F** and **Appendix G**, respectively.

The townhomes and commercial buildings are anticipated to be constructed by the Year 2028.

Roadway improvements include the following:

- Site accesses along Tower Road, 104th Avenue, Walden Street, and 105th Avenue. The accesses meet the City's minimum access spacing criteria for full-movement intersections and 3/4 movement intersections. However, the 3/4 movement intersection at 104th Avenue & Yampa Street is approximately 605 feet east of the intersection of 104th Avenue & Walden Street. A variance was approved on September 12, 2023.
- Connection of 105th Avenue to Tower Road will be 3/4 access. The ultimate median and west curb are proposed along Tower Road, between 104th Way and 105th Avenue.

Roadway improvements have already been completed along Homestead Trail per the *Reunion Center – Duet Phase District Improvements* construction plans approved on June 23, 2022. Improvements along Walden Street and 105th Avenue have not yet been constructed. Homestead Trail is not proposed to connect to Tower Road in this Duet & Commercial Phase.

This traffic letter will analyze the Level of Service (LOS) at the following intersections:

- E 104th Avenue & Tower Road (E1)
- E 104th Avenue & Walden Street (E2)
- Walden Street & E 105th Avenue (E3)
- Walden Street & Homestead Trail (E4)
- Tower Road & E 105th Avenue (A1)
- E 104th Avenue & Yampa Street (A2)
- Walden Street & E 104th Way (A3)
- Walden Street & E 105th Place (A4)
- 105th Ave & Yampa Street (A5)
- Homestead Trail & Yampa Street (A6)

Data Collection

Existing turning movement counts were collected by All Traffic Data on August 23, 2022 at the following study area intersections:

- 104th & Tower (E1)
- 104th & Walden (E2)
- Walden & 105th (E3)
- Walden & Homestead (E4)

The counts were collected from 7:00-9:00 AM and 4:00-6:00 PM along 104th Avenue and from 7:00-9:00 AM and 2:00-6:00 PM along Walden Street. The AM peak hour generally occurred 7:15-8:15 AM. The PM peak hour generally occurred 4:30-5:30 PM along 104th Avenue and 2:45-3:45 PM along Walden Street (due to the STEAD School). The traffic counts are included in **Appendix B**.

Additionally, signal timing plans along the 104th Avenue corridor (from State Highway 2 to Tower Road) were prepared by Michael Baker International on February 2, 2022 and provided by the City. The Implemented Signal Timing cycle length and parameters per their Synchro reports were utilized in the opening day Year 2028, but the phasing splits were optimized as necessary with the site generated traffic. These timing reports are included in **Appendix C**.

Background Traffic Summary

Traffic projections were updated based on new traffic counts and sources described in the *Reunion Center – South TIS – Addendum Letter* dated March 14, 2024, prepared by JR Engineering.

In order to align with projections by the DRCOG Focus Travel Model for Year 2050, a 3.0% growth rate was applied to the existing thru traffic volumes along 104th Avenue and Tower Road. A 2.0% growth rate was applied to the turning volumes at the intersection of 104th & Tower. A 1.0% growth rate was applied to the remaining minor streets and turning movements, since most of the traffic growth along these streets is accounted for in the Duet & Commercial site generated traffic. These rates were applied to estimate Year 2028 background volumes. JR notes that the City has observed 1.4% annual growth in recent years along 104th Avenue and Tower Road, according to traffic counts in December 2022.

JR also calculated average daily traffic (ADT) for the Year 2028 background condition. This was calculated by applying growth rates to existing ADT volumes. The sources of existing ADT volumes and the growth rates used are listed below, based on the highest ADT found for each segment:

- Tower Rd north of 104th Ave
  - 2022 ADT from DRCOG travel model
  - 3% growth rate
- Tower Rd south of 104th Ave
  - 2022 ADT from DRCOG travel model
  - 3% growth rate
- 104th Ave east of Tower Rd
  - May 2018 ADT from *Reunion Center – South TIS*
  - 3% growth rate
- 104th Ave west of Tower Rd
  - December 2022 ADT from traffic counts
  - 3% growth rate
- Walden St north of 104th Ave
  - August 2022 ADT from traffic counts
  - 1% growth rate

The *Reunion Center – STEAD School Phase 2 Traffic Letter* analyzed the Year 2024 scenario with half the STEAD School remaining (325 students) and the Duet townhomes. Therefore, site generated traffic of half the school was included in the Year 2028 Background Traffic in this conformance letter. The trip generation summary is included in **Appendix A**.

In the STEAD School Phase traffic letter, the AM Peak Hour of Adjacent Street Traffic and the PM Peak Hour of Generator options were used. This was because the PM peak hour of a school typically does not coincide with the PM peak hour of adjacent street traffic. In order to be conservative again, the PM Peak Hour of Generator was kept for the STEAD School.

Trip Generation Summary

Site generated traffic has been calculated from the latest data contained within the Institute of Transportation Engineers' (ITE) *Trip Generation Manual – 10th Edition*. The Duet & Commercial townhomes (2 units each) were studied as ITE Code 210 (Single-Family Detached Housing) with 190 total dwelling units. The townhomes were not studied as ITE Code 220 (Low-Rise Multifamily Housing) because the *Trip Generation Manual – 10th Edition* describes Code 220 as buildings with at least 4 residential units each. Based on the land use and the guidelines within Volume 1 of the *Trip Generation Manual*, JR used the fitted equations for the AM and PM peak hours of adjacent street traffic.

The land uses for the Commercial Parcel vary according to the site plan and are shown in the Trip Generation Summary as **Table 1**. This site plan is subject to change and will be updated as necessary in subsequent submittals.

No adjustments were made for internal capture trips, but adjustments were made for pass-by trips. The detailed land use reports are included in **Appendix A**.

The estimated site generated traffic for the Duet Townhomes are now less than the volumes assumed in the *Reunion Center – South TIS*, since the South TIS assumed a retail shopping center along with apartment buildings in TAZ's 1-2, 1-3a, and 1-3b. The estimated site generated traffic for the Commercial Parcel is now greater than the volumes assumed in the *Reunion Center – South TIS*, since the South TIS assumed multi-family housing and a shopping center in TAZ's Future-2a and Future-2b.

The TAZ Map and Trip Generation Table from the South TIS are included in **Appendix G**.

Trip Generation Summary

Alternative: Duet Phase and Commercial Center
Phase:
Project: Reunion Center

Open Date: 2/8/2023
Analysis Date: 2/8/2023

ITE	Land Use		Weekday Average Daily Trips *	Enter	Exit	Total	Weekday AM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total	Weekday PM Peak Hour of Adjacent Street Traffic *	Enter	Exit	Total
210	Townhomes			939	938	1877		35	105	140		118	70	188
	190	Dwelling Units												
565	Child Care Center			357	357	714		87	78	165		78	89	167
	15	1000 Sq. Ft. GFA												
720	Medical Office Building			129	129	258		20	6	26		9	24	33
	9	1000 Sq. Ft. GFA												
820	Retail			589	589	1178		97	59	156		44	48	92
	9.1	1000 Sq. Ft. GLA												
848	Tire Store			64	64	128		8	4	12		8	10	18
	4.5	1000 Sq. Ft. GFA												
880	Drug Store			681	681	1362		53	29	82		64	67	131
	15.4	1000 Sq. Ft. GFA												
911	Bank					0				0		18	22	40
	3.3	1000 Sq. Ft. GFA												
932	Restaurant			449	448	897		44	36	80		48	30	78
	8	1000 Sq. Ft. GFA												
934	Fast Food West with Drive-Through			589	588	1177		51	49	100		43	39	82
	2.5	1000 Sq. Ft. GFA												
934	Fast Food East with Drive-Through			589	588	1177		51	49	100		43	39	82
	2.5	1000 Sq. Ft. GFA												
937	Coffee Shop with Drive-Through			357	357	714		39	38	77		19	19	38
	0.87	1000 Sq. Ft. GFA												
948	Car Wash					0				0		39	39	78
	1	Car Wash Tunnels												

* - Custom rate used for selected time period.

Source: Institute of Transportation Engineers, Trip Generation Manual 10th Edition

ITE	Land Use		Weekday Average Daily Trips				Weekday AM Peak Hour of Adjacent Street Traffic				Weekday PM Peak Hour of Adjacent Street Traffic			
		*	Enter	Exit	Total		*	Enter	Exit	Total	*	Enter	Exit	Total
	Unadjusted Volume		4743	4739	9482			485	453	938		531	496	1027
	Internal Capture Trips		0	0	0			0	0	0		0	0	0
	Pass-By Trips		0	0	0			48	48	96		108	108	216
	Volume Added to Adjacent Streets		4743	4739	9482			437	405	842		423	388	811

Total Weekday Average Daily Trips Internal Capture = 0 Percent

Total Weekday AM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

Total Weekday PM Peak Hour of Adjacent Street Traffic Internal Capture = 0 Percent

* - Custom rate used for selected time period.

In summary, the Duet Townhomes & Commercial Parcel are expected to generate the approximate following unadjusted number of trips:

- 9,482 weekday trips
- 938 AM peak hour vehicle trips, split 485 entering (52%) and 453 exiting (48%)
- 1,027 PM peak hour vehicle trips, split 531 entering (52%) and 496 exiting (48%)

Based on the projected volumes, the Year 2028 Background Traffic, Assignment of Site Generated Traffic, and Year 2028 Opening Day Traffic are shown in **Figure 1**, **Figure 2**, and **Figure 3**, respectively. Lane Geometry is shown in **Figures 1 and 3**, while directional distribution of site generated traffic is shown in **Figure 2**.

Also described in the *Reunion Center – South TIS – Addendum Letter*, the directional distribution of site generated traffic was updated based on the traffic counts in August 2022 at Tower & 104th (E1) and described as follows:

- 25% to the west along 104th Avenue
- 40% to the south along Tower Road
- 10% to the east along 104th Avenue (toward E470)
- 25% to the north along Tower Road

All-Way Stop Warrant

JR analyzed whether the intersection of Walden Street and Homestead Trail (E4) meets the minimum volumes for an all-way stop condition (AWSC) per MUTCD Section 2B.07 in the Year 2028 Opening Day. The approach speed of Walden Street is below 40mph, so the full values were used. The total of both major street approaches is expected to exceed 300 vehicles in the AM peak hour with 481 vehicles, but not the PM peak hour with 169 vehicles. It is unlikely it would average at least 300 vehicles per hour for 8 hours of an average day. The total of both minor street approaches is not expected to exceed 200 vehicles, pedestrians, and bicyclists during any peak hour in Year 2028.

However, based on comments and discussions with the City, an AWSC condition is typical at the intersection of two collector roads, particularly in residential areas. Furthermore, safety is a concern for pedestrians crossing to/from the STEAD School and residents of the Duet Townhomes who cross to/from the Reunion Park facilities along Reunion Parkway. Therefore, even though the MUTCD volume warrant is not expected to be met, all-way stop control is proposed at Walden & Homestead (E4).

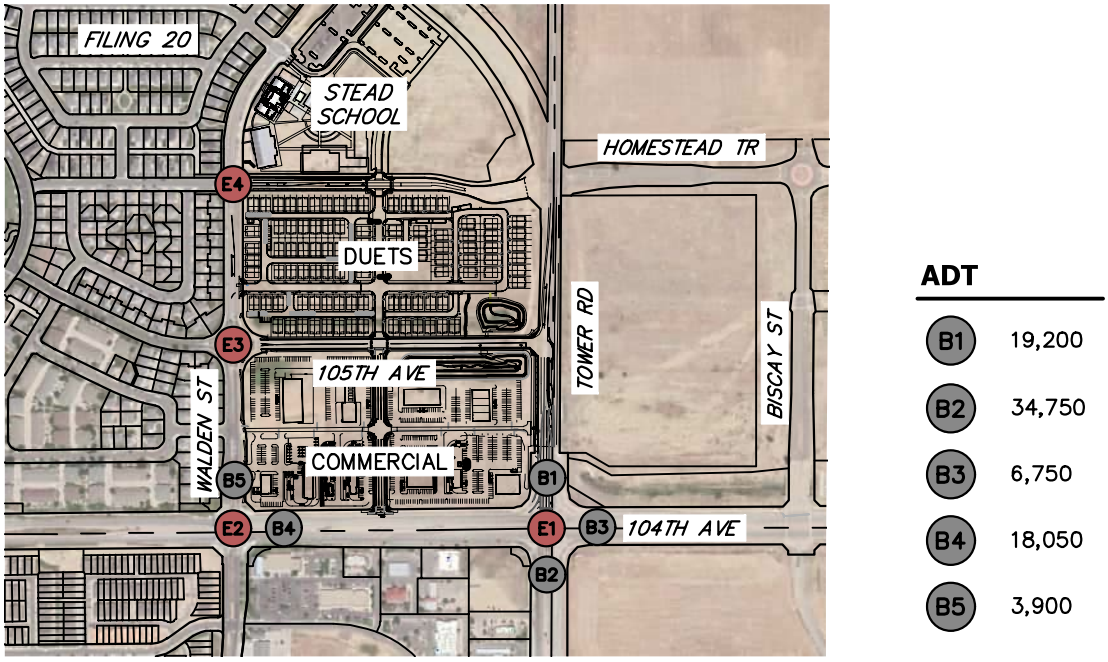
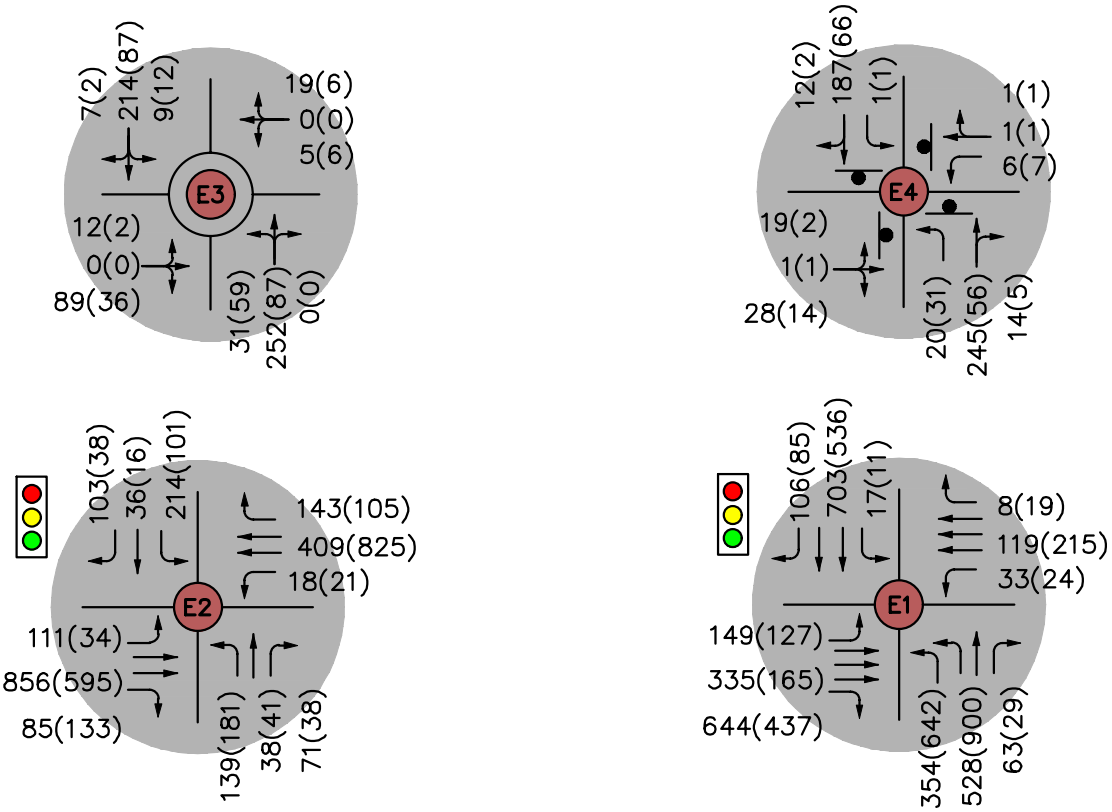


Figure 1 - Year 2028 Background Traffic and Lane Geometry



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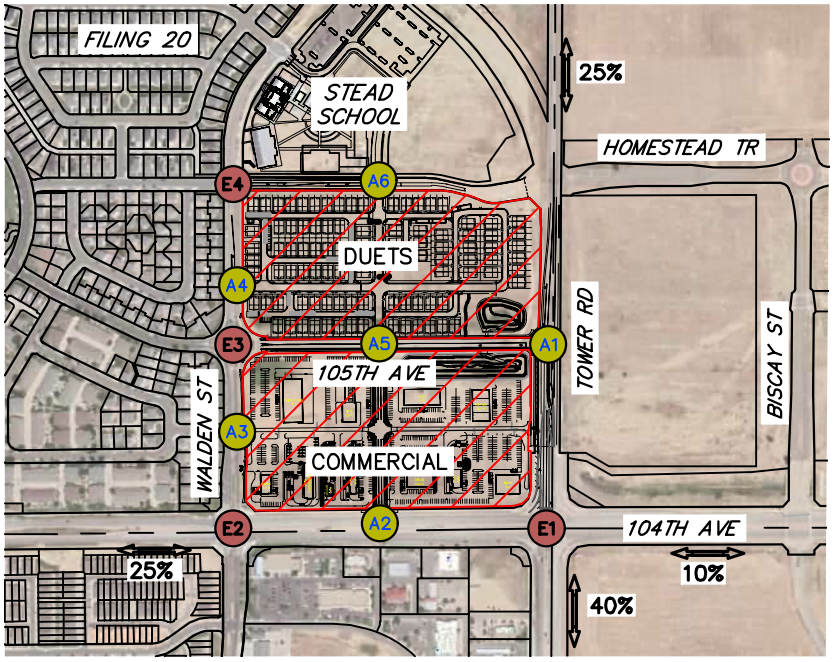
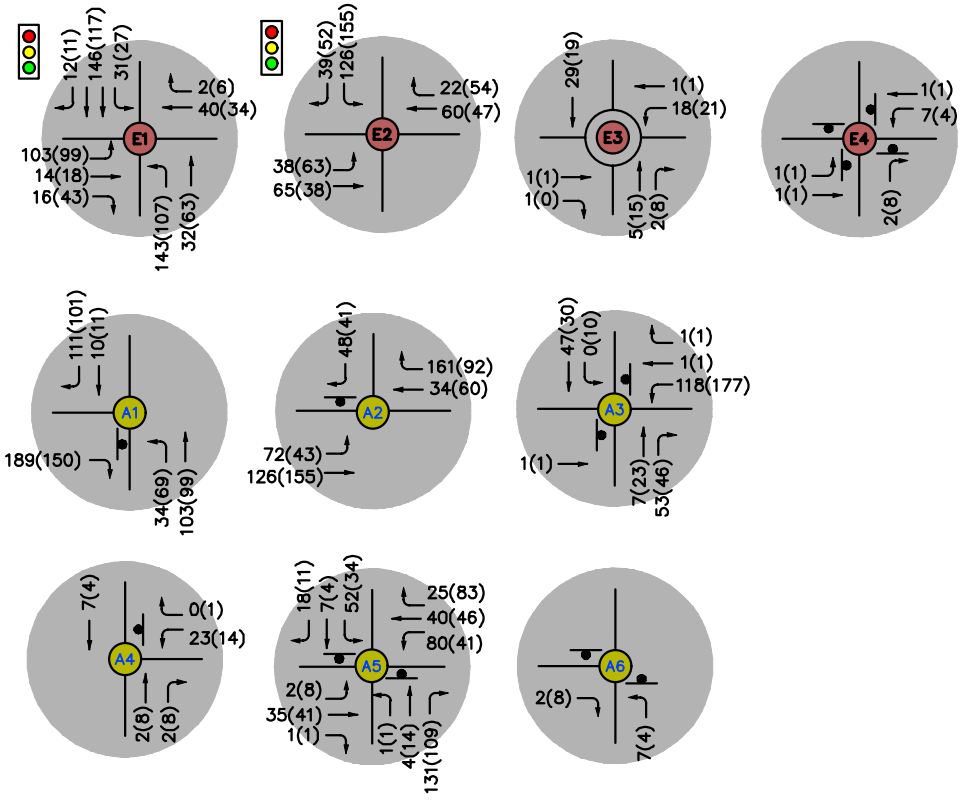
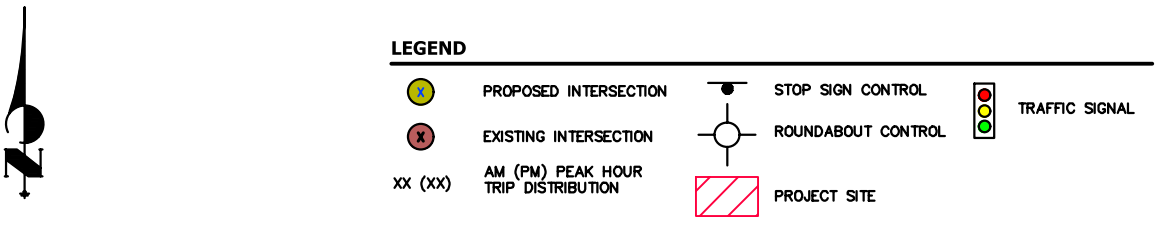
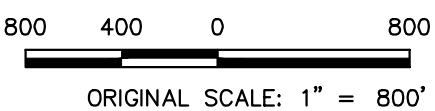


Figure 2 - Assignment of Site Generated Traffic







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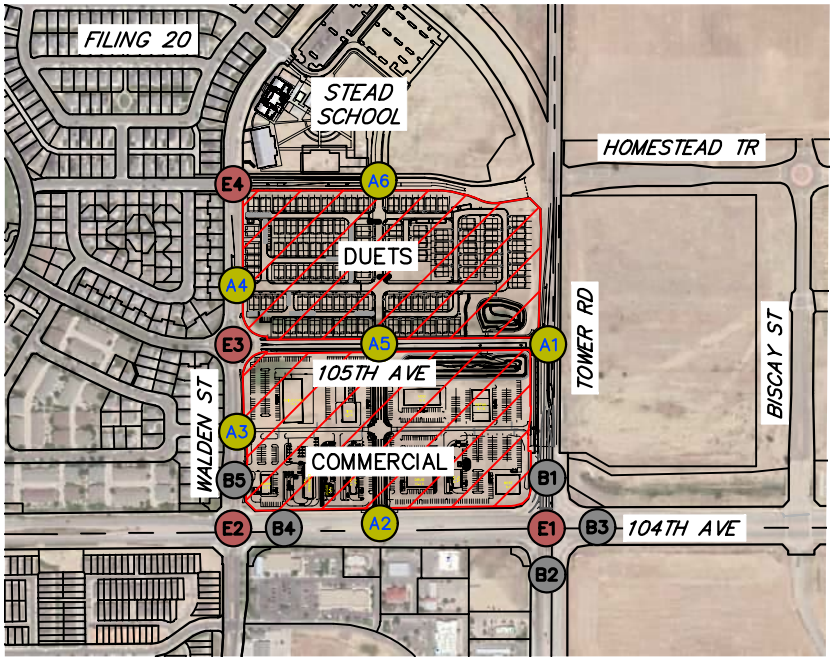
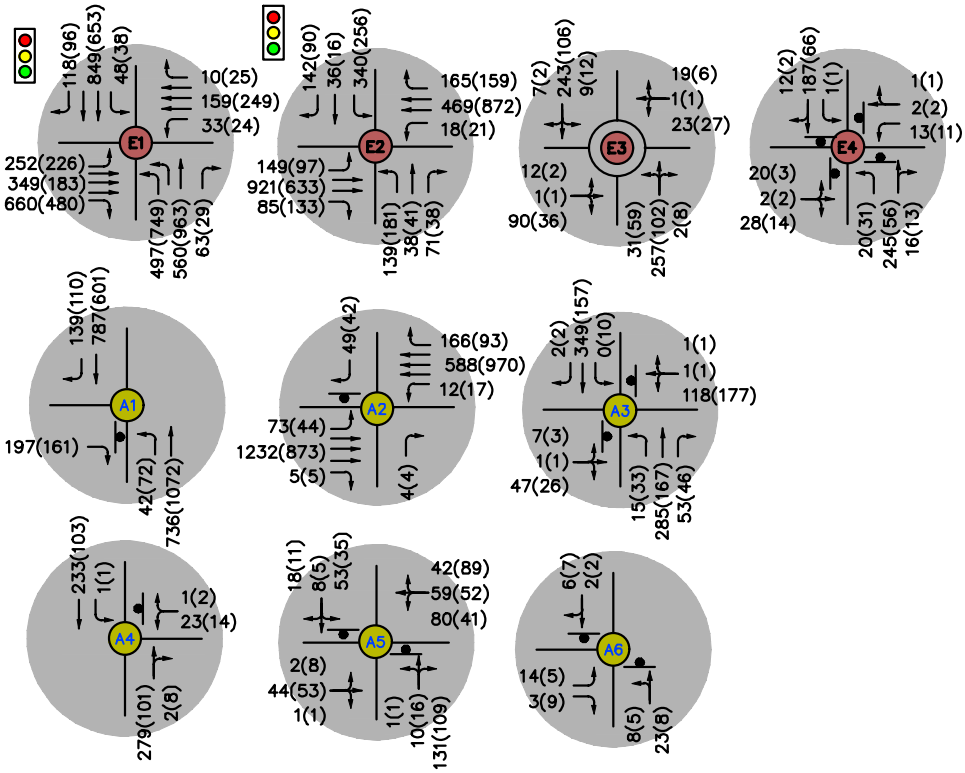
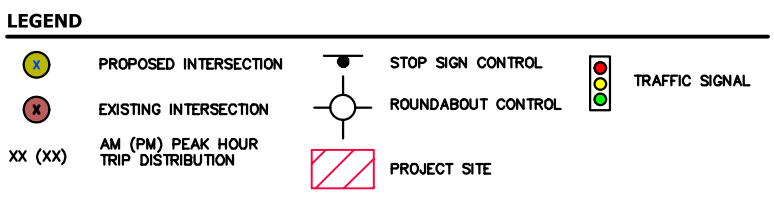
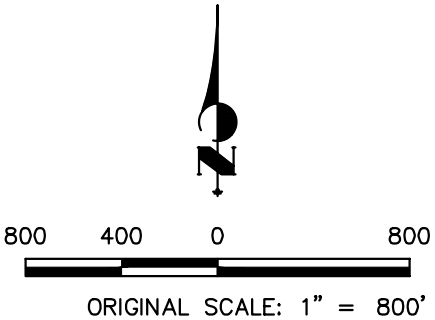


Figure 3 - Year 2028 Opening Day Traffic and Lane Geometry







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Level of Service Results

Operational analyses were conducted in the Year 2028 AM and PM peak hours to determine the levels of service. The projected traffic volumes, lane geometry, and intersection control were input into *Synchro* software and the level of service results are summarized in **Table 2** below. For the traffic signals along 104th Avenue, the cycle length of 120 seconds and parameters were maintained from the Michael Baker implemented signal timings, but the phasing splits were optimized in order to improve LOS due to site generated traffic.

Table 2 – LOS for Year 2028 Traffic

Signalized Intersection	Movement	Background Traffic LOS		Opening Day Traffic LOS	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
E1 - 104th Avenue & Tower Road	EBL	D	D	D	D
	EBT	D	D	D	D
	WBL	D	D	D	D
	WBT	D	D	D	D
	NBL	D	D	D	D
	NBT	B	B	C	C
	SBL	E	E	E	E
	SBT	C	C	D	D
	OVERALL	**D**	**D**	**D**	**D**
E2 - 104th Avenue & Walden Street	EBL	B	B	B	C
	EBT	B	B	C	B
	EBR	B	B	B	B
	WBL	B	B	C	B
	WBT	C	D	D	D
	WBR	C	C	D	C
	NBL	D	D	D	D
	NBT	D	D	D	D
	NBR	E	D	E	D
	SBL	D	D	D	D
	SBT	D	D	D	D
	SBR	D	D	D	D
	OVERALL	**C**	**C**	**C**	**C**
AWSC Intersection					
E4 - Walden Street & Homestead Trail	EBLTR	A	A	A	A
	WBL	A	A	A	A
	WBTR	A	A	A	A
	NBL	A	A	A	A
	NBTR	B	A	B	A
	SBL	A	A	A	A
	SBTR	B	A	B	A

TWSC Intersection	Movement	Background Traffic LOS		Opening Day Traffic LOS	
		AM Peak Hour	PM Peak Hour	AM Peak Hour	PM Peak Hour
A1 - Tower Road & 105th Avenue	EBR	C	B	D	C
	NBL	A	A	B	A
A2 - 104th Avenue & Yampa Street (3/4 Access)	EBL	B	B	B	C
	WBL	C	B	C	B
	NBR	B	B	C	B
	SBR	B	B	B	B
A3 - Walden Street & E 104th Way	EBLTR	B	A	B	B
	WBLTR	N/A	N/A	D	C
	NBL	A	A	A	A
	SBL	N/A	N/A	A	A
A4 - Walden Street & E 105th Place	WBLR	B	A	B	A
	SBL	A	A	A	A
A5 - 105th Avenue & Yampa Street	EBLTR	N/A	N/A	A	A
	WBLTR	N/A	N/A	A	A
	NBLTR	A	A	A	A
	SBLTR	A	A	B	B
A6 - Homestead Trail & Yampa Street	EBL	A	A	A	A
	EBR	A	A	A	A
	NBLT	A	A	A	A
	SBTR	A	A	A	A
Roundabout Intersection					
E3 - Walden Street & E 105th Avenue	EBLTR	A	A	A	A
	WBLTR	A	A	A	A
	NBLTR	A	A	A	A
	SBLTR	A	A	A	A

Notes:

1. EB=Eastbound, WB=Westbound, NB=Northbound, SB=Southbound, N/A=Not Applicable
2. L=Left, R=Right, T=Through
3. Yellow highlight does not meet established threshold of LOS D

The *HCM 6th Edition* Level of Service reports are included in **Appendix D**.

As shown in **Table 2**, all movements are expected to operate at acceptable levels of service in the Year 2028, except for the following:

Year 2028 Background Traffic

- 104th Avenue & Tower Road (E1): SBL in the AM and PM Peak Hours
- 104th Avenue & Walden Street (E2): NBR in the AM Peak Hour

Year 2028 Opening Day Traffic

- 104th Avenue & Tower Road (E1): SBL in the AM and PM Peak Hours
- 104th Avenue & Walden Street (E2): NBR in the AM Peak Hour

At 104th & Tower (E1), the 95th percentile queue lengths for the southbound-left lane are:

- 38 feet and 28 feet in the background AM and PM peak hours, respectively
- 78 feet and 67 feet in the opening day AM and PM peak hours, respectively

The existing storage length for the SBL lane is 250 feet. Because the upstream through lane is not expected to be impeded, JR recommends the City accept this failing LOS. Furthermore, this failure occurs in the background scenario and is not caused by site generated traffic.

At 104th & Walden (E2), the 95th percentile queue length for the northbound-right turn lane is nominal in the opening day AM peak hour. Therefore, JR recommends the City accept this failing LOS. Furthermore, this failure occurs in the background scenario and is not caused by site generated traffic.

Recommendations

In order to optimize traffic operations, below is a summary of the improvements recommended with the construction of the Duet Townhomes and Commercial Parcel. The improvements are categorized as Project responsibility and City responsibility. The recommended improvements are illustrated in **Figure 4**.

Project Responsibility

- Walden Street & Homestead Trail (E4): all-way stop control is recommended at this intersection.
- Tower Road & E 105th Avenue (A1): northbound-left and southbound-right turn lanes are recommended. This intersection is planned as a 3/4 access. 150 feet of storage is recommended for both turn lanes.
- E 104th Avenue & Yampa Street (A2): this is an existing 3/4 access intersection, but the access needs to be rebuilt to tie into Yampa Street.
- Walden Street & E 104th Way (A3): this is an existing full movement intersection, but the access needs to be rebuilt to tie into 104th Way.
- Walden Street & E 105th Place (A4): a southbound-left turn lane with 90 feet of storage is recommended.

City Responsibility

- E 104th Avenue & Tower Road (E1): stripe a second northbound through lane. Optimized traffic signal phasing is recommended.
- E 104th Avenue & Walden Street (E2): no roadway improvements are recommended, but optimized traffic signal phasing is recommended.

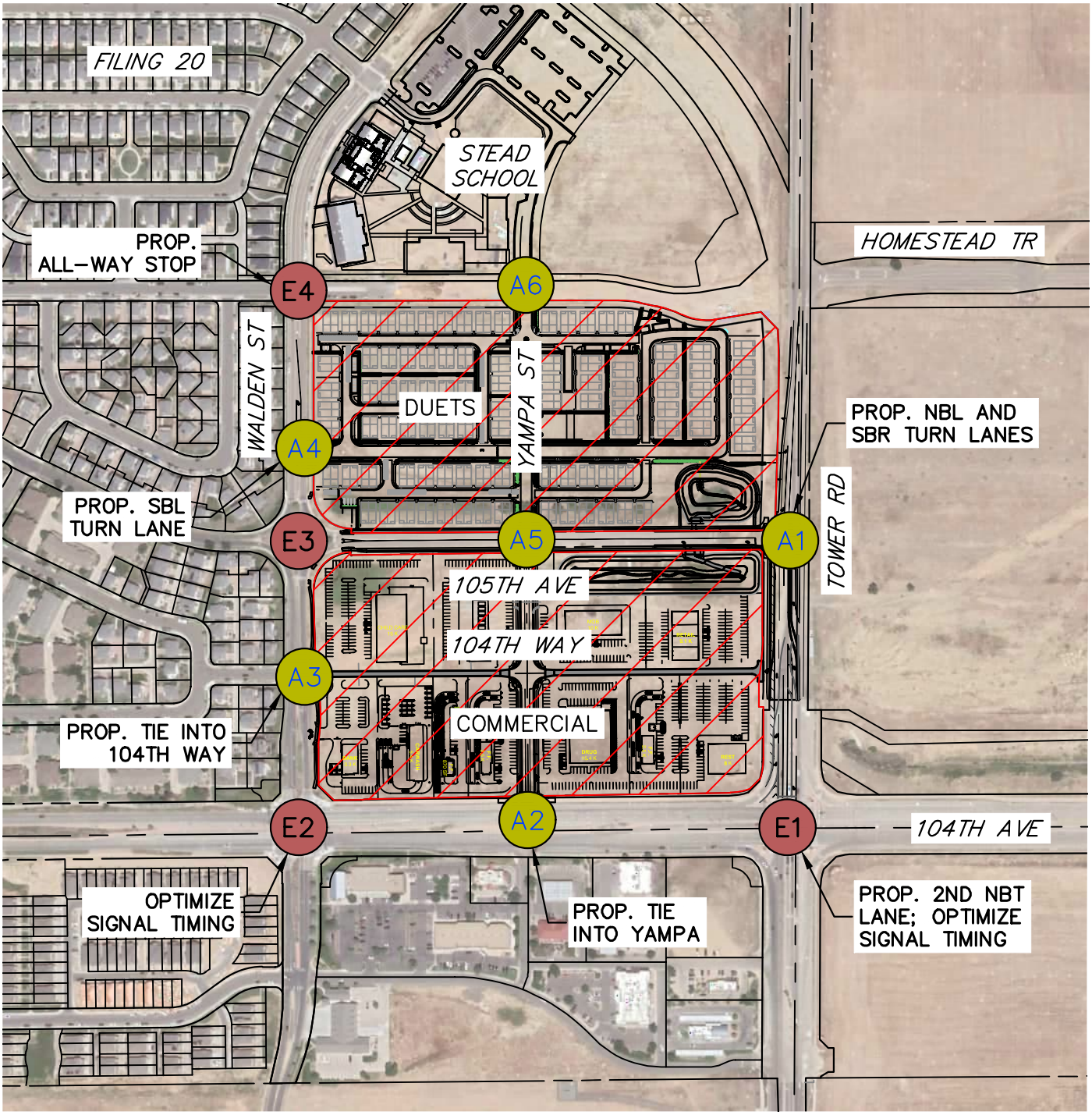
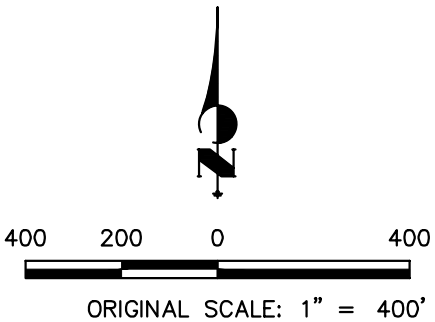
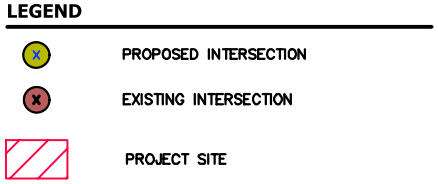


Figure 4 - Recommended Improvements





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Conclusion

This Traffic Letter has been prepared as a supplement to the *Reunion Center – South Traffic Impact Study*, dated March 6, 2020 and prepared by JR Engineering. Based on the development described herein and the anticipated trip generation, JR Engineering is of the opinion that the adjacent roadway network will function satisfactorily with the Duet & Commercial Phase of Reunion Center.

If you have any questions or comments, please feel free to contact me at efarney@jrengineering.com or 303-267-6183.

Sincerely,
JR Engineering, LLC

Eli Farney, PE, PTOE
Director of Public Works

Attachments:
Appendix A: TripGen Reports
Appendix B: Traffic Counts – August 2022
Appendix C: 104th Avenue Implemented Signal Timing – February 2022 (Michael Baker)
Appendix D: *HCM 6th Edition* Level of Service Reports
Appendix E: Site Plans – Reunion Center Duet and Commercial Parcel
Appendix F: *Reunion Center Village Plan* Figures
Appendix G: *Reunion Center – South TIS* Excerpts

APPENDIX A

TRIPGEN REPORTS

Detailed Land Use Data

For 190 Dwelling Units of Townhomes

(210) Single-Family Detached Housing

Project: Reunion Center

Open Date: 2/8/2023

Analysis Date: 2/8/2023

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	1877	0	9.44	4.81	19.39	2.1	264	50	50	True	Ln(T) = 0.92 Ln(X) + 2.71	0.95
Source : Trip Generation Manual 10th Edition												
Weekday AM Peak Hour of Adjacent Street Traffic	140	0	0.74	0.33	2.27	0.27	219	25	75	True	T = 0.71(X) + 4.8	0.89
Source : Trip Generation Manual 10th Edition												
Weekday PM Peak Hour of Adjacent Street Traffic	188	0	0.99	0.44	2.98	0.31	242	63	37	True	Ln(T) = 0.96 Ln(X) + 0.2	0.92
Source : Trip Generation Manual 10th Edition												

Detailed Land Use Data

For 15 1000 Sq. Ft. GFA of Child Care Center

(565) Day Care Center

Open Date: 2/8/2023

Project: Reunion Center

Analysis Date: 2/8/2023

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	714	0	47.62	12.12	211.06	29.78	5	50	50	False		
Source : Trip Generation Manual 10th Edition												
Weekday AM Peak Hour of Adjacent Street Traffic	165	0	11	1.79	57.02	6.08	5	53	47	False		
Source : Trip Generation Manual 10th Edition												
Weekday PM Peak Hour of Adjacent Street Traffic	167	0	11.12	1.56	40.85	6.28	5	47	53	False		
Source : Trip Generation Manual 10th Edition												

Detailed Land Use Data

For 1 Car Wash Tunnels of Car Wash

(948) Automated Car Wash

Open Date: 2/8/2023

Project: Reunion Center

Analysis Date: 2/8/2023

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday PM Peak Hour of Adjacent Street Traffic	78	0	77.5	50	104.5	33.07	1	50	50	False		
Source : Trip Generation Manual 10th Edition												

Detailed Land Use Data

For 4.5 1000 Sq. Ft. GFA of Tire Store

(848) Tire Store

Open Date: 2/8/2023

Project: Reunion Center

Analysis Date: 2/8/2023

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	128	0	28.52	19.02	88.78	16.45	5	50	50	False		
Source : Trip Generation Manual 10th Edition												
Weekday AM Peak Hour of Adjacent Street Traffic	12	0	2.72	0.51	7.78	1.45	5	64	36	False		
Source : Trip Generation Manual 10th Edition												
Weekday PM Peak Hour of Adjacent Street Traffic	18	0	3.98	1.46	12.76	2.12	6	43	57	False		
Source : Trip Generation Manual 10th Edition												

Detailed Land Use Data

For 2.5 1000 Sq. Ft. GFA of Fast Food East with Drive-Through

(934) Fast-Food Restaurant with Drive-Through Window

Project: Reunion Center

Open Date: 2/8/2023

Analysis Date: 2/8/2023

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	1177	0	470.95	98.89	1137.66	244.44	3	50	50	False		
Source : Trip Generation Manual 10th Edition												
Weekday AM Peak Hour of Adjacent Street Traffic	100	49	40.19	0.38	164.25	28.78	4	51	49	False		
Source : Trip Generation Manual 10th Edition												
Weekday PM Peak Hour of Adjacent Street Traffic	82	41	32.67	8.17	117.22	17.87	3	52	48	False		
Source : Trip Generation Manual 10th Edition												

Detailed Land Use Data

For 9.1 1000 Sq. Ft. GLA of Retail

(820) Shopping Center

Project: Reunion Center

Open Date: 2/8/2023

Analysis Date: 2/8/2023

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	1178	0	37.75	7.42	207.98	16.41	453	50	50	True	Ln(T) = 0.68 Ln(X) + 5.57	0.76
Source : Trip Generation Manual 10th Edition												
Weekday AM Peak Hour of Adjacent Street Traffic	156	0	0.94	0.18	23.74	0.87	351	62	38	True	T = 0.5(X) + 151.78	0.5
Source : Trip Generation Manual 10th Edition												
Weekday PM Peak Hour of Adjacent Street Traffic	92	31	3.81	0.74	18.69	2.04	327	48	52	True	Ln(T) = 0.74 Ln(X) + 2.89	0.82
Source : Trip Generation Manual 10th Edition												

Detailed Land Use Data

For 0.87 1000 Sq. Ft. GFA of Coffee Shop with Drive-Through

(937) Coffee/Donut Shop with Drive-Through Window

Project: Reunion Center

Open Date: 2/8/2023

Analysis Date: 2/8/2023

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	714	0	820.38	738.66	869		2	50	50	False		
Source : Trip Generation Manual 10th Edition												
Weekday AM Peak Hour of Adjacent Street Traffic	77	0	88.99	18.32	353.57	48.19	2	51	49	False		
Source : Trip Generation Manual 10th Edition												
Weekday PM Peak Hour of Adjacent Street Traffic	38	0	43.38	2.09	92.31	18.88	2	50	50	False		
Source : Trip Generation Manual 10th Edition												

Detailed Land Use Data

For 9 1000 Sq. Ft. GFA of Medical Office Building

(720) Medical-Dental Office Building

Project: Reunion Center

Open Date: 2/8/2023

Analysis Date: 2/8/2023

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	258	0	34.8	9.14	100.75	9.79	24	50	50	True	T = 38.42(X) - 87.62	0.95
Source : Trip Generation Manual 10th Edition												
Weekday AM Peak Hour of Adjacent Street Traffic	26	0	2.78	0.85	14.3	1.28	32	78	22	True	Ln(T) = 0.89 Ln(X) + 1.31	0.8
Source : Trip Generation Manual 10th Edition												
Weekday PM Peak Hour of Adjacent Street Traffic	33	0	3.46	0.25	8.86	1.58	28	28	72	True	T = 3.39(X) + 2.02	0.73
Source : Trip Generation Manual 10th Edition												

Detailed Land Use Data

For 3.3 1000 Sq. Ft. GFA of Bank

(911) Walk-in Bank

Open Date: 2/8/2023

Project: Reunion Center

Analysis Date: 2/8/2023

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday PM Peak Hour of Adjacent Street Traffic	40	0	12.13	2	24.15	12.41	5	44	56	False		
Source : Trip Generation Manual 10th Edition												

Detailed Land Use Data

For 8 1000 Sq. Ft. GFA of Restaurant

(932) High-Turnover (Sit-Down) Restaurant

Project: Reunion Center

Open Date: 2/8/2023

Analysis Date: 2/8/2023

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	897	0	112.18	13.04	742.41	72.51	5	50	50	False		
Source : Trip Generation Manual 10th Edition												
Weekday AM Peak Hour of Adjacent Street Traffic	80	0	9.94	0.76	102.39	11.33	5	55	45	False		
Source : Trip Generation Manual 10th Edition												
Weekday PM Peak Hour of Adjacent Street Traffic	78	34	9.77	0.92	62	7.37	6	62	38	False		
Source : Trip Generation Manual 10th Edition												

Detailed Land Use Data

For 15.4 1000 Sq. Ft. GFA of Drug Store

(880) Pharmacy/Drugstore without Drive-Through Window

Project: Reunion Center

Open Date: 2/8/2023

Analysis Date: 2/8/2023

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	1362	0	90.08	81	106.5	8.9	11	50	50	True	Ln(T) = 0.99 Ln(X) + 4.51	0.73
Source : Trip Generation Manual 10th Edition												
Weekday AM Peak Hour of Adjacent Street Traffic	82	0	2.94	1.17	4.3	1.25	10	65	35	True	T = 10.22(X) - 75.7	0.89
Source : Trip Generation Manual 10th Edition												
Weekday PM Peak Hour of Adjacent Street Traffic	131	69	8.51	5.11	11.7	2.16	11	49	51	False		
Source : Trip Generation Manual 10th Edition												

Detailed Land Use Data

For 2.5 1000 Sq. Ft. GFA of Fast Food West with Drive-Through

(934) Fast-Food Restaurant with Drive-Through Window

Project: Reunion Center

Open Date: 2/8/2023

Analysis Date: 2/8/2023

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	1177	0	470.95	98.89	1137.66	244.44	3	50	50	False		
Source : Trip Generation Manual 10th Edition												
Weekday AM Peak Hour of Adjacent Street Traffic	100	49	40.19	0.38	164.25	28.78	4	51	49	False		
Source : Trip Generation Manual 10th Edition												
Weekday PM Peak Hour of Adjacent Street Traffic	82	41	32.67	8.17	117.22	17.87	3	52	48	False		
Source : Trip Generation Manual 10th Edition												

Detailed Land Use Data

For 325 Students of STEAD School

(530) High School

Open Date: 8/26/2022

Project: Reunion Center

Analysis Date: 8/26/2024

Day / Period	Total Trips	Pass-By Trips	Avg Rate	Min Rate	Max Rate	Std Dev	Avg Size	% Enter	% Exit	Use Eq.	Equation	R2
Weekday Average Daily Trips	660	0	2.03	1.19	3.96	0.82	1498	50	50	False	Ln(T) = 0.76 Ln(X) + 2.46	0.6
Source : Trip Generation Manual 10th Edition												
Weekday AM Peak Hour of Adjacent Street Traffic	169	0	0.52	0.03	1.15	0.23	1202	67	33	False		
Source : Trip Generation Manual 10th Edition												
Weekday PM Peak Hour of Generator	107	0	0.33	0.16	0.74	0.13	1127	32	68	False	Ln(T) = 0.69 Ln(X) + 1.07	0.64
Source : Trip Generation Manual 10th Edition												

APPENDIX B

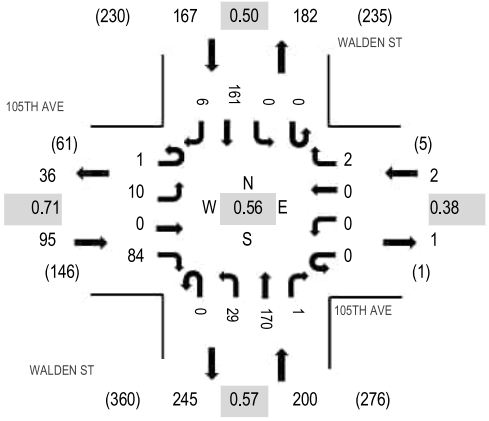
TRAFFIC COUNTS – AUGUST 23, 2022

ALL TRAFFIC DATA SERVICES

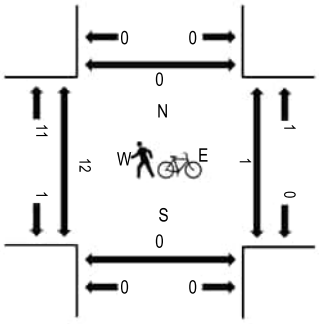
(303) 216-2439
www.alltrafficdata.net

Location: 1 WALDEN ST & 105TH AVE AM
Date: Tuesday, August 23, 2022
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

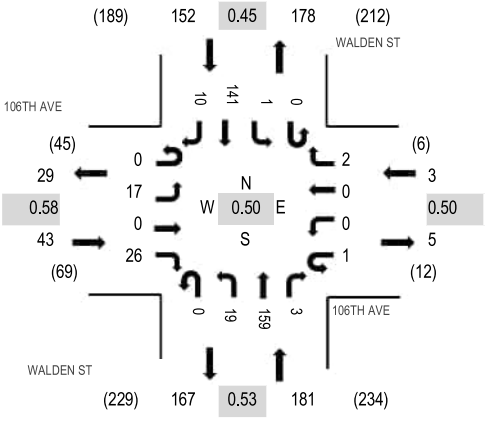
Traffic Counts

Interval Start Time	105TH AVE Eastbound				105TH AVE Westbound				WALDEN ST Northbound				WALDEN ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	20	0	0	0	2	1	5	13	0	0	0	25	0	66	453	0	0	0	0
7:15 AM	0	0	0	21	0	0	0	1	0	4	31	0	0	0	12	0	69	464	0	1	0	0
7:30 AM	1	1	0	23	0	0	0	0	0	11	39	0	0	0	33	2	110	452	5	0	0	0
7:45 AM	0	8	0	28	0	0	0	0	0	9	78	0	0	0	81	4	208	377	1	0	0	0
8:00 AM	0	1	0	12	0	0	0	1	0	5	22	1	0	0	35	0	77	204	0	0	0	0
8:15 AM	0	1	0	11	0	1	0	0	0	11	17	0	0	0	16	0	57		1	0	0	0
8:30 AM	0	0	0	11	0	0	0	0	0	4	11	0	0	0	9	0	35		0	0	0	0
8:45 AM	0	0	0	8	0	0	0	0	0	5	9	0	0	0	13	0	35		0	0	0	0
Count Total	1	11	0	134	0	1	0	4	1	54	220	1	0	0	224	6	657		7	1	0	0
Peak Hour	1	10	0	84	0	0	0	2	0	29	170	1	0	0	161	6	464		6	1	0	0

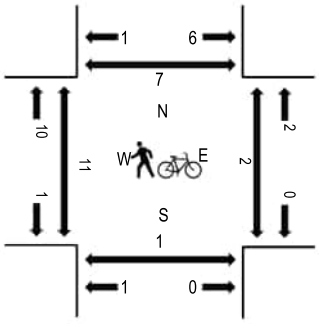
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 2 WALDEN ST & 106TH AVE AM
Date: Tuesday, August 23, 2022
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

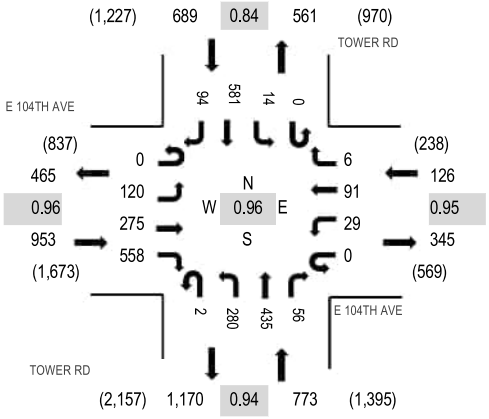
Interval Start Time	106TH AVE Eastbound				106TH AVE Westbound				WALDEN ST Northbound				WALDEN ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	0	0	11	0	0	0	1	0	1	9	4	0	0	13	0	39	356	0	0	0	0
7:15 AM	0	1	0	3	0	0	0	0	0	7	23	2	0	0	9	0	45	379	0	0	0	0
7:30 AM	0	3	0	6	0	0	0	0	0	4	36	0	0	0	29	3	81	368	1	1	0	1
7:45 AM	0	11	0	9	0	0	0	1	0	7	79	0	0	1	78	5	191	308	5	0	0	4
8:00 AM	0	2	0	8	1	0	0	1	0	1	21	1	0	0	25	2	62	142	1	0	0	1
8:15 AM	0	0	0	7	0	0	0	0	0	4	14	0	0	0	9	0	34		0	0	0	0
8:30 AM	0	0	0	1	0	0	0	1	0	5	4	2	0	0	8	0	21		0	0	0	0
8:45 AM	0	1	0	6	0	0	1	0	0	5	4	1	0	0	7	0	25		0	0	0	0
Count Total	0	18	0	51	1	0	1	4	0	34	190	10	0	1	178	10	498		7	1	0	6
Peak Hour	0	17	0	26	1	0	0	2	0	19	159	3	0	1	141	10	379		7	1	0	6

ALL TRAFFIC DATA SERVICES

(303) 216-2439
www.alltrafficdata.net

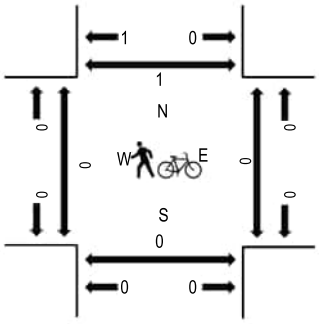
Location: 3 TOWER RD & E 104TH AVE AM
Date: Tuesday, August 23, 2022
Peak Hour: 07:00 AM - 08:00 AM
Peak 15-Minutes: 07:00 AM - 07:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

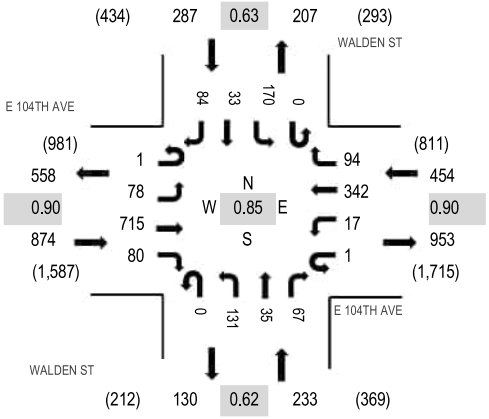
Interval Start Time	E 104TH AVE Eastbound				E 104TH AVE Westbound				TOWER RD Northbound				TOWER RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	19	67	155	0	8	15	0	0	57	127	9	0	4	187	13	661	2,541	0	0	0	0
7:15 AM	0	22	65	141	0	4	25	3	0	83	72	14	0	4	167	16	616	2,462	0	0	0	0
7:30 AM	0	38	69	130	0	10	26	0	1	62	122	21	0	4	127	35	645	2,375	0	0	0	0
7:45 AM	0	41	74	132	0	7	25	3	1	78	114	12	0	2	100	30	619	2,201	0	0	0	0
8:00 AM	0	20	65	140	0	10	22	2	0	55	97	15	0	1	139	16	582	1,992	0	0	0	0
8:15 AM	0	15	53	116	0	7	16	1	2	73	101	7	0	1	116	21	529		0	0	0	0
8:30 AM	0	19	31	122	0	7	20	2	0	50	83	11	0	2	113	11	471		0	0	0	0
8:45 AM	0	6	33	100	0	4	21	0	0	60	63	5	0	0	111	7	410		0	0	0	0
Count Total	0	180	457	1,036	0	57	170	11	4	518	779	94	0	18	1,060	149	4,533		0	0	0	0
Peak Hour	0	120	275	558	0	29	91	6	2	280	435	56	0	14	581	94	2,541		0	0	0	0

ALL TRAFFIC DATA SERVICES

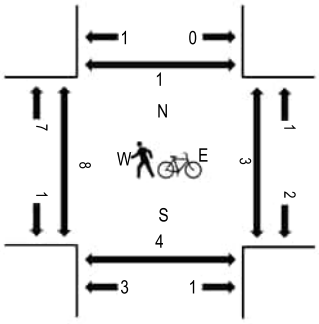
(303) 216-2439
www.alltrafficdata.net

Location: 4 WALDEN ST & E 104TH AVE AM
Date: Tuesday, August 23, 2022
Peak Hour: 07:15 AM - 08:15 AM
Peak 15-Minutes: 07:45 AM - 08:00 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

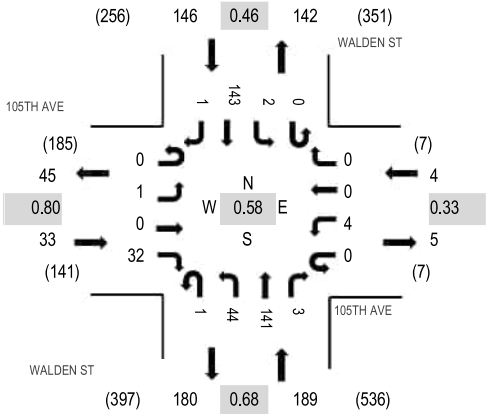
Traffic Counts

Interval Start Time	E 104TH AVE Eastbound				E 104TH AVE Westbound				WALDEN ST Northbound				WALDEN ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
7:00 AM	0	8	210	6	0	4	74	9	0	20	3	12	0	39	4	15	404	1,788	0	0	0	0
7:15 AM	0	7	160	17	1	3	71	23	0	21	7	11	0	42	5	6	374	1,848	2	3	2	0
7:30 AM	0	19	201	18	0	9	86	29	0	21	3	21	0	38	8	12	465	1,828	3	0	0	0
7:45 AM	0	37	148	24	0	3	95	31	0	53	20	21	0	56	14	43	545	1,671	1	0	0	0
8:00 AM	1	15	206	21	0	2	90	11	0	36	5	14	0	34	6	23	464	1,413	1	0	2	0
8:15 AM	1	10	142	15	0	5	90	15	0	20	7	10	0	26	3	10	354		1	1	3	1
8:30 AM	0	4	153	14	0	5	68	8	0	22	6	4	0	17	1	6	308		1	0	0	0
8:45 AM	0	2	129	19	0	4	67	8	0	22	6	4	0	16	2	8	287		0	0	0	0
Count Total	2	102	1,349	134	1	35	641	134	0	215	57	97	0	268	43	123	3,201		9	4	7	1
Peak Hour	1	78	715	80	1	17	342	94	0	131	35	67	0	170	33	84	1,848		7	3	4	0

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

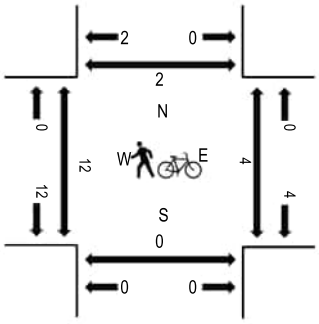
Location: 1 WALDEN ST & 105TH AVE PM
Date: Tuesday, August 23, 2022
Peak Hour: 02:45 PM - 03:45 PM
Peak 15-Minutes: 03:00 PM - 03:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



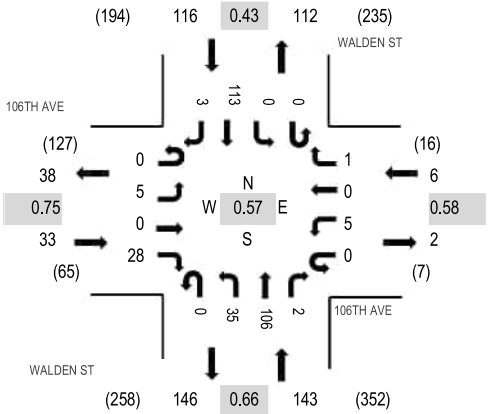
Traffic Counts

Interval Start Time	105TH AVE Eastbound				105TH AVE Westbound				WALDEN ST Northbound				WALDEN ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
2:00 PM	0	0	0	8	0	0	0	1	0	8	10	1	0	0	10	1	39	211	0	0	0	0
2:15 PM	1	0	0	7	0	0	0	0	0	7	18	0	0	0	8	0	41	331	0	0	0	0
2:30 PM	0	0	0	13	0	0	0	0	0	6	20	0	0	0	8	0	47	348	0	0	0	0
2:45 PM	0	1	0	2	0	0	0	0	0	10	55	1	0	1	14	0	84	372	0	0	0	0
3:00 PM	0	0	0	7	0	3	0	0	0	17	52	1	0	0	79	0	159	342	7	3	0	2
3:15 PM	0	0	0	9	0	0	0	0	0	9	17	0	0	1	22	0	58	228	1	0	0	0
3:30 PM	0	0	0	14	0	1	0	0	1	8	17	1	0	0	28	1	71	221	0	0	0	0
3:45 PM	0	0	0	11	0	0	0	0	0	13	22	0	0	0	8	0	54	191	0	1	0	1
4:00 PM	0	0	0	8	0	0	0	0	0	12	17	0	0	0	8	0	45	179	0	0	0	0
4:15 PM	0	1	0	11	0	0	0	0	0	14	16	0	0	0	9	0	51	185	0	0	2	0
4:30 PM	0	0	0	12	0	0	0	0	0	14	8	0	0	0	7	0	41	182	1	0	0	0
4:45 PM	0	0	0	6	0	0	0	0	0	10	17	0	0	0	9	0	42	198	0	0	1	0
5:00 PM	0	0	0	12	0	0	0	0	0	14	17	1	0	0	7	0	51	208	0	0	0	0
5:15 PM	0	0	0	4	0	1	0	0	0	18	19	0	0	0	6	0	48		0	0	0	0
5:30 PM	0	0	0	5	0	0	0	0	0	12	25	0	0	0	15	0	57		0	0	0	0
5:45 PM	0	0	0	9	0	1	0	0	0	10	18	0	0	0	14	0	52		0	0	0	0
Count Total	1	2	0	138	0	6	0	1	1	182	348	5	0	2	252	2	940		9	4	3	3
Peak Hour	0	1	0	32	0	4	0	0	1	44	141	3	0	2	143	1	372		8	3	0	2

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

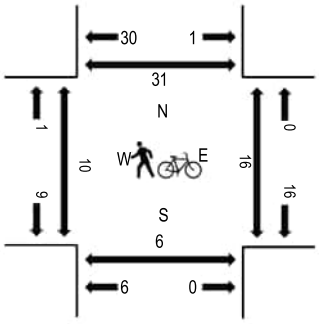
Location: 2 WALDEN ST & 106TH AVE PM
Date: Tuesday, August 23, 2022
Peak Hour: 02:45 PM - 03:45 PM
Peak 15-Minutes: 03:00 PM - 03:15 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



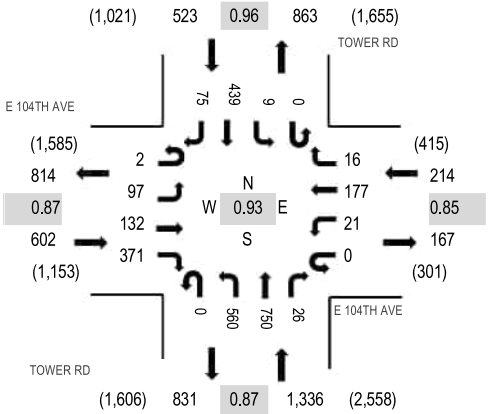
Traffic Counts

Interval Start Time	106TH AVE Eastbound				106TH AVE Westbound				WALDEN ST Northbound				WALDEN ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
2:00 PM	0	0	0	1	0	2	0	1	0	3	6	2	0	0	7	0	22	158	0	0	0	0
2:15 PM	0	0	0	2	0	2	0	0	0	9	9	0	0	0	4	3	29	267	0	0	0	0
2:30 PM	0	1	0	2	0	1	0	0	0	3	17	0	0	0	5	0	29	280	0	0	0	0
2:45 PM	0	4	0	7	0	1	0	0	0	12	42	1	0	0	11	0	78	298	0	0	0	1
3:00 PM	0	1	0	9	0	0	0	1	0	11	40	1	0	0	66	2	131	250	6	15	4	26
3:15 PM	0	0	0	8	0	1	0	0	0	6	12	0	0	0	14	1	42	148	1	0	0	1
3:30 PM	0	0	0	4	0	3	0	0	0	6	12	0	0	0	22	0	47	133	0	0	0	0
3:45 PM	0	0	0	0	0	1	0	0	1	9	11	1	0	0	7	0	30	101	2	0	0	0
4:00 PM	0	1	0	3	0	0	0	0	0	12	6	0	0	0	7	0	29	98	0	0	0	0
4:15 PM	0	0	0	2	0	0	0	0	0	7	10	0	0	1	7	0	27	94	0	0	0	0
4:30 PM	0	0	0	2	0	0	0	0	0	2	6	0	0	0	5	0	15	91	0	0	0	0
4:45 PM	0	1	0	5	0	0	0	0	0	9	8	0	0	0	4	0	27	117	0	0	0	0
5:00 PM	0	0	0	3	0	0	0	0	0	9	8	0	0	1	4	0	25	121	0	0	0	0
5:15 PM	0	0	0	3	0	0	0	0	0	9	9	0	0	0	3	0	24		0	0	0	0
5:30 PM	0	0	0	4	0	0	0	0	0	10	16	0	0	0	11	0	41		2	0	0	0
5:45 PM	0	0	0	2	0	3	0	0	0	4	13	0	0	0	9	0	31		1	0	0	0
Count Total	0	8	0	57	0	14	0	2	1	121	225	5	0	2	186	6	627		12	15	4	28
Peak Hour	0	5	0	28	0	5	0	1	0	35	106	2	0	0	113	3	298		7	15	4	28

ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

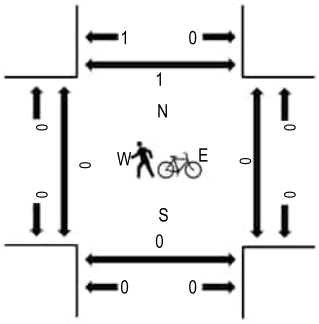
Location: 3 TOWER RD & E 104TH AVE PM
Date: Tuesday, August 23, 2022
Peak Hour: 04:45 PM - 05:45 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



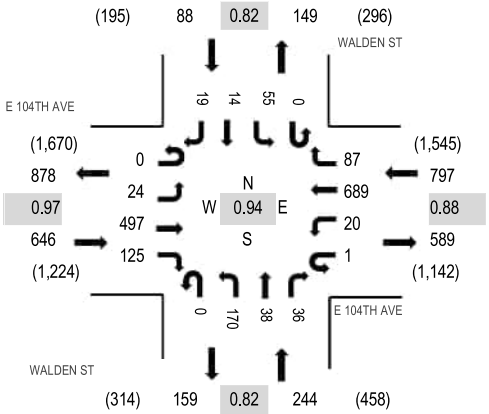
Traffic Counts

Interval Start Time	E 104TH AVE Eastbound				E 104TH AVE Westbound				TOWER RD Northbound				TOWER RD Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	28	32	80	0	4	47	2	0	160	184	9	0	1	103	22	672	2,508	0	0	0	0
4:15 PM	0	25	23	79	0	12	33	2	0	114	183	6	0	1	81	24	583	2,539	0	0	0	0
4:30 PM	0	26	30	88	0	6	52	2	0	128	170	1	0	1	95	25	624	2,673	0	0	0	0
4:45 PM	1	30	26	79	0	6	48	3	0	129	187	6	0	1	97	16	629	2,675	0	0	0	0
5:00 PM	0	20	30	102	0	5	32	5	0	159	215	9	0	2	108	16	703	2,639	0	0	0	0
5:15 PM	1	35	43	95	0	7	54	5	0	141	185	6	0	6	111	28	717		0	0	0	0
5:30 PM	0	12	33	95	0	3	43	3	0	131	163	5	0	0	123	15	626		0	0	0	1
5:45 PM	0	19	28	93	0	5	34	2	1	115	149	2	0	0	128	17	593		0	0	0	0
Count Total	2	195	245	711	0	48	343	24	1	1,077	1,436	44	0	12	846	163	5,147		0	0	0	1
Peak Hour	2	97	132	371	0	21	177	16	0	560	750	26	0	9	439	75	2,675		0	0	0	1

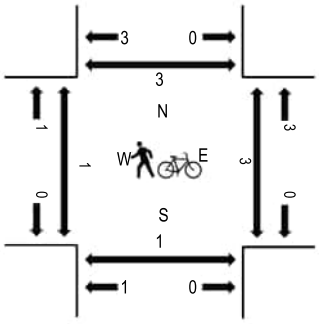
ALL TRAFFIC DATA SERVICES
(303) 216-2439
www.alltrafficdata.net

Location: 4 WALDEN ST & E 104TH AVE PM
Date: Tuesday, August 23, 2022
Peak Hour: 04:30 PM - 05:30 PM
Peak 15-Minutes: 05:15 PM - 05:30 PM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	E 104TH AVE Eastbound				E 104TH AVE Westbound				WALDEN ST Northbound				WALDEN ST Southbound					Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	Total		West	East	South	North
4:00 PM	0	1	131	20	0	7	190	31	0	46	6	10	0	12	4	7	465	1,687	0	2	0	0
4:15 PM	0	4	93	21	0	8	146	22	0	26	12	10	0	11	10	5	368	1,671	0	0	0	0
4:30 PM	0	8	126	33	0	4	186	16	0	43	7	9	0	16	3	2	453	1,775	0	0	0	0
4:45 PM	0	8	115	37	0	6	144	15	0	30	8	11	0	14	3	10	401	1,744	0	0	1	0
5:00 PM	0	1	129	24	1	3	170	26	0	56	13	5	0	15	3	3	449	1,735	1	3	0	3
5:15 PM	0	7	127	31	0	7	189	30	0	41	10	11	0	10	5	4	472		0	0	0	0
5:30 PM	1	6	120	32	0	8	151	26	0	32	6	12	0	17	4	7	422		0	2	0	2
5:45 PM	0	10	110	29	1	8	137	13	0	37	10	7	0	19	4	7	392		0	0	0	0
Count Total	1	45	951	227	2	51	1,313	179	0	311	72	75	0	114	36	45	3,422		1	7	1	5
Peak Hour	0	24	497	125	1	20	689	87	0	170	38	36	0	55	14	19	1,775		1	3	1	3

APPENDIX C

104TH AVENUE IMPLEMENTED SIGNAL TIMING

BY MICHAEL BAKER INTERNATIONAL

AM Peak Signal Timing Plan

After Implementation

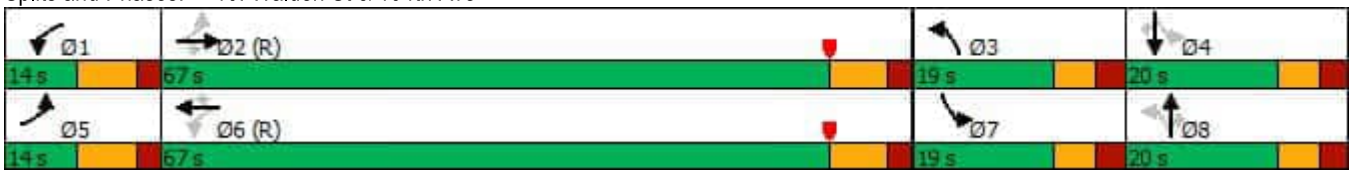
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	742	42	1	296	44	64	10	26	75	7	18
Future Volume (vph)	10	742	42	1	296	44	64	10	26	75	7	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		230	250		0	230		230	210		140
Storage Lanes	1		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	1.00					0.98	1.00					0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3406	1538	1805	3406	1583	1770	1727	1615	1805	1900	1615
Flt Permitted	0.544			0.328			0.752			0.727		
Satd. Flow (perm)	1031	3406	1538	623	3406	1545	1399	1727	1615	1381	1900	1594
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			159			168			168
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		1290			1314			404			2709	
Travel Time (s)		19.5			19.9			9.2			61.6	
Confl. Peds. (#/hr)	2					2	1					1
Peak Hour Factor	0.94	0.94	0.94	0.86	0.86	0.86	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	6%	5%	0%	6%	2%	2%	10%	0%	0%	0%	0%
Adj. Flow (vph)	11	789	45	1	344	51	69	11	28	81	8	19
Shared Lane Traffic (%)												
Lane Group Flow (vph)	11	789	45	1	344	51	69	11	28	81	8	19
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		40			30			24			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	12.5	36.5	36.5	12.5	36.5	36.5	14.5	42.5	42.5	14.5	42.5	42.5
Total Split (s)	14.0	67.0	67.0	14.0	67.0	67.0	19.0	20.0	20.0	19.0	20.0	20.0
Total Split (%)	11.7%	55.8%	55.8%	11.7%	55.8%	55.8%	15.8%	16.7%	16.7%	15.8%	16.7%	16.7%
Maximum Green (s)	6.5	59.5	59.5	6.5	59.5	59.5	12.5	13.5	13.5	12.5	13.5	13.5
Yellow Time (s)	5.3	5.3	5.3	5.3	5.3	5.3	3.8	3.8	3.8	3.8	3.8	3.8
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0		31.0	31.0		31.0	31.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	87.5	87.7	87.7	87.2	87.6	87.6	15.9	10.0	10.0	16.4	10.3	10.3
Actuated g/C Ratio	0.73	0.73	0.73	0.73	0.73	0.73	0.13	0.08	0.08	0.14	0.09	0.09
v/c Ratio	0.01	0.32	0.04	0.00	0.14	0.04	0.32	0.08	0.10	0.36	0.05	0.07
Control Delay	3.6	3.6	0.1	3.0	3.4	0.7	44.0	52.2	0.7	45.0	51.3	0.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.6	3.6	0.1	3.0	3.4	0.7	44.0	52.2	0.7	45.0	51.3	0.4
LOS	A	A	A	A	A	A	D	D	A	D	D	A
Approach Delay		3.4			3.0			33.6			37.7	
Approach LOS		A			A			C			D	

Intersection Summary

Area Type: Other
Cycle Length: 120
Actuated Cycle Length: 120
Offset: 16 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow
Natural Cycle: 110
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.36
Intersection Signal Delay: 8.1 Intersection LOS: A
Intersection Capacity Utilization 57.0% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 10: Walden St & 104th Ave

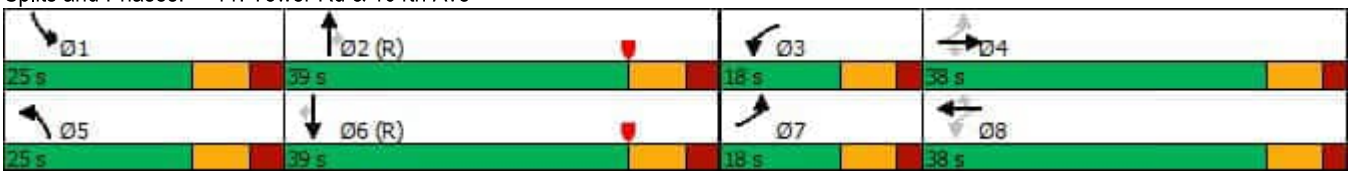


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	50	161	583	35	64	3	270	426	23	5	663	40
Future Volume (vph)	50	161	583	35	64	3	270	426	23	5	663	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		590	330		440	320		290	290		190
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	4848	1538	1467	4803	1615	3367	1743	1162	1504	3406	1538
Flt Permitted	0.693			0.628			0.950			0.950		
Satd. Flow (perm)	1266	4848	1538	970	4803	1615	3367	1743	1162	1504	3406	1538
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			485			189			182			182
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1314			579			636			501	
Travel Time (s)		19.9			8.8			9.6			7.6	
Peak Hour Factor	0.85	0.85	0.85	0.71	0.71	0.71	0.93	0.93	0.93	0.94	0.94	0.94
Heavy Vehicles (%)	4%	7%	5%	23%	8%	0%	4%	9%	39%	20%	6%	5%
Adj. Flow (vph)	59	189	686	49	90	4	290	458	25	5	705	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	59	189	686	49	90	4	290	458	25	5	705	43
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	15.4	39.4	39.4	15.4	39.4	39.4	16.2	40.2	40.2	16.2	40.2	40.2
Total Split (s)	18.0	38.0	38.0	18.0	38.0	38.0	25.0	39.0	39.0	25.0	39.0	39.0
Total Split (%)	15.0%	31.7%	31.7%	15.0%	31.7%	31.7%	20.8%	32.5%	32.5%	20.8%	32.5%	32.5%
Maximum Green (s)	10.6	30.6	30.6	10.6	30.6	30.6	16.8	30.8	30.8	16.8	30.8	30.8
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	3.1	3.1	3.1	3.1	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	8.2	8.2	8.2	8.2	8.2	8.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.0	5.0	2.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		27.0	27.0		27.0	27.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	33.2	26.5	26.5	33.3	26.6	26.6	14.2	62.0	62.0	8.0	42.8	42.8
Actuated g/C Ratio	0.28	0.22	0.22	0.28	0.22	0.22	0.12	0.52	0.52	0.07	0.36	0.36
v/c Ratio	0.15	0.18	0.96	0.16	0.08	0.01	0.73	0.51	0.04	0.05	0.58	0.06
Control Delay	24.6	38.8	51.5	24.5	34.7	0.0	61.8	26.4	0.1	53.6	37.2	0.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	24.6	38.8	51.5	24.5	34.7	0.0	61.8	26.4	0.1	53.6	37.2	0.2
LOS	C	D	D	C	C	A	E	C	A	D	D	A
Approach Delay		47.3			30.2			38.8			35.2	
Approach LOS		D			C			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 115			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.96			
Intersection Signal Delay: 40.3		Intersection LOS: D	
Intersection Capacity Utilization 80.3%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 11: Tower Rd & 104th Ave



PM Peak Signal Timing Plan

After Implementation

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	33	516	85	32	646	69	160	30	32	68	10	30
Future Volume (vph)	33	516	85	32	646	69	160	30	32	68	10	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		230	250		0	230		230	210		140
Storage Lanes	1		1	0		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							1.00		0.99	1.00		0.99
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1805	3539	1599	1752	3471	1599	1770	1776	1568	1752	1727	1509
Flt Permitted	0.332			0.397			0.507			0.732		
Satd. Flow (perm)	631	3539	1599	732	3471	1599	943	1776	1545	1346	1727	1488
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			159			159			168			168
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		1290			1314			404			2709	
Travel Time (s)		19.5			19.9			9.2			61.6	
Confl. Peds. (#/hr)							2		3	3		2
Peak Hour Factor	0.86	0.86	0.86	0.89	0.89	0.89	0.76	0.76	0.76	0.73	0.73	0.73
Heavy Vehicles (%)	0%	2%	1%	3%	4%	1%	2%	7%	3%	3%	10%	7%
Adj. Flow (vph)	38	600	99	36	726	78	211	39	42	93	14	41
Shared Lane Traffic (%)												
Lane Group Flow (vph)	38	600	99	36	726	78	211	39	42	93	14	41
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		40			30			24			22	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	12.5	36.5	36.5	12.5	36.5	36.5	14.5	42.5	42.5	14.5	42.5	42.5
Total Split (s)	14.0	60.0	60.0	14.0	60.0	60.0	23.0	23.0	23.0	23.0	23.0	23.0
Total Split (%)	11.7%	50.0%	50.0%	11.7%	50.0%	50.0%	19.2%	19.2%	19.2%	19.2%	19.2%	19.2%
Maximum Green (s)	6.5	52.5	52.5	6.5	52.5	52.5	16.5	16.5	16.5	16.5	16.5	16.5
Yellow Time (s)	5.3	5.3	5.3	5.3	5.3	5.3	3.8	3.8	3.8	3.8	3.8	3.8
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0	3.0	4.0	4.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		24.0	24.0		24.0	24.0		31.0	31.0		31.0	31.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	72.9	68.7	68.7	72.8	68.6	68.6	27.2	13.8	13.8	19.6	10.0	10.0
Actuated g/C Ratio	0.61	0.57	0.57	0.61	0.57	0.57	0.23	0.12	0.12	0.16	0.08	0.08
v/c Ratio	0.09	0.30	0.10	0.07	0.37	0.08	0.66	0.19	0.13	0.36	0.10	0.15
Control Delay	3.8	5.0	0.3	2.7	9.0	1.4	48.9	50.5	0.8	39.2	52.6	1.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.8	5.0	0.3	2.7	9.0	1.4	48.9	50.5	0.8	39.2	52.6	1.1
LOS	A	A	A	A	A	A	D	D	A	D	D	A
Approach Delay		4.3			8.0			42.2			29.9	
Approach LOS		A			A			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 13.2		Intersection LOS: B	
Intersection Capacity Utilization 56.0%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 10: Walden St & 104th Ave

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	127	405	23	159	9	576	708	22	8	431	67
Future Volume (vph)	102	127	405	23	159	9	576	708	22	8	431	67
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		590	330		440	320		290	290		190
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	4940	1583	1597	4759	1615	3433	1827	1417	1805	3406	1599
Flt Permitted	0.513			0.657			0.950			0.950		
Satd. Flow (perm)	965	4940	1583	1105	4759	1615	3433	1827	1417	1805	3406	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			460			264			182			256
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		1314			579			636			501	
Travel Time (s)		19.9			8.8			9.6			7.6	
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.97	0.97	0.97	0.92	0.92	0.92
Heavy Vehicles (%)	1%	5%	2%	13%	9%	0%	2%	4%	14%	0%	6%	1%
Adj. Flow (vph)	116	144	460	25	173	10	594	730	23	9	468	73
Shared Lane Traffic (%)												
Lane Group Flow (vph)	116	144	460	25	173	10	594	730	23	9	468	73
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	15.4	39.4	39.4	15.4	39.4	39.4	16.2	40.2	40.2	16.2	40.2	40.2
Total Split (s)	16.0	32.0	32.0	16.0	32.0	32.0	30.0	55.0	55.0	17.0	42.0	42.0
Total Split (%)	13.3%	26.7%	26.7%	13.3%	26.7%	26.7%	25.0%	45.8%	45.8%	14.2%	35.0%	35.0%
Maximum Green (s)	8.6	24.6	24.6	8.6	24.6	24.6	21.8	46.8	46.8	8.8	33.8	33.8
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	3.1	3.1	3.1	3.1	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	8.2	8.2	8.2	8.2	8.2	8.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.0	5.0	2.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Walk Time (s)		5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0
Flash Dont Walk (s)		27.0	27.0		27.0	27.0		27.0	27.0		27.0	27.0
Pedestrian Calls (#/hr)		0	0		0	0		0	0		0	0
Act Effct Green (s)	24.0	18.9	18.9	20.2	12.2	12.2	25.5	73.1	73.1	8.0	42.6	42.6
Actuated g/C Ratio	0.20	0.16	0.16	0.17	0.10	0.10	0.21	0.61	0.61	0.07	0.36	0.36
v/c Ratio	0.46	0.19	0.72	0.11	0.36	0.02	0.82	0.66	0.02	0.07	0.39	0.10
Control Delay	36.0	38.9	25.1	35.4	51.5	0.1	54.4	21.2	0.0	54.0	31.1	0.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0
Total Delay	36.0	38.9	25.1	35.4	51.5	0.1	54.4	21.5	0.0	54.0	31.1	0.3
LOS	D	D	C	D	D	A	D	C	A	D	C	A
Approach Delay		29.6			47.1			35.6			27.4	
Approach LOS		C			D			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 125			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.82			
Intersection Signal Delay: 33.3		Intersection LOS: C	
Intersection Capacity Utilization 84.9%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 11: Tower Rd & 104th Ave

APPENDIX D

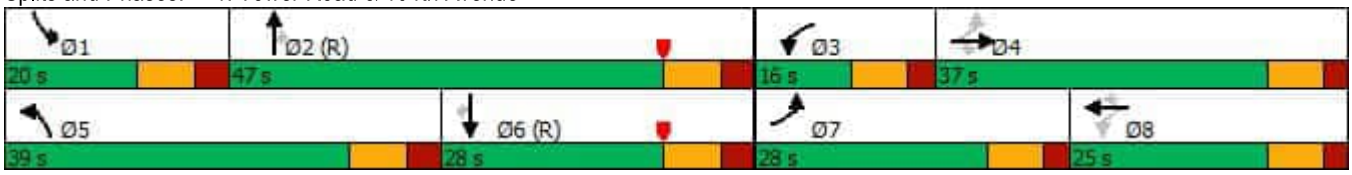
HCM 6TH EDITION LEVEL OF SERVICE REPORTS

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	335	644	33	119	8	354	528	63	17	703	106
Future Volume (vph)	149	335	644	33	119	8	354	528	63	17	703	106
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		590	330		440	320		290	290		190
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.445			0.518			0.950			0.950		
Satd. Flow (perm)	829	5085	1583	965	5085	1583	3433	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			613			331			249			324
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		660			1515			645			450	
Travel Time (s)		10.0			23.0			9.8			6.8	
Peak Hour Factor	0.84	0.88	0.92	0.78	0.83	0.78	0.88	0.92	0.79	0.78	0.92	0.83
Adj. Flow (vph)	177	381	700	42	143	10	402	574	80	22	764	128
Shared Lane Traffic (%)												
Lane Group Flow (vph)	177	381	700	42	143	10	402	574	80	22	764	128
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	15.4	17.4	17.4	15.4	17.4	17.4	16.2	18.2	18.2	16.2	18.2	18.2
Total Split (s)	28.0	37.0	37.0	16.0	25.0	25.0	39.0	47.0	47.0	20.0	28.0	28.0
Total Split (%)	23.3%	30.8%	30.8%	13.3%	20.8%	20.8%	32.5%	39.2%	39.2%	16.7%	23.3%	23.3%
Maximum Green (s)	20.6	29.6	29.6	8.6	17.6	17.6	30.8	38.8	38.8	11.8	19.8	19.8
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	3.1	3.1	3.1	3.1	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	8.2	8.2	8.2	8.2	8.2	8.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	2.0	2.0	3.0	2.0	2.0	2.0	5.0	5.0	2.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	35.7	23.7	23.7	22.1	13.9	13.9	18.5	61.8	61.8	8.0	41.6	41.6
Actuated g/C Ratio	0.30	0.20	0.20	0.18	0.12	0.12	0.15	0.52	0.52	0.07	0.35	0.35
v/c Ratio	0.49	0.38	0.87	0.18	0.24	0.02	0.76	0.32	0.09	0.19	0.62	0.17
Control Delay	31.1	39.0	32.0	30.1	48.1	0.1	58.1	20.5	0.2	56.8	37.7	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.1	39.0	32.0	30.1	48.1	0.1	58.1	20.5	0.2	56.8	37.7	0.5
LOS	C	D	C	C	D	A	E	C	A	E	D	A
Approach Delay		34.0			41.8			33.3			32.9	
Approach LOS		C			D			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 100			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.87			
Intersection Signal Delay: 33.9		Intersection LOS: C	
Intersection Capacity Utilization 85.1%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Tower Road & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	177	381	700	42	143	10	402	574	80	22	764	128
v/c Ratio	0.49	0.38	0.87	0.18	0.24	0.02	0.76	0.32	0.09	0.19	0.62	0.17
Control Delay	31.1	39.0	32.0	30.1	48.1	0.1	58.1	20.5	0.2	56.8	37.7	0.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.1	39.0	32.0	30.1	48.1	0.1	58.1	20.5	0.2	56.8	37.7	0.5
Queue Length 50th (ft)	117	102	281	24	38	0	155	107	0	16	248	0
Queue Length 95th (ft)	157	123	458	39	52	0	195	232	0	38	#433	0
Internal Link Dist (ft)		580			1435			565			370	
Turn Bay Length (ft)	350		590	330		440	320		290	290		190
Base Capacity (vph)	411	1254	852	238	774	521	881	1821	935	174	1226	760
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.30	0.82	0.18	0.18	0.02	0.46	0.32	0.09	0.13	0.62	0.17

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	335	644	33	119	8	354	528	63	17	703	106
Future Volume (veh/h)	149	335	644	33	119	8	354	528	63	17	703	106
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	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	177	381	0	42	143	0	402	574	0	22	764	0
Peak Hour Factor	0.84	0.88	0.92	0.78	0.83	0.78	0.88	0.92	0.79	0.78	0.92	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	322	716		217	426		469	1830		62	1470	
Arrive On Green	0.04	0.05	0.00	0.05	0.08	0.00	0.14	0.51	0.00	0.03	0.41	0.00
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	177	381	0	42	143	0	402	574	0	22	764	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	10.6	8.8	0.0	2.5	3.2	0.0	13.7	11.2	0.0	1.4	19.3	0.0
Cycle Q Clear(g_c), s	10.6	8.8	0.0	2.5	3.2	0.0	13.7	11.2	0.0	1.4	19.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	322	716		217	426		469	1830		62	1470	
V/C Ratio(X)	0.55	0.53		0.19	0.34		0.86	0.31		0.36	0.52	
Avail Cap(c_a), veh/h	437	1260		255	749		887	1830		175	1470	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.9	53.4	0.0	46.1	51.9	0.0	50.7	16.8	0.0	56.6	26.3	0.0
Incr Delay (d2), s/veh	1.5	0.2	0.0	0.4	0.2	0.0	1.8	0.4	0.0	1.3	1.3	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	5.1	3.9	0.0	1.1	1.3	0.0	5.9	4.4	0.0	0.7	8.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	47.4	53.6	0.0	46.6	52.0	0.0	52.5	17.3	0.0	57.9	27.6	0.0
LnGrp LOS	D	D		D	D		D	B		E	C	
Approach Vol, veh/h		558			185			976			786	
Approach Delay, s/veh		51.6			50.8			31.8			28.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.4	70.0	13.4	24.2	24.5	57.8	20.3	17.4
Change Period (Y+Rc), s	8.2	8.2	7.4	7.4	8.2	8.2	7.4	7.4
Max Green Setting (Gmax), s	11.8	38.8	8.6	29.6	30.8	19.8	20.6	17.6
Max Q Clear Time (g_c+I1), s	3.4	13.2	4.5	10.8	15.7	21.3	12.6	5.2
Green Ext Time (p_c), s	0.0	6.8	0.0	1.4	0.6	0.0	0.3	0.4

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

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	111	856	85	18	409	143	139	38	71	214	36	103
Future Volume (vph)	111	856	85	18	409	143	139	38	71	214	36	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		230	0		250	230		230	210		140
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.416			0.251			0.727			0.441		
Satd. Flow (perm)	775	3539	1583	468	3539	1583	1354	1863	1583	821	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			218			227			168
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		900			660			652			450	
Travel Time (s)		13.6			10.0			14.8			10.2	
Peak Hour Factor	0.83	0.92	0.82	0.78	0.88	0.84	0.84	0.78	0.80	0.87	0.78	0.83
Adj. Flow (vph)	134	930	104	23	465	170	165	49	89	246	46	124
Shared Lane Traffic (%)												
Lane Group Flow (vph)	134	930	104	23	465	170	165	49	89	246	46	124
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	12.5	17.5	17.5	12.5	17.5	17.5	14.5	16.5	16.5	14.5	16.5	16.5
Total Split (s)	19.0	50.0	50.0	13.0	44.0	44.0	20.0	17.0	17.0	40.0	37.0	37.0
Total Split (%)	15.8%	41.7%	41.7%	10.8%	36.7%	36.7%	16.7%	14.2%	14.2%	33.3%	30.8%	30.8%
Maximum Green (s)	11.5	42.5	42.5	5.5	36.5	36.5	13.5	10.5	10.5	33.5	30.5	30.5
Yellow Time (s)	5.3	5.3	5.3	5.3	5.3	5.3	3.8	3.8	3.8	3.8	3.8	3.8
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	68.3	62.1	62.1	59.1	53.7	53.7	22.3	10.1	10.1	34.9	17.4	17.4
Actuated g/C Ratio	0.57	0.52	0.52	0.49	0.45	0.45	0.19	0.08	0.08	0.29	0.14	0.14
v/c Ratio	0.26	0.51	0.11	0.08	0.29	0.21	0.57	0.31	0.26	0.63	0.17	0.33
Control Delay	13.9	22.4	0.2	4.8	8.4	2.0	40.2	57.3	1.8	40.8	44.8	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	22.4	0.2	4.8	8.4	2.0	40.2	57.3	1.8	40.8	44.8	4.5
LOS	B	C	A	A	A	A	D	E	A	D	D	A
Approach Delay		19.5			6.6			31.7			30.4	
Approach LOS		B			A			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.63			
Intersection Signal Delay: 19.4		Intersection LOS: B	
Intersection Capacity Utilization 64.3%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Walden Street & 104th Avenue

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	134	930	104	23	465	170	165	49	89	246	46	124
v/c Ratio	0.26	0.51	0.11	0.08	0.29	0.21	0.57	0.31	0.26	0.63	0.17	0.33
Control Delay	13.9	22.4	0.2	4.8	8.4	2.0	40.2	57.3	1.8	40.8	44.8	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.9	22.4	0.2	4.8	8.4	2.0	40.2	57.3	1.8	40.8	44.8	4.5
Queue Length 50th (ft)	44	258	0	4	67	0	99	36	0	156	32	0
Queue Length 95th (ft)	81	378	0	m5	93	0	132	65	0	202	54	11
Internal Link Dist (ft)		820			580			572			370	
Turn Bay Length (ft)	400		230			250	230		230	210		140
Base Capacity (vph)	543	1830	924	293	1583	828	313	164	345	518	473	527
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.25	0.51	0.11	0.08	0.29	0.21	0.53	0.30	0.26	0.47	0.10	0.24

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	111	856	85	18	409	143	139	38	71	214	36	103
Future Volume (veh/h)	111	856	85	18	409	143	139	38	71	214	36	103
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	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	134	930	104	23	465	170	165	49	89	246	46	124
Peak Hour Factor	0.83	0.92	0.82	0.78	0.88	0.84	0.84	0.78	0.80	0.87	0.78	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	451	1843	822	290	1730	772	339	156	132	387	235	200
Arrive On Green	0.05	0.52	0.52	0.01	0.16	0.16	0.10	0.08	0.08	0.14	0.13	0.13
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	134	930	104	23	465	170	165	49	89	246	46	124
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.5	20.5	4.1	0.8	13.8	11.2	10.0	3.0	6.5	14.8	2.6	8.9
Cycle Q Clear(g_c), s	4.5	20.5	4.1	0.8	13.8	11.2	10.0	3.0	6.5	14.8	2.6	8.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	451	1843	822	290	1730	772	339	156	132	387	235	200
V/C Ratio(X)	0.30	0.50	0.13	0.08	0.27	0.22	0.49	0.31	0.67	0.64	0.20	0.62
Avail Cap(c_a), veh/h	526	1843	822	331	1730	772	362	164	139	631	475	403
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	14.6	18.8	14.9	16.1	31.6	30.5	44.1	51.8	53.4	41.2	47.0	49.7
Incr Delay (d2), s/veh	0.1	1.0	0.3	0.0	0.4	0.7	0.4	0.4	9.0	0.6	0.1	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	8.1	1.5	0.3	6.6	4.9	4.5	1.4	2.9	6.6	1.2	3.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	14.8	19.8	15.2	16.1	32.0	31.2	44.5	52.2	62.5	41.9	47.1	50.9
LnGrp LOS	B	B	B	B	C	C	D	D	E	D	D	D
Approach Vol, veh/h		1168			658			303			416	
Approach Delay, s/veh		18.8			31.2			51.0			45.2	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	69.7	18.5	21.6	14.0	65.9	23.6	16.5
Change Period (Y+Rc), s	* 7.5	* 7.5	6.5	6.5	* 7.5	* 7.5	6.5	6.5
Max Green Setting (Gmax), s	* 5.5	* 43	13.5	30.5	* 12	* 37	33.5	10.5
Max Q Clear Time (g_c+I1), s	2.8	22.5	12.0	10.9	6.5	15.8	16.8	8.5
Green Ext Time (p_c), s	0.0	10.9	0.0	0.3	0.1	6.3	0.3	0.1

Intersection Summary	
HCM 6th Ctrl Delay	30.2
HCM 6th LOS	C

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	0	89	5	0	19	31	252	0	9	214	7
Future Volume (vph)	12	0	89	5	0	19	31	252	0	9	214	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.881			0.892						0.995	
Flt Protected		0.994			0.990			0.994			0.998	
Satd. Flow (prot)	0	1631	0	0	1645	0	0	1852	0	0	1850	0
Flt Permitted		0.994			0.990			0.994			0.998	
Satd. Flow (perm)	0	1631	0	0	1645	0	0	1852	0	0	1850	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		500			660			300			280	
Travel Time (s)		13.6			18.0			8.2			7.6	
Peak Hour Factor	0.78	0.78	0.80	0.78	0.78	0.78	0.78	0.87	0.78	0.78	0.87	0.78
Adj. Flow (vph)	15	0	111	6	0	24	40	290	0	12	246	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	126	0	0	30	0	0	330	0	0	267	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary			
Area Type:	Other		
Control Type: Roundabout			
Intersection Capacity Utilization 39.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	4.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	126	30	330	267
Demand Flow Rate, veh/h	128	30	337	272
Vehicles Circulating, veh/h	269	352	27	47
Vehicles Exiting, veh/h	50	12	370	335
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.6	4.0	4.9	4.5
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	128	30	337	272
Cap Entry Lane, veh/h	1049	964	1342	1315
Entry HV Adj Factor	0.984	1.000	0.980	0.982
Flow Entry, veh/h	126	30	330	267
Cap Entry, veh/h	1032	964	1315	1291
V/C Ratio	0.122	0.031	0.251	0.207
Control Delay, s/veh	4.6	4.0	4.9	4.5
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	1	28	6	1	1	20	245	14	1	187	12
Future Volume (vph)	19	1	28	6	1	1	20	245	14	1	187	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	150		0	150		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.920			0.925			0.991			0.990	
Flt Protected		0.981		0.950			0.950			0.950		
Satd. Flow (prot)	0	1681	0	1770	1723	0	1770	1846	0	1770	1844	0
Flt Permitted		0.981		0.950			0.950			0.950		
Satd. Flow (perm)	0	1681	0	1770	1723	0	1770	1846	0	1770	1844	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		500			666			395			595	
Travel Time (s)		13.6			18.2			10.8			16.2	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.87	0.78	0.78	0.85	0.78
Adj. Flow (vph)	24	1	36	8	1	1	26	282	18	1	220	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	61	0	8	2	0	26	300	0	1	235	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	19	1	28	6	1	1	20	245	14	1	187	12
Future Vol, veh/h	19	1	28	6	1	1	20	245	14	1	187	12
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.87	0.78	0.78	0.85	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	24	1	36	8	1	1	26	282	18	1	220	15
Number of Lanes	0	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	9.3	9.1	10.8	10.1
HCM LOS	A	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	40%	100%	0%	100%	0%
Vol Thru, %	0%	95%	2%	0%	50%	0%	94%
Vol Right, %	0%	5%	58%	0%	50%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	259	48	6	2	1	199
LT Vol	20	0	19	6	0	1	0
Through Vol	0	245	1	0	1	0	187
RT Vol	0	14	28	0	1	0	12
Lane Flow Rate	26	300	62	8	3	1	235
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.039	0.407	0.096	0.014	0.004	0.002	0.325
Departure Headway (Hd)	5.433	4.893	5.613	6.47	5.612	5.512	4.967
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	660	737	638	552	636	650	725
Service Time	3.158	2.618	3.655	4.221	3.363	3.238	2.693
HCM Lane V/C Ratio	0.039	0.407	0.097	0.014	0.005	0.002	0.324
HCM Control Delay	8.4	11	9.3	9.3	8.4	8.2	10.1
HCM Lane LOS	A	B	A	A	A	A	B
HCM 95th-tile Q	0.1	2	0.3	0	0	0	1.4

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	8	8	633	777	28
Future Volume (vph)	0	8	8	633	777	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250	0	150			150
Storage Lanes	0	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				0.850
Flt Protected			0.950			
Satd. Flow (prot)	0	1611	1770	1863	1863	1583
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1770	1863	1863	1583
Link Speed (mph)	30			30	30	
Link Distance (ft)	660			300	1403	
Travel Time (s)	15.0			6.8	31.9	
Peak Hour Factor	0.78	0.78	0.78	0.92	0.92	0.78
Adj. Flow (vph)	0	10	10	688	845	36
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	10	10	688	845	36
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60	60	60			60
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 50.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	8	8	633	777	28
Future Vol, veh/h	0	8	8	633	777	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	92	92	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	10	688	845	36

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	845	881	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	4.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	0	363	767	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	363	767	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	767	-	363	-	-
HCM Lane V/C Ratio	0.013	-	0.028	-	-
HCM Control Delay (s)	9.8	-	15.2	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	1106	5	12	554	5	0	0	4	0	0	1
Future Volume (vph)	1	1106	5	12	554	5	0	0	4	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.865			0.865
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	0	0	1611	0	0	1611
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	0	0	1611	0	0	1611
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		660			660			636			450	
Travel Time (s)		15.0			15.0			14.5			10.2	
Peak Hour Factor	0.78	0.93	0.78	0.78	0.92	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	1	1189	6	15	602	6	0	0	5	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	1189	6	15	602	6	0	0	5	0	0	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 31.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	1106	5	12	554	5	0	0	4	0	0	1
Future Vol, veh/h	1	1106	5	12	554	5	0	0	4	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	93	78	78	92	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	1189	6	15	602	6	0	0	5	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	608	0	0	1195	0	0	-	-	595	-	-	301
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	602	-	-	315	-	-	0	0	383	0	0	593
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	602	-	-	315	-	-	-	-	383	-	-	593
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.4	14.5	11.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	383	602	-	-	315	-	-	593
HCM Lane V/C Ratio	0.013	0.002	-	-	0.049	-	-	0.002
HCM Control Delay (s)	14.5	11	-	-	17	-	-	11.1
HCM Lane LOS	B	B	-	-	C	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0.2	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	0	47	0	0	0	15	278	0	0	302	2
Future Volume (vph)	7	0	47	0	0	0	15	278	0	0	302	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		150	150		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.883									0.999	
Flt Protected		0.994					0.950					
Satd. Flow (prot)	0	1635	0	0	1863	0	1770	1863	1863	1863	1861	0
Flt Permitted		0.994					0.950					
Satd. Flow (perm)	0	1635	0	0	1863	0	1770	1863	1863	1863	1861	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		501			660			450			300	
Travel Time (s)		11.4			15.0			10.2			6.8	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.88	0.78	0.78	0.88	0.78
Adj. Flow (vph)	9	0	60	0	0	0	19	316	0	0	343	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	69	0	0	0	0	19	316	0	0	346	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 26.0%		ICU Level of Service A	
Analysis Period (min) 15			

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	7	0	47	0	0	0	15	278	0	0	302	2
Future Vol, veh/h	7	0	47	0	0	0	15	278	0	0	302	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	150	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	88	78	78	88	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	0	60	0	0	0	19	316	0	0	343	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	699	699	345	729	700	316	346	0	0	316	0	0
Stage 1	345	345	-	354	354	-	-	-	-	-	-	-
Stage 2	354	354	-	375	346	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	354	364	698	338	363	724	1213	-	-	1244	-	-
Stage 1	671	636	-	663	630	-	-	-	-	-	-	-
Stage 2	663	630	-	646	635	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	350	358	698	305	357	724	1213	-	-	1244	-	-
Mov Cap-2 Maneuver	350	358	-	305	357	-	-	-	-	-	-	-
Stage 1	660	636	-	652	620	-	-	-	-	-	-	-
Stage 2	653	620	-	590	635	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.6	0	0.5	0
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1213	-	-	618	-	1244	-	-
HCM Lane V/C Ratio	0.016	-	-	0.112	-	-	-	-
HCM Control Delay (s)	8	-	-	11.6	0	0	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	-	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	1	277	0	1	226
Future Volume (vph)	0	1	277	0	1	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected					0.950	
Satd. Flow (prot)	1611	0	1863	0	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1611	0	1863	0	1770	1863
Link Speed (mph)	30		25			25
Link Distance (ft)	229		280			395
Travel Time (s)	5.2		7.6			10.8
Peak Hour Factor	0.78	0.78	0.87	0.78	0.78	0.87
Adj. Flow (vph)	0	1	318	0	1	260
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	318	0	1	260
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9		9	15	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	24.6%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	277	0	1	226
Future Vol, veh/h	0	1	277	0	1	226
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	87	78	78	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	318	0	1	260

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	580	318	0	0	318	0
Stage 1	318	-	-	-	-	-
Stage 2	262	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	477	723	-	-	1242	-
Stage 1	738	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	477	723	-	-	1242	-
Mov Cap-2 Maneuver	477	-	-	-	-	-
Stage 1	738	-	-	-	-	-
Stage 2	781	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	723	1242	-
HCM Lane V/C Ratio	-	-	0.002	0.001	-
HCM Control Delay (s)	-	-	10	7.9	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	9	0	0	19	17	0	6	0	1	1	0
Future Volume (vph)	0	9	0	0	19	17	0	6	0	1	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.935							
Flt Protected											0.976	
Satd. Flow (prot)	0	1863	0	0	1742	0	0	1863	0	0	1818	0
Flt Permitted											0.976	
Satd. Flow (perm)	0	1863	0	0	1742	0	0	1863	0	0	1818	0
Link Speed (mph)		25			30			30			30	
Link Distance (ft)		660			660			300			280	
Travel Time (s)		18.0			15.0			6.8			6.4	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	0	12	0	0	24	22	0	8	0	1	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	12	0	0	46	0	0	8	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	9	0	0	19	17	0	6	0	1	1	0
Future Vol, veh/h	0	9	0	0	19	17	0	6	0	1	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	12	0	0	24	22	0	8	0	1	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	46	0	0	12	0	0	48	58	12	51	47	35
Stage 1	-	-	-	-	-	-	12	12	-	35	35	-
Stage 2	-	-	-	-	-	-	36	46	-	16	12	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1562	-	-	1607	-	-	953	833	1069	948	845	1038
Stage 1	-	-	-	-	-	-	1009	886	-	981	866	-
Stage 2	-	-	-	-	-	-	980	857	-	1004	886	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1562	-	-	1607	-	-	952	833	1069	941	845	1038
Mov Cap-2 Maneuver	-	-	-	-	-	-	952	833	-	941	845	-
Stage 1	-	-	-	-	-	-	1009	886	-	981	866	-
Stage 2	-	-	-	-	-	-	979	857	-	995	886	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.4	9.1
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	833	1562	-	-	1607	-	-	890
HCM Lane V/C Ratio	0.009	-	-	-	-	-	-	0.003
HCM Control Delay (s)	9.4	0	-	-	0	-	-	9.1
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	1	1	23	2	6
Future Volume (vph)	14	1	1	23	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.902	
Flt Protected	0.950			0.998		
Satd. Flow (prot)	1770	1583	0	1859	1680	0
Flt Permitted	0.950			0.998		
Satd. Flow (perm)	1770	1583	0	1859	1680	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	666			181	194	
Travel Time (s)	18.2			4.1	4.4	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	18	1	1	29	3	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	1	0	30	11	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	1	1	23	2	6
Future Vol, veh/h	14	1	1	23	2	6
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	1	1	29	3	8
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	7.9	7.1	6.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	4%	100%	0%	0%
Vol Thru, %	96%	0%	0%	25%
Vol Right, %	0%	0%	100%	75%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	24	14	1	8
LT Vol	1	14	0	0
Through Vol	23	0	0	2
RT Vol	0	0	1	6
Lane Flow Rate	31	18	1	10
Geometry Grp	2	7	7	2
Degree of Util (X)	0.034	0.025	0.001	0.01
Departure Headway (Hd)	3.983	5.105	3.904	3.54
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	900	703	918	1011
Service Time	2.001	2.82	1.62	1.563
HCM Lane V/C Ratio	0.034	0.026	0.001	0.01
HCM Control Delay	7.1	8	6.6	6.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	127	165	437	24	215	19	642	900	29	11	536	85
Future Volume (vph)	127	165	437	24	215	19	642	900	29	11	536	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		590	330		440	320		290	290		190
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.387			0.623			0.950			0.950		
Satd. Flow (perm)	721	5085	1583	1160	5085	1583	3433	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			497			264			182			256
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		660			1515			645			450	
Travel Time (s)		10.0			23.0			9.8			6.8	
Peak Hour Factor	0.83	0.84	0.88	0.78	0.87	0.78	0.92	0.92	0.78	0.78	0.92	0.80
Adj. Flow (vph)	153	196	497	31	247	24	698	978	37	14	583	106
Shared Lane Traffic (%)												
Lane Group Flow (vph)	153	196	497	31	247	24	698	978	37	14	583	106
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	15.4	17.4	17.4	15.4	17.4	17.4	16.2	18.2	18.2	16.2	18.2	18.2
Total Split (s)	26.0	25.0	25.0	21.0	20.0	20.0	45.0	57.0	57.0	17.0	29.0	29.0
Total Split (%)	21.7%	20.8%	20.8%	17.5%	16.7%	16.7%	37.5%	47.5%	47.5%	14.2%	24.2%	24.2%
Maximum Green (s)	18.6	17.6	17.6	13.6	12.6	12.6	36.8	48.8	48.8	8.8	20.8	20.8
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	3.1	3.1	3.1	3.1	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	8.2	8.2	8.2	8.2	8.2	8.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	2.0	2.0	3.0	2.0	2.0	2.0	5.0	5.0	2.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	32.5	23.3	23.3	19.0	10.9	10.9	28.9	65.2	65.2	8.0	34.6	34.6
Actuated g/C Ratio	0.27	0.19	0.19	0.16	0.09	0.09	0.24	0.54	0.54	0.07	0.29	0.29
v/c Ratio	0.48	0.20	0.70	0.14	0.54	0.06	0.84	0.51	0.04	0.12	0.57	0.17
Control Delay	36.2	39.7	22.5	32.9	56.5	0.3	53.3	20.7	0.1	55.2	41.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	39.7	22.5	32.9	56.5	0.3	53.3	20.7	0.1	55.2	41.0	0.6
LOS	D	D	C	C	E	A	D	C	A	E	D	A
Approach Delay		29.0			49.6			33.5			35.2	
Approach LOS		C			D			C			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 34.1		Intersection LOS: C	
Intersection Capacity Utilization 74.5%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 1: Tower Road & 104th Avenue

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	153	196	497	31	247	24	698	978	37	14	583	106
v/c Ratio	0.48	0.20	0.70	0.14	0.54	0.06	0.84	0.51	0.04	0.12	0.57	0.17
Control Delay	36.2	39.7	22.5	32.9	56.5	0.3	53.3	20.7	0.1	55.2	41.0	0.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.2	39.7	22.5	32.9	56.5	0.3	53.3	20.7	0.1	55.2	41.0	0.6
Queue Length 50th (ft)	104	53	174	18	68	0	266	205	0	10	201	0
Queue Length 95th (ft)	141	69	252	34	93	0	314	392	0	28	#330	0
Internal Link Dist (ft)		580			1435			565			370	
Turn Bay Length (ft)	350		590	330		440	320		290	290		190
Base Capacity (vph)	358	994	709	305	536	403	1052	1924	943	129	1020	638
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.43	0.20	0.70	0.10	0.46	0.06	0.66	0.51	0.04	0.11	0.57	0.17

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	127	165	437	24	215	19	642	900	29	11	536	85
Future Volume (veh/h)	127	165	437	24	215	19	642	900	29	11	536	85
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	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	153	196	0	31	247	0	698	978	0	14	583	0
Peak Hour Factor	0.83	0.84	0.88	0.78	0.87	0.78	0.92	0.92	0.78	0.78	0.92	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	271	691		235	426		770	1908		44	1205	
Arrive On Green	0.03	0.04	0.00	0.04	0.08	0.00	0.22	0.54	0.00	0.02	0.34	0.00
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	153	196	0	31	247	0	698	978	0	14	583	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	9.3	4.5	0.0	1.9	5.6	0.0	23.6	21.1	0.0	0.9	15.6	0.0
Cycle Q Clear(g_c), s	9.3	4.5	0.0	1.9	5.6	0.0	23.6	21.1	0.0	0.9	15.6	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	271	691		235	426		770	1908		44	1205	
V/C Ratio(X)	0.57	0.28		0.13	0.58		0.91	0.51		0.32	0.48	
Avail Cap(c_a), veh/h	378	749		361	536		1060	1908		131	1205	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	46.9	51.7	0.0	46.6	53.0	0.0	45.4	17.8	0.0	57.5	31.4	0.0
Incr Delay (d2), s/veh	1.9	0.1	0.0	0.3	0.5	0.0	7.2	1.0	0.0	1.5	1.4	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	4.4	1.9	0.0	0.8	2.4	0.0	10.5	8.3	0.0	0.4	6.7	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	48.7	51.8	0.0	46.9	53.4	0.0	52.6	18.7	0.0	59.0	32.8	0.0
LnGrp LOS	D	D		D	D		D	B		E	C	
Approach Vol, veh/h		349			278			1676			597	
Approach Delay, s/veh		50.4			52.7			32.8			33.4	
Approach LOS		D			D			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	11.2	72.6	12.6	23.6	34.9	48.9	18.8	17.4
Change Period (Y+Rc), s	8.2	8.2	7.4	7.4	8.2	8.2	7.4	7.4
Max Green Setting (Gmax), s	8.8	48.8	13.6	17.6	36.8	20.8	18.6	12.6
Max Q Clear Time (g_c+I1), s	2.9	23.1	3.9	6.5	25.6	17.6	11.3	7.6
Green Ext Time (p_c), s	0.0	12.5	0.0	0.5	1.1	1.6	0.2	0.4

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

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	595	133	21	825	105	181	41	38	101	16	38
Future Volume (vph)	34	595	133	21	825	105	181	41	38	101	16	38
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		230	0		250	230		230	210		140
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.248			0.380			0.496			0.722		
Satd. Flow (perm)	462	3539	1583	708	3539	1583	924	1863	1583	1345	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			218			227			168
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		900			660			652			450	
Travel Time (s)		13.6			10.0			14.8			10.2	
Peak Hour Factor	0.78	0.92	0.83	0.78	0.92	0.83	0.84	0.78	0.78	0.82	0.78	0.78
Adj. Flow (vph)	44	647	160	27	897	127	215	53	49	123	21	49
Shared Lane Traffic (%)												
Lane Group Flow (vph)	44	647	160	27	897	127	215	53	49	123	21	49
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	12.5	17.5	17.5	12.5	17.5	17.5	14.5	16.5	16.5	14.5	16.5	16.5
Total Split (s)	18.0	57.0	57.0	13.0	52.0	52.0	25.0	17.0	17.0	33.0	25.0	25.0
Total Split (%)	15.0%	47.5%	47.5%	10.8%	43.3%	43.3%	20.8%	14.2%	14.2%	27.5%	20.8%	20.8%
Maximum Green (s)	10.5	49.5	49.5	5.5	44.5	44.5	18.5	10.5	10.5	26.5	18.5	18.5
Yellow Time (s)	5.3	5.3	5.3	5.3	5.3	5.3	3.8	3.8	3.8	3.8	3.8	3.8
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	72.7	68.9	68.9	70.4	65.9	65.9	28.0	14.0	14.0	20.0	10.0	10.0
Actuated g/C Ratio	0.61	0.57	0.57	0.59	0.55	0.55	0.23	0.12	0.12	0.17	0.08	0.08
v/c Ratio	0.13	0.32	0.16	0.06	0.46	0.13	0.66	0.25	0.13	0.46	0.14	0.17
Control Delay	11.0	16.3	1.0	2.7	5.9	1.2	47.6	50.9	0.7	41.2	53.2	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	16.3	1.0	2.7	5.9	1.2	47.6	50.9	0.7	41.2	53.2	1.3
LOS	B	B	A	A	A	A	D	D	A	D	D	A
Approach Delay		13.1			5.3			40.9			32.4	
Approach LOS		B			A			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 70			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.66			
Intersection Signal Delay: 14.9		Intersection LOS: B	
Intersection Capacity Utilization 58.2%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 2: Walden Street & 104th Avenue

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	44	647	160	27	897	127	215	53	49	123	21	49
v/c Ratio	0.13	0.32	0.16	0.06	0.46	0.13	0.66	0.25	0.13	0.46	0.14	0.17
Control Delay	11.0	16.3	1.0	2.7	5.9	1.2	47.6	50.9	0.7	41.2	53.2	1.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	11.0	16.3	1.0	2.7	5.9	1.2	47.6	50.9	0.7	41.2	53.2	1.3
Queue Length 50th (ft)	13	156	0	2	119	0	137	37	0	74	15	0
Queue Length 95th (ft)	25	210	4	m3	142	8	191	69	0	112	36	0
Internal Link Dist (ft)		820			580			572			370	
Turn Bay Length (ft)	400		230			250	230		230	210		140
Base Capacity (vph)	403	2030	1001	466	1944	968	359	218	386	453	287	386
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.32	0.16	0.06	0.46	0.13	0.60	0.24	0.13	0.27	0.07	0.13

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	34	595	133	21	825	105	181	41	38	101	16	38
Future Volume (veh/h)	34	595	133	21	825	105	181	41	38	101	16	38
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	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	44	647	160	27	897	127	215	53	49	123	21	49
Peak Hour Factor	0.78	0.92	0.83	0.78	0.92	0.83	0.84	0.78	0.78	0.82	0.78	0.78
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	282	1896	846	394	1870	834	380	243	206	308	156	132
Arrive On Green	0.03	0.53	0.53	0.01	0.17	0.17	0.12	0.13	0.13	0.08	0.08	0.08
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	44	647	160	27	897	127	215	53	49	123	21	49
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	1.3	12.5	6.3	0.8	27.3	8.2	12.9	3.0	3.3	7.5	1.2	3.5
Cycle Q Clear(g_c), s	1.3	12.5	6.3	0.8	27.3	8.2	12.9	3.0	3.3	7.5	1.2	3.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	282	1896	846	394	1870	834	380	243	206	308	156	132
V/C Ratio(X)	0.16	0.34	0.19	0.07	0.48	0.15	0.57	0.22	0.24	0.40	0.13	0.37
Avail Cap(c_a), veh/h	380	1896	846	432	1870	834	432	243	206	561	288	244
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	15.4	16.0	14.5	13.1	34.8	26.9	41.8	46.8	46.9	45.3	51.0	52.0
Incr Delay (d2), s/veh	0.1	0.5	0.5	0.0	0.9	0.4	0.5	0.2	0.2	0.3	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.5	4.9	2.4	0.3	13.1	3.4	5.7	1.4	1.3	3.3	0.6	1.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	16.4	15.0	13.1	35.6	27.2	42.3	46.9	47.1	45.6	51.1	52.7
LnGrp LOS	B	B	B	B	D	C	D	D	D	D	D	D
Approach Vol, veh/h		851			1051			317			193	
Approach Delay, s/veh		16.1			34.1			43.9			48.0	
Approach LOS		B			C			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	71.5	21.5	16.5	11.3	70.7	15.9	22.1
Change Period (Y+Rc), s	* 7.5	* 7.5	6.5	6.5	* 7.5	* 7.5	6.5	6.5
Max Green Setting (Gmax), s	* 5.5	* 50	18.5	18.5	* 11	* 45	26.5	10.5
Max Q Clear Time (g_c+I1), s	2.8	14.5	14.9	5.5	3.3	29.3	9.5	5.3
Green Ext Time (p_c), s	0.0	10.4	0.1	0.1	0.0	8.9	0.1	0.1

Intersection Summary	
HCM 6th Ctrl Delay	30.1
HCM 6th LOS	C

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	36	6	0	6	59	87	0	12	87	2
Future Volume (vph)	2	0	36	6	0	6	59	87	0	12	87	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.873			0.932						0.997	
Flt Protected		0.997			0.976			0.980			0.994	
Satd. Flow (prot)	0	1621	0	0	1694	0	0	1825	0	0	1846	0
Flt Permitted		0.997			0.976			0.980			0.994	
Satd. Flow (perm)	0	1621	0	0	1694	0	0	1825	0	0	1846	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		500			660			300			280	
Travel Time (s)		13.6			18.0			8.2			7.6	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.80	0.78	0.78	0.80	0.78
Adj. Flow (vph)	3	0	46	8	0	8	76	109	0	15	109	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	0	16	0	0	185	0	0	127	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary			
Area Type:	Other		
Control Type: Roundabout			
Intersection Capacity Utilization 24.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	3.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	49	16	185	127
Demand Flow Rate, veh/h	50	16	189	129
Vehicles Circulating, veh/h	134	192	18	86
Vehicles Exiting, veh/h	81	15	166	122
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.4	3.3	3.9	3.7
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	50	16	189	129
Cap Entry Lane, veh/h	1204	1134	1355	1264
Entry HV Adj Factor	0.980	1.000	0.978	0.983
Flow Entry, veh/h	49	16	185	127
Cap Entry, veh/h	1180	1134	1325	1243
V/C Ratio	0.042	0.014	0.140	0.102
Control Delay, s/veh	3.4	3.3	3.9	3.7
LOS	A	A	A	A
95th %tile Queue, veh	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	1	14	7	1	1	31	56	5	1	66	2
Future Volume (vph)	2	1	14	7	1	1	31	56	5	1	66	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	150		0	150		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.890			0.925			0.988			0.995	
Flt Protected		0.993		0.950			0.950			0.950		
Satd. Flow (prot)	0	1646	0	1770	1723	0	1770	1840	0	1770	1853	0
Flt Permitted		0.993		0.950			0.950			0.950		
Satd. Flow (perm)	0	1646	0	1770	1723	0	1770	1840	0	1770	1853	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		500			666			395			595	
Travel Time (s)		13.6			18.2			10.8			16.2	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.79	0.78
Adj. Flow (vph)	3	1	18	9	1	1	40	72	6	1	84	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	22	0	9	2	0	40	78	0	1	87	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.4%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	14	7	1	1	31	56	5	1	66	2
Future Vol, veh/h	2	1	14	7	1	1	31	56	5	1	66	2
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.79	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	1	18	9	1	1	40	72	6	1	84	3
Number of Lanes	0	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	7.7	8.1	7.9	8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	12%	100%	0%	100%	0%
Vol Thru, %	0%	92%	6%	0%	50%	0%	97%
Vol Right, %	0%	8%	82%	0%	50%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	61	17	7	2	1	68
LT Vol	31	0	2	7	0	1	0
Through Vol	0	56	1	0	1	0	66
RT Vol	0	5	14	0	1	0	2
Lane Flow Rate	40	78	22	9	3	1	86
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.057	0.099	0.028	0.014	0.003	0.002	0.111
Departure Headway (Hd)	5.134	4.576	4.574	5.553	4.7	5.15	4.629
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	695	779	787	648	766	691	769
Service Time	2.885	2.327	2.575	3.253	2.401	2.913	2.391
HCM Lane V/C Ratio	0.058	0.1	0.028	0.014	0.004	0.001	0.112
HCM Control Delay	8.2	7.8	7.7	8.3	7.4	7.9	8
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.3	0.1	0	0	0	0.4

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	11	3	973	590	9
Future Volume (vph)	0	11	3	973	590	9
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250	0	150			150
Storage Lanes	0	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				0.850
Flt Protected			0.950			
Satd. Flow (prot)	0	1611	1770	1863	1863	1583
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1770	1863	1863	1583
Link Speed (mph)	30			30	30	
Link Distance (ft)	660			300	1403	
Travel Time (s)	15.0			6.8	31.9	
Peak Hour Factor	0.78	0.78	0.78	0.92	0.92	0.78
Adj. Flow (vph)	0	14	4	1058	641	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	14	4	1058	641	12
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60	60	60			60
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 54.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	11	3	973	590	9
Future Vol, veh/h	0	11	3	973	590	9
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	78	78	92	92	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	14	4	1058	641	12

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	641	653	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	4.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	0	475	934	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	475	934	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.8	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	934	-	475	-	-
HCM Lane V/C Ratio	0.004	-	0.03	-	-
HCM Control Delay (s)	8.9	-	12.8	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	1	718	5	17	910	1	0	0	4	0	0	1
Future Volume (vph)	1	718	5	17	910	1	0	0	4	0	0	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.865			0.865
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	0	0	1611	0	0	1611
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	0	0	1611	0	0	1611
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		660			660			636			450	
Travel Time (s)		15.0			15.0			14.5			10.2	
Peak Hour Factor	0.78	0.92	0.78	0.78	0.92	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	1	780	6	22	989	1	0	0	5	0	0	1
Shared Lane Traffic (%)												
Lane Group Flow (vph)	1	780	6	22	989	1	0	0	5	0	0	1
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 27.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	718	5	17	910	1	0	0	4	0	0	1
Future Vol, veh/h	1	718	5	17	910	1	0	0	4	0	0	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	92	78	78	92	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	1	780	6	22	989	1	0	0	5	0	0	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	990	0	0	786	0	0	-	-	390	-	-	495
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	396	-	-	496	-	-	0	0	520	0	0	445
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	396	-	-	496	-	-	-	-	520	-	-	445
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.3	12	13.1
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	520	396	-	-	496	-	-	445
HCM Lane V/C Ratio	0.01	0.003	-	-	0.044	-	-	0.003
HCM Control Delay (s)	12	14.1	-	-	12.6	-	-	13.1
HCM Lane LOS	B	B	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0	0	-	-	0.1	-	-	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	0	26	0	0	0	33	144	0	0	127	2
Future Volume (vph)	3	0	26	0	0	0	33	144	0	0	127	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		150	150		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.880									0.997	
Flt Protected		0.995					0.950					
Satd. Flow (prot)	0	1631	0	0	1863	0	1770	1863	1863	1863	1857	0
Flt Permitted		0.995					0.950					
Satd. Flow (perm)	0	1631	0	0	1863	0	1770	1863	1863	1863	1857	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		501			660			450			300	
Travel Time (s)		11.4			15.0			10.2			6.8	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.84	0.78	0.78	0.84	0.78
Adj. Flow (vph)	4	0	33	0	0	0	42	171	0	0	151	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	37	0	0	0	0	42	171	0	0	154	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	0	26	0	0	0	33	144	0	0	127	2
Future Vol, veh/h	3	0	26	0	0	0	33	144	0	0	127	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	150	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	84	78	78	84	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	33	0	0	0	42	171	0	0	151	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	408	408	153	424	409	171	154	0	0	171	0	0
Stage 1	153	153	-	255	255	-	-	-	-	-	-	-
Stage 2	255	255	-	169	154	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	554	533	893	540	532	873	1426	-	-	1406	-	-
Stage 1	849	771	-	749	696	-	-	-	-	-	-	-
Stage 2	749	696	-	833	770	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	542	518	893	508	517	873	1426	-	-	1406	-	-
Mov Cap-2 Maneuver	542	518	-	508	517	-	-	-	-	-	-	-
Stage 1	824	771	-	727	676	-	-	-	-	-	-	-
Stage 2	727	676	-	802	770	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.5	0	1.5	0
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1426	-	-	837	-	1406	-	-
HCM Lane V/C Ratio	0.03	-	-	0.044	-	-	-	-
HCM Control Delay (s)	7.6	-	-	9.5	0	0	-	-
HCM Lane LOS	A	-	-	A	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	0	1	93	0	1	99
Future Volume (vph)	0	1	93	0	1	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.865					
Flt Protected					0.950	
Satd. Flow (prot)	1611	0	1863	0	1770	1863
Flt Permitted					0.950	
Satd. Flow (perm)	1611	0	1863	0	1770	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	229		280			395
Travel Time (s)	5.2		6.4			9.0
Peak Hour Factor	0.78	0.78	0.80	0.78	0.78	0.80
Adj. Flow (vph)	0	1	116	0	1	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	0	116	0	1	124
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60	60		60	60	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.2%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	1	93	0	1	99
Future Vol, veh/h	0	1	93	0	1	99
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	80	78	78	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	1	116	0	1	124

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	242	116	0	0	116	0
Stage 1	116	-	-	-	-	-
Stage 2	126	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	746	936	-	-	1473	-
Stage 1	909	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	745	936	-	-	1473	-
Mov Cap-2 Maneuver	745	-	-	-	-	-
Stage 1	909	-	-	-	-	-
Stage 2	899	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0.1
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	936	1473	-
HCM Lane V/C Ratio	-	-	0.001	0.001	-
HCM Control Delay (s)	-	-	8.9	7.4	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	0	12	0	0	6	6	0	2	0	1	1	0
Future Volume (vph)	0	12	0	0	6	6	0	2	0	1	1	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt					0.932							
Flt Protected											0.976	
Satd. Flow (prot)	0	1863	0	0	1736	0	0	1863	0	0	1818	0
Flt Permitted											0.976	
Satd. Flow (perm)	0	1863	0	0	1736	0	0	1863	0	0	1818	0
Link Speed (mph)		25			30			30			30	
Link Distance (ft)		660			660			300			280	
Travel Time (s)		18.0			15.0			6.8			6.4	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	0	15	0	0	8	8	0	3	0	1	1	0
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	15	0	0	16	0	0	3	0	0	2	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 13.3%		ICU Level of Service A	
Analysis Period (min) 15			

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	0	12	0	0	6	6	0	2	0	1	1	0
Future Vol, veh/h	0	12	0	0	6	6	0	2	0	1	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	15	0	0	8	8	0	3	0	1	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	16	0	0	15	0	0	28	31	15	29	27	12
Stage 1	-	-	-	-	-	-	15	15	-	12	12	-
Stage 2	-	-	-	-	-	-	13	16	-	17	15	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1602	-	-	1603	-	-	981	862	1065	980	866	1069
Stage 1	-	-	-	-	-	-	1005	883	-	1009	886	-
Stage 2	-	-	-	-	-	-	1007	882	-	1002	883	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1602	-	-	1603	-	-	980	862	1065	978	866	1069
Mov Cap-2 Maneuver	-	-	-	-	-	-	980	862	-	978	866	-
Stage 1	-	-	-	-	-	-	1005	883	-	1009	886	-
Stage 2	-	-	-	-	-	-	1006	882	-	999	883	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0	9.2	8.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	862	1602	-	-	1603	-	-	919
HCM Lane V/C Ratio	0.003	-	-	-	-	-	-	0.003
HCM Control Delay (s)	9.2	0	-	-	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A	-	-	A
HCM 95th %tile Q(veh)	0	0	-	-	0	-	-	0

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	1	1	8	2	7
Future Volume (vph)	5	1	1	8	2	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.899	
Flt Protected	0.950			0.995		
Satd. Flow (prot)	1770	1583	0	1853	1675	0
Flt Permitted	0.950			0.995		
Satd. Flow (perm)	1770	1583	0	1853	1675	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	666			181	194	
Travel Time (s)	18.2			4.1	4.4	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	6	1	1	10	3	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	1	0	11	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	60	60			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	13.3%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	7
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	1	1	8	2	7
Future Vol, veh/h	5	1	1	8	2	7
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	1	1	10	3	9
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	7.6	7	6.5
HCM LOS	A	A	A

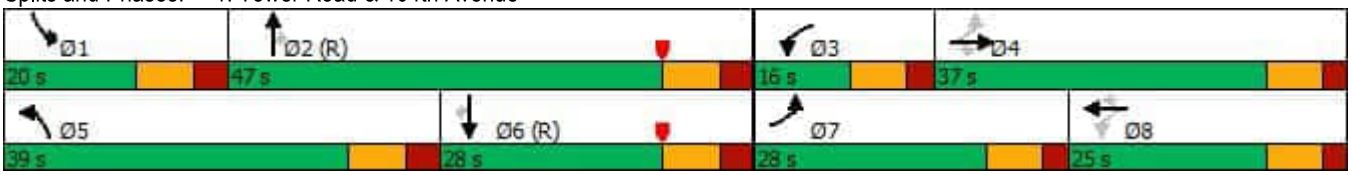
Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	11%	100%	0%	0%
Vol Thru, %	89%	0%	0%	22%
Vol Right, %	0%	0%	100%	78%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	9	5	1	9
LT Vol	1	5	0	0
Through Vol	8	0	0	2
RT Vol	0	0	1	7
Lane Flow Rate	12	6	1	12
Geometry Grp	2	7	7	2
Degree of Util (X)	0.013	0.009	0.001	0.011
Departure Headway (Hd)	3.978	5.073	3.873	3.489
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	904	709	928	1029
Service Time	1.985	2.781	1.581	1.498
HCM Lane V/C Ratio	0.013	0.008	0.001	0.012
HCM Control Delay	7	7.8	6.6	6.5
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0	0	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	252	349	660	33	159	10	497	560	63	48	849	118
Future Volume (vph)	252	349	660	33	159	10	497	560	63	48	849	118
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		590	330		440	320		290	290		190
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.415			0.509			0.950			0.950		
Satd. Flow (perm)	773	5085	1583	948	5085	1583	3433	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			612			331			249			324
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		660			1515			645			450	
Travel Time (s)		19.9			8.8			9.6			7.6	
Peak Hour Factor	0.87	0.88	0.92	0.78	0.84	0.78	0.88	0.92	0.78	0.78	0.92	0.83
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	290	397	717	42	189	13	565	609	81	62	923	142
Shared Lane Traffic (%)												
Lane Group Flow (vph)	290	397	717	42	189	13	565	609	81	62	923	142
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	4		4	8		8			2			6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	15.4	17.4	17.4	15.4	17.4	17.4	16.2	18.2	18.2	16.2	18.2	18.2
Total Split (s)	28.0	37.0	37.0	16.0	25.0	25.0	39.0	47.0	47.0	20.0	28.0	28.0
Total Split (%)	23.3%	30.8%	30.8%	13.3%	20.8%	20.8%	32.5%	39.2%	39.2%	16.7%	23.3%	23.3%
Maximum Green (s)	20.6	29.6	29.6	8.6	17.6	17.6	30.8	38.8	38.8	11.8	19.8	19.8
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	3.1	3.1	3.1	3.1	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	8.2	8.2	8.2	8.2	8.2	8.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	39.8	27.3	27.3	21.2	13.0	13.0	24.1	50.3	50.3	9.3	32.3	32.3
Actuated g/C Ratio	0.33	0.23	0.23	0.18	0.11	0.11	0.20	0.42	0.42	0.08	0.27	0.27
v/c Ratio	0.70	0.34	0.86	0.19	0.34	0.03	0.82	0.41	0.10	0.45	0.97	0.21
Control Delay	30.1	30.4	21.3	29.2	50.4	0.1	56.0	27.8	0.3	63.3	66.9	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	30.4	21.3	29.2	50.4	0.1	56.0	27.8	0.3	63.3	66.9	0.7
LOS	C	C	C	C	D	A	E	C	A	E	E	A
Approach Delay		25.7			44.1			38.7			58.3	
Approach LOS		C			D			D			E	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 110			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.97			
Intersection Signal Delay: 40.0		Intersection LOS: D	
Intersection Capacity Utilization 90.2%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Tower Road & 104th Avenue



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	290	397	717	42	189	13	565	609	81	62	923	142
v/c Ratio	0.70	0.34	0.86	0.19	0.34	0.03	0.82	0.41	0.10	0.45	0.97	0.21
Control Delay	30.1	30.4	21.3	29.2	50.4	0.1	56.0	27.8	0.3	63.3	66.9	0.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.1	30.4	21.3	29.2	50.4	0.1	56.0	27.8	0.3	63.3	66.9	0.7
Queue Length 50th (ft)	124	91	304	23	52	0	217	173	0	47	365	0
Queue Length 95th (ft)	122	92	#438	39	68	0	258	260	0	78	#652	0
Internal Link Dist (ft)		580			1435			565			370	
Turn Bay Length (ft)	350		590	330		440	320		290	290		190
Base Capacity (vph)	427	1291	858	229	745	514	881	1484	808	174	952	662
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.31	0.84	0.18	0.25	0.03	0.64	0.41	0.10	0.36	0.97	0.21

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	252	349	660	33	159	10	497	560	63	48	849	118
Future Volume (veh/h)	252	349	660	33	159	10	497	560	63	48	849	118
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	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	290	397	0	42	189	0	565	609	0	62	923	0
Peak Hour Factor	0.87	0.88	0.92	0.78	0.84	0.78	0.88	0.92	0.78	0.78	0.92	0.83
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	404	990		232	426		633	1555		104	1111	
Arrive On Green	0.05	0.06	0.00	0.05	0.08	0.00	0.18	0.44	0.00	0.06	0.31	0.00
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	290	397	0	42	189	0	565	609	0	62	923	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	17.2	9.0	0.0	2.5	4.2	0.0	19.2	14.0	0.0	4.1	28.9	0.0
Cycle Q Clear(g_c), s	17.2	9.0	0.0	2.5	4.2	0.0	19.2	14.0	0.0	4.1	28.9	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	404	990		232	426		633	1555		104	1111	
V/C Ratio(X)	0.72	0.40		0.18	0.44		0.89	0.39		0.60	0.83	
Avail Cap(c_a), veh/h	423	1260		270	749		887	1555		175	1111	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	44.4	49.5	0.0	46.1	52.4	0.0	47.8	22.9	0.0	55.1	38.3	0.0
Incr Delay (d2), s/veh	4.6	0.1	0.0	0.4	0.3	0.0	6.8	0.7	0.0	2.0	7.3	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	8.7	3.9	0.0	1.1	1.8	0.0	8.6	5.7	0.0	1.8	13.2	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	49.0	49.6	0.0	46.5	52.6	0.0	54.7	23.6	0.0	57.2	45.6	0.0
LnGrp LOS	D	D		D	D		D	C		E	D	
Approach Vol, veh/h		687			231			1174			985	
Approach Delay, s/veh		49.3			51.5			38.6			46.3	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.2	60.7	13.4	30.7	30.2	45.7	26.7	17.4
Change Period (Y+Rc), s	8.2	8.2	7.4	7.4	8.2	8.2	7.4	7.4
Max Green Setting (Gmax), s	11.8	38.8	8.6	29.6	30.8	19.8	20.6	17.6
Max Q Clear Time (g_c+I1), s	6.1	16.0	4.5	11.0	21.2	30.9	19.2	6.2
Green Ext Time (p_c), s	0.0	2.4	0.0	1.5	0.8	0.0	0.1	0.5

Intersection Summary	
HCM 6th Ctrl Delay	44.4
HCM 6th LOS	D

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	149	921	85	18	469	165	139	38	71	340	36	142
Future Volume (vph)	149	921	85	18	469	165	139	38	71	340	36	142
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		230	0		250	230		230	210		140
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.342			0.190			0.727			0.441		
Satd. Flow (perm)	637	3539	1583	354	3539	1583	1354	1863	1583	821	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			218			227			169
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		900			660			652			450	
Travel Time (s)		13.6			10.0			14.8			10.2	
Peak Hour Factor	0.84	0.92	0.80	0.78	0.91	0.84	0.84	0.78	0.80	0.88	0.78	0.84
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	177	1001	106	23	515	196	165	49	89	386	46	169
Shared Lane Traffic (%)												
Lane Group Flow (vph)	177	1001	106	23	515	196	165	49	89	386	46	169
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Permitted Phases	2		2	6		6	8		8	4		4
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	3.0	10.0	10.0	5.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	10.5	17.5	17.5	12.5	17.5	17.5	14.5	16.5	16.5	14.5	16.5	16.5
Total Split (s)	19.0	50.0	50.0	13.0	44.0	44.0	20.0	17.0	17.0	40.0	37.0	37.0
Total Split (%)	15.8%	41.7%	41.7%	10.8%	36.7%	36.7%	16.7%	14.2%	14.2%	33.3%	30.8%	30.8%
Maximum Green (s)	11.5	42.5	42.5	5.5	36.5	36.5	13.5	10.5	10.5	33.5	30.5	30.5
Yellow Time (s)	5.3	5.3	5.3	5.3	5.3	5.3	3.8	3.8	3.8	3.8	3.8	3.8
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	60.0	53.1	53.1	48.5	43.2	43.2	21.9	10.1	10.1	45.1	26.8	26.8
Actuated g/C Ratio	0.50	0.44	0.44	0.40	0.36	0.36	0.18	0.08	0.08	0.38	0.22	0.22
v/c Ratio	0.43	0.64	0.13	0.11	0.40	0.28	0.57	0.31	0.26	0.72	0.11	0.35
Control Delay	20.8	30.7	0.3	12.1	22.7	6.9	35.9	57.4	1.9	37.7	36.3	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	30.7	0.3	12.1	22.7	6.9	35.9	57.4	1.9	37.7	36.3	7.3
LOS	C	C	A	B	C	A	D	E	A	D	D	A
Approach Delay		26.9			18.2			29.4			29.1	
Approach LOS		C			B			C			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 16 (13%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 80			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 25.4		Intersection LOS: C	
Intersection Capacity Utilization 73.0%		ICU Level of Service D	
Analysis Period (min) 15			

Splits and Phases: 2: Walden Street & 104th Avenue

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	177	1001	106	23	515	196	165	49	89	386	46	169
v/c Ratio	0.43	0.64	0.13	0.11	0.40	0.28	0.57	0.31	0.26	0.72	0.11	0.35
Control Delay	20.8	30.7	0.3	12.1	22.7	6.9	35.9	57.4	1.9	37.7	36.3	7.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.8	30.7	0.3	12.1	22.7	6.9	35.9	57.4	1.9	37.7	36.3	7.3
Queue Length 50th (ft)	74	342	0	6	210	66	86	36	0	232	28	0
Queue Length 95th (ft)	118	449	0	m11	267	68	120	66	0	303	50	43
Internal Link Dist (ft)		820			580			572			370	
Turn Bay Length (ft)	400		230			250	230		230	210		140
Base Capacity (vph)	428	1566	821	209	1274	709	312	163	345	573	473	528
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.64	0.13	0.11	0.40	0.28	0.53	0.30	0.26	0.67	0.10	0.32

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	149	921	85	18	469	165	139	38	71	340	36	142
Future Volume (veh/h)	149	921	85	18	469	165	139	38	71	340	36	142
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	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	177	1001	106	23	515	196	165	49	89	386	46	169
Peak Hour Factor	0.84	0.92	0.80	0.78	0.91	0.84	0.84	0.78	0.80	0.88	0.78	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	389	1600	713	219	1414	631	335	156	132	509	363	308
Arrive On Green	0.07	0.45	0.45	0.01	0.13	0.13	0.10	0.08	0.08	0.21	0.19	0.19
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	177	1001	106	23	515	196	165	49	89	386	46	169
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	6.9	25.9	4.7	0.9	15.9	13.4	10.0	3.0	6.5	22.9	2.4	11.5
Cycle Q Clear(g_c), s	6.9	25.9	4.7	0.9	15.9	13.4	10.0	3.0	6.5	22.9	2.4	11.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	389	1600	713	219	1414	631	335	156	132	509	363	308
V/C Ratio(X)	0.46	0.63	0.15	0.10	0.36	0.31	0.49	0.31	0.67	0.76	0.13	0.55
Avail Cap(c_a), veh/h	427	1600	713	261	1414	631	358	164	139	631	475	403
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.6	25.3	19.4	22.4	38.3	37.2	44.1	51.8	53.4	36.5	39.9	43.6
Incr Delay (d2), s/veh	0.3	1.9	0.4	0.1	0.7	1.3	0.4	0.4	9.0	3.1	0.1	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.7	10.7	1.8	0.4	7.7	5.9	4.5	1.4	2.9	10.3	1.1	4.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	19.9	27.1	19.9	22.5	39.0	38.5	44.5	52.2	62.5	39.6	40.0	44.2
LnGrp LOS	B	C	B	C	D	D	D	D	E	D	D	D
Approach Vol, veh/h		1284			734			303			601	
Approach Delay, s/veh		25.5			38.3			51.0			40.9	
Approach LOS		C			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.2	61.5	18.5	29.8	16.4	55.3	31.8	16.5
Change Period (Y+Rc), s	* 7.5	* 7.5	6.5	6.5	* 7.5	* 7.5	6.5	6.5
Max Green Setting (Gmax), s	* 5.5	* 43	13.5	30.5	* 12	* 37	33.5	10.5
Max Q Clear Time (g_c+I1), s	2.9	27.9	12.0	13.5	8.9	17.9	24.9	8.5
Green Ext Time (p_c), s	0.0	9.3	0.0	0.4	0.1	6.7	0.4	0.1

Intersection Summary	
HCM 6th Ctrl Delay	34.6
HCM 6th LOS	C

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	1	90	23	0	19	31	257	2	9	243	7
Future Volume (vph)	12	1	90	23	0	19	31	257	2	9	243	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.882			0.939			0.999			0.996	
Flt Protected		0.994			0.973			0.994			0.998	
Satd. Flow (prot)	0	1633	0	0	1702	0	0	1850	0	0	1852	0
Flt Permitted		0.994			0.973			0.994			0.998	
Satd. Flow (perm)	0	1633	0	0	1702	0	0	1850	0	0	1852	0
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		500			660			300			280	
Travel Time (s)		7.6			10.0			4.5			4.2	
Peak Hour Factor	0.78	0.78	0.80	0.78	0.78	0.78	0.78	0.87	0.78	0.78	0.87	0.78
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	15	1	113	29	0	24	40	295	3	12	279	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	129	0	0	53	0	0	338	0	0	300	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary			
Area Type:	Other		
Control Type: Roundabout			
Intersection Capacity Utilization 41.6%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	4.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	128	53	338	300
Demand Flow Rate, veh/h	130	54	345	306
Vehicles Circulating, veh/h	327	357	28	71
Vehicles Exiting, veh/h	50	16	429	340
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.9	4.3	5.0	4.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	130	54	345	306
Cap Entry Lane, veh/h	989	959	1341	1283
Entry HV Adj Factor	0.984	0.981	0.980	0.982
Flow Entry, veh/h	128	53	338	300
Cap Entry, veh/h	973	941	1314	1260
V/C Ratio	0.132	0.056	0.257	0.238
Control Delay, s/veh	4.9	4.3	5.0	4.9
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	20	2	28	13	2	1	20	245	16	1	187	12
Future Volume (vph)	20	2	28	13	2	1	20	245	16	1	187	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	150		0	150		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.925			0.962			0.990			0.991	
Flt Protected		0.980		0.950			0.950			0.950		
Satd. Flow (prot)	0	1689	0	1770	1792	0	1770	1844	0	1770	1846	0
Flt Permitted		0.980		0.950			0.950			0.950		
Satd. Flow (perm)	0	1689	0	1770	1792	0	1770	1844	0	1770	1846	0
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		500			666			395			595	
Travel Time (s)		7.6			10.1			6.0			9.0	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.87	0.78	0.78	0.84	0.78
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	26	3	36	17	3	1	26	282	21	1	223	15
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	65	0	17	4	0	26	303	0	1	238	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 32.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	10.4
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	2	28	13	2	1	20	245	16	1	187	12
Future Vol, veh/h	20	2	28	13	2	1	20	245	16	1	187	12
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.87	0.78	0.78	0.84	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	26	3	36	17	3	1	26	282	21	1	223	15
Number of Lanes	0	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	9.4	9.3	10.9	10.2
HCM LOS	A	A	B	B

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	40%	100%	0%	100%	0%
Vol Thru, %	0%	94%	4%	0%	67%	0%	94%
Vol Right, %	0%	6%	56%	0%	33%	0%	6%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	20	261	50	13	3	1	199
LT Vol	20	0	20	13	0	1	0
Through Vol	0	245	2	0	2	0	187
RT Vol	0	16	28	0	1	0	12
Lane Flow Rate	26	302	64	17	4	1	238
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.039	0.414	0.101	0.03	0.006	0.002	0.332
Departure Headway (Hd)	5.481	4.936	5.666	6.492	5.752	5.562	5.017
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	654	728	631	550	620	644	716
Service Time	3.212	2.667	3.717	4.251	3.51	3.294	2.749
HCM Lane V/C Ratio	0.04	0.415	0.101	0.031	0.006	0.002	0.332
HCM Control Delay	8.4	11.1	9.4	9.5	8.5	8.3	10.2
HCM Lane LOS	A	B	A	A	A	A	B
HCM 95th-tile Q	0.1	2	0.3	0.1	0	0	1.5

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	197	42	736	787	139
Future Volume (vph)	0	197	42	736	787	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250	0	150			150
Storage Lanes	0	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				0.850
Flt Protected			0.950			
Satd. Flow (prot)	0	1611	1770	1863	1863	1583
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1770	1863	1863	1583
Link Speed (mph)	30			30	30	
Link Distance (ft)	660			300	1403	
Travel Time (s)	15.0			6.8	31.9	
Peak Hour Factor	0.78	0.80	0.78	0.92	0.92	0.78
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	0	246	54	800	855	178
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	246	54	800	855	178
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60	60	60			60
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 60.3%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	4.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	197	42	736	787	139
Future Vol, veh/h	0	197	42	736	787	139
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	80	78	92	92	78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	246	54	800	855	178

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	855	1033	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	4.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	0	358	673	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	358	673	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	34.5	0.7	0
HCM LOS	D		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	673	-	358	-	-
HCM Lane V/C Ratio	0.08	-	0.688	-	-
HCM Control Delay (s)	10.8	-	34.5	-	-
HCM Lane LOS	B	-	D	-	-
HCM 95th %tile Q(veh)	0.3	-	4.9	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	1232	5	12	588	166	0	0	4	0	0	49
Future Volume (vph)	73	1232	5	12	588	166	0	0	4	0	0	49
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.865			0.865
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	0	0	1611	0	0	1611
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	0	0	1611	0	0	1611
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		660			660			636			450	
Travel Time (s)		15.0			15.0			14.5			10.2	
Peak Hour Factor	0.78	0.93	0.78	0.78	0.92	0.84	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	94	1325	6	15	639	198	0	0	5	0	0	63
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	1325	6	15	639	198	0	0	5	0	0	63
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 33.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	73	1232	5	12	588	166	0	0	4	0	0	49
Future Vol, veh/h	73	1232	5	12	588	166	0	0	4	0	0	49
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	93	78	78	92	84	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	94	1325	6	15	639	198	0	0	5	0	0	63

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	837	0	0	1331	0	0	-	-	663	-	-	320
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	469	-	-	270	-	-	0	0	346	0	0	577
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	469	-	-	270	-	-	-	-	346	-	-	577
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.3	15.6	12
HCM LOS			C	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	346	469	-	-	270	-	-	577
HCM Lane V/C Ratio	0.015	0.2	-	-	0.057	-	-	0.109
HCM Control Delay (s)	15.6	14.6	-	-	19.1	-	-	12
HCM Lane LOS	C	B	-	-	C	-	-	B
HCM 95th %tile Q(veh)	0	0.7	-	-	0.2	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	7	1	47	118	1	1	15	285	53	0	349	2
Future Volume (vph)	7	1	47	118	1	1	15	285	53	0	349	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		150	150		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.884			0.999				0.850		0.999	
Flt Protected		0.994			0.953		0.950					
Satd. Flow (prot)	0	1637	0	0	1773	0	1770	1863	1583	1863	1861	0
Flt Permitted		0.994			0.953		0.950					
Satd. Flow (perm)	0	1637	0	0	1773	0	1770	1863	1583	1863	1861	0
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		501			660			450			300	
Travel Time (s)		11.4			15.0			10.2			6.8	
Peak Hour Factor	0.78	0.78	0.78	0.83	0.78	0.78	0.78	0.88	0.78	0.78	0.88	0.78
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	9	1	60	142	1	1	19	324	68	0	397	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	70	0	0	144	0	19	324	68	0	400	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.5%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	7	1	47	118	1	1	15	285	53	0	349	2
Future Vol, veh/h	7	1	47	118	1	1	15	285	53	0	349	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	150	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	83	78	78	78	88	78	78	88	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	9	1	60	142	1	1	19	324	68	0	397	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	796	829	399	791	762	324	400	0	0	392	0	0
Stage 1	399	399	-	362	362	-	-	-	-	-	-	-
Stage 2	397	430	-	429	400	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	305	306	651	307	335	717	1159	-	-	1167	-	-
Stage 1	627	602	-	657	625	-	-	-	-	-	-	-
Stage 2	629	583	-	604	602	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	300	301	651	274	330	717	1159	-	-	1167	-	-
Mov Cap-2 Maneuver	300	301	-	274	330	-	-	-	-	-	-	-
Stage 1	617	602	-	646	615	-	-	-	-	-	-	-
Stage 2	616	574	-	547	602	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	31.6	0.4	0
HCM LOS	B	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1159	-	-	556	276	1167	-	-
HCM Lane V/C Ratio	0.017	-	-	0.127	0.524	-	-	-
HCM Control Delay (s)	8.2	-	-	12.4	31.6	0	-	-
HCM Lane LOS	A	-	-	B	D	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.4	2.8	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	23	1	279	2	1	233
Future Volume (vph)	23	1	279	2	1	233
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.995		0.999			
Flt Protected	0.954				0.950	
Satd. Flow (prot)	1768	0	1861	0	1770	1863
Flt Permitted	0.954				0.950	
Satd. Flow (perm)	1768	0	1861	0	1770	1863
Link Speed (mph)	45		45			45
Link Distance (ft)	229		280			395
Travel Time (s)	3.5		4.2			6.0
Peak Hour Factor	0.78	0.78	0.88	0.78	0.78	0.87
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	29	1	317	3	1	268
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	0	320	0	1	268
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60	60		60	60	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 24.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	23	1	279	2	1	233
Future Vol, veh/h	23	1	279	2	1	233
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	88	78	78	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	1	317	3	1	268

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	589	319	0	0	320	0
Stage 1	319	-	-	-	-	-
Stage 2	270	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	471	722	-	-	1240	-
Stage 1	737	-	-	-	-	-
Stage 2	775	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	471	722	-	-	1240	-
Mov Cap-2 Maneuver	471	-	-	-	-	-
Stage 1	737	-	-	-	-	-
Stage 2	774	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	478	1240	-
HCM Lane V/C Ratio	-	-	0.064	0.001	-
HCM Control Delay (s)	-	-	13	7.9	-
HCM Lane LOS	-	-	B	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	44	1	80	59	42	1	10	131	53	8	18
Future Volume (vph)	2	44	1	80	59	42	1	10	131	53	8	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.969			0.875			0.969	
Flt Protected		0.998			0.978						0.967	
Satd. Flow (prot)	0	1855	0	0	1765	0	0	1630	0	0	1745	0
Flt Permitted		0.998			0.978						0.967	
Satd. Flow (perm)	0	1855	0	0	1765	0	0	1630	0	0	1745	0
Link Speed (mph)		25			30			30			30	
Link Distance (ft)		660			660			300			280	
Travel Time (s)		18.0			15.0			6.8			6.4	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	3	56	1	103	76	54	1	13	168	68	10	23
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	60	0	0	233	0	0	182	0	0	101	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60		60	60		60	60		60	60		60
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 39.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	44	1	80	59	42	1	10	131	53	8	18
Future Vol, veh/h	2	44	1	80	59	42	1	10	131	53	8	18
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	3	56	1	103	76	54	1	13	168	68	10	23

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	130	0	0	57	0	0	389	399	57	462	372	103
Stage 1	-	-	-	-	-	-	63	63	-	309	309	-
Stage 2	-	-	-	-	-	-	326	336	-	153	63	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1455	-	-	1547	-	-	570	539	1009	510	558	952
Stage 1	-	-	-	-	-	-	948	842	-	701	660	-
Stage 2	-	-	-	-	-	-	687	642	-	849	842	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1455	-	-	1547	-	-	517	499	1009	393	517	952
Mov Cap-2 Maneuver	-	-	-	-	-	-	517	499	-	393	517	-
Stage 1	-	-	-	-	-	-	946	840	-	700	612	-
Stage 2	-	-	-	-	-	-	612	596	-	695	840	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	3.3	9.8	14.8
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	935	1455	-	-	1547	-	-	467
HCM Lane V/C Ratio	0.195	0.002	-	-	0.066	-	-	0.217
HCM Control Delay (s)	9.8	7.5	0	-	7.5	0	-	14.8
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.2	-	-	0.8

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	14	3	8	23	2	6
Future Volume (vph)	14	3	8	23	2	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.902	
Flt Protected	0.950			0.987		
Satd. Flow (prot)	1770	1583	0	1839	1680	0
Flt Permitted	0.950			0.987		
Satd. Flow (perm)	1770	1583	0	1839	1680	0
Link Speed (mph)	45			45	45	
Link Distance (ft)	666			181	194	
Travel Time (s)	10.1			2.7	2.9	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Adj. Flow (vph)	18	4	10	29	3	8
Shared Lane Traffic (%)						
Lane Group Flow (vph)	18	4	0	39	11	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	60	60			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	18.2%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	7.3
Intersection LOS	A

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	3	8	23	2	6
Future Vol, veh/h	14	3	8	23	2	6
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	4	10	29	3	8
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	7.8	7.2	6.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	26%	100%	0%	0%
Vol Thru, %	74%	0%	0%	25%
Vol Right, %	0%	0%	100%	75%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	14	3	8
LT Vol	8	14	0	0
Through Vol	23	0	0	2
RT Vol	0	0	3	6
Lane Flow Rate	40	18	4	10
Geometry Grp	2	7	7	2
Degree of Util (X)	0.044	0.026	0.004	0.01
Departure Headway (Hd)	4.03	5.121	3.92	3.55
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	889	701	914	1006
Service Time	2.052	2.84	1.639	1.579
HCM Lane V/C Ratio	0.045	0.026	0.004	0.01
HCM Control Delay	7.2	8	6.7	6.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0.1	0	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	183	480	24	249	25	749	963	29	38	653	96
Future Volume (vph)	226	183	480	24	249	25	749	963	29	38	653	96
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		590	330		440	320		290	290		190
Storage Lanes	1		1	1		1	2		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	0.97	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	3433	3539	1583	1770	3539	1583
Flt Permitted	0.375			0.610			0.950			0.950		
Satd. Flow (perm)	699	5085	1583	1136	5085	1583	3433	3539	1583	1770	3539	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			545			264			182			256
Link Speed (mph)		45			45			45			45	
Link Distance (ft)		660			1515			645			450	
Travel Time (s)		10.0			23.0			9.8			6.8	
Peak Hour Factor	0.87	0.84	0.88	0.78	0.88	0.78	0.92	0.92	0.78	0.78	0.92	0.80
Adj. Flow (vph)	260	218	545	31	283	32	814	1047	37	49	710	120
Shared Lane Traffic (%)												
Lane Group Flow (vph)	260	218	545	31	283	32	814	1047	37	49	710	120
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			24			24	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm	Prot	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8			2			6

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	15.4	17.4	17.4	15.4	17.4	17.4	16.2	18.2	18.2	16.2	18.2	18.2
Total Split (s)	26.0	25.0	25.0	21.0	20.0	20.0	45.0	57.0	57.0	17.0	29.0	29.0
Total Split (%)	21.7%	20.8%	20.8%	17.5%	16.7%	16.7%	37.5%	47.5%	47.5%	14.2%	24.2%	24.2%
Maximum Green (s)	18.6	17.6	17.6	13.6	12.6	12.6	36.8	48.8	48.8	8.8	20.8	20.8
Yellow Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.1	5.1	5.1	5.1	5.1	5.1
All-Red Time (s)	2.4	2.4	2.4	2.4	2.4	2.4	3.1	3.1	3.1	3.1	3.1	3.1
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	8.2	8.2	8.2	8.2	8.2	8.2
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	5.0	5.0	3.0	5.0	5.0
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	36.3	27.1	27.1	19.1	11.1	11.1	32.3	54.6	54.6	8.6	27.6	27.6
Actuated g/C Ratio	0.30	0.23	0.23	0.16	0.09	0.09	0.27	0.46	0.46	0.07	0.23	0.23
v/c Ratio	0.70	0.19	0.70	0.14	0.60	0.08	0.88	0.65	0.05	0.39	0.87	0.21
Control Delay	41.9	37.0	18.0	31.6	57.8	0.4	53.7	29.3	0.1	62.5	58.2	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	37.0	18.0	31.6	57.8	0.4	53.7	29.3	0.1	62.5	58.2	0.9
LOS	D	D	B	C	E	A	D	C	A	E	E	A
Approach Delay		28.1			50.1			39.2			50.6	
Approach LOS		C			D			D			D	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 0 (0%), Referenced to phase 2:NBT and 6:SBT, Start of Yellow			
Natural Cycle: 90			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.88			
Intersection Signal Delay: 39.8		Intersection LOS: D	
Intersection Capacity Utilization 86.3%		ICU Level of Service E	
Analysis Period (min) 15			

Splits and Phases: 1: Tower Road & 104th Avenue

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	260	218	545	31	283	32	814	1047	37	49	710	120
v/c Ratio	0.70	0.19	0.70	0.14	0.60	0.08	0.88	0.65	0.05	0.39	0.87	0.21
Control Delay	41.9	37.0	18.0	31.6	57.8	0.4	53.7	29.3	0.1	62.5	58.2	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.9	37.0	18.0	31.6	57.8	0.4	53.7	29.3	0.1	62.5	58.2	0.9
Queue Length 50th (ft)	165	53	161	17	78	0	309	345	0	37	284	0
Queue Length 95th (ft)	244	75	249	34	106	0	370	435	0	67	#465	0
Internal Link Dist (ft)		580			1435			565			370	
Turn Bay Length (ft)	350		590	330		440	320		290	290		190
Base Capacity (vph)	377	1146	779	306	533	402	1052	1609	819	131	814	561
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.69	0.19	0.70	0.10	0.53	0.08	0.77	0.65	0.05	0.37	0.87	0.21

Intersection Summary

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	226	183	480	24	249	25	749	963	29	38	653	96
Future Volume (veh/h)	226	183	480	24	249	25	749	963	29	38	653	96
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	260	218	0	31	283	0	814	1047	0	49	710	0
Peak Hour Factor	0.87	0.84	0.88	0.78	0.88	0.78	0.92	0.92	0.78	0.78	0.92	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	352	951		233	426		883	1624		96	907	
Arrive On Green	0.05	0.06	0.00	0.04	0.08	0.00	0.26	0.46	0.00	0.05	0.26	0.00
Sat Flow, veh/h	1781	5106	1585	1781	5106	1585	3456	3554	1585	1781	3554	1585
Grp Volume(v), veh/h	260	218	0	31	283	0	814	1047	0	49	710	0
Grp Sat Flow(s),veh/h/ln	1781	1702	1585	1781	1702	1585	1728	1777	1585	1781	1777	1585
Q Serve(g_s), s	15.5	4.9	0.0	1.9	6.5	0.0	27.5	27.2	0.0	3.2	22.3	0.0
Cycle Q Clear(g_c), s	15.5	4.9	0.0	1.9	6.5	0.0	27.5	27.2	0.0	3.2	22.3	0.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	352	951		233	426		883	1624		96	907	
V/C Ratio(X)	0.74	0.23		0.13	0.67		0.92	0.64		0.51	0.78	
Avail Cap(c_a), veh/h	368	951		359	536		1060	1624		131	907	
HCM Platoon Ratio	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00
Uniform Delay (d), s/veh	45.0	48.1	0.0	46.6	53.4	0.0	43.5	25.1	0.0	55.3	41.6	0.0
Incr Delay (d2), s/veh	6.3	0.0	0.0	0.1	1.1	0.0	10.5	2.0	0.0	4.2	6.7	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.9	2.1	0.0	0.8	2.7	0.0	12.6	11.2	0.0	1.5	10.3	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	51.2	48.2	0.0	46.7	54.5	0.0	54.0	27.1	0.0	59.5	48.3	0.0
LnGrp LOS	D	D		D	D		D	C		E	D	
Approach Vol, veh/h		478			314			1861			759	
Approach Delay, s/veh		49.8			53.7			38.9			49.0	
Approach LOS		D			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	63.1	12.6	29.8	38.9	38.8	24.9	17.4
Change Period (Y+Rc), s	8.2	8.2	7.4	7.4	8.2	8.2	7.4	7.4
Max Green Setting (Gmax), s	8.8	48.8	13.6	17.6	36.8	20.8	18.6	12.6
Max Q Clear Time (g_c+I1), s	5.2	29.2	3.9	6.9	29.5	24.3	17.5	8.5
Green Ext Time (p_c), s	0.0	11.3	0.0	0.6	1.2	0.0	0.0	0.4

Intersection Summary	
HCM 6th Ctrl Delay	44.0
HCM 6th LOS	D

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	97	633	133	21	872	159	181	41	38	256	16	90
Future Volume (vph)	97	633	133	21	872	159	181	41	38	256	16	90
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	400		230	0		250	230		230	210		140
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	3539	1583	1770	3539	1583	1770	1863	1583	1770	1863	1583
Flt Permitted	0.175			0.363			0.744			0.401		
Satd. Flow (perm)	326	3539	1583	676	3539	1583	1386	1863	1583	747	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			218			218			227			168
Link Speed (mph)		45			45			25			25	
Link Distance (ft)		900			660			652			450	
Travel Time (s)		13.6			10.0			17.8			12.3	
Peak Hour Factor	0.80	0.92	0.84	0.78	0.92	0.84	0.84	0.78	0.78	0.87	0.78	0.80
Adj. Flow (vph)	121	688	158	27	948	189	215	53	49	294	21	113
Shared Lane Traffic (%)												
Lane Group Flow (vph)	121	688	158	27	948	189	215	53	49	294	21	113
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2		2	6		6	8		8	4		4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector Phase	5	2	2	1	6	6	3	8	8	7	4	4
Switch Phase												
Minimum Initial (s)	5.0	10.0	10.0	5.0	10.0	10.0	8.0	10.0	10.0	8.0	10.0	10.0
Minimum Split (s)	12.5	17.5	17.5	12.5	17.5	17.5	14.5	16.5	16.5	14.5	16.5	16.5
Total Split (s)	18.0	57.0	57.0	13.0	52.0	52.0	25.0	17.0	17.0	33.0	25.0	25.0
Total Split (%)	15.0%	47.5%	47.5%	10.8%	43.3%	43.3%	20.8%	14.2%	14.2%	27.5%	20.8%	20.8%
Maximum Green (s)	10.5	49.5	49.5	5.5	44.5	44.5	18.5	10.5	10.5	26.5	18.5	18.5
Yellow Time (s)	5.3	5.3	5.3	5.3	5.3	5.3	3.8	3.8	3.8	3.8	3.8	3.8
All-Red Time (s)	2.2	2.2	2.2	2.2	2.2	2.2	2.7	2.7	2.7	2.7	2.7	2.7
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5	7.5	7.5	7.5	6.5	6.5	6.5	6.5	6.5	6.5
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	2.0	5.0	5.0	2.0	5.0	5.0	2.0	2.0	2.0	2.0	2.0	2.0
Recall Mode	None	C-Max	C-Max	None	C-Max	C-Max	None	None	None	None	None	None
Act Effct Green (s)	66.4	60.7	60.7	58.1	52.8	52.8	23.8	10.1	10.1	37.0	15.2	15.2
Actuated g/C Ratio	0.55	0.51	0.51	0.48	0.44	0.44	0.20	0.08	0.08	0.31	0.13	0.13
v/c Ratio	0.43	0.38	0.17	0.07	0.61	0.23	0.66	0.34	0.14	0.67	0.09	0.33
Control Delay	18.1	21.0	1.2	4.0	15.9	3.2	43.9	58.1	0.9	41.5	45.6	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	21.0	1.2	4.0	15.9	3.2	43.9	58.1	0.9	41.5	45.6	4.0
LOS	B	C	A	A	B	A	D	E	A	D	D	A
Approach Delay		17.4			13.6			39.6			31.8	
Approach LOS		B			B			D			C	

Intersection Summary			
Area Type:	Other		
Cycle Length: 120			
Actuated Cycle Length: 120			
Offset: 6 (5%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow			
Natural Cycle: 75			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.67			
Intersection Signal Delay: 20.5		Intersection LOS: C	
Intersection Capacity Utilization 68.2%		ICU Level of Service C	
Analysis Period (min) 15			

Splits and Phases: 2: Walden Street & 104th Avenue

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	121	688	158	27	948	189	215	53	49	294	21	113
v/c Ratio	0.43	0.38	0.17	0.07	0.61	0.23	0.66	0.34	0.14	0.67	0.09	0.33
Control Delay	18.1	21.0	1.2	4.0	15.9	3.2	43.9	58.1	0.9	41.5	45.6	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	18.1	21.0	1.2	4.0	15.9	3.2	43.9	58.1	0.9	41.5	45.6	4.0
Queue Length 50th (ft)	42	184	0	2	334	2	128	39	0	185	15	0
Queue Length 95th (ft)	70	256	5	m6	473	m16	170	70	0	245	33	0
Internal Link Dist (ft)		820			580			572			370	
Turn Bay Length (ft)	400		230			250	230		230	210		140
Base Capacity (vph)	308	1790	908	379	1557	819	366	163	345	462	287	386
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.38	0.17	0.07	0.61	0.23	0.59	0.33	0.14	0.64	0.07	0.29

Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	97	633	133	21	872	159	181	41	38	256	16	90
Future Volume (veh/h)	97	633	133	21	872	159	181	41	38	256	16	90
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	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	121	688	158	27	948	189	215	53	49	294	21	112
Peak Hour Factor	0.80	0.92	0.84	0.78	0.92	0.84	0.84	0.78	0.78	0.87	0.78	0.80
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	259	1748	780	345	1654	738	389	156	132	430	232	196
Arrive On Green	0.05	0.49	0.49	0.01	0.15	0.15	0.13	0.08	0.08	0.17	0.12	0.12
Sat Flow, veh/h	1781	3554	1585	1781	3554	1585	1781	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	121	688	158	27	948	189	215	53	49	294	21	112
Grp Sat Flow(s),veh/h/ln	1781	1777	1585	1781	1777	1585	1781	1870	1585	1781	1870	1585
Q Serve(g_s), s	4.2	14.6	6.7	0.9	29.7	12.6	13.0	3.2	3.5	17.7	1.2	8.0
Cycle Q Clear(g_c), s	4.2	14.6	6.7	0.9	29.7	12.6	13.0	3.2	3.5	17.7	1.2	8.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	259	1748	780	345	1654	738	389	156	132	430	232	196
V/C Ratio(X)	0.47	0.39	0.20	0.08	0.57	0.26	0.55	0.34	0.37	0.68	0.09	0.57
Avail Cap(c_a), veh/h	324	1748	780	383	1654	738	439	164	139	527	288	244
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.9	19.2	17.2	16.7	39.7	32.5	42.7	51.9	52.0	40.2	46.6	49.6
Incr Delay (d2), s/veh	0.5	0.7	0.6	0.0	1.5	0.8	0.5	0.5	0.6	1.7	0.1	1.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.7	5.9	2.6	0.4	14.4	5.5	5.8	1.5	1.4	8.0	0.6	3.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.4	19.9	17.8	16.7	41.2	33.3	43.1	52.4	52.7	41.8	46.6	50.5
LnGrp LOS	C	B	B	B	D	C	D	D	D	D	D	D
Approach Vol, veh/h		967			1164			317			427	
Approach Delay, s/veh		19.6			39.3			46.1			44.4	
Approach LOS		B			D			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	10.5	66.5	21.6	21.4	13.7	63.3	26.5	16.5
Change Period (Y+Rc), s	* 7.5	* 7.5	6.5	6.5	* 7.5	* 7.5	6.5	6.5
Max Green Setting (Gmax), s	* 5.5	* 50	18.5	18.5	* 11	* 45	26.5	10.5
Max Q Clear Time (g_c+I1), s	2.9	16.6	15.0	10.0	6.2	31.7	19.7	5.5
Green Ext Time (p_c), s	0.0	10.8	0.1	0.1	0.0	8.4	0.3	0.1

Intersection Summary	
HCM 6th Ctrl Delay	34.2
HCM 6th LOS	C

Notes

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

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	2	0	36	27	1	6	59	102	8	12	106	2
Future Volume (vph)	2	0	36	27	1	6	59	102	8	12	106	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.873			0.975			0.994			0.997	
Flt Protected		0.997			0.962			0.982			0.995	
Satd. Flow (prot)	0	1621	0	0	1747	0	0	1818	0	0	1848	0
Flt Permitted		0.997			0.962			0.982			0.995	
Satd. Flow (perm)	0	1621	0	0	1747	0	0	1818	0	0	1848	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		500			660			300			280	
Travel Time (s)		13.6			18.0			8.2			7.6	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.83	0.78	0.78	0.83	0.78
Adj. Flow (vph)	3	0	46	35	1	8	76	123	10	15	128	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	0	0	44	0	0	209	0	0	146	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Yield			Yield			Yield			Yield	

Intersection Summary			
Area Type:	Other		
Control Type: Roundabout			
Intersection Capacity Utilization 31.0%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	3.9
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	49	44	209	146
Demand Flow Rate, veh/h	50	45	213	149
Vehicles Circulating, veh/h	182	206	18	115
Vehicles Exiting, veh/h	82	25	214	136
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	3.6	3.6	4.0	4.0
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	50	45	213	149
Cap Entry Lane, veh/h	1146	1118	1355	1227
Entry HV Adj Factor	0.980	0.977	0.979	0.983
Flow Entry, veh/h	49	44	209	146
Cap Entry, veh/h	1123	1093	1326	1206
V/C Ratio	0.044	0.040	0.157	0.121
Control Delay, s/veh	3.6	3.6	4.0	4.0
LOS	A	A	A	A
95th %tile Queue, veh	0	0	1	0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	2	14	11	2	1	31	56	13	1	66	2
Future Volume (vph)	3	2	14	11	2	1	31	56	13	1	66	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	150		0	150		0	150		0
Storage Lanes	0		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.903			0.962			0.970			0.995	
Flt Protected		0.992		0.950			0.950			0.950		
Satd. Flow (prot)	0	1669	0	1770	1792	0	1770	1807	0	1770	1853	0
Flt Permitted		0.992		0.950			0.950			0.950		
Satd. Flow (perm)	0	1669	0	1770	1792	0	1770	1807	0	1770	1853	0
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		500			666			395			595	
Travel Time (s)		13.6			18.2			10.8			16.2	
Peak Hour Factor	0.78	0.78	0.78	0.79	0.78	0.78	0.78	0.84	0.78	0.78	0.84	0.78
Adj. Flow (vph)	4	3	18	14	3	1	40	67	17	1	79	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	14	4	0	40	84	0	1	82	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 18.9%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Intersection Delay, s/veh	7.9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	2	14	11	2	1	31	56	13	1	66	2
Future Vol, veh/h	3	2	14	11	2	1	31	56	13	1	66	2
Peak Hour Factor	0.78	0.78	0.78	0.79	0.78	0.78	0.78	0.84	0.78	0.78	0.84	0.78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	3	18	14	3	1	40	67	17	1	79	3
Number of Lanes	0	1	0	1	1	0	1	1	0	1	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	1	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	1	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	1
HCM Control Delay	7.8	8.2	7.9	8
HCM LOS	A	A	A	A

Lane	NBLn1	NBLn2	EBLn1	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	100%	0%	16%	100%	0%	100%	0%
Vol Thru, %	0%	81%	11%	0%	67%	0%	97%
Vol Right, %	0%	19%	74%	0%	33%	0%	3%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	31	69	19	11	3	1	68
LT Vol	31	0	3	11	0	1	0
Through Vol	0	56	2	0	2	0	66
RT Vol	0	13	14	0	1	0	2
Lane Flow Rate	40	83	24	14	4	1	81
Geometry Grp	7	7	6	7	7	7	7
Degree of Util (X)	0.057	0.104	0.031	0.021	0.005	0.002	0.105
Departure Headway (Hd)	5.147	4.514	4.642	5.553	4.818	5.168	4.647
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	692	788	776	648	747	687	764
Service Time	2.906	2.274	2.642	3.254	2.518	2.94	2.419
HCM Lane V/C Ratio	0.058	0.105	0.031	0.022	0.005	0.001	0.106
HCM Control Delay	8.2	7.8	7.8	8.4	7.5	8	8
HCM Lane LOS	A	A	A	A	A	A	A
HCM 95th-tile Q	0.2	0.3	0.1	0.1	0	0	0.4

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	0	161	72	1072	601	110
Future Volume (vph)	0	161	72	1072	601	110
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250	0	150			150
Storage Lanes	0	1	1			1
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.865				0.850
Flt Protected			0.950			
Satd. Flow (prot)	0	1611	1770	1863	1863	1583
Flt Permitted			0.950			
Satd. Flow (perm)	0	1611	1770	1863	1863	1583
Link Speed (mph)	30			50	50	
Link Distance (ft)	660			300	1403	
Travel Time (s)	15.0			4.1	19.1	
Peak Hour Factor	0.78	0.79	0.78	0.93	0.92	0.80
Adj. Flow (vph)	0	204	92	1153	653	138
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	204	92	1153	653	138
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	0			12	12	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	9	15			9
Sign Control	Stop			Free	Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 59.8%		ICU Level of Service B	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	161	72	1072	601	110
Future Vol, veh/h	0	161	72	1072	601	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	150	-	-	150
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	78	79	78	93	92	80
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	204	92	1153	653	138

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	-	653	791	0	-	0
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.22	4.12	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	0	467	829	-	-	-
Stage 1	0	-	-	-	-	-
Stage 2	0	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	-	467	829	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	18.5	0.7	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	829	-	467	-	-
HCM Lane V/C Ratio	0.111	-	0.436	-	-
HCM Control Delay (s)	9.9	-	18.5	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0.4	-	2.2	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	873	5	17	970	93	0	0	4	0	0	42
Future Volume (vph)	44	873	5	17	970	93	0	0	4	0	0	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		150	150		0	0		0	0		0
Storage Lanes	1		1	1		1	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.91	1.00	1.00	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850			0.865			0.865
Flt Protected	0.950			0.950								
Satd. Flow (prot)	1770	5085	1583	1770	5085	1583	0	0	1611	0	0	1611
Flt Permitted	0.950			0.950								
Satd. Flow (perm)	1770	5085	1583	1770	5085	1583	0	0	1611	0	0	1611
Link Speed (mph)		45			45			30			30	
Link Distance (ft)		660			660			636			450	
Travel Time (s)		10.0			10.0			14.5			10.2	
Peak Hour Factor	0.78	0.92	0.78	0.78	0.92	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	56	949	6	22	1054	119	0	0	5	0	0	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	56	949	6	22	1054	119	0	0	5	0	0	54
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 28.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	873	5	17	970	93	0	0	4	0	0	42
Future Vol, veh/h	44	873	5	17	970	93	0	0	4	0	0	42
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	150	-	150	150	-	0	-	-	0	-	-	0
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	92	78	78	92	78	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	56	949	6	22	1054	119	0	0	5	0	0	54

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1173	0	0	955	0	0	-	-	475	-	-	527
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy	5.34	-	-	5.34	-	-	-	-	7.14	-	-	7.14
Critical Hdwy Stg 1	-	-	-	-	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.12	-	-	3.12	-	-	-	-	3.92	-	-	3.92
Pot Cap-1 Maneuver	323	-	-	411	-	-	0	0	459	0	0	424
Stage 1	-	-	-	-	-	-	0	0	-	0	0	-
Stage 2	-	-	-	-	-	-	0	0	-	0	0	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	323	-	-	411	-	-	-	-	459	-	-	424
Mov Cap-2 Maneuver	-	-	-	-	-	-	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	0.3	12.9	14.7
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	459	323	-	-	411	-	-	424
HCM Lane V/C Ratio	0.011	0.175	-	-	0.053	-	-	0.127
HCM Control Delay (s)	12.9	18.5	-	-	14.2	-	-	14.7
HCM Lane LOS	B	C	-	-	B	-	-	B
HCM 95th %tile Q(veh)	0	0.6	-	-	0.2	-	-	0.4

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	3	1	26	177	1	1	33	167	46	10	157	2
Future Volume (vph)	3	1	26	177	1	1	33	167	46	10	157	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		0	150		150	150		0
Storage Lanes	0		0	0		0	1		1	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.883			0.999				0.850		0.998	
Flt Protected		0.995			0.953		0.950			0.950		
Satd. Flow (prot)	0	1637	0	0	1773	0	1770	1863	1583	1770	1859	0
Flt Permitted		0.995			0.953		0.950			0.950		
Satd. Flow (perm)	0	1637	0	0	1773	0	1770	1863	1583	1770	1859	0
Link Speed (mph)		30			30			25			25	
Link Distance (ft)		501			660			450			300	
Travel Time (s)		11.4			15.0			12.3			8.2	
Peak Hour Factor	0.78	0.78	0.78	0.84	0.78	0.78	0.78	0.84	0.78	0.78	0.84	0.78
Adj. Flow (vph)	4	1	33	211	1	1	42	199	59	13	187	3
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	38	0	0	213	0	42	199	59	13	190	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Stop			Stop			Free			Free	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.7%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	1	26	177	1	1	33	167	46	10	157	2
Future Vol, veh/h	3	1	26	177	1	1	33	167	46	10	157	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	150	150	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	84	78	78	78	84	78	78	84	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	1	33	211	1	1	42	199	59	13	187	3

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	529	557	189	515	499	199	190	0	0	258	0	0
Stage 1	215	215	-	283	283	-	-	-	-	-	-	-
Stage 2	314	342	-	232	216	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	460	439	853	470	473	842	1384	-	-	1307	-	-
Stage 1	787	725	-	724	677	-	-	-	-	-	-	-
Stage 2	697	638	-	771	724	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	444	421	853	437	454	842	1384	-	-	1307	-	-
Mov Cap-2 Maneuver	444	421	-	437	454	-	-	-	-	-	-	-
Stage 1	763	718	-	702	657	-	-	-	-	-	-	-
Stage 2	674	619	-	732	717	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10	20.8	1.1	0.5
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1384	-	-	757	438	1307	-	-
HCM Lane V/C Ratio	0.031	-	-	0.051	0.487	0.01	-	-
HCM Control Delay (s)	7.7	-	-	10	20.8	7.8	-	-
HCM Lane LOS	A	-	-	B	C	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	2.6	0	-	-

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	14	2	101	8	1	103
Future Volume (vph)	14	2	101	8	1	103
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0	0		0	100	
Storage Lanes	1	0		0	1	
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt	0.981		0.990			
Flt Protected	0.959				0.950	
Satd. Flow (prot)	1752	0	1844	0	1770	1863
Flt Permitted	0.959				0.950	
Satd. Flow (perm)	1752	0	1844	0	1770	1863
Link Speed (mph)	30		30			30
Link Distance (ft)	229		280			395
Travel Time (s)	5.2		6.4			9.0
Peak Hour Factor	0.78	0.78	0.83	0.78	0.78	0.83
Adj. Flow (vph)	18	3	122	10	1	124
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	0	132	0	1	124
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Right	Left	Left
Median Width(ft)	12		12			12
Link Offset(ft)	0		0			0
Crosswalk Width(ft)	16		16			16
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	60	60		60	60	
Sign Control	Stop		Free			Free

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 15.8%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	0.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	2	101	8	1	103
Future Vol, veh/h	14	2	101	8	1	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	100	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	83	78	78	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	3	122	10	1	124

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	253	127	0	0	132	0
Stage 1	127	-	-	-	-	-
Stage 2	126	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	736	923	-	-	1453	-
Stage 1	899	-	-	-	-	-
Stage 2	900	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	735	923	-	-	1453	-
Mov Cap-2 Maneuver	735	-	-	-	-	-
Stage 1	899	-	-	-	-	-
Stage 2	899	-	-	-	-	-

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

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	754	1453	-
HCM Lane V/C Ratio	-	-	0.027	0.001	-
HCM Control Delay (s)	-	-	9.9	7.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	8	53	1	41	52	89	1	16	109	35	5	11
Future Volume (vph)	8	53	1	41	52	89	1	16	109	35	5	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.935			0.883			0.971	
Flt Protected		0.994			0.989						0.967	
Satd. Flow (prot)	0	1848	0	0	1723	0	0	1645	0	0	1749	0
Flt Permitted		0.994			0.989						0.967	
Satd. Flow (perm)	0	1848	0	0	1723	0	0	1645	0	0	1749	0
Link Speed (mph)		25			30			30			30	
Link Distance (ft)		660			660			300			280	
Travel Time (s)		18.0			15.0			6.8			6.4	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.80	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	10	68	1	53	67	111	1	21	140	45	6	14
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	79	0	0	231	0	0	162	0	0	65	0
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		0			0			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Sign Control		Free			Free			Stop			Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization 38.1%		ICU Level of Service A	
Analysis Period (min) 15			

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	53	1	41	52	89	1	16	109	35	5	11
Future Vol, veh/h	8	53	1	41	52	89	1	16	109	35	5	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	80	78	78	78	78	78	78
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	10	68	1	53	67	111	1	21	140	45	6	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	178	0	0	69	0	0	328	373	69	398	318	123
Stage 1	-	-	-	-	-	-	89	89	-	229	229	-
Stage 2	-	-	-	-	-	-	239	284	-	169	89	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1398	-	-	1532	-	-	625	557	994	562	598	928
Stage 1	-	-	-	-	-	-	918	821	-	774	715	-
Stage 2	-	-	-	-	-	-	764	676	-	833	821	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1398	-	-	1532	-	-	589	531	994	452	570	928
Mov Cap-2 Maneuver	-	-	-	-	-	-	589	531	-	452	570	-
Stage 1	-	-	-	-	-	-	912	815	-	769	687	-
Stage 2	-	-	-	-	-	-	716	650	-	693	815	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	1	1.7	9.9	12.9
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	891	1398	-	-	1532	-	-	520
HCM Lane V/C Ratio	0.181	0.007	-	-	0.034	-	-	0.126
HCM Control Delay (s)	9.9	7.6	0	-	7.4	0	-	12.9
HCM Lane LOS	A	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0	-	-	0.1	-	-	0.4

Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	5	9	5	8	2	7
Future Volume (vph)	5	9	5	8	2	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	100	0	0			0
Storage Lanes	1	1	0			0
Taper Length (ft)	25		25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.850			0.899	
Flt Protected	0.950			0.982		
Satd. Flow (prot)	1770	1583	0	1829	1675	0
Flt Permitted	0.950			0.982		
Satd. Flow (perm)	1770	1583	0	1829	1675	0
Link Speed (mph)	25			30	30	
Link Distance (ft)	666			181	194	
Travel Time (s)	18.2			4.1	4.4	
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	6	12	6	10	3	9
Shared Lane Traffic (%)						
Lane Group Flow (vph)	6	12	0	16	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Right	Left	Left	Left	Right
Median Width(ft)	12			0	0	
Link Offset(ft)	0			0	0	
Crosswalk Width(ft)	16			16	16	
Two way Left Turn Lane						
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15	60	60			9
Sign Control	Stop			Stop	Stop	

Intersection Summary			
Area Type:	Other		
Control Type: Unsignalized			
Intersection Capacity Utilization	14.9%	ICU Level of Service	A
Analysis Period (min)	15		

Intersection	
Intersection Delay, s/veh	6.9
Intersection LOS	A

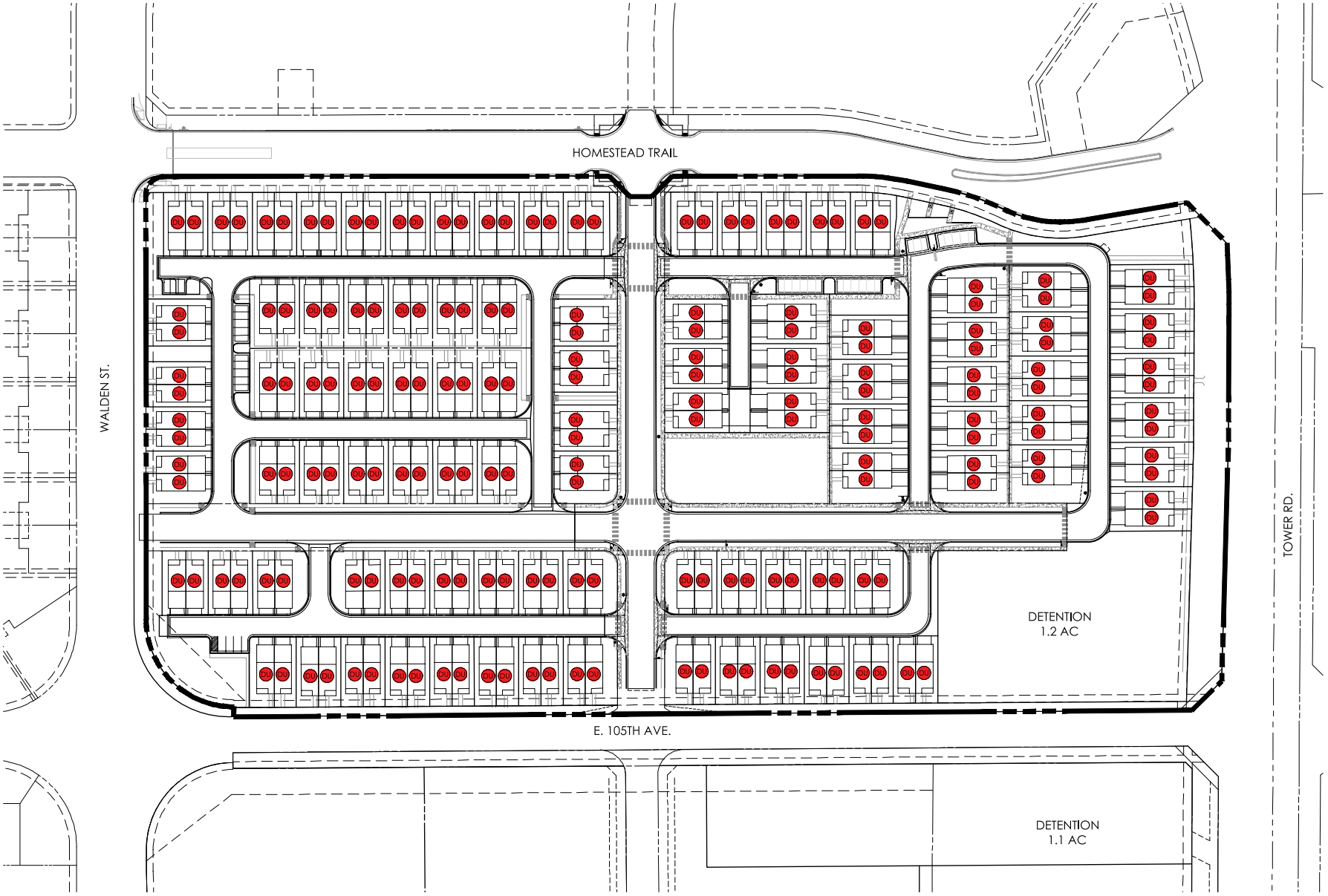
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	9	5	8	2	7
Future Vol, veh/h	5	9	5	8	2	7
Peak Hour Factor	0.78	0.78	0.78	0.78	0.78	0.78
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	6	12	6	10	3	9
Number of Lanes	1	1	0	1	1	0

Approach	EB	NB	SB
Opposing Approach		SB	NB
Opposing Lanes	0	1	1
Conflicting Approach Left	SB	EB	
Conflicting Lanes Left	1	2	0
Conflicting Approach Right	NB		EB
Conflicting Lanes Right	1	0	2
HCM Control Delay	7	7.1	6.6
HCM LOS	A	A	A

Lane	NBLn1	EBLn1	EBLn2	SBLn1
Vol Left, %	38%	100%	0%	0%
Vol Thru, %	62%	0%	0%	22%
Vol Right, %	0%	0%	100%	78%
Sign Control	Stop	Stop	Stop	Stop
Traffic Vol by Lane	13	5	9	9
LT Vol	5	5	0	0
Through Vol	8	0	0	2
RT Vol	0	0	9	7
Lane Flow Rate	17	6	12	12
Geometry Grp	2	7	7	2
Degree of Util (X)	0.019	0.009	0.012	0.011
Departure Headway (Hd)	4.05	5.083	3.883	3.511
Convergence, Y/N	Yes	Yes	Yes	Yes
Cap	887	707	925	1022
Service Time	2.061	2.793	1.592	1.524
HCM Lane V/C Ratio	0.019	0.008	0.013	0.012
HCM Control Delay	7.1	7.8	6.6	6.6
HCM Lane LOS	A	A	A	A
HCM 95th-tile Q	0.1	0	0	0

APPENDIX E

REUNION CENTER – DUET TOWNHOMES & COMMERCIAL PARCEL SITE PLANS



SITE PLAN

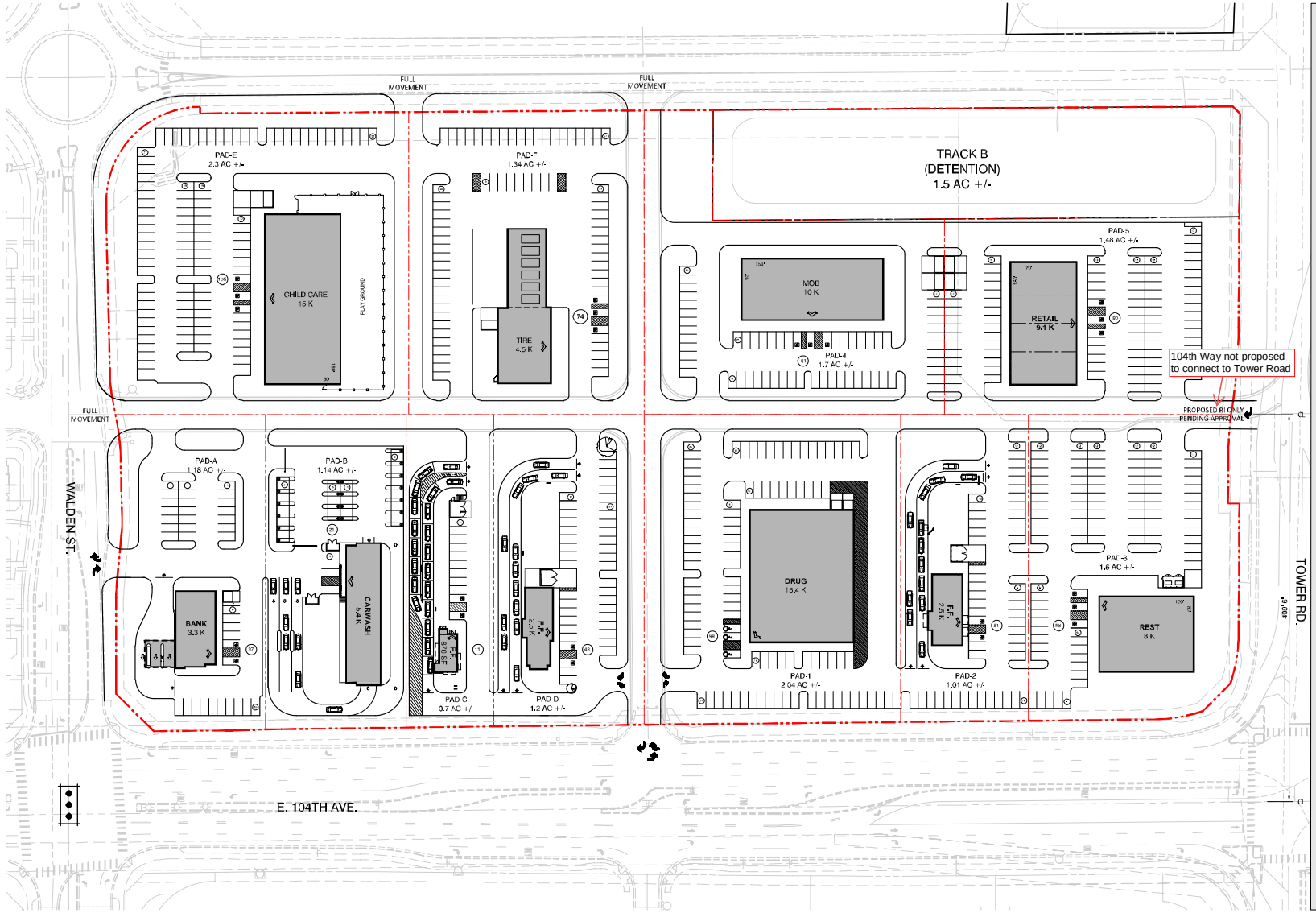
JANUARY 27, 2023

REUNION CENTER DUETS

COMMERCE CITY, CO

terracina design
10200 E. Girard Ave. Ste A-314
Denver, CO 80231
ph: 303.632.8867

Scale: 1"= 50'-0"



PROJECT SUMMARY

SITE	17.2 AC +/-
COMMERCIAL	15.7 AC +/-
TRACK B (DETENTION)	1.5 AC +/-
PAD-1 (DRUG/RETAIL)	2.04 AC
BUILDING	15,400 SF
PARKING PROVIDED	99
PARKING RATIO PROVIDED	6.4/1,000
PAD-2 (F.F.)	1.01 AC
BUILDING	2,500 SF
PARKING PROVIDED	51
PARKING RATIO PROVIDED	20/1,000
PAD-3 (RESTAURANT)	1.6 AC
BUILDING	8,000 SF
PARKING PROVIDED	98
PARKING RATIO PROVIDED	12 /1,000
PAD-4 (MOB)	1.7 AC
BUILDING	9,000 SF
PARKING PROVIDED	61
PARKING RATIO PROVIDED	6.8/1,000
PAD-5 (RETAIL)	1.48 AC
BUILDING	9,100 SF
PARKING PROVIDED	90
PARKING RATIO PROVIDED	9.9/1,000
PAD-A (BANK)	1.18 AC
BUILDING	3,300 SF
PARKING PROVIDED	37
PARKING RATIO PROVIDED	11.2/1,000
PAD-B (CAR WASH)	1.14 AC
BUILDING	5,400 SF
PARKING PROVIDED	21
PARKING RATIO PROVIDED	3.9/1,000
PAD-C (FAST FOOD)	0.7 AC
BUILDING	870 SF
PARKING PROVIDED	11
PARKING RATIO PROVIDED	12.6/1,000
PAD-D (FAST FOOD)	1.2 AC
BUILDING	2,500 SF
PARKING PROVIDED	43
PARKING RATIO PROVIDED	17.2/1,000
PAD-E (CHILD CARE)	2.3 AC
BUILDING	15,000 SF
PARKING PROVIDED	106
PARKING RATIO PROVIDED	7/1,000
PAD-F (AUTO CARE)	1.34 AC
BUILDING	4,500 SF
PARKING PROVIDED	74
PARKING RATIO PROVIDED	16.4/1,000

Reunion Center - Commercial Parcel
Commerce City, CO

Site Scheme - L

SCALE: 1" = 50' - 0"

0 50' 25' 100'

N

Oakwood Homes

G3 JOB #: 21-027

11/28/2022

DATE	REVISIONS

7730 E. Belleview Ave.
Suite A-180
Greenwood Village
CO 80111

G3 ARCHITECTURE
architecture | planning | interiors

APPENDIX F

REUNION CENTER VILLAGE PLAN

SITE DATA						
PLANNING AREA	LAND USE	ACREAGE	COMMERCIAL SQUARE FEET	RESIDENTIAL UNITES	DU/AC	FAR
1	SCHOOL/LIBRARY	18.9	127,700			0.15
2	RESIDENTIAL	20.1		291	14.5	
3	RESIDENTIAL	24.6		440	17.9	
4	RETAIL/SPORTS COMPLEX	19.1	232,000			0.30
5	RETAIL/LODGING/ENTERTAINMENT	33.5	207,300			0.15
6	SPORTS COMPLEX	42.2	30,000			0.02
TOTAL		158.4	597,000	731	4.6	0.09

PARKING DATA			
PLANNING AREA	LAND USE	PARKING REQUIRED	PARKING PROVIDED (5)
1	SCHOOL/LIBRARY (1)	335	607
2	RESIDENTIAL	537	554
3	RESIDENTIAL	770	785
4	RETAIL/SPORTS COMPLEX (2)(3)	600	575
5	RETAIL/LODGING/ENTERTAINMENT (2)	1,489	1,258
6	SPORTS COMPLEX (3)	230	230
TOTAL		3,961	4,009

NOTES:

(1) LARGE INDOOR SPORTS VENUES WILL BE PARKED USING OUTDOOR RECREATION PARKING REQUIREMENTS.

(2) PARKING NUMBERS ARE CONCEPTUAL AND SUBJECT TO CHANGE AT TIME OF PUD PERMIT.

(3)SHARED PARKING PERCENTAGE HAS NOT BEEN APPLIED TO PARKING PROVIDED.

(4) THE MINIMUM NUMBER OF PARKING SPACES FOR A MIXED USE DEVELOPMENT OR WHERE SHARED PARKING STRATEGIES ARE PROPOSED SHALL BE DETERMINED BY A STUDY PREPARED BY THE APPLICANT FOLLOWING THE PROCEDURES OF THE URBAN LAND INSTITUTE SHARED PARKING REPORT, ITE SHARED PARKING GUIDELINES, OR OTHER APPROVED PROCEDURES. A FORMAL PARKING STUDY MAY BE WAIVED FOR SMALL DEVELOPMENTS WHERE THERE IS ESTABLISHED EXPERIENCE WITH THE LAND USE MIX AND ITS IMPACT IS EXPECTED TO BE MINIMAL. THE ACTUAL NUMBER OF PARKING SPACES REQUIRED SHALL BE BASED ON WELL-RECOGNIZED SOURCES OF PARKING DATA SUCH AS THE ULI OR ITE REPORTS. IF STANDARD RATES ARE NOT AVAILABLE OR LIMITED, THE APPLICANT MAY COLLECT DATA AT SIMILAR SITES TO ESTABLISH LOCAL PARKING DEMAND RATES. IF THE SHARED PARKING PLAN ASSUMES USE OF AN EXISTING PARKING FACILITY, THEN FIELD SURVEYS SHALL BE CONDUCTED TO DETERMINE ACTUAL PARKING ACCUMULATION. IF POSSIBLE, THESE SURVEYS SHOULD CONSIDER THE SEASONAL PEAK PERIOD FOR THE COMBINATION OF LAND USES INVOLVED.

SITE PLAN NOTES:

1. RESIDENTIAL DENSITIES AND COMMERCIAL SQUARE FOOTAGE SHOWN ARE CONCEPTUAL. DENSITIES TO MEET THE REQUIREMENTS OF REUNION PUD ZONE DOCUMENT AMENDMENT #5.

ROAD SECTION NOTES:

1. REFER TO "ALTERNATE ROADWAY DESIGN STANDARDS REUNION CENTER - SOUTH" FOR PROPOSED ROAD AND INTERSECTION STANDARDS.

CITY STAFF CERTIFICATE

APPROVED BY THE DEPARTMENT OF COMMUNITY DEVELOPMENT OF THE CITY OF COMMERCE CITY, THIS _____ DAY OF _____, 2019.

_____

DEPARTMENT OF COMMUNITY DEVELOPMENT

REUNION CENTER

OAKWOOD HOMES

terracina design

REUNION

REAL HOMETOWN

ILLUSTRATIVE SITE PLAN

N

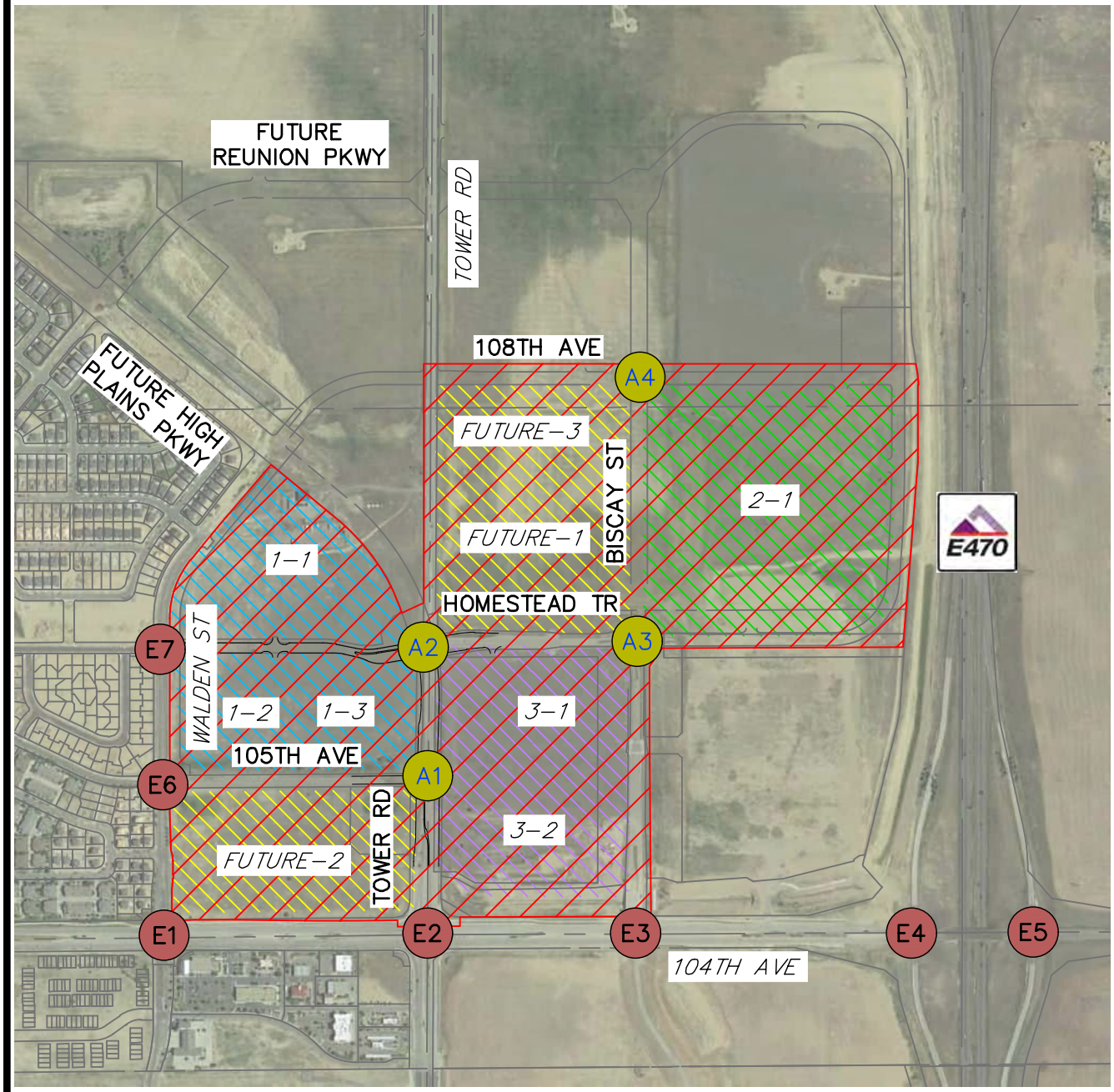
Scale: 1" = 200'

0 200 400 800

January 22, 2020

APPENDIX G

REUNION CENTER - SOUTH TIS EXCERPTS



LEGEND

- PROPOSED INTERSECTION
- EXISTING INTERSECTION
- PROJECT SITE
- PHASE 1 TAZ
- PHASE 2 TAZ
- PHASE 3 TAZ
- FUTURE PHASE TAZ

N

800 400 0 800

ORIGINAL SCALE: 1" = 800'

FIGURE 6 – TRAFFIC ANALYSIS ZONES MAP
REUNION CENTER – SOUTH
PROJ. NO. 14421.49
PAGE 15

J·R ENGINEERING
A Westrian Company

Centennial 303–740–9393 • Colorado Springs 719–593–2593
Fort Collins 970–491–9888 • www.jrengineering.com

Project Traffic

Trip Generation

Trip generation has been calculated from the latest data contained within the Institute of Transportation Engineers' (ITE) *Trip Generation Manual 10th Edition, 2017*. Based on the land use and the guidelines within the *Trip Generation Manual*, JR used the appropriate fitted curve equation or average rate for the AM peak hour traffic, PM peak hour traffic, and weekday average daily traffic (ADT) for each land use.

A map of the assigned traffic analysis zones is shown in Figure 6. These zones are based on the currently anticipated phases 1, 2, and 3, as well as future phases.

Based on the Reunion Center concept plans, Table 1 shows a summary of land use and external vehicle trips generated. Adjustments were made for internal site trips, but adjustments were not made for pass-by trips.

Table 1 – Trip Generation Table

Parcel	Land Use Code No.	Number of Units	Weekday Trips	AM Peak Hour Trips	PM Peak Hour Trips
1-1a	530 (High School)	650 Students	1,608	338 67% entering	91 48% entering
1-1b	590 (Library)	29,000 sq ft GFA	2,089	29 71% entering	237 48% entering
1-1c	444 (Movie Theater)	2 Screens	440	0	29 44% entering
1-2	220 (MFH Low-Rise)	97 DU	692	46 23% entering	57 63% entering
1-3a	220 (MFH Low-Rise)	122 DU	881	58 23% entering	70 63% entering
1-3b	820 (Shopping Center)	8,000 sq ft GFA	1,079	156 62% entering	84 48% entering
2-1	488 (Soccer Complex)	7 Fields	499	7 61% entering	115 66% entering
3-1a	310 (Hotel)	130 Rooms	1,087	60 59% entering	71 51% entering
3-1b	820 (Shopping Center)	26,000 sq ft GFA	2,405	165 62% entering	201 48% entering
3-1c	435 (MPRF)	50,000 sq ft GFA	N/A	0	179 55% entering
3-1d	850 (Supermarket)	16,000 sq ft GFA	1,708	61 60% entering	198 51% entering

Notes: DU = Dwelling Units, GFA = Gross Floor Area
MFH = Multifamily Housing, SFH = Single Family Housing
MPRF = Multipurpose Recreational Facility
N/A = Not Applicable; Data Not Given

Parcel	Land Use Code No.	Number of Units	Weekday Trips	AM Peak Hour Trips	PM Peak Hour Trips
3-2a	310 (Hotel)	130 Rooms	1,087	61 59% entering	78 51% entering
3-2b	931 (Quality Restaurant)	7,000 sq ft GFA	587	5 50% entering	55 51% entering
3-2c	437 (Bowling Alley)	38,000 sq ft GFA	N/A	31 95% entering	44 65% entering
3-2d	444 (Movie Theater)	9 Screens	1,980	0	131 44% entering
3-2e	431 (Mini Golf Course)	18 Holes	N/A	0	6 33% entering
Future-1	435 (MPRF)	213,000 sq ft GFA	6,139	277 66% entering	435 47% entering
Future-2a	220 (MFH Low-Rise)	82 DU	579	40 23% entering	50 63% entering
Future-2b	820 (Shopping Center)	19,000 sq ft GFA	1,943	161 62% entering	159 48% entering
Future-3	221 (MFH Mid-Rise)	139 DU	756	47 26% entering	61 61% entering

Notes: DU = Dwelling Units, GFA = Gross Floor Area
MFH = Multifamily Housing, SFH = Single Family Housing
MPRF = Multipurpose Recreational Facility
N/A = Not Applicable; Data Not Given

In summary, Reunion Center – South is expected to generate approximately 26,000 weekday trips, including 1,519 AM peak hour trips and 1,979 PM peak hour trips.

The Trip Generation summary, detailed land use reports, and internal capture report are included in **Appendix C**.

Project Trip Distribution

An important element in the determination of the proposed project's traffic impact is the directional distribution of its traffic onto the surrounding roadway system. The relative location of the site, the type of land use, and specific characteristics of the roadway and access system will dictate this distribution of traffic. Note that in this analysis, the distribution was based on the Reunion Center master traffic study, which utilized the traffic counts along E 104th Avenue and Tower Road, the DRCOG Travel Demand Model, and the approved *Reunion, Colorado Phase 3 (Villages 5 & 6) Traffic Study*, prepared by Carter and Burgess in 2005.