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DATE: April 8, 2024

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HSH PROJECT NO.: 2021163.00

SUBJECT: Newton – Washington Street Improvements

Introduction

Howard Stein Hudson (HSH) has prepared this technical memorandum to present the work done to develop the proposed improvements as part of the Washington Street pilot project. This memo will present a summary of the existing conditions of the study area, a summary of the traffic analysis performed, and a summary of the proposed improvements for the pilot.

Study Area

The study area is comprised of 0.8 miles of Washington Street through West Newton. The study area begins at the intersection with Chestnut Hill in the west and extends to the intersection with Lowell Avenue in the east. The full study area is shown in **Figure 1**.

The following intersections are included in the study area:

- Washington Street at Chestnut Street (signalized);
- Washington Street at Davis Court (unsignalized);
- Washington Street at Dunstan Street (unsignalized);
- Washington Street at Armory Street (unsignalized);
- Washington Street at Cross Street (unsignalized);
- Washington Street at Parsons Street (unsignalized);
- Washington Street at Eddy Street (unsignalized);
- Washington Street at Brookside Avenue (unsignalized);
- Washington Street at Walker Street (unsignalized);
- Washington Street at Brooks Avenue (unsignalized); and
- Washington Street at Lowell Avenue (signalized).



The study area intersections are shown in **Figure 2**. The signalized intersection of Washington Street at Walnut Street is not within the pilot limits but has been included in the traffic analysis models as it is a signalized intersection less than 1,000 feet from the project area.



Figure 1. Study Area





Figure 2. Study Area Intersections





Existing Conditions

Roadway Description

Washington Street is a two-way urban minor arterial under local jurisdiction running east-west alongside I-90 through a significant portion of the Town of Newton. The posted speed limit throughout the project area is 35 miles per hour (mph). Throughout the study area, the roadway width stays between 55 and 60 feet. There are two vehicle lanes provided in each direction, with curbside parking along most of the corridor. There is a paved sidewalk along the entirety of the north side of Washington Street within the study area, but there are portions of the south side of Washington Street that do not have sidewalks. There are no bicycle accommodations provided on Washington Street within the study area; however, in 2020, the City of Newton installed a bike lane edge line and bike lane pavement markings on the south side of Washington Street, but it does not act as a bike lane due to no restrictions on curbside parking in the area. Generally, pavement, pavement markings, sidewalks, and signage along the corridor are in good condition.

Public Transportation

There are three public transportation bus routes that run along the corridor, all serviced by Massachusetts Bay Transportation Authority (MBTA). The three bus routes, #553, #554, and #556, are all express bus routes that run inbound during the a.m. peak hours and outbound during the p.m. peak hours.

The corridor is also near two MBTA Commuter Rail Station on the Framingham/Worcester Line. The Newtonville Commuter Rail Station is located off Walnut Street, which is 950 feet east of the intersection of Washington Street at Lowell Avenue. The West Newton Commuter Rail Station is located 1,500 feet to the west of the western extents of the study area.

HSH obtained Automatic Passenger Counts (APC) data from MBTA from 2019 to determine the average weekday ridership for the bus routes on the corridor. The total ridership for each route is shown in **Table 1**. The APC data also provided boarding and alighting data for each bus stop along the transit routes.

The bus routes, Commuter Rail Stations, and the average weekday boardings and alightings for each bus stop within the study area are shown in **Figure 3**.

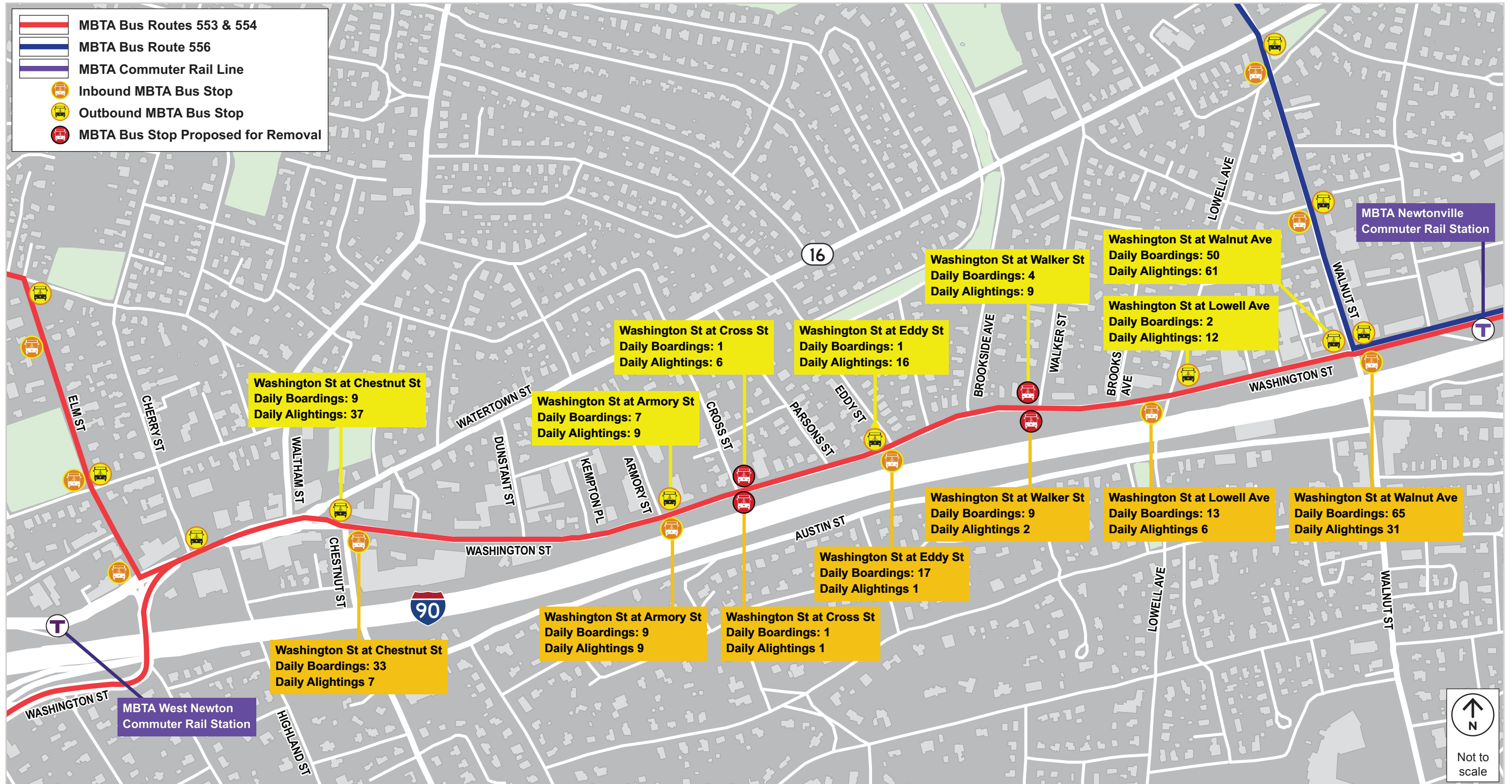


Table 1. Average Weekday Ridership by Bus Route, 2019

MBTA Bus Route	Inbound Daily Riders	Outbound Daily Riders	Total Daily Riders
553	385	430	815
554	300	335	635
556	275	205	480



Figure 3. *Transit Map and Bus Stop Boardings/Alightings*





Parking Study

HSH completed a parking study along the Washington Street corridor from the intersection with Chestnut Street to the intersection with Lowell Street to measure parking utilization and turnover for an average weekday and an average weekend day. HSH collected parking data for two eight-hour weekdays, and two four-hour weekend days to average the parking utilization and turnover over multiple typical days of data. The weekday data was collected from 10 a.m. to 6 p.m. on Thursday April 13, 2023, and Wednesday, May 24, 2023; the weekend data was collected from 10 a.m. to 2 p.m. on Saturday, May 13, 2023 and Saturday, June 10, 2023.

The parking study was conducted in accordance with the Metropolitan Area Planning Council’s (MAPC’s) resource titled “How to do a Parking Study”. Parked vehicles along the corridor were documented on a half-hour basis to determine the average weekday and average weekend utilization and turnover. On-street parking was observed to be more heavily utilized during the weekdays which is summarized below in **Table 2**.

Table 2. Parking Study Results – Average Weekday Utilization

North Side of Washington Street		South Side of Washington Street	
Block	Average Weekday Utilization (%)	Block	Average Weekday Utilization (%)
Lowell Ave to Brooks Ave	37	Lowell Ave to Brooks Ave	45
Brooks Ave to Walker St	25	Brooks Ave to Walker St	0
Walker St to Brookside Ave	10	Walker St to Brookside Ave	0
Brookside Ave to Harrington St	0	Brookside Ave to Harrington St	0
Harrington St to Eddy St	0	Harrington St to Eddy St	0
Eddy St to Parsons St	11	Eddy St to Parsons St	2
Parsons St to Cross St	59	Parsons St to Cross St	7
Cross St to Armory St	46	Cross St to Armory St	24
Armory St to Kempton Pl	57	Armory St to Kempton Pl	26



North Side of Washington Street		South Side of Washington Street	
Block	Average Weekday Utilization (%)	Block	Average Weekday Utilization (%)
Kempton Pl to Dunstan St	*See footnote	Kempton Pl to West Newton Auto Driveway	47
Dunstan St to Davis Court E	33	West Newton Auto Driveway to VideoLink Driveway	35
Davis Court E to Davis Court W	64	VideoLink Driveway to Chestnut Street	34
Davis Court W to Chestnut St	68		
Entire North Side	45	Entire South Side	15

* Kempton Place to Dunstan Street block under construction with Dunstan East Residences at the time that existing parking data was collected.

Public Engagement

HSH and the City facilitated public engagement surveys, one for the general public and another for businesses within the study area. HSH reviewed key takeaways from the public survey with the City, and have summarized those key takeaways below:

- Over half of the respondents stated they would need separated or parking protected facilities to increase desire to bike along Washington Street.
- Most common words to describe vision for the future of Washington Street were attractive, green, safe, and friendly.
- 11 of 20 business responses concerned about access and amount of parking.
- Approximately 60 responses expressed resistance to change the roadway or roadway cross-section.
- Concerns shared by over 1/3 of respondents driving, walking, or biking included:
 - Speeding
 - Driving behaviors
 - Unattractive roadway
 - Congestion/traffic
 - Lack of crosswalks
 - Poor sidewalk conditions
 - Conflicts with other users



- Lack of dedicated bicycle facilities

The City of Newton alongside HSH facilitated a public meeting on November 30, 2023, to inform the public of the project, the existing conditions analysis done to date, and the alternatives that were being explored at the time to solicit feedback. That public meeting was followed up with a secondary survey for the public to engage in the process of selecting an alternative to progress.

Results from the second public engagement survey received over 700 responses and showed that generally Alternative #3 was ranked the highest and the existing conditions was ranked the lowest. Some of the open-ended response themes we heard were parking concerns, traffic flow concern, varied opinions on bike lanes, the need for improved safety for pedestrians, aesthetics, impact to businesses, and providing safe and accessible bus stops.

Existing Traffic Volumes

The turning movement counts (TMCs) were collected on Wednesday, February 1, 2023, and Automatic Traffic Recorder (ATR) counts were conducted along Washington Street and intersecting corridors between January 29, 2023, and February 4, 2023. A map showing the traffic count locations and durations is provided in **Appendix A**. Bicycle volume counts were counted on October 26, 2023, to better reflect demand outside of winter months. Based on turning movement counts, the morning peak hour was determined to be 7:45 a.m. to 8:45 a.m. and the afternoon peak hour was determined as 5:00 p.m. to 6:00 p.m. TMCs are provided in **Appendix A** and raw ATR data is available upon request.

Additional bicycle TMCs were collected October 26, 2023 from 8 a.m. to 10:30 a.m. and 3:00 p.m. to 5:30 p.m. to capture bicycle volumes during warmer weather at the following locations:

- Washington Street at Chestnut Street;
- Washington Street at Cross Street;
- Washington Street at Parsons Street;
- Washington Street at Eddy Street;
- Washington Street at Brookside Avenue;
- Washington Street at Walker Street; and
- Washington Street at Lowell Avenue.

Table 3 summarizes the ATR traffic data including Average Daily Traffic (ADT), peak-hour percentage (K), and 85th percentile speed. **Figure 4**, **Figure 5**, and **Figure 6** presents the existing weekday peak hour traffic volumes for vehicles, bicycles, and pedestrians, respectively.



Table 3. Average Weekday Daily Traffic Summary

Location		Average Daily Traffic (ADT)	Percent Heavy Vehicles	Average Speed (mph)	85 th Percentile Speed (mph)	K Factor
Washington St East of Dunstan St	Eastbound	6,326	2.1%	33	37	10.2%
	Westbound	5,854	2.1%	33	37	9.5%
	Total	12,180	2.1%			9.7%
Washington St East of Lowell Ave	Eastbound	5,704	2.6%	20	27	9.9%
	Westbound	6,086	2.4%	26	32	10.0%
	Total	11,790	2.5%			9.4%
Washington St East of Walnut St	Eastbound	6,977	3.1%	26	31	9.6%
	Westbound	7,147	2.7%	29	34	9.8%
	Total	14,124	2.9%			9.2%
Chestnut St North of Austin St	Northbound	3,122	1.5%	27	31	11.5%
	Southbound	2,498	1.3%	28	33	11.0%
	Total	5,622	1.4%			11.3%
Austin St West of Allston St	Eastbound	658	1.0%	27	32	15.5%
	Westbound	887	1.2%	29	34	12.9%
	Total	1,545	1.1%			10.9%
Watertown St East of Randlett Pk	Eastbound	4,347	1.9%	30	35	9.5%
	Westbound	3,868	2.1%	30	35	11.2%
	Total	8,215	2.0%			10.3%
Lowell Ave South of Washington St	Northbound	4,025	1.3%	27	31	9.6%
	Southbound	4,141	1.3%	26	30	11.4%
	Total	8,166	1.3%			10.5%
Lowell Ave North of Washington St	Northbound	2,129	1.6%	28	33	9.5%
	Southbound	2,316	1.8%	27	31	10.7%
	Total	4,445	1.7%			10.2%
Walnut St South of Washington St	Northbound	6,630	1.8%	19	24	7.8%
	Southbound	6,379	5.4%	16	21	8.3%
	Total	13,009	3.6%			8.0%
Walnut St North of Washington St	Northbound	4,207	2.2%	27	31	7.9%
	Southbound	4,199	2.3%	24	29	8.3%
	Total	8,406	2.3%			8.0%



Location		Average Daily Traffic (ADT)	Percent Heavy Vehicles	Average Speed (mph)	85 th Percentile Speed (mph)	K Factor
Dunstan St North of Washington St	Northbound	397	0.8%	17	21	10.8%
	Southbound	368	1.1%	18	23	10.6%
	Total	765	0.9%			10.3%
Cross St North of Washington St	Northbound	334	1.5%	23	28	10.5%
	Southbound	329	1.2%	22	27	11.9%
	Total	663				10.7%
Parsons St North of Washington St	Northbound	249	2.4%	21	26	13.3%
	Southbound	212	0.9%	23	28	12.7%
	Total	461	1.7%			10.8%
Eddy St North of Washington St	Northbound	1,174	0.7%	25	29	11.2%
	Southbound	1,430	1.1%	26	30	13.4%
	Total	2,604	0.9%			10.1%
Brookside St North of Washington St	Northbound	535	2.8%	26	30	14.2%
	Southbound	71	2.8%	20	26	16.9%
	Total	606	2.8%			13.7%
Walker St North of Washington St	Northbound	307	1.0%	24	29	13.0%
	Southbound	417	2.2%	24	29	14.6%
	Total	724	1.7%			14.0%



Figure 4. Existing (2024) Condition Traffic Volumes, Weekday a.m. and p.m. Peak Hours

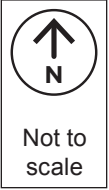
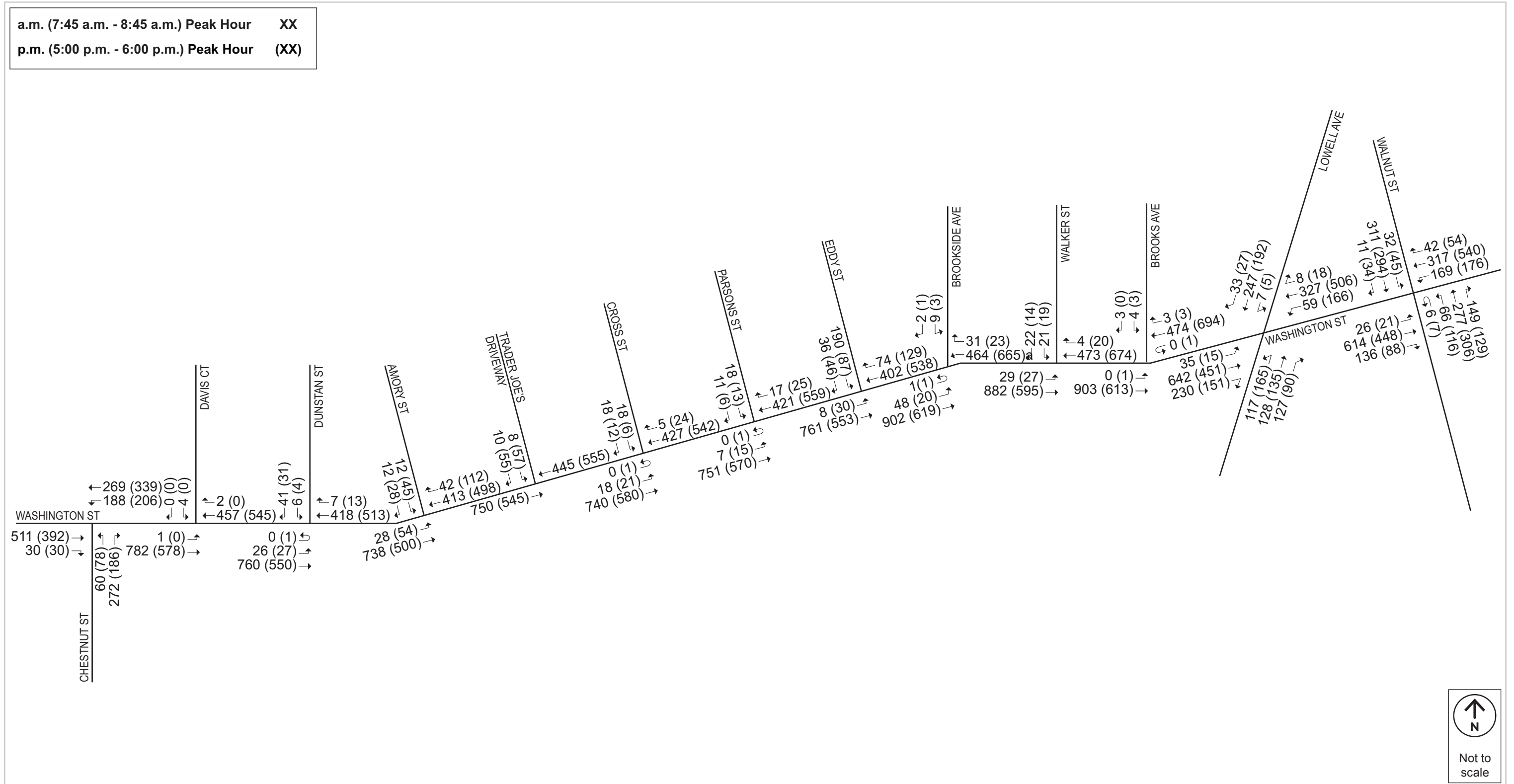




Figure 5. Existing (2023) Condition Bicycle Volumes, Weekday a.m. and p.m. Peak Hours

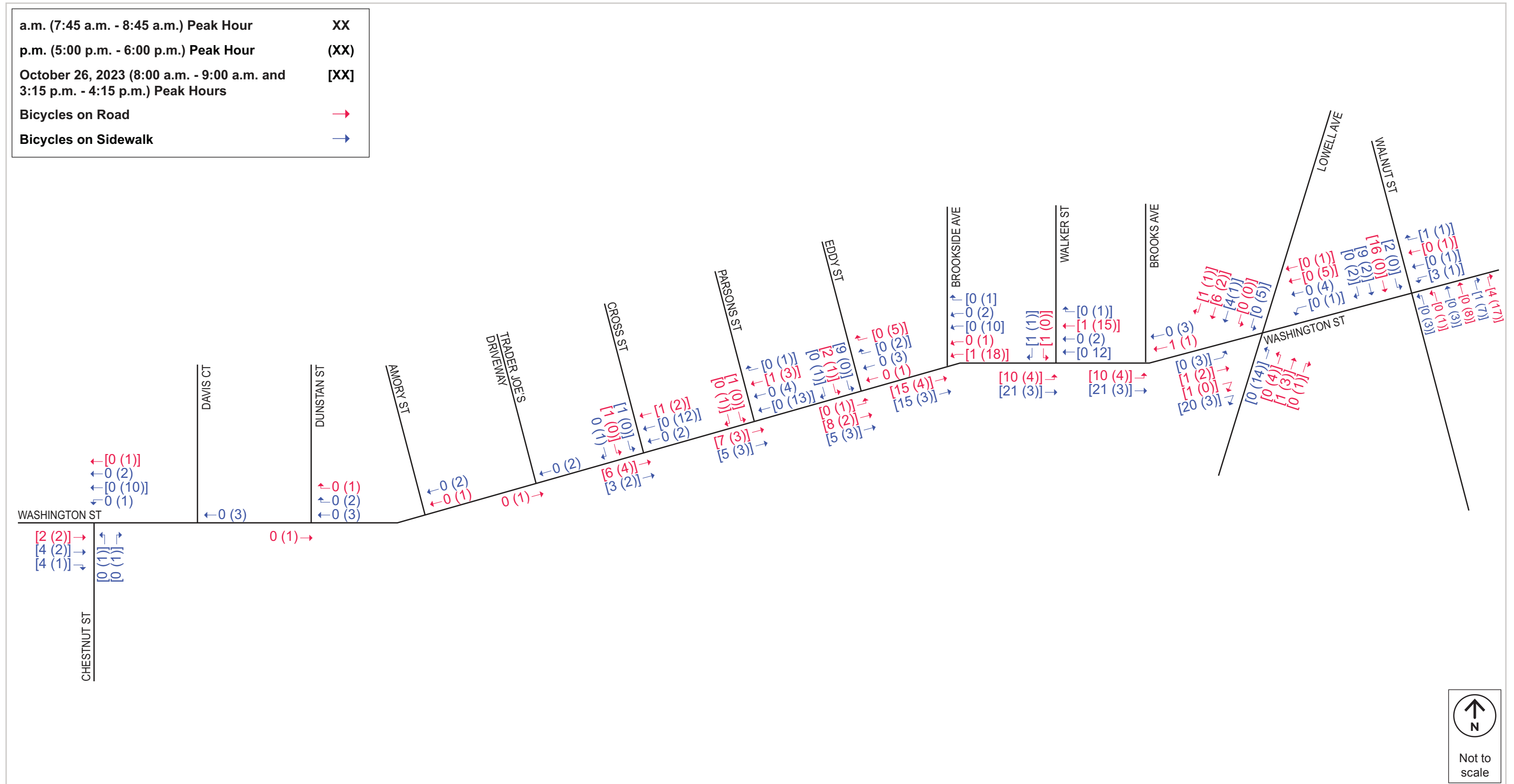
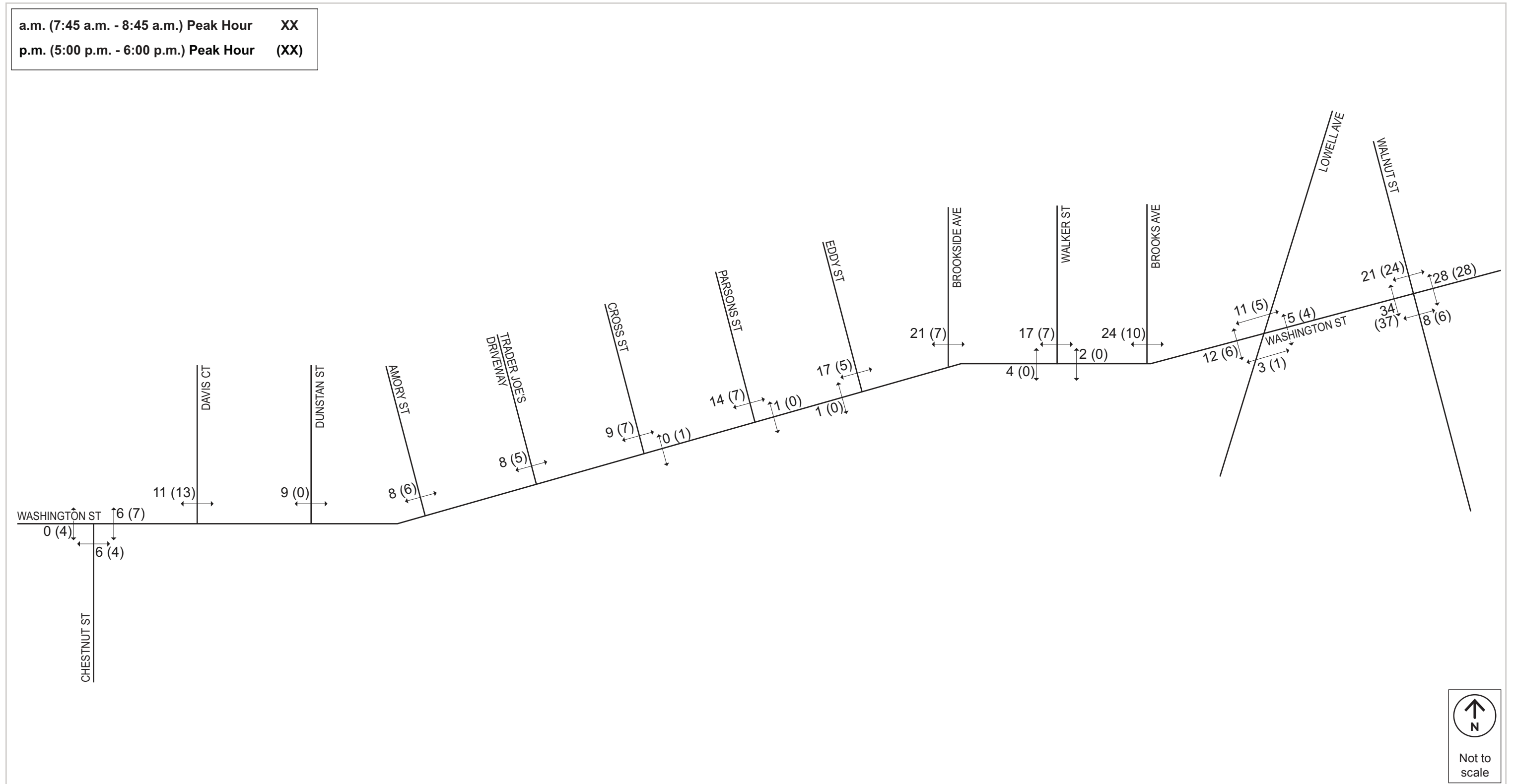




Figure 6. Existing (2024) Condition Pedestrian Volumes, Weekday a.m. and p.m. Peak Hours





Existing Traffic Operations

Traffic operations are determined through an analysis of intersection Level of Service (LOS) calculations. LOS, at signalized and unsignalized intersections, is typically calculated using the traffic operational analysis methodology of the Transportation Research Board's (TRB's) 2022 *Highway Capacity Manual* (HCM), which can be found in the latest version of Synchro (v11). However, depending on the signal phasing at an intersection (i.e. more than eight phases, specialized non-NEMA phasing, etc.), HCM 6th Edition outputs through Synchro aren't always feasible. In such cases, Synchro provides the ability to use the 2000 HCM outputs. The LOS and delay (in seconds) are based on intersection geometry and traffic volumes. **Table 4**, an excerpt from the HCM, provides LOS criteria for signalized and unsignalized intersections. LOS A defines the most favorable condition, with minimum traffic delay. LOS F represents the worst condition, with significant traffic delay.

Table 4. Level of Service Criteria

Level of Service	Average Stopped Delay (sec.) Signalized Intersections
A	0.0–10.0
B	10.1–20.0
C	20.1–35.0
D	35.1–55.0
E	55.1–80.0
F	>80.0

Source: Highway Capacity Manual, 6th Edition. Transportation Research Board.

In addition to intersection operations, travel times were measured along the corridor. Travel times were obtained with the average of 10 runs of the model within SimTraffic between Chestnut Street and Lowell Avenue. Multiple in-field travel times were collected during the a.m. and p.m. peak hours on a typical weekday to ensure that the results provided from the model reflected the existing conditions accurately. The existing travel times produced by SimTraffic are documented in **Table 5**.



Table 5. Existing Travel Times

Time Period	Eastbound Travel Time (minutes)	Westbound Travel Time (minutes)
a.m. Peak Hour	2.6	2.9
p.m. Peak Hour	2.2	2.8

Source: SimTraffic

Table 6 summarizes the existing LOS, delay, volume to capacity (v/c) ratio, and queue analysis. The detailed synchro report is provided in **Appendix B**.



Table 6. Existing (2023) Condition Operational Analysis Results Summary

Intersection/Movement	a.m. peak hour					p.m. peak hour				
	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)
Signalized Intersections										
Chestnut St/Washington St	C	21.6	-	-	-	B	19.9	-	-	-
Washington St EB thru	B	17.0	0.58	192	484	B	16.2	0.45	132	375
Washington St EB right	A	6.1	0.03	2	19	A	6.3	0.03	2	18
Washington St WB left/thru thru	A	6.8	0.36	36	119	A	9.1	0.47	59	177
Chestnut St NB left	E	60.0	0.53	51	100	E	56.0	0.58	74	111
Chestnut St NB right	D	49.0	0.20	0	55	D	43.9	0.16	0	26
Lowell Ave/Washington St	D	38.1	-	-	-	D	35.0	-	-	-
Washington St EB left/thru thru/right	D	36.6	0.84	342	#480	C	20.7	0.47	139	250
Washington St WB left/thru thru/right	C	30.8	0.66	162	190	D	37.5	0.88	245	#433
Lowell Ave NB left	C	34.3	0.59	77	#144	D	42.7	0.73	88	#196
Lowell Ave NB thru/right	C	29.6	0.50	153	235	C	30.7	0.47	111	213
Lowell Ave SB left/thru/right	E	65.0	0.88	~233	#410	E	64.9	0.84	160	#295
Unsignalized Intersections										
Washington St/Davis Ct	A	0.1	-	-	-	A	0.0	-	-	-
Washington St EB left/thru thru	A	0.0	0.34		0	A	0.0	0.25		0
Washington St WB thru thru/right		0.0	0.19		0	A	0.0	0.25		0
Davis Ct SB left/right	C	19.1	0.03		2	A	0.0	0.03		0
Washington St/Dunstan St	A	0.8	-	-	-	A	1.4	-	-	-
Washington St EB left/thru thru	A	0.0	0.33		0	A	0.0	0.24		0
Washington St WB thru thru/right	A	0.0	0.18		0	A	0.0	0.24		0
Dunstan St SB left/right	B	11.6	0.11		9	B	11.9	0.06		5
Washington St/Armory St	A	0.7	-	-	-	A	1.7	-	-	-



Intersection/Movement	a.m. peak hour					p.m. peak hour				
	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)
Washington St EB left/thru thru	A	0.0	0.31		0	A	0.0	0.21		0
Washington St WB thru thru/right	A	0.0	0.17		0	A	0.0	0.22		0
Armory SB left/right	C	15.4	0.10		9	C	20.6	0.26		26
Washington St/Trader Joe's	A	0.4	-	-	-	A	1.9	-	-	-
Washington St EB thru thru	A	0.0	0.24		0	A	0.0	0.17		0
Washington St WB thru thru	A	0.0	0.14		0	A	0.0	0.18		0
Trader Joe's SB left/right	B	14.8	0.09		14.8	C	19.1	0.34		37
Washington St/Cross St	A	0.7	-	-	-	A	0.5	-	-	-
Washington St EB left/thru thru	A	0.0	0.32			A	0.0	0.25		0
Washington St WB thru thru/right	A	0.0	0.18			A	0.0	0.23		0
Cross St SB left/right	C	15.4	0.12		10	B	14.3	0.08		6
Washington St/Parsons St	A	0.6	-	-	-	A	0.6	-	-	-
Washington St EB left/thru thru	A	0.0	0.32		0	A	0.0	0.25		0
Washington St WB thru thru/right	A	0.0	0.19		0	A	0.0	0.25		0
Parsons St SB left/right	C	16.8	0.13		11	C	19.1	0.11		9
Washington St/Eddy St	A	15.8	-	-	-	B	3.3	-	-	-
Washington St EB left/thru thru	A	0.0	0.33			A	0.0	0.25		0
Washington St WB thru thru/right	A	0.0	0.17			A	0.0	0.24		0
Eddy St SEB left/right	F	89.4	0.99		257	D	32.7	0.54		73
Washington St/Brookside Ave	B	0.7	-	-	-	A	0.3	-	-	-
Washington St EB left/thru thru	A	0.0	0.40		0	A	0.0	0.27		0
Washington St WB thru thru/right	A	0.0	0.21		0	A	0.0	0.30		0
Brookside Ave SB left/right	D	26.4	0.11		9	C	21.3	0.03		3
Washington St/Brooks Ave	A	0.1	-	-	-	A	0.1	-	-	-
Washington St EB left/thru thru	A	0.0	0.39		0	A	0.0	0.27		0



Intersection/Movement	a.m. peak hour					p.m. peak hour				
	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)
Washington St WB thru thru/right	A	0.0	0.22		0	A	0.0	0.30		0
Brooks Ave SB left/right	C	16.8	0.04		3	C	18.3	0.03		2
Washington St/Walker St	B	0.8	-	-	-	A	0.7	-	-	-
Washington St EB left/thru thru	A	0.0	0.38		0	A	0.0	0.26		0
Washington St WB thru thru/right	A	0.0	0.21		0	A	0.0	0.29		0
Brooks Ave SB left/right	C	17.2	0.14		12	C	17.8	0.14		12



Existing Safety Conditions

Crash reports from 2015-2020 were analyzed for Washington Street between Chestnut Street and Walnut Street to provide the existing safety conditions of the study area. The crash trends are summarized in **Table 7**. Collision diagram and crash rate worksheets can be found in **Appendix C**. Notable collision trends based on the analyzed crashes include:

- Reoccurring collisions with vehicles parking curbside along Washington Street;
- Reoccurring angle collisions between vehicles traveling through on Washington Street and vehicles turning left at side streets and driveways;
- Multiple collisions between vehicles existing driveways and bicycles traveling on the sidewalk on the north side of Washington Street; and
- Multiple collisions between vehicles and pedestrians crossing Washington Street resulting in injury.

Table 7 provides a summary of the years and manner of collisions for the 133 recorded collisions along Washington Street between Chestnut Street and Walnut Street.

Table 7. Crash Data Summary – 2015 to 2020

Scenario	Number of Crashes	Percentage of Total Crashes
Year		
2015	22	17%
2016	28	21%
2017	33	25%
2018	24	18%
2019	17	13%
2020	9	6%
Crash Type		
Head on	4	3%
Angle	59	44%
Rear-end	22	17%
Single-Vehicle	10	8%
Sideswipe	34	26%
Unknown	4	3%



Scenario	Number of Crashes	Percentage of Total Crashes
Involving Ped/Bicycle:		
Involved Bicycle	2	2%
Involved Pedestrian	6	4%
Severity		
Property Damage	96	72%
Injury	31	23%
Fatality	0	0%
Unknown	6	5%
Total	133	133

All project intersection crash rates were calculated to be below the crash rate average for the Massachusetts Department of Transportation (MassDOT) District 6. However, HSH calculated the segment crash rate for the portion of Washington Street within the pilot limits, from Chestnut Street to Lowell Avenue. The crash rate for the segment of Washington Street was found to be 3.99 which is higher than the current MassDOT District 6 average for an urban minor arterial. The collisions happening mid-block along Washington Street contribute to the higher-than-average segment crash rate for the study area. A high number of mid-block collisions that contribute to the high segment crash rate are collisions with a parked vehicle, resulting in property damage only.

Future Conditions

Future traffic volumes were estimated to perform traffic analysis for the Washington Street corridor under the future conditions. Using the future estimated volumes, three conditions were analyzed:

- No-build – Future traffic volumes with the existing geometry;
- Build without growth – Existing traffic volumes under proposed improvements; and
- Build – Future traffic volumes under proposed improvements.

Those future conditions are discussed in more detail in the section following. Build Conditions with proposed improvements without traffic growth were also analyzed and are provided in **Appendix D**.

Estimation of Future Volumes

The Future (2030) traffic volumes are based on a seven-year design horizon. Future volumes for the year 2030 were established by increasing the existing volumes by a background growth rate of 0.562% per year for Washington Street and 0.514% per year for intersecting local roads provided by



the Central Transportation Planning Staff. In addition to the background growth, future development trips were added from the following planned developments anticipated for completion by 2030 based on current project status via MassBuilds and City of Newton:

- Dunstan Residences
- 1314 Washington Street
- West Newton Armory

The No-build travel times along Washington Street between Chestnut Street and Lowell Avenue are presented in **Table 8**. **Table 9** summarizes the No Build LOS, delay, volume to capacity (v/c) ratio, and queue analysis.

The Future (2030) weekday peak hour vehicle volumes that were used for No Build and Build conditions are shown in **Figure 7**.

Table 8. No Build Travel Times

Time Period	Eastbound Travel Time (minutes)	Westbound Travel Time (minutes)
a.m. Peak Hour	2.8	2.9
p.m. Peak Hour	2.3	3.5

Source: SimTraffic



Figure 7. Future (2030) Condition Traffic Volumes, Weekday a.m. and p.m. Peak Hours

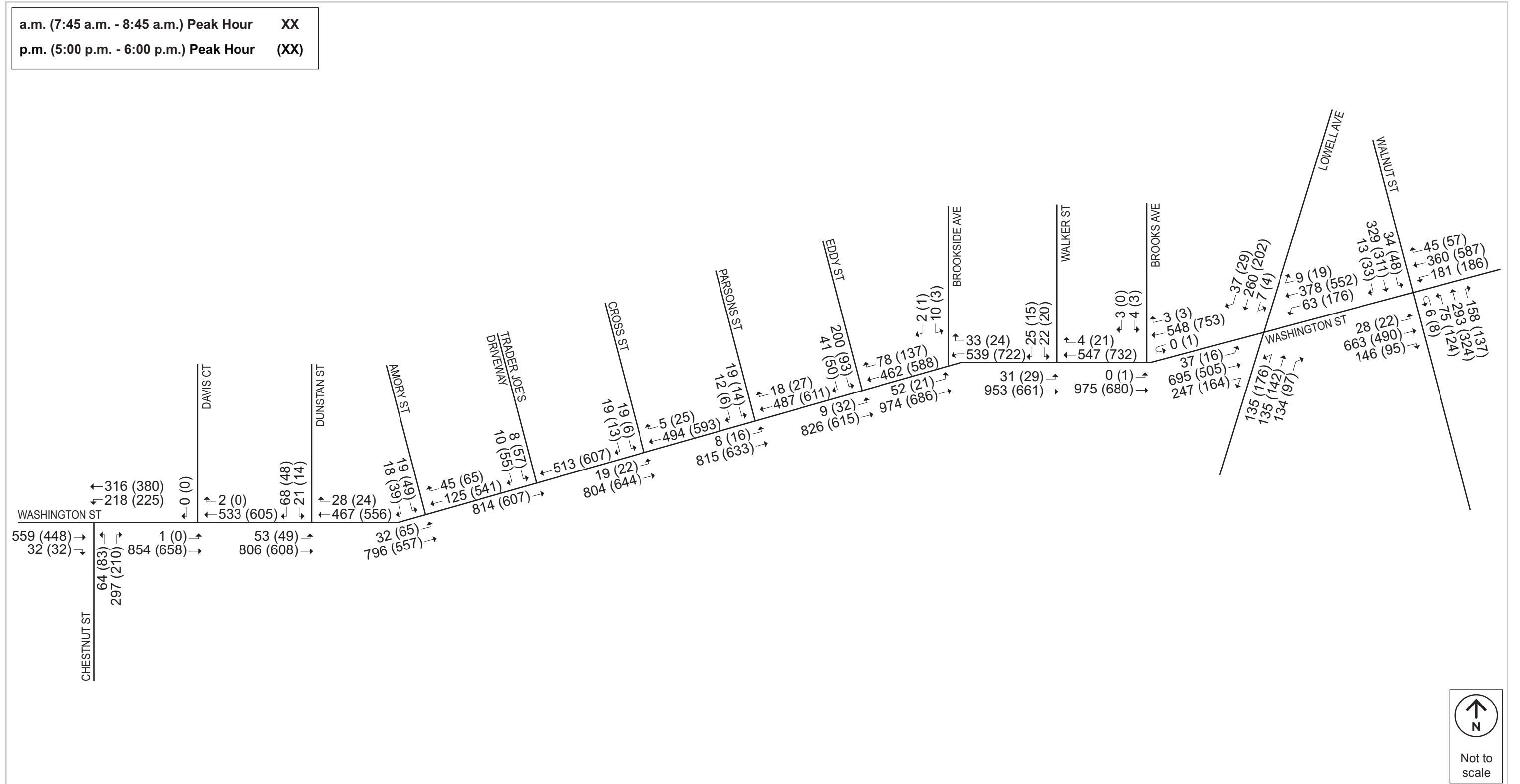




Table 9. No Build (2030) Condition Operational Analysis Results Summary

Intersection/Movement	a.m. peak hour					p.m. peak hour				
	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)
Signalized Intersections										
Chestnut St/Washington St	C	21.8	-	-	-	B	19.5	-	-	-
Washington St EB thru	B	17.6	0.60	202	546	B	16.4	0.49	146	413
Washington St EB right	A	6.2	0.03	2	20	A	6.3	0.03	2	19
Washington St WB left/thru thru	A	7.4	0.43	46	143	A	8.8	0.48	58	189
Chestnut St NB left	E	60.7	0.56	55	107	E	56.4	0.57	68	119
Chestnut St NB right	D	48.9	0.22	0	56	D	44.5	0.16	0	44
Lowell Ave/Washington St	D	43.2	-	-	-	D	39.3	-	-	-
Washington St EB left/thru thru/right	D	48.5	0.94	381	#535	C	23.5	0.54	167	284
Washington St WB left/thru thru/right	C	33.4	0.88dl	155	223	D	48.9	0.94	259	#490
Lowell Ave NB left	C	33.1	0.61	83	#139	D	39.3	0.71	91	#219
Lowell Ave NB thru/right	C	27.8	0.47	153	248	C	29.0	0.46	113	223
Lowell Ave SB left/thru/right	E	58.9	0.86	~273	#456	E	64.7	0.85	169	#324
Unsignalized Intersections										
Washington St/Davis Ct	A	0.1	-	-	-	A	0.0	-	-	-
Washington St EB left/thru thru	A	0.0	0.36		0	A	0.0	0.28		0
Washington St WB thru thru/right	A	0.0	0.23		0	A	0.0	0.26		0
Davis Ct SB left/right	C	21.6	0.02		21.6	A	0.0	0.02		0
Washington St/Dunstan St	A	1.4	-	-	-	A	1.1	-	-	-
Washington St EB left/thru thru	A	0.0	0.34		0	A	0.0	0.26		0
Washington St WB thru thru/right	A	0.0	0.20		0	A	0.0	0.24		0
Dunstan St SB left/right	C	15.3	0.22		21	B	14.5	0.15		13
Washington St/Armory St	B	0.8	-	-	-	B	2.1	-	-	-



Intersection/Movement	a.m. peak hour					p.m. peak hour				
	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)
Washington St EB left/thru thru	A	0.0	0.34		0	A	0.0	0.23		0
Washington St WB thru thru/right	A	0.0	0.20		0	A	0.0	0.23		0
Armory SB left/right	C	17.7	0.13		11	C	24.7	0.34		37
Washington St/Trader Joe's	A	0.2	-	-	-	A	1.7	-	-	-
Washington St EB thru thru	A	0.0	0.26		0	A	0.0	0.19		0
Washington St WB thru thru	A	0.0	0.16		0	A	0.0	0.19		0
Trader Joe's SB left/right	C	15.9	0.06		5	C	20.3	0.34		37
Washington St/Cross St	A	0.6	-	-	-	A	0.4	-	-	-
Washington St EB left/thru thru	A	0.0	0.34		0	A	0.0	0.27		0
Washington St WB thru thru/right	A	0.0	0.21		0	A	0.0	0.25		0
Cross St SB left/right	C	16.9	0.12		10	B	14.8	0.05		4
Washington St/Parsons St	A	0.5	-	-	-	A	0.4	-	-	-
Washington St EB left/thru thru	A	0.0	0.35		0	A	0.0	0.27		0
Washington St WB thru thru/right	A	0.0	0.21		0	A	0.0	0.26		0
Parsons St SB left/right	C	17.9	0.11		9	C	19.2	0.08		6
Washington St/Eddy St	A	16.2	-	-	-	B	3.9	-	-	-
Washington St EB left/thru thru	A	0.0	0.35		0	A	0.0	0.26		0
Washington St WB thru thru/right	A	0.0	0.20		0	A	0.0	0.25		0
Eddy St SEB left/right	F	107.9	1.03		261	E	38.9	0.61		90
Washington St/Brookside Ave	B	0.6	-	-	-	A	0.2	-	-	-
Washington St EB left/thru thru	A	0.0	0.42		0	A	0.0	0.29		0
Washington St WB thru thru/right	A	0.0	0.23		0	A	0.0	0.02		0
Brookside Ave SB left/right	D	28.1	0.08		6	C	20.2	0.31		1
Washington St/Brooks Ave	A	0.1	-	-	-	A	0.0	-	-	-
Washington St EB left/thru thru	A	0.0	0.42		0	A	0.0	0.29		0



Intersection/Movement	a.m. peak hour					p.m. peak hour				
	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)
Washington St WB thru thru/right	A	0.0	0.23		0	A	0.0	0.32		0
Brooks Ave SB left/right	C	17.7	0.02		2	C	19.5	0.01		1
Washington St/Walker St	B	0.8	-	-	-	A	0.7	-	-	-
Washington St EB left/thru thru	A	0.0	0.41		0	A	0.0	0.28		0
Washington St WB thru thru/right	A	0.0	0.23		0	A	0.0	0.31		0
Walker St SB left/right	C	18.0	0.16		14	C	18.2	0.12		10



Alternatives Analysis

The Washington Street Pilot Project team evaluated four cross-section alternatives:

- Alternative 1: Road diet with one-way separated bike lanes provided in each direction;
- Alternative 2: Road diet with two-way separated bike lane provided along the north side of Washington Street;
- Alternative 3: Road diet with two-way separated bike lane/shared use path along the south side of Washington Street; and
- Alternative 4: Boulevard design with a road diet and two-way separated bike lane/shared use path along the south side of Washington Street.

The project team evaluated the alternatives using but not limited to the following criteria:

- Impacts to driver/pedestrian/bicyclist/transit user experiences;
- Preferences of public, local businesses, and city officials;
- Parking impacts;
- Traffic calming elements;
- Safety impacts; and
- Opportunities to add plantings/greenscape.

Following a Public Information Meeting and multiple instances of City and Project team coordination, Alternative 3, a road diet with two-way separated bike lane/shared use path along the south side of Washington Street, was selected as the preferred alternative. The critical design components of the chosen alternative are summarized in following sections.

Proposed Design Overview

While the current speed limit through most of the project limits is 35 mph along Washington Street, per coordination with the City, the speed limit regulation will be removed prior to construction of the pilot project and the pilot design speed shall be 25 mph.

Along Washington Street, the cross section will generally consist of one 11-foot travel lane in each direction, parking provided along the north side sidewalk, and a 10-foot path at street level along the south side of Washington Street, protected from the travel lane by a buffer and floating parking. West of Dunstan Street, a two-way left-turn lane is proposed. The path is proposed to act as a shared-use path where there is no sidewalk along the south side of Washington Street, and a bidirectional bike path where there is a sidewalk.



Parking is maintained along the north side of Washington Street, but the parking limits are adjusted where necessary to account for fire hydrants, bus stops, and to provide better visibility on approaches to crosswalks across Washington Street and intersections. No parking is proposed within five feet of driveway openings. On the south side of Washington Street, parking is proposed against a buffer to the path, except for where restricted for bus stops, crosswalk approaches, driveway path crossings, and where width is restricted at left-turn lanes and approaching Lowell Avenue.

The lane use at the signalized intersection with Chestnut Street is proposed to remain the same. At the signalized intersection with Lowell Avenue, the westbound approach proposes one shared through/right-turn lane and an exclusive left-turn lane. To maintain acceptable levels of delay and queueing, two eastbound lanes are still provided with enough storage for queues.

The design along Washington Street in front of the Newton Crossing development has been adjusted to account for their work zone which closes off a portion of the north side of Washington Street. Short left-turn storage lanes are proposed at the following intersections:

- Armory Street
- Cross Street
- Eddy Street
- Brookside Avenue
- Walker Street

PROPOSED PEDESTRIAN AND BICYCLE CROSSINGS

Crosswalks at the intersections with Chestnut Street and Lowell Avenue will all be retained. Existing mid-block crosswalks across the corridor provide a modular pedestrian refuge island to allow people to cross a single direction of travel at a time. All unsignalized crosswalks across Washington Street are proposed to feature the modular pedestrian refuge island. The design proposes to locate the crosswalks on the east side of side streets, where crosswalks can be opposite a left-turn pocket to provide space for the refuge area. Detectable warning panels will be provided in the center refuge island and in the path buffer on the south side of the crossing. No crosswalks are proposed at Parsons Street, Harrington Street, or Brooks Avenue. However, a bicycle crossing is proposed to be marked across the roadway to warn drivers that bikes may be crossing at this location.

PROPOSED TRANSIT ACCOMMODATIONS

On the north side of Washington Street, buses will pull to the curb at stops, and bus stops will be marked and brought to minimum dimensions as required by the MBTA. On the south side of Washington Street, the design proposes modular bus platforms which will allow buses to stop in-lane



and will provide ramps to access the shared use path and the crosswalk across Washington Street. People utilizing the south-side bus stops will be able to wait on the bus platforms and not conflict with anyone riding along the path.

The pair of bus stops at Washington Street/Walker Street (Stop IDs 7646 and 7629) and at Washington Street/Cross Street (Stop IDs 7648 and 7626) are proposed to be consolidated. The stops located at Cross Street showed less than eight (8) daily combined boardings and alightings each, and the stops at Walker Street showed less than 12 daily combined boardings and alightings each. The MBTA was coordinated with and has agreed to the bus stop consolidation. A summary of the existing and proposed bus stop spacing with consolidation is provided in **Table 10**, with stop spacing measured between the center of the stop pairs. Overall, the proposed spacing eliminates the closely spaced stops and brings the overall bus stop spacing more within the MBTA’s range of 750 to 1,300 feet.

Table 10. Bus Stop Spacing

Existing Spacing			Proposed Spacing		
Stop Locations	Eastbound Stop Spacing	Westbound Stop Spacing	Stop Locations	Eastbound Stop Spacing	Westbound Stop Spacing
Chestnut St to Armory St	1525 ft	1675 ft	Chestnut St to Armory St	1,540 ft	1,675 ft
Armory St to Cross St	385 ft	370 ft	Armory St to Eddy St	1,185 ft	965 ft
Cross St to Eddy St	615 ft	620 ft			
Eddy St to Walker St	970 ft	800 ft	Eddy St to Lowell Ave	1,135 ft	1,595 ft
Walker St to Lowell Ave	385 ft	785 ft			

PROJECT LIMITS BICYCLE TRANSITIONS

Bikes traveling westbound transitioning at the ends of the pathway on the west limits will need to ramp up to sidewalk level at the Chestnut Street intersection, press the pedestrian pushbutton, and utilize the exclusive pedestrian phase of the signal to cross to the bike lane on the opposite side of the roadway to avoid conflict with the existing far-side bus stop on the south side of Washington



Street. Bikes entering the path from the east limits on Washington Street would utilize the exclusive pedestrian phase of the signal at Lowell Avenue to cross the intersection diagonally.

BUILD PEAK HOUR OPERATIONAL ANALYSIS

The peak hour travel times under the build scenarios along Washington Street between Chestnut Street and Lowell Avenue are summarized in **Table 11**. The peak hour operational analysis for Build conditions using existing (2023) and future (2030) volumes are summarized in **Table 12**.

The signalized intersections at Walnut Street and Lowell Avenue degrade to an overall intersection LOS of D or worse during the Build (2030) p.m. peak hour. The unsignalized intersections show acceptable LOS and queueing for the Build conditions, aside from the Eddy Street southbound approach that is shown to operate at a LOS F during all Build scenarios. For the a.m. peak hours, the Eddy Street approach operates at an LOS F, and queues are shown to not exceed 8 vehicle lengths. During the p.m. peak hours, the Eddy Street approach operates with a volume to capacity ratio over 1.

Table 11. Build 2023 and 2030 Travel Times

Time Period	Eastbound Travel Time (minutes)	Westbound Travel Time (minutes)
Build 2023 Travel Times		
a.m. Peak Hour	3.0	2.8
p.m. Peak Hour	2.3	3.1
Build 2030 Travel Times		
a.m. Peak Hour	3.8	2.6
p.m. Peak Hour	2.4	3.3

Source: SimTraffic



Table 12. Build Operations Peak Hour Traffic Operations Summary

Intersection/Movement	Build (2023) AM Condition					Build (2023) PM Condition					Build (2030) AM Condition					Build (2030) PM Condition				
	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)
Signalized Intersections																				
Chestnut St/Washington St	C	-	-	-	-	B	-	-	-	-	C	-	-	-	-	B	-	-	-	-
Washington St EB thru	B	16.1	0.55	173	473	B	15.4	0.44	126	365	B	17.6	0.60	202	546	B	16.4	0.49	146	413
Washington St EB right	A	6.1	0.03	2	19	A	6.3	0.03	2	18	A	6.2	0.03	2	20	A	6.3	0.03	2	19
Washington St WB left/thru thru	A	6.8	0.36	37	121	A	8.2	0.42	50	168	A	7.4	0.43	46	143	A	8.8	0.48	58	189
Chestnut St NB left	E	60.0	0.53	51	100	E	55.5	0.54	64	113	E	60.7	0.56	55	107	E	56.4	0.57	68	119
Chestnut St NB right	D	49.0	0.21	0	55	D	44.5	0.14	0	42	D	48.9	0.22	0	56	D	44.5	0.16	0	44
Lowell Ave/Washington St	D	-	-	-	-	C	-	-	-	-	D	-	-	-	-	D	-	-	-	-
Washington St EB left/thru thru/right	C	33.7	0.80	329	#456	C	20.9	0.47	144	256	D	54.6	0.97	380	#535	C	27.4	0.61	180	273
Washington St WB left	D	43.4	0.57	37	#111	D	36.7	0.69	89	#259	F	108.3	0.89	45	#140	F	86.7	0.96	118	#289
Washington St WB thru/right	C	26.9	0.53	209	311	C	28.6	0.71	286	#603	C	32.1	0.64	244	357	D	43.4	0.87	360	#639
Lowell Ave NB left	D	36.0	0.61	73	#127	D	42.5	0.72	87	#195	C	34.2	0.62	84	#159	C	32.3	0.62	87	#219
Lowell Ave NB thru/right	C	30.1	0.485	143	234	C	30.6	0.46	110	212	C	28.2	0.48	158	256	C	26.3	0.42	108	236
Lowell Ave SB left/thru/right	E	66.4	0.89	~226	#412	E	64.8	0.84	162	#300	E	58.9	0.86	~273	#456	D	49.6	0.74	163	#382
Unsignalized Intersections																				
Washington St/Davis Ct	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washington EB left	A	8.4	0.00	-	0	A	0.0	0.00	-	0	A	8.7	0.00	-	0	A	0.0	0.00	-	0
Washington St EB left	A	0.0	0.50	-	0	A	0.0	0.38	-	0	A	0.0	0.55	-	0	A	0.0	0.42	-	0
Washington St WB thru/right	A	0.0	0.29	-	0	A	0.0	0.35	-	0	A	0.0	0.34	-	0	A	0.0	0.39	-	0
Davis Ct SB left/right	D	31.9	0.03	-	2	A	0.0	0.03	-	0	E	42.5	0.04	-	3	A	0.0	0.04	-	0
Washington St/Dunstan St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washington St EB left thru	A	0.7	0.03	-	2	A	0.8	0.03	-	2	A	1.5	0.06	-	5	A	1.4	0.06	-	4
Washington St WB thru/right	A	0.0	0.27	-	0	A	0.0	0.34	-	0	A	0.0	0.32	-	0	A	0.0	0.37	-	0
Dunstan St SB left/right	C	15.0	0.13	-	11	B	14.3	0.09	-	7	D	27.5	0.38	-	42	C	20.6	0.23	-	21
Washington St/Armory St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washington St EB left	A	8.5	0.03	-	2	A	9.2	0.06	-	5	A	8.7	0.04	-	3	A	9.5	0.08	-	6
Washington St EB thru	A	0.0	0.47	-	0	A	0.0	0.33	-	0	A	0.0	0.51	-	0	A	0.0	0.35	-	0
Washington St WB thru/right	A	0.0	0.29	-	0	A	0.0	0.39	-	0	A	0.0	0.33	-	0	A	0.0	0.43	-	0
Armory SB left/right	C	20.7	0.10	-	8	D	27.8	0.34	-	37	D	26.3	0.20	-	18	E	36.5	0.46	-	55
Washington St/Trader Joe's	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washington St EB thru	A	0.0	0.48	-	0	A	0.0	0.35	-	0	A	0.0	0.52	-	0	A	0.0	0.38	-	0
Washington St WB thru	A	0.0	0.28	-	0	A	0.0	0.35	-	0	A	0.0	0.33	-	0	A	0.0	0.39	-	0
Trader Joe's SB left/right	C	19.3	0.07	-	6	D	26.6	0.43	-	51	C	22.3	0.09	-	7	D	32.0	0.48	-	61
Washington St/Cross St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washington St EB left	A	8.4	0.02	-	1	A	8.8	0.02	-	2	A	8.6	0.02	-	2	A	9.0	0.03	-	2



Intersection/Movement	Build (2023) AM Condition					Build (2023) PM Condition					Build (2030) AM Condition					Build (2030) PM Condition				
	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)	LOS	Delay (Sec)	V/C Ratio	50th %ile (ft)	95th %ile (ft)
Washington St EB thru	A	0.0	0.47	-	0	A	0.0	0.38	-	0	A	0.0	0.51	-	0	A	0.0	0.41	-	0
Washington St WB left/thru	A	0.0	0.28	-	0	A	0.0	0.36	-	0	A	0.0	0.32	-	0	A	0.0	0.40	-	0
Cross St SB left/right	C	21.1	0.15	-	13	C	17.8	0.07	-	5	D	25.2	0.19	-	17	C	19.3	0.08	-	6
Washington St/Parsons St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washington St EB left/thru	A	0.2	0.01	-	1	A	0.5	0.02	-	1	A	0.2	0.01	-	1	A	0.5	0.02	-	1
Washington St WB left/thru	A	0.0	0.28	-	0	A	0.0	0.37	-	0	A	0.0	0.32	-	0	A	0.0	0.41	-	0
Parsons St SB left/right	C	22.8	0.14	-	12	C	22.6	0.09	-	8	D	27.3	0.17	-	15	D	26.0	0.11	-	9
Washington St/Eddy St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washington St EB left	A	8.5	0.01	-	1	A	9.3	0.04	-	3	A	8.8	0.01	-	1	A	9.5	0.04	-	3
Washington St EB thru	A	0.0	0.49	-	0	A	0.0	0.36	-	0	A	0.0	0.53	-	0	A	0.0	0.39	-	0
Washington St WB thru/right	A	0.0	0.30	-	0	A	0.0	0.43	-	0	A	0.0	0.35	-	0	A	0.0	0.46	-	0
Eddy St SEB left/right	F	226.4	1.32	-	351	F	53.7	0.69	-	110	F	387.4	1.69	-	466	F	84.2	0.85	-	153
Washington St/Brookside Ave	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washington St EB left/thru	A	1.5	0.05	-	4	A	0.7	0.03	-	2	A	2.0	0.06	-	5	A	0.9	0.03	-	2
Washington St WB thru/right	A	0.0	0.32	-	0	A	0.0	0.44	-	0	A	0.0	0.37	-	0	A	0.0	0.48	-	0
Brookside Ave SB left/right	E	50.0	0.13	-	11	E	36.4	0.03	-	3	F	78.8	0.21	-	18	F	51.3	0.05	-	4
Washington St/Brooks Ave	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washington St EB left/thru thru	A	0.0	0.39	-	0	A	0.1	0.37	-	0	A	0.0	0.42	-	0	A	0.1	0.29	-	0
Washington St WB thru/right	A	0.0	0.31	-	0	A	0.0	0.45	-	0	A	0.0	0.35	-	0	A	0.0	0.48	-	0
Brooks Ave SB left/right	C	19.7	0.03	-	2	D	25.0	0.02	-	1	C	23.4	0.03	-	3	D	30.6	0.02	-	2
Washington St/Walker St	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Washington St EB left	A	8.7	0.03	-	2	A	9.8	0.04	-	3	A	9.1	0.04	-	3	B	10.3	0.05	-	4
Washington St EB thru	A	0.0	0.56	-	0	A	0.0	0.39	-	0	A	0.0	0.61	-	0	A	0.0	0.42	-	0
Washington St WB thru/right	A	0.0	0.31	-	0	A	0.0	0.44	-	0	A	0.0	0.35	-	0	A	0.0	0.48	-	0
Walker St SB left/right	E	36.5	0.29	-	29	E	40.7	0.26	-	25	F	56.4	0.43	-	46	F	67.7	0.41	-	41



Safety Impacts

The proposed design provides proven safety countermeasures that are anticipated to target the safety-related challenges of this corridor. The path that operates as a shared-use path and two-way bicycle path where a sidewalk on the south side of Washington Street will provide a dedicated space, away from vehicles, for pedestrians and bicyclists. The historic collision data showed trends of pedestrian and bicyclist related collisions resulting in injury. Bicyclist collision records noted that vehicles were colliding with bicycles as they were riding on the sidewalk. The proposed path provides a separate facility on the south side of Washington Street, where for 2,900 feet of the corridor there are no side streets or driveways intersecting the path and proposing a potential vehicle-bicycle conflict. The potential conflict points on the south side of Washington Street are significantly less than the potential conflict points on the north side, which was one safety-related decision to pursue the alternative with south side bicycle facilities.

The design proposes pedestrian accommodations that incorporate proven safety countermeasures by the Federal Highway Administration (FHWA) to reduce the likelihood of vehicle and pedestrian collisions. The FHWA notes that pedestrian crossings with a refuge island, as proposed in the design, reduce the likelihood of pedestrian related collisions by 56%.¹

The design proposes proven traffic calming elements that will target speed reduction along the corridor, and therefore, reduce the likelihood of speed-related collisions. Based on local stakeholder input, and a higher-than-average segment crash rate, it's been noted that vehicle speeds are creating a safety concern along the corridor. By facilitating a road diet and narrowing the effective width of the roadway for vehicles, drivers will likely feel more constrained and less comfortable traveling at the speeds with which they are doing so today. The design also proposes lateral shifts around left-turn pockets and pedestrian refuge islands which will serve as a traffic calming measure. Overall slower speeds could lead to a reduction in single vehicle collisions, that was proven to be a collision trend with the existing safety analysis. The City plans to reduce speed limits along Washington Street prior to or in coordination with the implementation of this project to support the physical design proposed.

¹ 2. (CMF ID: 175) Desktop Reference for Crash Reduction Factors, FHWA-SA-08-011, September 2008, Table 11.



The existing collision data reported 34 sideswipe collisions. This project is not anticipated to reduce sideswipe collisions since the corridor will continue to have a constrained cross-section with on-street parking on both sides of the roadway.

The road diet also targets turning-related collisions in and out of the driveways and side streets on the north side of Washington Street. Vehicles turning in and out of side streets on Washington Street are currently required to turn across two lanes of traffic, and, under the proposed design, will be required to cross only one lane of traffic at a time. The proposed road diet reduces the potential conflict points for turning vehicles.

Parking restrictions are also proposed which limit parking within five feet of driveway openings and 20 feet of an intersection or crosswalk. This will help to improve visibility for drivers and those crossing Washington Street or existing driveways and intersections. On the south side of Washington Street, parking is restricted a minimum of 20 feet from driveways where there will be two-way bicycle traffic crossing.

Parking Impacts

The proposed design will accommodate 117 on-street parking spaces along Washington Street between Chestnut Street and Lowell Avenue. This is approximately a 51% reduction from the amount of existing parking along the corridor. This quantity does not include the north side of Washington Street between Kempton Place and Armory Street where parking is currently prohibited due to construction associated with the Dunstan East development. Based on the existing peak parking demand, it is anticipated that the typical maximum daily utilization of the proposed parking inventory will be 63% for the corridor.



HOWARD STEIN HUDSON

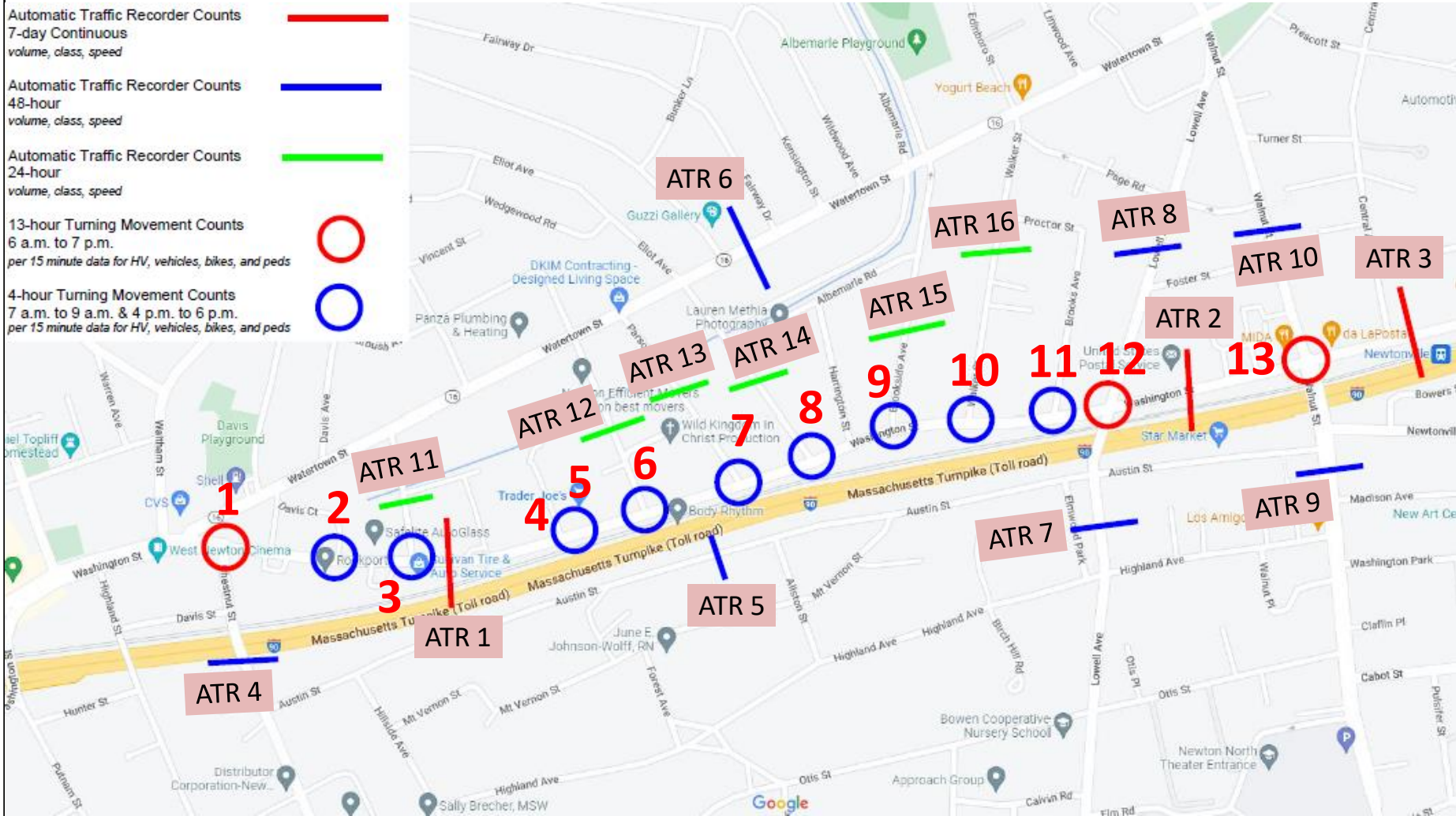
Engineers + Planners

Appendix A

Traffic Data



- Automatic Traffic Recorder Counts
7-day Continuous
volume, class, speed —
- Automatic Traffic Recorder Counts
48-hour
volume, class, speed —
- Automatic Traffic Recorder Counts
24-hour
volume, class, speed —
- 13-hour Turning Movement Counts
6 a.m. to 7 p.m.
per 15 minute data for HV, vehicles, bikes, and peds ○
- 4-hour Turning Movement Counts
7 a.m. to 9 a.m. & 4 p.m. to 6 p.m.
per 15 minute data for HV, vehicles, bikes, and peds ○



Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTM #: Location 1
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Chestnut Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F



PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
6:00 AM	0	2	0	18	0	0	0	0	0	0	17	2	0	1	11	0
6:15 AM	0	3	0	14	0	0	0	0	0	0	25	0	0	6	26	0
6:30 AM	0	5	0	21	0	0	0	0	0	0	51	1	0	11	15	0
6:45 AM	0	7	0	29	0	0	0	0	0	0	51	6	0	12	35	0
7:00 AM	0	6	0	36	0	0	0	0	0	0	88	2	0	10	35	0
7:15 AM	0	12	0	46	0	0	0	0	0	0	107	4	0	27	29	0
7:30 AM	0	25	0	75	0	0	0	0	0	0	91	4	0	21	48	0
7:45 AM	0	15	0	63	0	0	0	0	0	0	151	6	0	42	53	0
8:00 AM	0	17	0	68	0	0	0	0	0	0	104	10	0	44	74	0
8:15 AM	0	12	0	68	0	0	0	0	0	0	127	6	0	51	67	0
8:30 AM	0	16	0	73	0	0	0	0	0	0	129	8	0	44	63	0
8:45 AM	0	17	0	70	0	0	0	0	0	0	89	20	0	60	65	0
9:00 AM	0	22	0	55	0	0	0	0	0	0	73	8	0	30	68	0
9:15 AM	0	9	0	50	0	0	0	0	0	0	83	8	0	23	61	0
9:30 AM	0	17	0	28	0	0	0	0	0	0	69	7	0	32	48	0
9:45 AM	0	11	0	33	0	0	0	0	0	0	91	10	0	19	53	0
10:00 AM	0	20	0	22	0	0	0	0	0	0	63	6	0	21	40	0
10:15 AM	0	9	0	29	0	0	0	0	0	0	53	5	0	17	45	0
10:30 AM	0	16	0	28	0	0	0	0	0	0	52	7	0	22	47	0
10:45 AM	0	16	0	27	0	0	0	0	0	0	50	5	0	17	57	0
11:00 AM	0	9	0	30	0	0	0	0	0	0	65	5	0	29	51	0
11:15 AM	0	17	0	27	0	0	0	0	0	0	58	7	0	27	59	0
11:30 AM	0	17	0	31	0	0	0	0	0	0	62	9	0	23	73	0
11:45 AM	0	14	0	27	0	0	0	0	0	0	68	5	1	21	67	0
12:00 PM	0	24	0	31	0	0	0	0	0	0	74	9	0	34	55	0
12:15 PM	0	14	0	22	0	0	0	0	0	0	78	3	1	32	73	0
12:30 PM	0	14	0	23	0	0	0	0	0	0	65	7	1	25	67	0
12:45 PM	0	18	0	37	0	0	0	0	0	0	74	12	2	42	86	0
1:00 PM	0	10	0	36	0	0	0	0	0	0	65	3	1	23	65	0
1:15 PM	0	19	0	34	0	0	0	0	0	0	63	9	0	30	81	0
1:30 PM	0	11	0	30	0	0	0	0	0	0	57	8	1	27	66	0
1:45 PM	0	17	0	37	0	0	0	0	0	0	65	7	1	33	67	0
2:00 PM	0	14	0	42	0	0	0	0	0	0	54	5	0	34	82	0
2:15 PM	0	11	0	26	0	0	0	0	0	0	86	2	0	32	86	0
2:30 PM	0	18	0	34	0	0	0	0	0	0	53	3	0	47	81	0
2:45 PM	0	19	0	31	0	0	0	0	0	0	61	4	0	46	84	0
3:00 PM	0	20	0	32	0	0	0	0	0	0	54	8	0	55	88	0
3:15 PM	0	19	0	35	0	0	0	0	0	0	81	10	0	54	91	0
3:30 PM	0	17	0	49	0	0	0	0	0	0	89	3	0	57	99	0
3:45 PM	0	26	0	53	0	0	0	0	0	0	73	5	0	44	82	0
4:00 PM	0	25	0	50	0	0	0	0	0	0	49	5	0	72	93	0
4:15 PM	0	20	0	43	0	0	0	0	0	0	66	8	0	45	88	0
4:30 PM	0	18	0	43	0	0	0	0	0	0	86	9	1	53	81	0
4:45 PM	0	21	0	46	0	0	0	0	0	0	94	6	0	51	88	0
5:00 PM	0	17	0	47	0	0	0	0	0	0	79	7	0	46	76	0
5:15 PM	0	17	0	41	0	0	0	0	0	0	110	8	0	64	97	0
5:30 PM	0	20	0	62	0	0	0	0	0	0	99	9	0	41	83	0
5:45 PM	0	24	0	36	0	0	0	0	0	0	104	6	0	53	79	0
6:00 PM	0	23	0	39	0	0	0	0	0	0	98	5	0	42	75	0
6:15 PM	0	11	0	32	0	0	0	0	0	0	67	8	0	40	77	0
6:30 PM	0	13	0	26	0	0	0	0	0	0	78	5	0	28	69	0
6:45 PM	0	17	0	19	0	0	0	0	0	0	73	8	0	23	59	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	60	0	272	0	0	0	0	0	0	511	30	0	181	257	0
PHF	0.93				0.00				0.86				0.93			
HV %	0.0%	1.7%	0.0%	1.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.5%	3.3%	0.0%	0.6%	2.3%	0.0%

MID PEAK HOUR 12:00 PM to 1:00 PM	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	70	0	113	0	0	0	0	0	0	291	31	4	133	281	0
PHF	0.83				0.00				0.94				0.80			
HV %	0.0%	10.0%	0.0%	2.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.8%	3.2%	0.0%	4.5%	3.2%	0.0%

PM PEAK HOUR 4:45 PM to 5:45 PM	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	75	0	196	0	0	0	0	0	0	382	30	0	202	344	0
PHF	0.83				0.00				0.87				0.85			
HV %	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	0.0%	1.0%	1.7%	0.0%

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTM #: Location 1
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Chestnut Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F



HEAVY VEHICLES

Start Time	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
6:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0
6:45 AM	0	0	0	2	0	0	0	0	0	0	1	0	0	1	2	0
7:00 AM	0	0	0	2	0	0	0	0	0	0	4	0	0	0	1	0
7:15 AM	0	1	0	1	0	0	0	0	0	0	1	0	0	3	2	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0
7:45 AM	0	0	0	1	0	0	0	0	0	0	3	0	0	0	1	0
8:00 AM	0	1	0	1	0	0	0	0	0	0	3	0	0	0	1	0
8:15 AM	0	0	0	1	0	0	0	0	0	0	4	1	0	0	2	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	1	2	0
8:45 AM	0	0	0	1	0	0	0	0	0	0	1	0	0	1	2	0
9:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	4	0
9:15 AM	0	1	0	1	0	0	0	0	0	0	4	0	0	0	5	0
9:30 AM	0	0	0	0	0	0	0	0	0	0	4	1	0	2	4	0
9:45 AM	0	0	0	1	0	0	0	0	0	0	4	0	0	0	1	0
10:00 AM	0	1	0	1	0	0	0	0	0	0	2	0	0	1	3	0
10:15 AM	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
10:30 AM	0	1	0	2	0	0	0	0	0	0	1	0	0	1	3	0
10:45 AM	0	0	0	2	0	0	0	0	0	0	1	0	0	0	2	0
11:00 AM	0	0	0	1	0	0	0	0	0	0	4	0	0	0	3	0
11:15 AM	0	1	0	1	0	0	0	0	0	0	2	0	0	1	0	0
11:30 AM	0	2	0	1	0	0	0	0	0	0	2	1	0	0	5	0
11:45 AM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2	0
12:00 PM	0	5	0	1	0	0	0	0	0	0	5	0	0	2	1	0
12:15 PM	0	0	0	1	0	0	0	0	0	0	3	0	0	0	5	0
12:30 PM	0	0	0	1	0	0	0	0	0	0	1	1	0	2	1	0
12:45 PM	0	2	0	0	0	0	0	0	0	0	2	0	0	2	2	0
1:00 PM	0	0	0	1	0	0	0	0	0	0	2	0	0	0	4	0
1:15 PM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2	0
1:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0
1:45 PM	0	2	0	1	0	0	0	0	0	0	3	0	0	1	1	0
2:00 PM	0	0	0	1	0	0	0	0	0	0	1	1	0	1	4	0
2:15 PM	0	2	0	1	0	0	0	0	0	0	4	0	0	0	2	0
2:30 PM	0	1	0	1	0	0	0	0	0	0	1	0	0	0	1	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	3	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	5	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
4:00 PM	0	1	0	0	0	0	0	0	0	0	1	0	0	3	1	0
4:15 PM	0	0	0	1	0	0	0	0	0	0	3	0	0	1	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	2	2	0
4:45 PM	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0
6:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
6:15 PM	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	0
6:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	1	0	0	0	0	0	0	2	0	0	1	2	0

AM PEAK HOUR 9:00 AM to 10:00 AM	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
<i>PHF</i>	0	1	0	2	0	0	0	0	0	0	14	1	0	3	14	0
	0.38				0.00				0.75				0.71			

MID PEAK HOUR 11:30 AM to 12:30 PM	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
<i>PHF</i>	0	7	0	4	0	0	0	0	0	0	11	1	0	2	13	0
	0.46				0.00				0.60				0.75			

PM PEAK HOUR 2:00 PM to 3:00 PM	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
<i>PHF</i>	0	3	0	3	0	0	0	0	0	0	7	1	0	2	8	0
	0.50				0.00				0.50				0.50			

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTM #: Location 1
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Chestnut Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

PEDESTRIANS & BICYCLES (on Road)

Start Time	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
6:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	4
8:45 AM	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1
9:00 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	6
9:45 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
10:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4
10:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	6
10:45 AM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	9
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3
11:30 AM	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	5
12:00 PM	0	0	0	5	0	0	0	0	0	0	0	1	0	0	0	2
12:15 PM	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	9
12:30 PM	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	3
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	9
1:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
1:15 PM	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	2
1:30 PM	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	3
1:45 PM	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	6
2:00 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	4
2:15 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1
2:30 PM	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	3
2:45 PM	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	9
3:00 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	7
3:15 PM	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	11
3:30 PM	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	6
3:45 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	4
4:00 PM	0	0	0	9	0	0	0	0	0	0	0	0	0	0	0	5
4:15 PM	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	6
4:30 PM	0	0	0	7	0	0	0	0	0	0	0	0	0	0	0	3
4:45 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	1	0	0	0	0	0	0	0	4	0	0	0	1
6:00 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1
6:15 PM	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
6:30 PM	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0
6:45 PM	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	2

AM PEAK HOUR 7:45 AM to 8:45 AM	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	6

MID PEAK HOUR 12:00 PM to 1:00 PM	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	20	0	0	0	0	0	0	0	2	0	0	0	23

PM PEAK HOUR 4:45 PM to 5:45 PM	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	1	6	0	0	0	0	0	0	0	0	0	0	0	6

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTM #: Location 1
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Chestnut Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

BICYCLES (on Sidewalk)

Start Time	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
6:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
7:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
7:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
7:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
7:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
11:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
11:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
11:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
11:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
12:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
12:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
12:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
12:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
1:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
1:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
1:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
1:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
2:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
2:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
2:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
2:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	2	0	-
5:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	1	0	0	-
5:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
6:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-

AM PEAK HOUR 7:45 AM to 8:45 AM	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 12:00 PM to 1:00 PM	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR 4:45 PM to 5:45 PM	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 2
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Davis Court
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
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 www.BostonTrafficData.com

PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	114	0	0	0	41	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	150	0	0	0	59	0
7:30 AM	0	0	0	0	0	0	0	0	1	0	149	0	0	0	68	0
7:45 AM	0	0	0	0	0	2	0	0	0	1	213	0	0	0	101	0
8:00 AM	0	0	0	0	0	1	0	0	0	0	175	0	0	0	120	1
8:15 AM	0	0	0	0	0	1	0	0	0	0	188	0	0	0	119	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	192	0	0	0	107	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	155	0	0	0	121	0

Start Time	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	1	0	97	0	0	0	149	0
4:15 PM	0	0	0	0	0	0	0	0	1	1	114	0	0	0	122	0
4:30 PM	0	0	0	0	0	0	0	0	1	0	125	0	0	0	126	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	144	0	0	0	136	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	129	0	0	0	150	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	149	0	0	0	144	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	153	0	0	0	115	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	142	0	0	0	110	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	4	0	0	0	1	768	0	0	0	447	2
PHF	0.00				0.50				0.90				0.93			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	1.6%	0.0%

PM PEAK HOUR 4:45 PM to 5:45 PM	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	575	0	0	0	545	0
PHF	0.00				0.00				0.94				0.91			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	1.5%	0.0%

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 2
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Davis Court
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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 www.BostonTrafficData.com

HEAVY VEHICLES

Start Time	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	5	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0

Start Time	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	3	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0

AM PEAK HOUR 7:00 AM to 8:00 AM PHF	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	15	0	0	0	9	0
	0.00				0.00				0.63				0.45			

PM PEAK HOUR 4:00 PM to 5:00 PM PHF	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	12	0	0	0	11	0
	0.00				0.00				0.60				0.69			

Client: Emma Enteadó, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 2
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Davis Court
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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PEDESTRIANS & BICYCLES (on Road)

Start Time	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

Start Time	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	10	0	0	0	4	0	0	0	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 2
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Davis Court
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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BICYCLES (on Sidewalk)

Start Time	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
7:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-

Start Time	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
4:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	3	0	-
5:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Davis Court Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 3
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Dunstan Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

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PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	3	0	6	107	0	0	0	39	0
7:15 AM	0	0	0	0	0	1	0	5	0	7	140	0	0	0	54	0
7:30 AM	0	0	0	0	0	2	0	5	0	8	140	0	0	0	63	0
7:45 AM	0	0	0	0	0	0	0	11	0	5	207	0	0	0	96	1
8:00 AM	0	0	0	0	0	0	0	8	0	7	168	0	0	0	114	1
8:15 AM	0	0	0	0	0	4	0	8	0	5	180	0	0	0	112	3
8:30 AM	0	0	0	0	0	2	0	14	0	8	184	0	0	0	91	2
8:45 AM	0	0	0	0	0	4	0	18	0	17	138	0	0	0	103	3

Start Time	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	1	0	11	0	17	78	0	0	0	133	2
4:15 PM	0	0	0	0	0	1	0	6	0	6	106	0	0	0	120	5
4:30 PM	0	0	0	0	0	4	0	8	0	7	120	0	1	0	115	3
4:45 PM	0	0	0	0	0	2	0	6	1	10	130	0	0	0	127	2
5:00 PM	0	0	0	0	0	1	0	8	0	4	125	0	0	0	147	4
5:15 PM	0	0	0	0	0	0	0	8	1	8	144	0	0	0	129	4
5:30 PM	0	0	0	0	0	1	0	8	0	13	152	0	0	0	111	2
5:45 PM	0	0	0	0	0	2	0	7	0	3	151	0	0	0	108	3

AM PEAK HOUR 7:45 AM to 8:45 AM	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	6	0	41	0	25	739	0	0	0	413	7
PHF	0.00				0.73				0.90				0.91			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.0%	1.9%	0.0%	0.0%	0.0%	1.7%	0.0%

PM PEAK HOUR 4:45 PM to 5:45 PM	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	4	0	30	2	35	551	0	0	0	514	12
PHF	0.00				0.94				0.89				0.87			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	2.1%	0.0%

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 3
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Dunstan Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
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 www.BostonTrafficData.com

HEAVY VEHICLES

Start Time	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	5	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
7:45 AM	0	0	0	0	0	0	0	0	0	1	2	0	0	0	1	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	2	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	3	0

Start Time	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM PHF	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	1	13	0	0	0	9	0
	0.00				0.00				0.58				0.75			

PM PEAK HOUR 4:00 PM to 5:00 PM PHF	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	12	0	0	0	10	0
	0.00				0.00				0.75				0.63			

Client: Emma Enteadó, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 3
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Dunstan Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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 www.BostonTrafficData.com

PEDESTRIANS & BICYCLES (on Road)

Start Time	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	2	0	1	0	1	0	0	0	0

Start Time	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	10	0	0	0	0	0	0	1	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteadó, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 3
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Dunstan Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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 www.BostonTrafficData.com

BICYCLES (on Sidewalk)

Start Time	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
7:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-

Start Time	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
4:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	3	0	-
5:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	1	-
5:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	1	-
5:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Dunstan Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 4
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Armory Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	1	0	1	107	0	0	0	38	1
7:15 AM	0	0	0	0	0	1	0	3	0	1	140	0	0	0	50	2
7:30 AM	0	0	0	0	0	2	0	0	0	2	143	0	0	0	66	1
7:45 AM	0	0	0	0	0	1	0	0	0	5	198	0	0	0	100	8
8:00 AM	0	0	0	0	0	3	0	2	0	7	158	0	0	0	110	11
8:15 AM	0	0	0	0	0	4	0	6	0	9	178	0	0	0	108	8
8:30 AM	0	0	0	0	0	4	0	4	0	6	185	0	0	0	93	15
8:45 AM	0	0	0	0	0	5	0	5	0	5	126	0	0	0	97	10

Start Time	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	5	0	11	0	9	77	0	0	0	122	32
4:15 PM	0	0	0	0	0	5	0	10	0	13	95	0	0	0	111	34
4:30 PM	0	0	0	0	0	12	0	7	0	19	109	0	0	0	110	34
4:45 PM	0	0	0	0	0	10	0	11	0	11	115	0	0	0	123	31
5:00 PM	0	0	0	0	0	13	0	7	0	17	111	0	1	0	140	28
5:15 PM	0	0	0	0	0	7	0	8	0	14	119	0	0	0	127	29
5:30 PM	0	0	0	0	0	12	0	6	0	11	127	0	0	0	113	27
5:45 PM	0	0	0	0	0	13	0	7	0	11	125	0	1	0	109	26

AM PEAK HOUR 7:45 AM to 8:45 AM	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	12	0	12	0	27	719	0	0	0	411	42
PHF	0.00				0.60				0.92				0.94			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	0.0%	0.0%	0.0%	1.7%	2.4%

PM PEAK HOUR 4:45 PM to 5:45 PM	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	42	0	32	0	53	472	0	1	0	503	115
PHF	0.00				0.88				0.95				0.92			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	3.1%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	1.6%	0.0%

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 4
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Armory Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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 www.BostonTrafficData.com

HEAVY VEHICLES

Start Time	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	2	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0

Start Time	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	3	0	0	0	3	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	2	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM PHF	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	9
	0.00				0.00				0.60				0.63			

PM PEAK HOUR 4:00 PM to 5:00 PM PHF	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	1	0	1	10	0	0	0	8
	0.00				0.25				0.69				0.67			

Client: Emma Enteadó, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 4
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Armory Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

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PEDESTRIANS & BICYCLES (on Road)

Start Time	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1

Start Time	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	8	0	0	0	1	0	0	0	0

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	6	0	0	0	0	0	1	0	1

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 4
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Armory Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

BICYCLES (on Sidewalk)

Start Time	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
7:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-

Start Time	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
4:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	0	0	0	1	-	0	0	0	-	0	1	0	-
5:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	2	0	-
5:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Armory Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 5
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Trader Joe's Parking Lot Driveway
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Northbound				Southbound				Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	1	0	0	0	0	106	0	0	0	39	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	142	0	0	0	52	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	145	0	0	0	68	0
7:45 AM	0	0	0	0	0	1	0	1	0	0	196	0	0	0	107	0
8:00 AM	0	0	0	0	0	0	0	1	0	0	162	0	0	0	121	0
8:15 AM	0	0	0	0	0	1	0	5	0	0	184	0	0	0	110	0
8:30 AM	0	0	0	0	0	6	0	3	0	0	189	0	0	0	102	0
8:45 AM	0	0	0	0	0	3	0	6	0	0	131	0	0	0	100	0

Start Time	Northbound				Southbound				Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	14	0	15	0	0	82	0	0	0	139	0
4:15 PM	0	0	0	0	0	19	0	15	0	0	100	0	0	0	129	0
4:30 PM	0	0	0	0	0	17	0	11	0	0	123	0	0	0	134	0
4:45 PM	0	0	0	0	0	20	0	10	0	0	125	0	0	0	144	0
5:00 PM	0	0	0	0	0	11	0	16	0	0	123	0	0	0	153	0
5:15 PM	0	0	0	0	0	17	0	16	0	0	127	0	0	0	140	0
5:30 PM	0	0	0	0	0	13	0	15	0	0	140	0	0	0	125	0
5:45 PM	0	0	0	0	0	16	0	8	0	0	139	0	0	0	128	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Northbound				Southbound				Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	8	0	10	0	0	731	0	0	0	440	0
PHF	0.00				0.50				0.93				0.91			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	12.5%	0.0%	0.0%	0.0%	0.0%	2.1%	0.0%	0.0%	0.0%	1.8%	0.0%

PM PEAK HOUR 4:45 PM to 5:45 PM	Northbound				Southbound				Eastbound				Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	61	0	57	0	0	515	0	0	0	562	0
PHF	0.00				0.89				0.92				0.92			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%	0.0%	0.0%	0.0%	1.8%	0.0%

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 5
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Trader Joe's Parking Lot Driveway
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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HEAVY VEHICLES

Start Time	Northbound				Southbound				Eastbound			Westbound				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	2	0
8:30 AM	0	0	0	0	0	1	0	0	0	0	4	0	0	0	4	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0

Start Time	Northbound				Southbound				Eastbound			Westbound				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM PHF	Northbound				Southbound				Eastbound			Westbound				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	1	0	0	0	0	14	0	0	0	10	0
	0.00				0.25				0.58			0.63				

PM PEAK HOUR 4:00 PM to 5:00 PM PHF	Northbound				Southbound				Eastbound			Westbound				
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	11	0	0	0	9	0
	0.00				0.00				0.69			0.75				

Client: Emma Enteadó, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 5
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Trader Joe's Parking Lot Driveway
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

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PEDESTRIANS & BICYCLES (on Road)

Start Time	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0

Start Time	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	2	0	1	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Southbound				Eastbound				Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	5	0	1	0	0	0	0	0	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 5
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Trader Joe's Parking Lot Driveway
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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 www.BostonTrafficData.com

BICYCLES (on Sidewalk)

Start Time	Northbound				Trader Joe's Parking Lot Driveway Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
7:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-

Start Time	Northbound				Trader Joe's Parking Lot Driveway Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
4:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	1	0	-
5:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	2	0	-
5:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Trader Joe's Parking Lot Driveway Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Trader Joe's Parking Lot Driveway Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 6
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Cross Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

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PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	1	0	0	0	0	109	0	0	0	40	1
7:15 AM	0	0	0	0	0	2	0	2	0	0	137	0	0	0	50	1
7:30 AM	0	0	0	0	0	0	0	1	0	1	145	0	0	0	68	2
7:45 AM	0	0	0	0	0	4	0	8	0	1	198	0	0	0	102	0
8:00 AM	0	0	0	0	0	4	0	3	0	3	159	0	0	0	117	1
8:15 AM	0	0	0	0	0	3	0	5	0	7	171	0	0	0	105	2
8:30 AM	0	0	0	0	0	7	0	2	0	6	188	0	0	0	102	2
8:45 AM	0	0	0	0	0	5	0	1	0	3	129	0	0	0	100	5

Start Time	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	2	0	4	0	5	93	0	0	0	133	2
4:15 PM	0	0	0	0	0	2	0	6	0	1	115	0	0	0	123	4
4:30 PM	0	0	0	0	0	1	0	5	0	2	134	0	0	0	133	4
4:45 PM	0	0	0	0	0	1	0	8	0	6	142	0	0	0	137	3
5:00 PM	0	0	0	0	0	2	0	4	1	5	123	0	0	0	145	5
5:15 PM	0	0	0	0	0	1	0	1	0	6	137	0	0	0	139	5
5:30 PM	0	0	0	0	0	0	0	2	0	7	148	0	0	0	123	7
5:45 PM	0	0	0	0	0	3	0	5	0	2	137	0	0	0	121	6

AM PEAK HOUR 7:45 AM to 8:45 AM	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	18	0	18	0	17	716	0	0	0	426	5
PHF	0.00				0.75				0.92				0.91			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%	0.0%	0.0%	0.0%	1.6%	0.0%

PM PEAK HOUR 4:45 PM to 5:45 PM	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	4	0	15	1	24	550	0	0	0	544	20
PHF	0.00				0.53				0.93				0.94			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	1.3%	0.0%

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 6
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Cross Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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HEAVY VEHICLES

Start Time	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	2	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0

Start Time	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM PHF	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	12	0	0	0	9	0
	0.00				0.00				0.60				0.75			

PM PEAK HOUR 4:00 PM to 5:00 PM PHF	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	1	9	0	0	0	10	0
	0.00				0.00				0.83				0.83			

Client: Emma Enteadó, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 6
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Cross Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

PEDESTRIANS & BICYCLES (on Road)

Start Time	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0

Start Time	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteadó, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 6
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Cross Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

BICYCLES (on Sidewalk)

Start Time	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
7:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-

Start Time	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
4:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	1	0	-
5:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	2	0	-
5:15 PM	0	0	0	0	0	0	1	-	0	0	0	-	0	0	0	-
5:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 7
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Parsons Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	1	0	1	0	0	110	0	0	0	39	1
7:15 AM	0	0	0	0	0	2	0	2	0	0	141	0	0	0	49	1
7:30 AM	0	0	0	0	0	3	0	3	0	0	147	0	0	0	70	2
7:45 AM	0	0	0	0	0	5	0	3	0	2	200	0	0	0	98	7
8:00 AM	0	0	0	0	0	4	0	2	0	2	161	0	0	0	119	5
8:15 AM	0	0	0	0	0	3	0	1	0	3	173	0	0	0	105	2
8:30 AM	0	0	0	0	0	6	0	5	0	0	191	0	0	0	99	3
8:45 AM	0	0	0	0	0	13	0	2	0	2	131	0	1	0	107	3

Start Time	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	1	0	8	0	3	98	0	0	0	126	5
4:15 PM	0	0	0	0	0	1	0	2	0	4	113	0	0	0	119	3
4:30 PM	0	0	0	0	0	1	0	4	0	4	134	0	0	0	133	9
4:45 PM	0	0	0	0	0	1	0	3	0	2	143	0	0	0	142	7
5:00 PM	0	0	0	0	0	2	0	1	0	3	133	0	0	0	144	4
5:15 PM	0	0	0	0	0	5	0	2	1	3	135	0	0	0	151	9
5:30 PM	0	0	0	0	0	1	0	0	0	6	156	0	0	0	120	6
5:45 PM	0	0	0	0	0	5	0	3	0	3	167	0	0	0	115	5

AM PEAK HOUR 7:45 AM to 8:45 AM	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	18	0	11	0	7	725	0	0	0	421	17
PHF	0.00				0.66				0.91				0.88			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.9%	0.0%	0.0%	0.0%	1.9%	5.9%

PM PEAK HOUR 4:45 PM to 5:45 PM	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	9	0	6	1	14	567	0	0	0	557	26
PHF	0.00				0.54				0.90				0.91			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	1.6%	0.0%

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 7
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Parsons Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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 www.BostonTrafficData.com

HEAVY VEHICLES

Start Time	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	5	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	2	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0

Start Time	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	3	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM PHF	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	14	0	0	0	8	1
	0.00				0.00				0.70				0.56			

PM PEAK HOUR 4:00 PM to 5:00 PM PHF	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	1	0	0	10	0	0	0	10	0
	0.00				0.25				0.63				0.83			

Client: Emma Enteadó, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 7
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Parsons Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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 www.BostonTrafficData.com

PEDESTRIANS & BICYCLES (on Road)

Start Time	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0

Start Time	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	14	0	0	0	0	0	0	0	1

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteadó, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 7
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Parsons Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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BICYCLES (on Sidewalk)

Start Time	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
7:00 AM	0	0	0	0	1	0	0	-	0	0	0	-	0	0	0	-
7:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	0	1	0	0	-	0	0	0	-	0	0	0	-

Start Time	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
4:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	1	0	-
5:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	3	0	-
5:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:45 PM	0	0	0	0	0	0	0	-	0	1	0	-	0	1	0	-

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 8
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Eddy Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

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PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	16	0	4	0	0	110	0	0	0	36	8
7:15 AM	0	0	0	0	0	26	0	8	0	1	144	0	0	0	44	9
7:30 AM	0	0	0	0	0	35	0	5	0	3	148	0	0	0	69	18
7:45 AM	0	0	0	0	0	57	0	15	0	1	204	0	0	0	85	22
8:00 AM	0	0	0	0	0	54	0	6	0	1	164	0	0	0	114	13
8:15 AM	0	0	0	0	0	35	0	8	0	3	176	0	0	0	101	16
8:30 AM	0	0	0	0	0	44	0	7	0	3	196	0	0	0	97	23
8:45 AM	0	0	0	0	0	46	0	8	0	7	140	0	0	0	100	23

Start Time	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	16	0	14	0	6	93	0	0	0	117	37
4:15 PM	0	0	0	0	0	21	0	6	0	4	111	0	0	0	117	29
4:30 PM	0	0	0	0	0	20	0	15	0	4	131	0	0	0	126	30
4:45 PM	0	0	0	0	0	19	0	9	0	6	138	0	0	0	137	23
5:00 PM	0	0	0	0	0	21	0	10	0	7	130	0	0	0	138	35
5:15 PM	0	0	0	0	0	20	0	14	0	9	130	0	0	0	146	35
5:30 PM	0	0	0	0	0	20	0	12	0	8	147	0	0	0	120	31
5:45 PM	0	0	0	0	0	26	0	10	0	7	165	0	0	0	115	22

AM PEAK HOUR 7:45 AM to 8:45 AM	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	190	0	36	0	8	740	0	0	0	397	74
PHF	0.00				0.78				0.91				0.93			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	2.3%	5.4%

PM PEAK HOUR 5:00 PM to 6:00 PM	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	87	0	46	0	31	572	0	0	0	519	123
PHF	0.00				0.92				0.88				0.89			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.8%	0.0%

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTM #: Location 8
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Eddy Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
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 www.BostonTrafficData.com

HEAVY VEHICLES

Start Time	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	4	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	3	0
8:30 AM	0	0	0	0	0	1	0	0	0	0	5	0	0	0	3	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0

Start Time	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	1	0
4:15 PM	0	0	0	0	0	1	0	1	0	0	3	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	3	0	0	0	2	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	2	0	0	0	1	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM <i>PHF</i>	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	1	0	0	0	0	15	0	0	0	9
0.00				0.25				0.63				0.54				

PM PEAK HOUR 4:00 PM to 5:00 PM <i>PHF</i>	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	1	0	4	0	0	9	0	0	0	0	5
0.00				0.63				0.75				0.75				

Client: Emma Enteadó, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 8
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Eddy Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

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PEDESTRIANS & BICYCLES (on Road)

Start Time	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	5	0	0	0	1	0	0	0	0

Start Time	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	10	0	0	0	1	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	17	0	0	0	1	0	0	0	0

PM PEAK HOUR ¹ 5:00 PM to 6:00 PM	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	5	0	0	0	0	0	1	0	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteadó, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 8
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Eddy Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

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BICYCLES (on Sidewalk)

Start Time	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
7:00 AM	0	0	0	0	0	0	0	-	0	1	0	-	0	0	0	-
7:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	0	3	0	0	-	0	1	0	-	0	0	0	-

Start Time	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
4:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	1	0	-
5:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	3	0	-
5:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 5:00 PM to 6:00 PM	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 9
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Brookside Avenue
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

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PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	9	118	0	0	0	46	2
7:15 AM	0	0	0	0	0	3	0	0	0	9	160	0	0	0	51	3
7:30 AM	0	0	0	0	0	2	0	0	0	16	170	0	1	0	85	10
7:45 AM	0	0	0	0	0	4	0	1	0	20	238	0	0	0	104	13
8:00 AM	0	0	0	0	0	2	0	0	1	6	213	0	0	0	124	4
8:15 AM	0	0	0	0	0	1	0	0	0	9	202	0	0	0	126	11
8:30 AM	0	0	0	0	0	2	0	1	0	11	211	0	0	0	110	3
8:45 AM	0	0	0	0	0	1	0	1	1	14	175	0	0	0	122	17

Start Time	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	1	0	0	0	8	102	0	0	0	153	4
4:15 PM	0	0	0	0	0	1	0	0	1	6	123	0	0	0	149	7
4:30 PM	0	0	0	0	0	1	0	0	0	7	140	0	0	0	158	5
4:45 PM	0	0	0	0	0	0	0	0	0	8	151	0	0	0	159	0
5:00 PM	0	0	0	0	0	1	0	1	0	6	140	0	0	0	177	6
5:15 PM	0	0	0	0	0	0	0	0	0	3	151	0	0	0	165	4
5:30 PM	0	0	0	0	0	0	0	0	1	7	157	0	0	0	153	5
5:45 PM	0	0	0	0	0	2	0	0	0	4	170	0	0	0	130	6

AM PEAK HOUR 7:45 AM to 8:45 AM	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	9	0	2	1	46	864	0	0	0	464	31
PHF	0.00				0.55				0.88				0.90			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	11.1%	0.0%	0.0%	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	2.4%	0.0%

PM PEAK HOUR 4:45 PM to 5:45 PM	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	1	0	1	1	24	599	0	0	0	654	15
PHF	0.00				0.25				0.95				0.91			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.2%	0.5%	0.0%	0.0%	0.0%	1.2%	0.0%

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 9
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Brookside Avenue
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

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HEAVY VEHICLES

Start Time	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	1	5	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
7:45 AM	0	0	0	0	0	1	0	0	0	0	2	0	0	0	2	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	7	0	0	0	3	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	5	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0

Start Time	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0
4:45 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	0	2	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM PHF	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	17	0	0	0	13	0
	0.00				0.00				0.61				0.65			

PM PEAK HOUR 4:15 PM to 5:15 PM PHF	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	1	10	0	0	0	7	0
	0.00				0.00				0.55				0.88			

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 9
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Brookside Avenue
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

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PEDESTRIANS & BICYCLES (on Road)

Start Time	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	10	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	11	0	2	0	0	0	0	0	0

Start Time	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	13	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	1	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	21	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	8	0	0	0	0	0	1	0	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 9
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Brookside Avenue
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

BICYCLES (on Sidewalk)

Start Time	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
7:00 AM	0	0	0	0	0	0	0	-	0	1	0	-	0	0	0	-
7:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	0	0	0	0	-	0	2	0	-	0	0	0	-

Start Time	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
4:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	1	0	-
4:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	1	0	-
5:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	2	0	-
5:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 4:45 PM to 5:45 PM	Northbound				Brookside Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 10
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Walker Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	3	0	1	0	5	108	0	0	0	47	1
7:15 AM	0	0	0	0	0	4	0	2	0	2	157	0	0	0	52	0
7:30 AM	0	0	0	0	0	11	0	8	0	7	164	0	0	0	87	3
7:45 AM	0	0	0	0	0	3	0	7	0	11	231	0	0	0	109	1
8:00 AM	0	0	0	0	0	2	0	7	0	9	204	0	0	0	120	1
8:15 AM	0	0	0	0	0	5	0	6	0	4	199	0	0	0	130	1
8:30 AM	0	0	0	0	0	10	0	2	0	4	209	0	0	0	110	1
8:45 AM	0	0	0	0	0	15	0	8	0	5	171	0	0	0	130	4

Start Time	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	7	0	3	0	1	101	0	0	0	155	7
4:15 PM	0	0	0	0	0	2	0	5	0	4	119	0	0	0	147	3
4:30 PM	0	0	0	0	0	6	0	1	0	3	135	0	0	0	165	4
4:45 PM	0	0	0	0	0	3	0	5	0	8	143	0	0	0	150	3
5:00 PM	0	0	0	0	0	4	0	4	0	5	138	0	0	0	179	4
5:15 PM	0	0	0	0	0	8	0	3	0	6	142	0	0	0	166	6
5:30 PM	0	0	0	0	0	4	0	3	0	9	145	0	0	0	154	5
5:45 PM	0	0	0	0	0	3	0	4	0	7	165	0	0	0	145	4

AM PEAK HOUR 7:45 AM to 8:45 AM	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	20	0	22	0	28	843	0	0	0	469	4
PHF	0.00				0.88				0.90				0.90			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	4.5%	0.0%	0.0%	1.9%	0.0%	0.0%	0.0%	2.6%	25.0%

PM PEAK HOUR 5:00 PM to 6:00 PM	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	19	0	14	0	27	590	0	0	0	644	19
PHF	0.00				0.75				0.90				0.91			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	0.0%	0.0%	0.8%	0.0%

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTM #: Location 10
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Walker Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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 www.BostonTrafficData.com

HEAVY VEHICLES

Start Time	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	1	4	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	4	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	6	0	0	0	4	1
8:30 AM	0	0	0	0	0	0	0	1	0	0	5	0	0	0	4	0
8:45 AM	0	0	0	0	0	1	0	0	0	0	2	0	0	0	4	1

Start Time	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM PHF	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	1	0	1	0	0	16	0	0	0	14	2
	0.00				0.50				0.67				0.80			

PM PEAK HOUR 4:15 PM to 5:15 PM PHF	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	11	0	0	0	7	0
	0.00				0.00				0.55				0.88			

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 10
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Walker Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

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PEDESTRIANS & BICYCLES (on Road)

Start Time	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	5	0	0	0	1	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	8	0	0	0	3	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	9	0	0	0	3	0	0	0	0

Start Time	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	4	0	0	0	1	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	17	0	0	0	4	0	0	0	2

PM PEAK HOUR ¹ 5:00 PM to 6:00 PM	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 10
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Walker Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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 www.BostonTrafficData.com

BICYCLES (on Sidewalk)

Start Time	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
7:00 AM	0	0	0	0	0	0	0	-	0	1	0	-	0	0	0	-
7:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	0	0	0	0	-	0	1	0	-	0	0	0	-

Start Time	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
4:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	1	0	-
5:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	1	0	-

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 5:00 PM to 6:00 PM	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 11
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Brooks Avenue
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

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PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	117	0	0	0	48	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	162	0	0	0	52	0
7:30 AM	0	0	0	0	0	0	0	2	0	0	176	0	0	0	87	0
7:45 AM	0	0	0	0	0	0	0	1	0	0	239	0	0	0	108	1
8:00 AM	0	0	0	0	0	2	0	0	0	0	207	0	0	0	121	1
8:15 AM	0	0	0	0	0	2	0	1	0	0	200	0	0	0	135	1
8:30 AM	0	0	0	0	0	0	0	1	0	0	220	0	0	0	106	0
8:45 AM	0	0	0	0	0	0	0	0	0	1	200	0	0	0	133	0

Start Time	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	1	0	0	0	0	108	0	0	0	163	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	119	0	0	0	149	2
4:30 PM	0	0	0	0	0	0	0	1	0	0	141	0	1	0	168	1
4:45 PM	0	0	0	0	0	2	0	0	0	1	149	0	0	0	153	3
5:00 PM	0	0	0	0	0	1	0	0	0	1	137	0	1	0	183	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	152	0	0	0	179	0
5:30 PM	0	0	0	0	0	2	0	0	0	0	151	0	0	0	165	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	168	0	0	0	149	1

AM PEAK HOUR 7:45 AM to 8:45 AM	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	4	0	3	0	0	866	0	0	0	470	3
PHF	0.00				0.58				0.91				0.87			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	25.0%	0.0%	0.0%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	2.8%	33.3%

PM PEAK HOUR 5:00 PM to 6:00 PM	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	3	0	0	0	1	608	0	1	0	676	3
PHF	0.00				0.38				0.91				0.92			
HV %	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%	0.0%	100.0%	0.0%	0.7%	0.0%

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 11
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Brooks Avenue
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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 www.BostonTrafficData.com

HEAVY VEHICLES

Start Time	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
7:00 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	4	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	1	0
8:15 AM	0	0	0	0	0	1	0	0	0	0	6	0	0	0	6	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	4	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4	0

Start Time	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	5	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0

AM PEAK HOUR 8:00 AM to 9:00 AM <i>PHF</i>	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	1	0	0	0	0	17	0	0	0	15
0.00				0.25				0.71				0.57				

PM PEAK HOUR 4:15 PM to 5:15 PM <i>PHF</i>	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	0	0	0	0	0	0	0	0	0	0	10	0	1	0	7
0.00				0.00				0.50				0.67				

Client: Emma Enteadó, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 11
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Brooks Avenue
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

PEDESTRIANS & BICYCLES (on Road)

Start Time	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0
8:00 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0

Start Time	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
4:00 PM	0	0	0	0	0	0	0	16	0	0	0	1	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	24	0	0	0	0	0	1	0	0

PM PEAK HOUR ¹ 5:00 PM to 6:00 PM	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	10	0	0	0	0	0	1	0	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteadó, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 11
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Brooks Avenue
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

BICYCLES (on Sidewalk)

Start Time	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
7:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
7:30 AM	0	0	0	0	0	0	0	-	0	1	0	-	0	0	0	-
7:45 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:00 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	0	0	0	0	-	0	2	0	-	0	0	0	-

Start Time	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
4:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	1	0	-
4:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	1	0	-
5:00 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	3	0	-
5:15 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:30 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-
5:45 PM	0	0	0	0	0	0	0	-	0	0	0	-	0	0	0	-

AM PEAK HOUR ¹ 7:45 AM to 8:45 AM	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR ¹ 5:00 PM to 6:00 PM	Northbound				Brooks Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0

¹ NOTE: Peak hour summaries here correspond to peak hours identified for passenger cars and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 12
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Lowell Avenue
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F



PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Lowell Avenue Northbound			Lowell Avenue Southbound			Washington Street Eastbound			Washington Street Westbound						
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
6:00 AM	0	3	2	7	0	1	4	1	0	0	19	6	0	2	11	1
6:15 AM	0	3	12	4	0	0	7	2	0	3	35	3	0	1	23	0
6:30 AM	0	2	14	20	0	0	6	2	0	1	52	6	0	0	12	0
6:45 AM	0	9	22	25	0	1	26	3	0	1	49	23	0	7	30	0
7:00 AM	0	14	27	26	0	0	19	3	0	5	97	17	0	10	31	0
7:15 AM	0	12	30	43	0	1	26	3	0	5	127	28	0	5	38	4
7:30 AM	0	27	44	35	0	2	28	8	0	7	132	35	0	9	50	3
7:45 AM	0	31	39	37	0	1	60	13	0	5	178	56	0	12	67	3
8:00 AM	0	30	25	26	0	2	66	8	0	7	158	46	0	12	86	1
8:15 AM	0	27	24	35	0	3	59	6	0	5	139	51	0	16	105	2
8:30 AM	0	29	40	29	0	1	62	6	0	16	140	69	0	19	66	2
8:45 AM	0	49	49	35	0	2	52	2	0	6	100	93	0	15	82	5
9:00 AM	0	39	41	37	0	0	30	7	0	4	95	39	0	12	71	2
9:15 AM	0	23	19	13	0	2	21	8	0	9	78	20	0	21	61	1
9:30 AM	0	17	24	18	0	1	26	6	0	10	76	22	0	10	66	0
9:45 AM	0	21	34	12	0	0	24	6	0	3	92	34	0	8	53	2
10:00 AM	0	24	18	19	0	2	20	3	0	2	71	40	0	7	54	2
10:15 AM	0	21	19	13	0	1	37	3	0	5	51	22	0	10	52	5
10:30 AM	0	24	23	19	0	1	17	8	0	9	51	29	0	10	58	1
10:45 AM	0	19	13	15	0	2	18	2	0	7	54	18	0	12	54	3
11:00 AM	0	23	12	8	0	0	21	3	0	3	52	33	0	11	67	1
11:15 AM	0	23	13	15	0	0	21	1	0	5	57	26	0	18	65	5
11:30 AM	0	21	18	10	0	1	32	6	0	3	66	27	0	18	69	4
11:45 AM	0	33	24	18	0	1	29	4	0	4	67	26	0	17	75	4
12:00 PM	0	31	22	20	0	0	39	9	0	8	81	30	0	26	74	4
12:15 PM	0	23	24	13	0	2	20	9	0	8	71	29	0	18	79	7
12:30 PM	0	25	31	21	0	2	37	10	0	4	72	22	0	17	80	5
12:45 PM	0	24	19	20	0	0	32	7	0	6	88	24	0	14	107	4
1:00 PM	0	29	22	19	0	1	27	4	0	5	71	27	0	19	69	0
1:15 PM	0	25	30	9	0	4	23	10	0	1	69	19	0	13	91	4
1:30 PM	0	28	21	18	0	5	12	9	0	7	79	24	0	18	81	6
1:45 PM	0	28	16	20	0	1	46	10	0	6	69	30	0	20	84	3
2:00 PM	0	22	30	16	0	2	40	5	0	5	73	41	0	18	86	1
2:15 PM	0	29	19	22	0	2	28	7	0	3	76	31	0	19	93	8
2:30 PM	0	38	28	18	0	2	46	7	0	2	62	33	0	14	98	2
2:45 PM	0	28	26	24	0	4	30	12	0	5	61	31	0	43	116	1
3:00 PM	0	39	23	19	0	0	52	9	0	8	66	27	0	38	114	3
3:15 PM	0	35	30	8	0	1	46	7	0	7	92	42	0	35	128	1
3:30 PM	0	29	31	12	0	1	66	6	0	5	89	57	0	34	121	5
3:45 PM	0	48	46	33	0	0	53	19	0	4	93	34	0	40	118	3
4:00 PM	0	57	56	33	0	4	49	5	0	1	75	28	0	37	113	3
4:15 PM	0	34	31	26	0	3	35	10	0	1	84	24	0	26	114	6
4:30 PM	0	59	36	25	0	3	51	9	0	4	103	36	0	30	100	6
4:45 PM	0	27	33	18	0	1	51	11	0	12	102	36	0	23	113	1
5:00 PM	0	34	34	25	0	0	54	6	0	2	90	49	0	39	153	5
5:15 PM	0	49	29	19	0	2	46	4	0	3	116	38	0	42	120	5
5:30 PM	0	42	39	26	0	2	49	7	0	4	122	26	0	43	114	3
5:45 PM	0	40	33	20	0	1	43	10	0	6	119	37	0	34	101	5
6:00 PM	0	30	23	23	0	1	56	7	0	2	107	32	0	21	103	3
6:15 PM	0	27	28	22	0	1	35	1	0	6	87	29	0	24	96	4
6:30 PM	0	25	23	16	0	1	30	1	0	3	90	30	0	22	81	5
6:45 PM	0	23	21	8	0	1	26	1	0	3	87	21	0	28	61	4

AM PEAK HOUR 7:45 AM to 8:45 AM	Lowell Avenue Northbound			Lowell Avenue Southbound			Washington Street Eastbound			Washington Street Westbound						
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	117	128	127	0	7	247	33	0	33	615	222	0	59	324	8
PHF	0.87			0.94			0.91			0.79						
HV %	0.0%	0.9%	3.1%	0.8%	0.0%	0.0%	2.0%	3.0%	0.0%	6.1%	2.4%	0.5%	0.0%	3.4%	4.0%	0.0%

MID PEAK HOUR 12:00 PM to 1:00 PM	Lowell Avenue Northbound			Lowell Avenue Southbound			Washington Street Eastbound			Washington Street Westbound						
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	103	96	74	0	4	128	35	0	26	312	105	0	75	340	20
PHF	0.89			0.85			0.93			0.87						
HV %	0.0%	3.9%	4.2%	2.7%	0.0%	0.0%	3.1%	5.7%	0.0%	0.0%	4.5%	0.0%	0.0%	0.0%	2.9%	5.0%

PM PEAK HOUR 5:00 PM to 6:00 PM	Lowell Avenue Northbound			Lowell Avenue Southbound			Washington Street Eastbound			Washington Street Westbound						
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	0	165	135	90	0	5	192	27	0	15	447	150	0	158	488	18
PHF	0.91			0.93			0.94			0.84						
HV %	0.0%	0.6%	2.2%	6.7%	0.0%	0.0%	1.6%	0.0%	0.0%	0.0%	0.9%	0.0%	0.0%	1.3%	2.3%	0.0%

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 12
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Lowell Avenue
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F



HEAVY VEHICLES

Start Time	Lowell Avenue Northbound				Lowell Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
6:00 AM	0	1	0	0	0	0	0	0	0	0	0	1	0	1	3	0
6:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0
6:45 AM	0	0	0	0	0	0	1	1	0	0	0	1	0	0	1	0
7:00 AM	0	0	0	0	0	0	1	0	0	1	3	1	0	1	1	0
7:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	4	0
7:30 AM	0	0	1	1	0	0	1	0	0	1	1	0	0	0	2	0
7:45 AM	0	0	1	0	0	0	1	0	0	0	0	1	0	0	2	0
8:00 AM	0	1	1	0	0	0	1	0	0	0	4	0	0	0	1	0
8:15 AM	0	0	0	1	0	0	3	1	0	0	6	0	0	0	6	0
8:30 AM	0	0	2	0	0	0	0	0	0	2	5	0	0	2	4	0
8:45 AM	0	0	0	0	0	0	1	0	0	1	1	3	0	0	4	0
9:00 AM	0	0	0	3	0	0	0	0	0	0	1	0	0	0	4	0
9:15 AM	0	1	1	0	0	0	0	0	0	0	1	0	0	2	5	0
9:30 AM	0	1	0	0	0	0	0	1	0	3	2	0	0	0	3	0
9:45 AM	0	0	1	1	0	0	3	0	0	0	5	2	0	0	0	0
10:00 AM	0	2	0	0	0	0	0	0	0	0	2	1	0	0	1	0
10:15 AM	0	0	0	2	0	0	1	0	0	1	1	0	0	0	0	0
10:30 AM	0	0	2	0	0	0	1	1	0	1	3	1	0	0	3	0
10:45 AM	0	0	0	0	0	0	1	0	0	0	3	1	0	2	2	0
11:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	1	4	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	2	0
11:30 AM	0	1	0	0	0	0	1	1	0	0	2	0	0	1	5	0
11:45 AM	0	0	1	1	0	0	3	0	0	0	1	0	0	0	3	0
12:00 PM	0	1	2	1	0	0	1	0	0	0	5	0	0	0	4	0
12:15 PM	0	2	1	0	0	0	1	0	0	0	4	0	0	0	2	0
12:30 PM	0	1	1	1	0	0	1	2	0	0	2	0	0	0	1	1
12:45 PM	0	0	0	0	0	0	1	0	0	0	3	0	0	0	3	0
1:00 PM	0	1	1	2	0	0	0	0	0	1	2	0	0	0	4	0
1:15 PM	0	0	1	0	0	0	2	0	0	0	2	0	0	1	3	0
1:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0
1:45 PM	0	0	1	0	0	0	0	0	0	0	6	1	0	0	1	0
2:00 PM	0	0	0	0	0	0	1	0	0	0	0	1	0	0	6	0
2:15 PM	0	0	1	0	0	0	1	0	0	0	3	1	0	0	2	0
2:30 PM	0	0	0	2	0	0	1	0	0	0	3	0	0	2	2	0
2:45 PM	0	0	0	3	0	0	1	0	0	0	2	0	0	2	1	0
3:00 PM	0	0	0	1	0	0	2	0	0	0	2	1	0	0	4	0
3:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0
3:30 PM	0	1	0	0	0	0	0	1	0	0	3	0	0	0	5	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	1	3	0
4:00 PM	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	0
4:15 PM	0	0	1	1	0	0	0	0	0	0	4	1	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2	0
4:45 PM	0	0	3	1	0	0	0	0	0	0	1	0	0	1	3	0
5:00 PM	0	0	1	3	0	0	1	0	0	0	2	0	0	1	4	0
5:15 PM	0	0	0	1	0	0	1	0	0	0	1	0	0	0	5	0
5:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0
5:45 PM	0	1	1	2	0	0	1	0	0	0	1	0	0	0	1	0
6:00 PM	0	1	0	0	0	0	0	0	0	0	2	0	0	1	2	0
6:15 PM	0	0	0	2	0	0	1	0	0	0	8	0	0	0	2	0
6:30 PM	0	0	0	1	0	0	0	0	0	0	0	0	0	3	0	0
6:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	1	3	0

AM PEAK HOUR 8:00 AM to 9:00 AM	Lowell Avenue Northbound				Lowell Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
PHF	0	1	3	1	0	0	5	1	0	3	16	3	0	2	15	0
	0.63				0.38				0.79				0.71			

MID PEAK HOUR 11:30 AM to 12:30 PM	Lowell Avenue Northbound				Lowell Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
PHF	0	4	4	2	0	0	6	1	0	0	12	0	0	1	14	0
	0.63				0.58				0.60				0.63			

PM PEAK HOUR 2:15 PM to 3:15 PM	Lowell Avenue Northbound				Lowell Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
PHF	0	0	1	6	0	0	5	0	0	0	10	2	0	4	9	0
	0.58				0.63				0.75				0.81			

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTM #: Location 12
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Lowell Avenue
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

PEDESTRIANS & BICYCLES (on Road)

Start Time	Lowell Avenue Northbound				Lowell Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
6:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
6:15 AM	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
6:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
6:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
7:15 AM	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	1	0	1	0	0	0	10	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	4	0	1	0	1
8:00 AM	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	1	0	0	0	7	0	0	0	1	0	0	0	3
8:30 AM	0	1	0	1	0	0	0	1	0	0	0	7	0	0	0	1
8:45 AM	0	1	0	0	0	0	0	1	0	0	0	13	0	0	0	2
9:00 AM	0	0	0	0	0	0	0	5	0	0	0	1	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
9:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	1
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
10:30 AM	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1
10:45 AM	0	0	0	0	0	1	0	2	0	0	0	4	0	0	0	0
11:00 AM	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	5
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	1	0	0	0	1	0	1	0	1	0	0	0	1
11:45 AM	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	1
12:00 PM	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	1
12:30 PM	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:15 PM	0	0	0	0	0	0	0	1	0	0	0	3	0	0	0	2
1:30 PM	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1:45 PM	0	0	0	1	0	0	0	1	0	0	0	4	0	0	0	0
2:00 PM	0	0	0	0	0	0	0	5	0	0	0	5	0	0	0	2
2:15 PM	0	0	1	0	0	0	0	3	0	0	0	1	0	0	0	1
2:30 PM	1	0	0	1	0	0	0	4	0	0	0	4	0	0	0	1
2:45 PM	0	0	0	1	0	0	0	3	0	0	0	3	0	0	0	1
3:00 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2
3:30 PM	0	0	0	2	0	0	0	3	0	0	0	2	0	0	0	0
3:45 PM	1	0	0	3	0	0	0	0	0	0	0	19	0	0	0	7
4:00 PM	1	0	0	2	0	0	0	5	0	0	0	16	0	0	0	3
4:15 PM	0	0	0	3	0	0	0	3	0	0	0	4	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0
4:45 PM	1	0	0	1	0	0	0	5	0	0	0	3	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	2
5:15 PM	0	1	0	0	0	0	0	1	0	0	0	2	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1
5:45 PM	0	1	0	1	0	0	0	1	0	0	0	1	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
6:30 PM	0	1	0	0	0	0	0	2	0	0	0	0	0	0	0	1
6:45 PM	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0

AM PEAK HOUR 7:45 AM to 8:45 AM	Lowell Avenue Northbound				Lowell Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	1	0	3	0	0	0	11	0	0	0	12	0	1	0	5

MID PEAK HOUR 12:00 PM to 1:00 PM	Lowell Avenue Northbound				Lowell Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	0	0	0	0	5	0	0	0	9	0	0	0	1

PM PEAK HOUR 5:00 PM to 6:00 PM	Lowell Avenue Northbound				Lowell Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	2	0	1	0	0	0	5	0	0	0	6	0	0	0	4

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTM #: Location 12
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Lowell Avenue
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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BICYCLES (on Sidewalk)

Start Time	Lowell Avenue Northbound				Lowell Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
6:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
7:00 AM	0	0	0	-	0	0	0	-	0	0	1	-	0	0	0	-
7:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
7:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
7:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	-	0	0	0	-	0	0	2	-	0	0	0	-
9:00 AM	0	0	0	-	0	1	0	-	0	0	1	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	1	0	-	0	0	1	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:45 AM	0	0	0	-	0	0	1	-	0	0	0	-	0	0	0	-
11:00 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
11:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
11:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
11:45 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
12:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
12:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
12:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
12:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
1:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
1:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
1:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
1:45 PM	0	0	0	-	0	1	0	-	0	0	1	-	0	0	0	-
2:00 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
2:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
2:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
2:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	0	1	-	0	1	0	-
3:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	3	0	-
5:15 PM	0	0	0	-	0	1	0	-	0	0	0	-	1	0	0	-
5:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
6:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
6:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:30 PM	0	0	1	-	0	0	0	-	0	0	0	-	0	0	1	-
6:45 PM	0	0	0	-	0	1	0	-	0	0	0	-	0	0	0	-

AM PEAK HOUR 7:45 AM to 8:45 AM	Lowell Avenue Northbound				Lowell Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

MID PEAK HOUR 12:00 PM to 1:00 PM	Lowell Avenue Northbound				Lowell Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR 5:00 PM to 6:00 PM	Lowell Avenue Northbound				Lowell Avenue Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	1	0	0	0	0	0	0	1	4	0	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 13
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Walnut Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F



PASSENGER CARS & HEAVY VEHICLES COMBINED

Start Time	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
6:00 AM	0	3	12	9	0	1	14	0	0	2	25	2	0	9	10	1
6:15 AM	1	3	22	10	0	1	28	0	0	0	34	5	0	7	26	0
6:30 AM	0	2	27	10	0	7	31	0	0	3	60	4	0	16	8	2
6:45 AM	0	7	41	12	0	1	39	0	0	0	60	7	0	15	32	0
7:00 AM	0	11	42	16	0	0	56	0	0	3	96	12	0	21	29	2
7:15 AM	1	8	49	32	0	4	74	1	0	3	149	14	0	19	43	3
7:30 AM	1	14	88	46	0	6	63	6	0	3	151	28	0	22	35	6
7:45 AM	0	17	75	47	0	10	65	3	0	7	163	29	0	44	63	8
8:00 AM	0	17	54	26	0	4	86	3	0	6	155	39	0	31	80	10
8:15 AM	2	20	72	34	0	9	89	3	0	9	133	33	0	39	96	15
8:30 AM	4	10	76	42	0	9	71	2	0	2	123	26	0	55	70	9
8:45 AM	0	29	59	50	0	5	68	8	0	4	108	34	0	40	69	19
9:00 AM	0	17	73	37	0	8	64	3	0	9	101	13	0	28	56	14
9:15 AM	0	10	47	22	0	3	58	3	0	4	74	16	0	28	74	8
9:30 AM	0	13	58	32	0	5	64	3	0	6	86	10	0	30	48	4
9:45 AM	0	20	45	17	0	5	71	2	0	7	73	28	0	27	41	13
10:00 AM	1	18	40	23	0	3	56	2	0	1	66	10	0	23	47	10
10:15 AM	0	21	49	24	0	6	57	3	0	4	55	17	0	20	43	9
10:30 AM	0	19	43	29	0	6	44	3	0	1	54	12	0	30	48	14
10:45 AM	1	18	56	30	0	6	61	3	0	2	44	16	0	27	52	15
11:00 AM	1	10	40	34	0	5	42	8	0	7	43	9	0	27	53	9
11:15 AM	0	18	67	33	0	8	63	3	0	6	61	5	0	29	70	8
11:30 AM	1	19	53	16	0	5	58	5	0	6	52	14	0	38	62	10
11:45 AM	0	16	74	42	0	8	74	5	0	6	79	8	0	42	68	9
12:00 PM	2	24	54	31	0	7	73	10	0	6	69	16	0	45	68	7
12:15 PM	0	17	66	38	0	10	56	7	0	4	70	14	0	43	83	15
12:30 PM	1	22	60	29	0	6	115	5	0	7	68	12	0	17	72	16
12:45 PM	0	19	48	42	0	8	70	11	0	5	78	20	0	42	83	15
1:00 PM	0	15	59	36	0	7	49	11	0	3	74	16	0	33	60	7
1:15 PM	2	19	67	32	0	5	42	7	0	4	65	16	0	38	87	14
1:30 PM	0	24	90	41	0	9	53	4	0	8	72	24	0	27	66	13
1:45 PM	2	14	62	32	0	8	70	12	0	5	64	10	0	43	70	10
2:00 PM	0	9	45	40	0	4	45	9	0	4	71	20	0	36	89	11
2:15 PM	1	22	59	42	0	8	59	10	0	7	92	15	0	33	80	6
2:30 PM	2	18	54	32	0	6	65	6	0	2	75	12	0	46	95	13
2:45 PM	3	17	65	37	0	10	62	6	0	4	60	12	0	30	125	10
3:00 PM	0	28	74	38	0	9	72	5	0	5	69	12	0	31	131	10
3:15 PM	1	20	63	36	0	13	58	5	0	13	82	13	0	43	137	13
3:30 PM	3	19	72	27	0	11	87	4	0	4	76	16	0	36	126	12
3:45 PM	1	26	61	31	0	4	61	5	0	3	80	24	0	38	127	12
4:00 PM	0	25	73	31	0	3	83	2	0	4	107	17	0	41	117	11
4:15 PM	0	29	64	26	0	12	58	4	0	4	86	19	0	42	109	14
4:30 PM	1	18	83	35	0	17	78	9	0	5	98	16	0	39	113	11
4:45 PM	1	26	50	30	0	8	80	5	0	5	83	18	0	47	100	13
5:00 PM	1	34	80	37	0	7	67	8	0	2	106	20	0	43	147	12
5:15 PM	1	13	75	35	0	12	74	9	0	5	101	21	0	49	120	9
5:30 PM	2	31	82	26	0	10	70	7	0	7	127	22	0	36	124	17
5:45 PM	3	29	69	31	0	16	83	7	0	7	114	25	0	48	107	16
6:00 PM	0	27	58	31	0	9	65	2	0	10	119	26	0	44	108	15
6:15 PM	1	24	65	44	0	6	66	8	0	4	80	16	0	40	90	16
6:30 PM	1	14	56	37	0	12	57	8	0	6	74	21	0	29	87	14
6:45 PM	1	18	59	27	0	11	56	5	0	7	77	29	0	47	63	13

AM PEAK HOUR 7:45 AM to 8:45 AM	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	6	64	277	149	0	32	311	11	0	24	574	127	0	169	309	42
PHF	0.89				0.88				0.91				0.87			
HV %	0.0%	1.6%	4.0%	5.4%	0.0%	6.3%	1.9%	27.3%	0.0%	8.3%	2.1%	2.4%	0.0%	2.4%	3.2%	11.9%

MID PEAK HOUR 12:00 PM to 1:00 PM	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	3	82	228	140	0	31	314	33	0	22	285	62	0	147	306	53
PHF	0.94				0.75				0.90				0.90			
HV %	0.0%	1.2%	2.6%	0.7%	0.0%	3.2%	2.5%	3.0%	0.0%	9.1%	3.9%	3.2%	0.0%	4.8%	3.3%	3.8%

PM PEAK HOUR 5:00 PM to 6:00 PM	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
	7	107	306	129	0	45	294	31	0	21	448	88	0	176	498	54
PHF	0.90				0.87				0.89				0.90			
HV %	0.0%	0.9%	1.0%	0.0%	0.0%	2.2%	2.0%	0.0%	0.0%	0.0%	1.8%	1.1%	0.0%	0.0%	1.4%	1.9%

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTM #: Location 13
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Walnut Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F



HEAVY VEHICLES

Start Time	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
6:00 AM	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	0
6:15 AM	0	0	2	0	0	0	2	0	0	0	0	0	0	1	0	0
6:30 AM	0	0	1	0	0	1	3	0	0	0	2	0	0	4	0	1
6:45 AM	0	0	1	0	0	0	1	0	0	0	1	0	0	2	2	0
7:00 AM	0	0	2	0	0	0	3	0	0	0	3	2	0	3	3	1
7:15 AM	0	0	4	0	0	1	4	0	0	0	1	0	0	4	3	0
7:30 AM	0	0	0	3	0	1	3	2	0	0	2	1	0	0	1	0
7:45 AM	0	0	4	0	0	0	0	0	0	0	0	0	0	2	2	2
8:00 AM	0	0	1	2	0	0	2	2	0	2	2	1	0	1	1	1
8:15 AM	0	0	3	3	0	1	1	1	0	0	7	0	0	1	3	1
8:30 AM	0	1	3	3	0	1	3	0	0	0	3	2	0	0	4	1
8:45 AM	0	0	4	4	0	0	1	1	0	0	0	1	0	2	3	1
9:00 AM	0	0	2	2	0	0	1	0	0	0	4	0	0	0	4	0
9:15 AM	0	0	1	0	0	0	4	0	0	0	0	1	0	0	9	1
9:30 AM	0	1	2	1	0	1	7	0	0	0	4	0	0	1	2	1
9:45 AM	0	1	1	0	0	1	3	0	0	2	2	3	0	0	0	3
10:00 AM	0	0	3	0	0	0	6	0	0	0	0	1	0	1	1	0
10:15 AM	0	1	1	0	0	0	5	0	0	1	3	2	0	0	1	1
10:30 AM	0	0	2	1	0	0	0	0	0	0	2	0	0	0	2	2
10:45 AM	0	0	3	1	0	0	2	0	0	0	2	1	0	3	4	1
11:00 AM	0	0	2	3	0	1	2	1	0	0	1	0	0	1	1	0
11:15 AM	0	0	3	2	0	0	2	0	0	0	3	1	0	1	4	0
11:30 AM	0	0	2	0	0	0	1	1	0	0	2	0	0	2	5	0
11:45 AM	0	1	1	2	0	1	4	0	0	0	3	0	0	5	4	0
12:00 PM	0	0	1	0	0	0	2	0	0	0	3	0	0	2	4	0
12:15 PM	0	0	2	0	0	0	0	1	0	0	2	1	0	1	2	1
12:30 PM	0	0	3	0	0	0	2	0	0	1	3	0	0	0	3	0
12:45 PM	0	1	0	1	0	1	4	0	0	1	3	1	0	4	1	1
1:00 PM	0	0	3	1	0	0	1	1	0	0	4	1	0	3	3	0
1:15 PM	0	0	1	0	0	1	2	0	0	1	0	0	0	0	2	0
1:30 PM	0	1	0	0	0	0	2	1	0	0	0	1	0	2	2	0
1:45 PM	0	0	2	3	0	0	1	0	0	0	2	0	0	0	1	1
2:00 PM	0	1	1	1	0	0	0	1	0	0	3	0	0	2	4	1
2:15 PM	0	0	0	2	0	2	2	0	0	0	3	0	0	0	1	0
2:30 PM	0	1	3	2	0	0	1	0	0	0	2	0	0	1	2	0
2:45 PM	0	0	1	1	0	0	1	0	0	0	4	0	0	2	2	0
3:00 PM	0	2	1	1	0	0	3	0	0	1	1	0	0	0	2	1
3:15 PM	0	0	2	2	0	0	0	0	0	0	2	0	0	1	1	1
3:30 PM	0	1	3	1	0	2	1	0	0	1	1	1	0	0	2	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	2	1	0	1	3	2
4:00 PM	0	0	0	2	0	0	2	0	0	0	2	0	0	1	1	0
4:15 PM	0	1	0	2	0	0	0	0	0	0	5	0	0	0	0	0
4:30 PM	0	0	1	2	0	1	1	0	0	1	1	1	0	2	1	1
4:45 PM	0	1	3	1	0	0	2	0	0	0	1	0	0	0	4	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	4	0	0	0	3	0
5:15 PM	0	0	1	0	0	0	3	0	0	0	2	0	0	0	2	0
5:30 PM	0	1	2	0	0	1	1	0	0	0	1	1	0	0	2	0
5:45 PM	0	0	0	0	0	0	2	0	0	0	1	0	0	0	0	1
6:00 PM	0	0	2	0	0	0	1	0	0	0	2	0	0	0	2	0
6:15 PM	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0
6:30 PM	0	0	1	1	0	1	2	0	0	1	1	0	0	0	5	1
6:45 PM	0	1	0	4	0	0	0	0	0	0	3	0	0	0	2	1

AM PEAK HOUR 8:00 AM to 9:00 AM	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
PHF	0	1	11	12	0	2	7	4	0	2	12	4	0	4	11	4
	0.75				0.81				0.64				0.79			

MID PEAK HOUR 11:00 AM to 12:00 PM	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
PHF	0	1	8	7	0	2	9	2	0	0	9	1	0	9	14	0
	0.80				0.65				0.63				0.64			

PM PEAK HOUR 2:00 PM to 3:00 PM	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right
PHF	0	2	5	6	0	2	4	1	0	0	12	0	0	5	9	1
	0.54				0.44				0.75				0.54			

Client: Emma Entead, EIT - Traffic
 Project #: 1122_10_HSH
 BTM #: Location 13
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Walnut Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

PEDESTRIANS & BICYCLES (on Road)

Start Time	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
6:00 AM	0	1	0	2	0	0	0	1	0	0	0	0	0	0	0	0
6:15 AM	0	0	0	1	0	0	0	0	0	0	0	4	0	0	0	4
6:30 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1
6:45 AM	0	0	0	0	0	0	0	4	0	0	0	2	0	0	0	0
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0
7:15 AM	0	3	0	3	0	0	0	5	0	0	0	7	0	0	0	16
7:30 AM	0	0	0	4	0	0	0	2	0	0	0	5	0	0	0	19
7:45 AM	0	1	0	2	0	1	0	1	0	0	0	3	0	0	0	6
8:00 AM	1	0	0	0	0	0	0	2	0	0	0	1	0	0	0	4
8:15 AM	0	0	0	3	0	0	0	8	0	0	0	13	0	0	0	11
8:30 AM	0	1	0	3	0	2	0	10	0	0	0	17	0	0	0	7
8:45 AM	0	0	0	1	0	1	0	18	0	0	0	16	0	0	0	6
9:00 AM	0	0	0	2	0	0	0	4	0	0	0	10	0	0	0	6
9:15 AM	0	0	0	1	0	0	0	3	0	0	0	3	0	0	0	1
9:30 AM	0	0	0	0	0	0	0	3	0	0	0	3	0	0	0	0
9:45 AM	0	0	0	0	0	1	0	3	0	0	0	5	0	0	0	3
10:00 AM	0	0	0	0	0	1	0	3	0	0	0	10	0	0	0	5
10:15 AM	0	0	1	0	0	0	0	5	0	0	0	8	0	0	0	3
10:30 AM	0	0	0	1	0	0	0	7	0	0	0	5	0	0	0	6
10:45 AM	0	0	0	0	0	0	0	3	0	0	0	5	0	0	0	3
11:00 AM	0	0	0	1	0	1	0	3	0	0	0	11	0	0	0	9
11:15 AM	0	0	0	0	0	0	0	5	0	0	0	5	1	0	0	4
11:30 AM	0	1	1	0	0	0	0	5	0	1	0	11	0	0	0	2
11:45 AM	0	0	0	2	0	0	0	3	0	0	0	8	0	0	0	7
12:00 PM	0	0	0	1	0	0	0	7	0	0	0	10	0	0	0	4
12:15 PM	0	0	0	2	0	0	0	5	0	0	0	10	0	0	0	5
12:30 PM	1	0	0	0	0	0	0	9	0	0	0	15	0	0	0	14
12:45 PM	0	2	0	0	0	0	0	14	0	0	0	20	0	0	0	4
1:00 PM	0	1	0	3	0	0	0	4	0	0	0	8	0	0	0	6
1:15 PM	0	0	0	1	0	0	0	8	0	0	0	12	0	0	0	3
1:30 PM	0	0	0	0	0	0	0	5	0	0	0	8	0	0	0	4
1:45 PM	0	0	0	1	0	0	0	10	0	0	0	22	0	0	0	34
2:00 PM	0	0	0	3	0	0	0	15	0	0	0	32	0	0	10	16
2:15 PM	0	0	0	0	0	0	0	5	1	0	0	8	0	0	0	5
2:30 PM	0	1	0	3	0	0	0	10	0	0	0	22	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	7	0	0	0	12	0	0	0	9
3:00 PM	0	0	0	2	0	0	0	5	0	0	0	6	0	0	0	7
3:15 PM	0	0	0	1	0	0	0	6	0	0	0	10	0	0	0	3
3:30 PM	0	1	0	3	0	0	0	4	0	0	0	12	0	0	0	5
3:45 PM	0	0	0	5	0	0	0	6	0	0	0	40	0	0	0	22
4:00 PM	0	1	0	0	0	0	0	10	0	0	0	28	0	0	0	12
4:15 PM	0	0	0	5	0	0	0	3	0	0	0	19	0	0	0	4
4:30 PM	0	0	0	3	0	1	0	3	0	0	0	11	0	0	0	6
4:45 PM	0	0	0	12	0	0	0	5	0	0	0	11	0	0	0	9
5:00 PM	0	0	0	4	0	0	0	10	0	0	0	13	0	0	0	4
5:15 PM	0	0	0	1	0	0	0	4	0	0	0	9	0	0	0	5
5:30 PM	0	0	0	0	0	0	0	4	0	0	0	10	0	0	0	5
5:45 PM	0	0	0	1	0	0	1	6	0	0	0	5	0	0	0	14
6:00 PM	0	2	0	10	0	0	0	9	0	0	0	4	0	0	0	4
6:15 PM	0	0	0	0	0	0	0	8	0	0	0	2	0	0	0	3
6:30 PM	0	0	0	2	0	0	0	12	0	0	0	7	0	0	0	6
6:45 PM	0	0	0	1	0	0	0	4	0	0	0	4	0	0	0	10

AM PEAK HOUR 7:45 AM to 8:45 AM	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	1	2	0	8	0	3	0	21	0	0	0	34	0	0	0	28

MID PEAK HOUR 12:00 PM to 1:00 PM	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	1	2	0	3	0	0	0	35	0	0	0	55	0	0	0	27

PM PEAK HOUR 5:00 PM to 6:00 PM	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED	Left	Thru	Right	PED
	0	0	0	6	0	0	1	24	0	0	0	37	0	0	0	28

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.

Client: Emma Enteado, EIT - Traffic
 Project #: 1122_10_HSH
 BTD #: Location 13
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Walnut Street
 Count Date: 2/1/2023
 Day of Week: Wednesday
 Weather: Clouds & Sun, 30°F

BOSTON TRAFFIC DATA

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BICYCLES (on Sidewalk)

Start Time	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
6:00 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
6:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
7:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
7:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
7:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	1	-
7:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	1	-
8:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	1	0	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	1	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
11:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	1	0	0	-
11:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
11:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
11:45 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
12:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
12:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
12:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
12:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
1:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
1:15 PM	0	0	0	-	0	0	0	-	0	0	1	-	0	0	0	-
1:30 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
1:45 PM	0	0	0	-	0	0	0	-	0	0	1	-	0	0	0	-
2:00 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
2:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
2:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
2:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	0	1	-	0	0	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
3:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	1	-
4:15 PM	3	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	1	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
5:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	1	-
6:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
6:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-

AM PEAK HOUR 7:45 AM to 8:45 AM	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

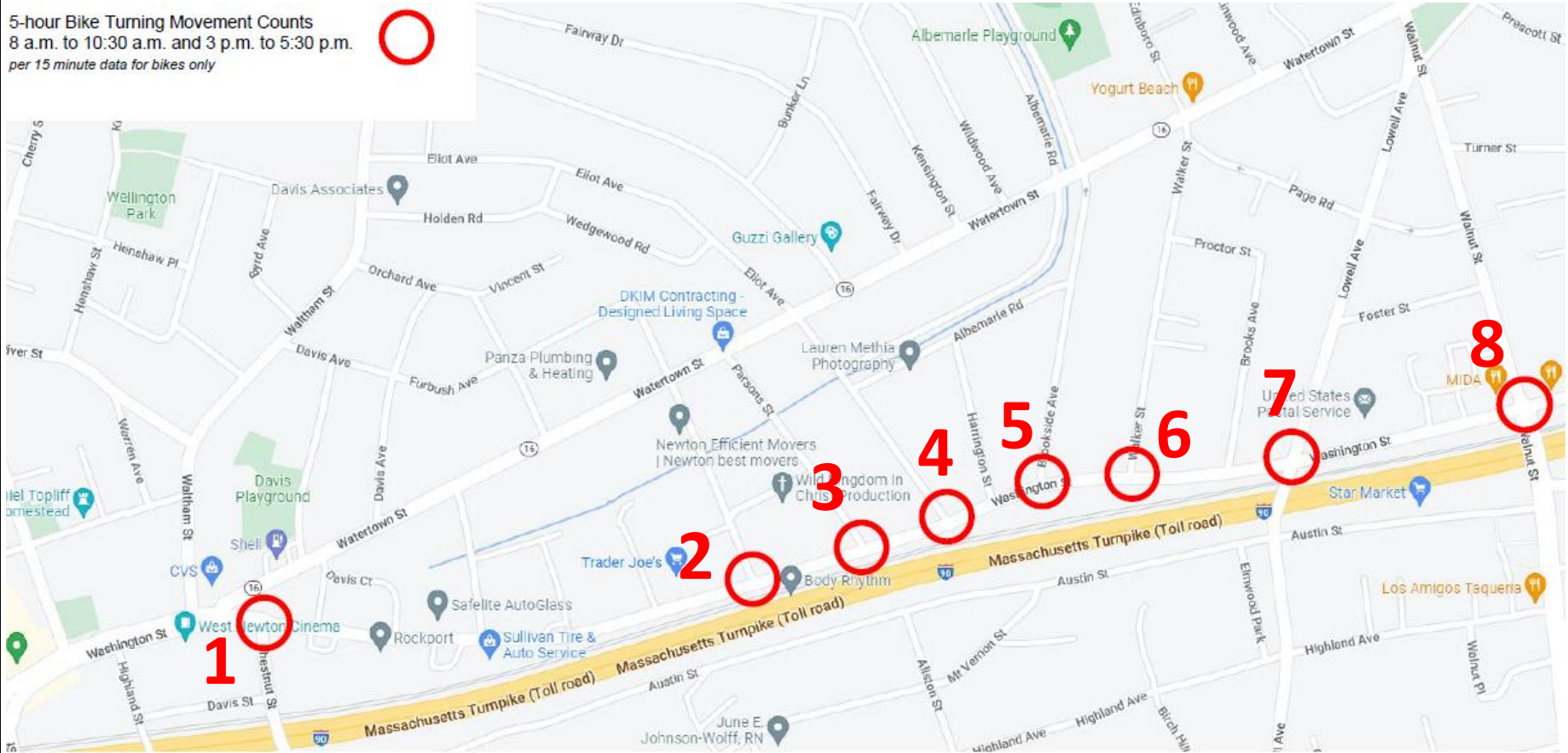
MID PEAK HOUR 12:00 PM to 1:00 PM	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

PM PEAK HOUR 5:00 PM to 6:00 PM	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0

NOTE: Peak hour summaries here correspond to peak hours identified for passenger car and heavy vehicles combined.



5-hour Bike Turning Movement Counts
8 a.m. to 10:30 a.m. and 3 p.m. to 5:30 p.m.
per 15 minute data for bikes only



Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 1
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Chestnut Street
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

BOSTON TRAFFIC DATA

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BICYCLES (on Roadway)

Start Time	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
8:45 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
3:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	2	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
4:00 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
4:15 PM	1	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	1	-	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	1	-	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
5:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 1
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Chestnut Street
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

BOSTON TRAFFIC DATA

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BICYCLES (on Sidewalk)

Start Time	Chestnut Street Northbound				Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	3	3	-	0	0	0	-
8:45 AM	0	0	0	-	0	0	0	-	0	1	1	-	0	0	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	1	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:00 PM	1	0	0	-	0	0	0	-	0	0	0	-	1	0	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	2	1	-	0	0	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
3:45 PM	0	0	1	-	0	0	0	-	0	0	0	-	0	4	0	-
4:00 PM	1	0	0	-	0	0	0	-	0	0	0	-	0	5	0	-
4:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	2	0	-
4:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	1	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 2
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Cross Street
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

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BICYCLES (on Roadway)

Start Time	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	-	1	0	0	-	0	2	0	-	0	0	0	-
8:45 AM	0	0	0	-	0	0	0	-	0	3	0	-	0	1	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
3:00 PM	0	0	0	-	1	0	0	-	0	0	0	-	0	1	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
3:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
4:00 PM	0	0	0	-	0	0	0	-	0	2	0	-	0	0	0	-
4:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
5:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 2
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Cross Street
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

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BICYCLES (on Sidewalk)

Start Time	Northbound				Cross Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	2	0	-	0	0	0	-
8:45 AM	0	0	0	-	1	0	0	-	0	1	0	-	0	0	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:45 AM	0	0	0	-	0	0	0	-	1	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	2	0	-	0	0	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
3:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	8	1	-
4:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	3	0	-
4:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	2	0	-
4:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 3
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Parsons Street
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

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BICYCLES (on Roadway)

Start Time	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	-	1	0	0	-	0	2	0	-	0	0	0	-
8:45 AM	0	0	0	-	0	0	0	-	0	4	0	-	0	1	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
3:00 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
3:45 PM	0	0	0	-	0	0	1	-	0	0	0	-	0	2	0	-
4:00 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
4:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
4:30 PM	0	0	0	-	2	0	0	-	0	1	0	-	0	0	0	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
5:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 3
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Parsons Street
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

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BICYCLES (on Sidewalk)

Start Time	Northbound				Parsons Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	3	0	-	0	0	0	-
8:45 AM	0	0	0	-	0	0	0	-	0	2	0	-	0	0	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	1	-
3:15 PM	0	0	0	-	0	0	0	-	0	2	0	-	0	1	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
3:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	9	1	-
4:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	2	0	-
4:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
4:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 4
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Eddy Street
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

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BICYCLES (on Roadway)

Start Time	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
8:15 AM	0	0	0	-	1	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	3	0	-	0	0	0	-
8:45 AM	0	0	0	-	1	0	0	-	0	4	0	-	0	1	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	1	-
3:00 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	2	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	1	-
3:45 PM	0	0	0	-	0	0	0	-	1	0	0	-	0	9	2	-
4:00 PM	0	0	0	-	1	0	0	-	0	0	0	-	0	2	2	-
4:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	2	-
4:30 PM	0	0	0	-	0	0	0	-	1	0	0	-	0	0	1	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	1	-
5:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	3	-
5:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 4
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Eddy Street
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

BOSTON TRAFFIC DATA

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BICYCLES (on Sidewalk)

Start Time	Northbound				Eddy Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	1	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	-	5	0	0	-	0	3	0	-	0	0	0	-
8:45 AM	0	0	0	-	3	0	0	-	0	2	0	-	0	0	0	-
9:00 AM	0	0	0	-	2	0	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	1	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	2	0	-	0	1	0	-
3:30 PM	0	0	0	-	0	0	1	-	0	1	0	-	0	1	1	-
3:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	3	1	-
4:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
4:30 PM	0	0	0	-	0	0	0	-	0	2	0	-	0	0	1	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-

Client: Emma Enteadó
 Project #: 1380_1_HSH
 BTD #: Location 5
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Brookside Ave
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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BICYCLES (on Roadway)

Start Time	Northbound				Brookside Ave Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	0	0	0	-	0	2	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	2	0	-	0	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	5	0	-	0	0	0	-
8:45 AM	0	0	0	-	0	0	0	-	0	6	0	-	0	1	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
3:00 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
3:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	12	0	-
4:00 PM	0	0	0	-	0	0	0	-	0	2	0	-	0	4	0	-
4:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	2	0	-
4:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	2	0	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
5:00 PM	0	0	0	-	2	0	0	-	0	0	0	-	0	4	0	-
5:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 5
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Brookside Ave
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

BICYCLES (on Sidewalk)

Start Time	Northbound				Brookside Ave Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	1	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	4	0	-	0	0	0	-
8:45 AM	0	0	0	-	1	0	0	-	0	11	0	-	0	0	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	2	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
3:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	2	0	-	0	1	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	2	0	-
3:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	5	0	-
4:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	2	1	-
4:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
4:30 PM	0	0	0	-	0	0	0	-	0	2	0	-	0	2	0	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 6
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Walker Street
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

BICYCLES (on Roadway)

Start Time	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	3	0	-	0	0	0	-
8:45 AM	0	0	0	-	1	0	0	-	0	5	0	-	0	1	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	2	0	-
3:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-
3:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	11	0	-
4:00 PM	0	0	0	-	0	0	0	-	0	2	0	-	0	2	0	-
4:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
4:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
5:00 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	4	0	-
5:15 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	1	0	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 6
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Walker Street
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

BOSTON TRAFFIC DATA

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BICYCLES (on Sidewalk)

Start Time	Northbound				Walker Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	0	0	0	-	0	2	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	6	0	-	0	0	0	-
8:45 AM	0	0	0	-	1	0	0	-	0	12	0	-	0	0	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	2	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:15 PM	0	0	0	-	0	0	0	-	0	2	0	-	0	1	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	2	0	-
3:45 PM	0	0	0	-	1	0	0	-	0	0	0	-	0	6	0	-
4:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	3	1	-
4:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	2	0	-
4:30 PM	0	0	0	-	1	0	0	-	0	2	0	-	0	3	1	-
4:45 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:00 PM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	1	-
5:15 PM	0	0	0	-	1	0	0	-	0	0	0	-	0	0	1	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 7
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Lowell Ave
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

BICYCLES (on Roadway)

Start Time	Lowell Ave Northbound				Lowell Ave Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	1	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	0	0	-	0	2	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	0	0	-	0	3	0	-	0	0	1	-	0	0	0	-
8:45 AM	0	0	0	-	0	1	1	-	0	1	0	-	0	0	0	-
9:00 AM	0	0	0	-	0	1	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	0	-	0	1	0	-	0	0	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	1	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:00 PM	0	0	0	-	1	0	0	-	0	0	0	-	0	0	0	-
3:15 PM	1	0	0	-	0	1	0	-	0	1	0	-	0	1	0	-
3:30 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
3:45 PM	3	2	1	-	0	0	1	-	0	0	0	-	0	0	1	-
4:00 PM	0	1	0	-	0	1	0	-	0	1	0	-	0	3	0	-
4:15 PM	1	1	0	-	0	1	0	-	0	0	0	-	0	0	0	-
4:30 PM	0	1	0	-	0	1	0	-	0	0	0	-	0	1	0	-
4:45 PM	0	1	0	-	0	0	0	-	0	0	0	-	0	1	0	-
5:00 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-
5:15 PM	0	0	0	-	0	1	1	-	0	0	0	-	0	1	0	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 7
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Lowell Ave
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
 Office: 978-746-1259
 DataRequest@BostonTrafficData.com
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BICYCLES (on Sidewalk)

Start Time	Lowell Ave Northbound				Lowell Ave Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	0	0	0	-	0	0	3	-	0	0	0	-
8:15 AM	0	0	0	-	0	0	0	-	0	0	1	-	0	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	0	3	-	0	0	0	-
8:45 AM	0	0	0	-	0	4	0	-	0	0	13	-	0	0	0	-
9:00 AM	0	0	0	-	0	1	0	-	0	0	2	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	1	-	0	0	0	-
9:30 AM	0	0	0	-	0	0	1	-	0	0	0	-	0	0	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:15 AM	1	1	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:00 PM	0	2	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:15 PM	0	0	0	-	0	1	2	-	2	0	0	-	0	0	0	-
3:30 PM	1	0	0	-	0	0	0	-	1	0	0	-	0	0	0	-
3:45 PM	11	0	0	-	0	0	3	-	0	0	1	-	0	1	0	-
4:00 PM	2	0	0	-	0	0	0	-	0	0	2	-	0	0	0	-
4:15 PM	0	0	0	-	0	0	1	-	0	0	0	-	0	0	0	-
4:30 PM	2	0	0	-	0	0	0	-	3	0	0	-	0	0	0	-
4:45 PM	0	0	0	-	0	1	0	-	0	0	0	-	0	0	0	-
5:00 PM	3	1	0	-	0	0	1	-	0	0	0	-	0	0	0	-
5:15 PM	0	0	0	-	0	0	0	-	0	0	0	-	0	1	0	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 8
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Walnut Street
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

BOSTON TRAFFIC DATA

PO BOX 1723, Framingham, MA 01701
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 DataRequest@BostonTrafficData.com
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BICYCLES (on Roadway)

Start Time	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
8:15 AM	0	2	0	-	0	5	0	-	0	0	0	-	0	0	0	-
8:30 AM	0	2	0	-	0	1	0	-	0	0	0	-	0	0	0	-
8:45 AM	0	0	0	-	0	10	0	-	0	1	0	-	0	0	0	-
9:00 AM	0	1	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:30 AM	0	1	0	-	0	1	0	-	0	1	0	-	0	0	0	-
9:45 AM	0	1	0	-	0	1	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	1	0	-	0	0	0	-	0	0	0	-
10:15 AM	0	1	0	-	0	0	0	-	0	0	0	-	0	0	0	-
3:00 PM	0	1	1	-	0	1	0	-	0	1	0	-	0	0	0	-
3:15 PM	1	2	0	-	0	0	0	-	0	1	0	-	0	1	0	-
3:30 PM	0	1	0	-	0	0	0	-	0	1	0	-	0	0	0	-
3:45 PM	4	12	1	-	0	0	0	-	0	0	0	-	0	0	0	-
4:00 PM	3	2	0	-	0	0	0	-	0	0	0	-	0	0	0	-
4:15 PM	0	1	0	-	0	0	0	-	0	1	0	-	0	0	0	-
4:30 PM	1	2	0	-	0	3	0	-	0	0	0	-	0	0	0	-
4:45 PM	1	0	0	-	0	3	0	-	1	0	0	-	0	0	0	-
5:00 PM	0	3	0	-	0	1	0	-	0	1	0	-	0	1	0	-
5:15 PM	0	2	0	-	0	5	0	-	0	0	0	-	0	1	0	-

Client: Emma Enteado
 Project #: 1380_1_HSH
 BTD #: Location 8
 Location: Newton, MA
 Street 1: Washington Street
 Street 2: Walnut Street
 Count Date: 10/26/23
 Day of Week: Thursday
 Weather: Clouds & Sun, 70°F

BOSTON TRAFFIC DATA

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 DataRequest@BostonTrafficData.com
 www.BostonTrafficData.com

BICYCLES (on Sidewalk)

Start Time	Walnut Street Northbound				Walnut Street Southbound				Washington Street Eastbound				Washington Street Westbound			
	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-	Left	Thru	Right	-
8:00 AM	0	1	0	-	2	0	0	-	0	0	0	-	0	0	1	-
8:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	1	0	0	-
8:30 AM	0	0	0	-	0	0	0	-	0	0	1	-	1	0	0	-
8:45 AM	0	0	0	-	0	9	0	-	0	0	0	-	1	0	0	-
9:00 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:15 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	1	-
9:30 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
9:45 AM	0	0	0	-	0	0	0	-	0	0	0	-	0	0	0	-
10:00 AM	0	0	0	-	0	4	0	-	0	1	0	-	0	0	0	-
10:15 AM	0	0	0	-	0	1	0	-	0	0	0	-	0	0	0	-
3:00 PM	0	0	0	-	0	1	0	-	0	0	0	-	0	0	0	-
3:15 PM	1	1	1	-	0	0	0	-	0	2	0	-	0	1	0	-
3:30 PM	1	0	0	-	0	1	0	-	0	1	0	-	0	2	0	-
3:45 PM	1	5	2	-	0	1	1	-	0	0	1	-	0	0	1	-
4:00 PM	0	1	0	-	0	0	1	-	0	0	0	-	1	0	0	-
4:15 PM	0	0	0	-	0	0	0	-	0	0	1	-	0	0	0	-
4:30 PM	0	0	0	-	0	0	0	-	0	2	1	-	0	0	2	-
4:45 PM	1	1	0	-	0	0	0	-	0	0	1	-	0	0	0	-
5:00 PM	0	1	0	-	0	0	0	-	0	0	0	-	0	0	0	-
5:15 PM	1	1	0	-	0	0	0	-	0	0	0	-	1	0	0	-



HOWARD STEIN HUDSON

Engineers + Planners

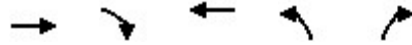
Appendix B

Existing Synchro and Simtraffic Analysis

Queues

1: Chestnut St & Washington St

04/02/2024



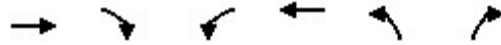
Lane Group	EBT	EBR	WBT	NBL	NBR
Lane Group Flow (vph)	594	35	491	65	292
v/c Ratio	0.57	0.03	0.35	0.53	0.61
Control Delay	19.6	5.4	7.8	71.1	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.6	5.4	7.8	71.1	9.0
Queue Length 50th (ft)	192	2	36	51	0
Queue Length 95th (ft)	484	19	119	100	55
Internal Link Dist (ft)	85		428	227	
Turn Bay Length (ft)		50			
Base Capacity (vph)	1050	1091	1397	137	515
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.57	0.03	0.35	0.47	0.57

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: Chestnut St & Washington St

04/02/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↖↑	↗	↗
Traffic Volume (vph)	511	30	188	269	60	272
Future Volume (vph)	511	30	188	269	60	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	1.00		0.95	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1660	1411		3139	1593	1439
Flt Permitted	1.00	1.00		0.56	0.95	1.00
Satd. Flow (perm)	1660	1411		1784	1593	1439
Peak-hour factor, PHF	0.86	0.86	0.93	0.93	0.93	0.93
Adj. Flow (vph)	594	35	202	289	65	292
RTOR Reduction (vph)	0	4	0	0	0	254
Lane Group Flow (vph)	594	31	0	491	65	38
Heavy Vehicles (%)	3%	3%	2%	1%	2%	1%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pt+ov
Protected Phases	6	3	5	2	3	3 5
Permitted Phases		6	2			
Actuated Green, G (s)	76.7	86.3		90.0	9.6	16.4
Effective Green, g (s)	76.7	86.3		90.0	9.6	16.4
Actuated g/C Ratio	0.61	0.69		0.72	0.08	0.13
Clearance Time (s)	6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1018	1047		1358	122	188
v/s Ratio Prot	c0.36	0.00		c0.02	c0.04	0.03
v/s Ratio Perm		0.02		0.24		
v/c Ratio	0.58	0.03		0.36	0.53	0.20
Uniform Delay, d1	14.5	6.1		6.6	55.5	48.5
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.4	0.0		0.2	4.4	0.5
Delay (s)	17.0	6.1		6.8	60.0	49.0
Level of Service	B	A		A	E	D
Approach Delay (s)	16.4			6.8	51.0	
Approach LOS	B			A	D	

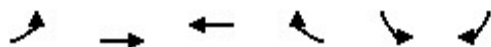
Intersection Summary

HCM 2000 Control Delay	21.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.52		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

4: Washington St & Davis Ct

04/02/2024

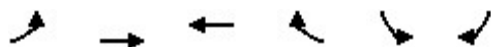


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↔	
Traffic Volume (veh/h)	1	782	457	2	4	0
Future Volume (Veh/h)	1	782	457	2	4	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.93	0.93	0.50	0.50
Hourly flow rate (vph)	1	869	491	2	8	0
Pedestrians					11	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		508				
pX, platoon unblocked						
vC, conflicting volume	504				940	258
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	504				940	258
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1060				263	740
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	291	579	327	166	8	
Volume Left	1	0	0	0	8	
Volume Right	0	0	0	2	0	
cSH	1060	1700	1700	1700	263	
Volume to Capacity	0.00	0.34	0.19	0.10	0.03	
Queue Length 95th (ft)	0	0	0	0	2	
Control Delay (s)	0.0	0.0	0.0	0.0	19.1	
Lane LOS	A				C	
Approach Delay (s)	0.0		0.0		19.1	
Approach LOS					C	
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			34.8%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

6: Washington St & Dunstan St

04/02/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↕↕	
Traffic Volume (veh/h)	26	760	418	7	6	41
Future Volume (Veh/h)	26	760	418	7	6	41
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.91	0.91	0.73	0.73
Hourly flow rate (vph)	29	844	459	8	8	56
Pedestrians					9	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		869				
pX, platoon unblocked						
vC, conflicting volume	476				952	242
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	476				952	242
tC, single (s)	4.2				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				97	93
cM capacity (veh/h)	1059				252	758
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	310	563	306	161	64	
Volume Left	29	0	0	0	8	
Volume Right	0	0	0	8	56	
cSH	1059	1700	1700	1700	606	
Volume to Capacity	0.03	0.33	0.18	0.09	0.11	
Queue Length 95th (ft)	2	0	0	0	9	
Control Delay (s)	1.0	0.0	0.0	0.0	11.6	
Lane LOS	A				B	
Approach Delay (s)	0.4		0.0		11.6	
Approach LOS					B	
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			47.3%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

8: Washington St & Armory St

04/02/2024

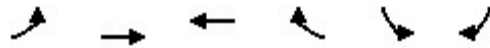


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↘↘	
Traffic Volume (veh/h)	28	738	413	42	12	12
Future Volume (Veh/h)	28	738	413	42	12	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.94	0.94	0.60	0.60
Hourly flow rate (vph)	30	802	439	45	20	20
Pedestrians					8	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	492				930	250
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	492				930	250
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				92	97
cM capacity (veh/h)	1074				260	750
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	297	535	293	191	40	
Volume Left	30	0	0	0	20	
Volume Right	0	0	0	45	20	
cSH	1074	1700	1700	1700	386	
Volume to Capacity	0.03	0.31	0.17	0.11	0.10	
Queue Length 95th (ft)	2	0	0	0	9	
Control Delay (s)	1.1	0.0	0.0	0.0	15.4	
Lane LOS	A				C	
Approach Delay (s)	0.4		0.0		15.4	
Approach LOS					C	
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			51.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

10: Washington St & Trader Joe's

04/02/2024

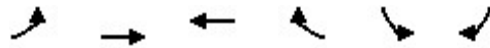


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	
Traffic Volume (veh/h)	0	750	445	0	8	10
Future Volume (Veh/h)	0	750	445	0	8	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.93	0.93	0.91	0.91	0.50	0.50
Hourly flow rate (vph)	0	806	489	0	16	20
Pedestrians					8	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	497				900	252
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	497				900	252
tC, single (s)	4.1				7.1	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				94	97
cM capacity (veh/h)	1069				256	747
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	403	403	244	244	36	
Volume Left	0	0	0	0	16	
Volume Right	0	0	0	0	20	
cSH	1700	1700	1700	1700	404	
Volume to Capacity	0.24	0.24	0.14	0.14	0.09	
Queue Length 95th (ft)	0	0	0	0	7	
Control Delay (s)	0.0	0.0	0.0	0.0	14.8	
Lane LOS					B	
Approach Delay (s)	0.0		0.0		14.8	
Approach LOS					B	
Intersection Summary						
Average Delay			0.4			
Intersection Capacity Utilization			33.0%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

12: Washington St & Cross St

04/02/2024

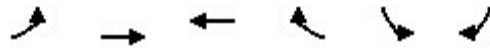


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↘↘	
Traffic Volume (veh/h)	18	740	427	5	18	18
Future Volume (Veh/h)	18	740	427	5	18	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.91	0.91	0.75	0.75
Hourly flow rate (vph)	20	804	469	5	24	24
Pedestrians					9	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	483				922	246
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	483				922	246
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				91	97
cM capacity (veh/h)	1081				265	754
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	288	536	313	161	48	
Volume Left	20	0	0	0	24	
Volume Right	0	0	0	5	24	
cSH	1081	1700	1700	1700	393	
Volume to Capacity	0.02	0.32	0.18	0.09	0.12	
Queue Length 95th (ft)	1	0	0	0	10	
Control Delay (s)	0.8	0.0	0.0	0.0	15.4	
Lane LOS	A				C	
Approach Delay (s)	0.3		0.0		15.4	
Approach LOS					C	
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			47.1%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

14: Washington St & Parsons St

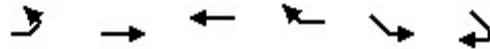
04/02/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↔	
Traffic Volume (veh/h)	7	751	421	17	18	11
Future Volume (Veh/h)	7	751	421	17	18	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.88	0.88	0.66	0.66
Hourly flow rate (vph)	8	825	478	19	27	17
Pedestrians			1		14	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	511				931	262
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	511				931	262
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				90	98
cM capacity (veh/h)	1050				263	726
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	283	550	319	178	44	
Volume Left	8	0	0	0	27	
Volume Right	0	0	0	19	17	
cSH	1050	1700	1700	1700	350	
Volume to Capacity	0.01	0.32	0.19	0.10	0.13	
Queue Length 95th (ft)	1	0	0	0	11	
Control Delay (s)	0.3	0.0	0.0	0.0	16.8	
Lane LOS	A				C	
Approach Delay (s)	0.1		0.0		16.8	
Approach LOS					C	
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			38.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 16: Washington St & Eddy St

04/02/2024

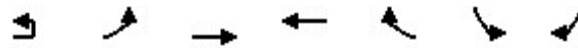


Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↔↕	↔↕		↕↔	
Traffic Volume (veh/h)	8	761	402	74	190	36
Future Volume (Veh/h)	8	761	402	74	190	36
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.93	0.93	0.78	0.78
Hourly flow rate (vph)	9	836	432	80	244	46
Pedestrians		1			17	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	529				925	274
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	529				925	274
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				7	94
cM capacity (veh/h)	1031				263	717
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	
Volume Total	288	557	288	224	290	
Volume Left	9	0	0	0	244	
Volume Right	0	0	0	80	46	
cSH	1031	1700	1700	1700	293	
Volume to Capacity	0.01	0.33	0.17	0.13	0.99	
Queue Length 95th (ft)	1	0	0	0	257	
Control Delay (s)	0.4	0.0	0.0	0.0	89.4	
Lane LOS	A				F	
Approach Delay (s)	0.1		0.0		89.4	
Approach LOS					F	
Intersection Summary						
Average Delay			15.8			
Intersection Capacity Utilization			50.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

18: Washington St & Brookside Ave

04/02/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↕↕	↕↕		↕	
Traffic Volume (veh/h)	1	48	902	473	31	9	2
Future Volume (Veh/h)	1	48	902	473	31	9	2
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.88	0.90	0.90	0.55	0.55
Hourly flow rate (vph)	0	55	1025	526	34	16	4
Pedestrians						21	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						2	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)				974			
pX, platoon unblocked	0.00	0.99				0.99	0.99
vC, conflicting volume	0	581				1186	301
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	558				1170	276
tC, single (s)	0.0	4.1				7.0	6.9
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.6	3.3
p0 queue free %	0	94				90	99
cM capacity (veh/h)	0	993				159	706
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1		
Volume Total	397	683	351	209	20		
Volume Left	55	0	0	0	16		
Volume Right	0	0	0	34	4		
cSH	993	1700	1700	1700	188		
Volume to Capacity	0.06	0.40	0.21	0.12	0.11		
Queue Length 95th (ft)	4	0	0	0	9		
Control Delay (s)	1.8	0.0	0.0	0.0	26.4		
Lane LOS	A				D		
Approach Delay (s)	0.6		0.0		26.4		
Approach LOS					D		
Intersection Summary							
Average Delay			0.7				
Intersection Capacity Utilization			58.4%		ICU Level of Service		B
Analysis Period (min)			15				

Queues

20: Lowell Ave & Washington St

04/02/2024



Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	996	507	138	293	305
v/c Ratio	0.82	0.64	0.59	0.53	0.88
Control Delay	35.3	31.7	41.7	30.5	70.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	35.3	31.7	41.7	30.5	70.5
Queue Length 50th (ft)	342	162	77	153	~233
Queue Length 95th (ft)	#480	190	#144	235	#410
Internal Link Dist (ft)	166	846		193	395
Turn Bay Length (ft)					
Base Capacity (vph)	1216	790	234	555	346
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.82	0.64	0.59	0.53	0.88

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

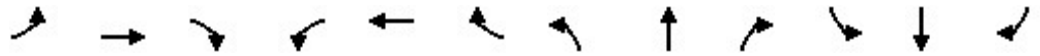
Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 20: Lowell Ave & Washington St

04/02/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↗	↘			↕↕	
Traffic Volume (vph)	35	642	230	59	333	8	120	128	127	7	247	33
Future Volume (vph)	35	642	230	59	333	8	120	128	127	7	247	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frbp, ped/bikes		1.00			1.00		1.00	0.99			1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Frt		0.96			1.00		1.00	0.93			0.98	
Flt Protected		1.00			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		3061			3097		1608	1541			1647	
Flt Permitted		0.91			0.59		0.27	1.00			0.99	
Satd. Flow (perm)		2797			1855		451	1541			1633	
Peak-hour factor, PHF	0.91	0.91	0.91	0.79	0.79	0.79	0.87	0.87	0.87	0.94	0.94	0.94
Adj. Flow (vph)	38	705	253	75	422	10	138	147	146	7	263	35
RTOR Reduction (vph)	0	28	0	0	1	0	0	30	0	0	4	0
Lane Group Flow (vph)	0	968	0	0	506	0	138	263	0	0	301	0
Confl. Bikes (#/hr)							1		1			
Heavy Vehicles (%)	6%	2%	1%	3%	4%	0%	1%	3%	1%	0%	2%	3%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	
Protected Phases		1			1		3	3	4			4
Permitted Phases	1			1			4			4		
Actuated Green, G (s)		46.4			46.4		33.2	38.2			23.5	
Effective Green, g (s)		46.4			46.4		33.2	38.2			23.5	
Actuated g/C Ratio		0.41			0.41		0.30	0.34			0.21	
Clearance Time (s)		5.0			5.0		5.0				5.0	
Vehicle Extension (s)		4.0			4.0		2.0				3.0	
Lane Grp Cap (vph)		1158			768		233	525			342	
v/s Ratio Prot							0.05	c0.17				
v/s Ratio Perm		c0.35			0.27		0.12				c0.18	
v/c Ratio		0.84			0.66		0.59	0.50			0.88	
Uniform Delay, d1		29.4			26.4		31.6	29.3			42.9	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		7.2			4.4		2.7	0.3			22.2	
Delay (s)		36.6			30.8		34.3	29.6			65.0	
Level of Service		D			C		C	C			E	
Approach Delay (s)		36.6			30.8			31.1			65.0	
Approach LOS		D			C			C			E	

Intersection Summary

HCM 2000 Control Delay	38.1	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.70		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	91.4%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Queues

21: Walnut St & Washington St

04/02/2024



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	853	612	82	311	167	36	366
v/c Ratio	0.71	1.20dl	0.47	0.58	0.30	0.17	0.97
Control Delay	34.0	47.8	35.2	36.3	5.4	38.4	83.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.0	47.8	35.2	36.3	5.4	38.4	83.6
Queue Length 50th (ft)	312	~276	41	182	0	21	268
Queue Length 95th (ft)	#441	#374	78	270	45	50	#450
Internal Link Dist (ft)	846	534		238			255
Turn Bay Length (ft)			175		160	110	
Base Capacity (vph)	1205	705	178	569	582	210	378
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.87	0.46	0.55	0.29	0.17	0.97

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

HCM Signalized Intersection Capacity Analysis

21: Walnut St & Washington St

04/02/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	
Lane Configurations		↕↕			↕↕			↗	↖	↗	↗	↖	
Traffic Volume (vph)	26	614	136	169	322	42	6	67	277	149	32	311	
Future Volume (vph)	26	614	136	169	322	42	6	67	277	149	32	311	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5	
Lane Util. Factor		0.95			0.95			1.00	1.00	1.00	1.00	1.00	
Frbp, ped/bikes		1.00			1.00			1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00	1.00	1.00	1.00	1.00	
Frt		0.97			0.99			1.00	1.00	0.85	1.00	0.99	
Flt Protected		1.00			0.98			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3090			3057			1595	1644	1367	1533	1652	
Flt Permitted		0.91			0.53			0.17	1.00	1.00	0.57	1.00	
Satd. Flow (perm)		2815			1652			282	1644	1367	922	1652	
Peak-hour factor, PHF	0.91	0.91	0.91	0.87	0.87	0.87	0.89	0.89	0.89	0.89	0.88	0.88	
Adj. Flow (vph)	29	675	149	194	370	48	7	75	311	167	36	353	
RTOR Reduction (vph)	0	12	0	0	5	0	0	0	0	111	0	1	
Lane Group Flow (vph)	0	841	0	0	607	0	0	82	311	56	36	365	
Confl. Bikes (#/hr)										1			
Heavy Vehicles (%)	8%	2%	2%	2%	3%	12%	0%	2%	4%	5%	6%	2%	
Turn Type	Perm	NA		pm+pt	NA		custom	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6			7	4			8	
Permitted Phases	2			6			7	4		4	8		
Actuated Green, G (s)		45.9			45.9			38.5	38.5	38.5	26.0	26.0	
Effective Green, g (s)		45.9			45.9			38.5	38.5	38.5	26.0	26.0	
Actuated g/C Ratio		0.40			0.40			0.34	0.34	0.34	0.23	0.23	
Clearance Time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5	
Vehicle Extension (s)		2.0			2.0			2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		1133			665			164	555	461	210	376	
v/s Ratio Prot								0.03	c0.19			c0.22	
v/s Ratio Perm		0.30			c0.37			0.14		0.04	0.04		
v/c Ratio		0.74			1.20dl			0.50	0.56	0.12	0.17	0.97	
Uniform Delay, d1		29.0			32.2			28.8	30.8	26.1	35.3	43.6	
Progression Factor		1.00			1.00			1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		4.4			16.7			0.9	0.8	0.0	0.1	38.5	
Delay (s)		33.4			48.9			29.7	31.6	26.1	35.5	82.1	
Level of Service		C			D			C	C	C	D	F	
Approach Delay (s)		33.4			48.9			29.7				78.0	
Approach LOS		C			D			C				E	
Intersection Summary													
HCM 2000 Control Delay			43.8									HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.88										
Actuated Cycle Length (s)			114.0									Sum of lost time (s)	31.0
Intersection Capacity Utilization			89.2%									ICU Level of Service	E
Analysis Period (min)			15										
dl Defacto Left Lane. Recode with 1 though lane as a left lane.													
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis
 21: Walnut St & Washington St

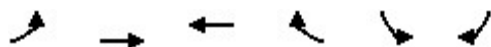
04/02/2024

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	11
Future Volume (vph)	11
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.88
Adj. Flow (vph)	12
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Bikes (#/hr)	3
Heavy Vehicles (%)	27%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Unsignalized Intersection Capacity Analysis

27: Washington St & Brooks Ave

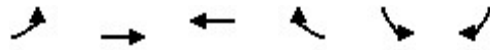
04/02/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↔	
Traffic Volume (veh/h)	0	903	483	3	4	3
Future Volume (Veh/h)	0	903	483	3	4	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.87	0.87	0.58	0.58
Hourly flow rate (vph)	0	992	555	3	7	5
Pedestrians					24	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			246			
pX, platoon unblocked	0.91				0.91	0.91
vC, conflicting volume	582				1076	303
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	343				886	36
tC, single (s)	4.1				7.3	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	1092				217	920
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	331	661	370	188	12	
Volume Left	0	0	0	0	7	
Volume Right	0	0	0	3	5	
cSH	1092	1700	1700	1700	318	
Volume to Capacity	0.00	0.39	0.22	0.11	0.04	
Queue Length 95th (ft)	0	0	0	0	3	
Control Delay (s)	0.0	0.0	0.0	0.0	16.8	
Lane LOS					C	
Approach Delay (s)	0.0		0.0		16.8	
Approach LOS					C	
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			37.7%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 30: Washington St & Walker St

04/02/2024

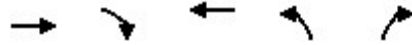


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↔	
Traffic Volume (veh/h)	29	882	482	4	21	22
Future Volume (Veh/h)	29	882	482	4	21	22
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.88	0.88
Hourly flow rate (vph)	32	980	536	4	24	25
Pedestrians		4	2		17	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			627			
pX, platoon unblocked	0.95				0.95	0.95
vC, conflicting volume	557				1111	291
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	429				1012	149
tC, single (s)	4.1				6.8	7.0
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				89	97
cM capacity (veh/h)	1067				216	802
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	359	653	357	183	49	
Volume Left	32	0	0	0	24	
Volume Right	0	0	0	4	25	
cSH	1067	1700	1700	1700	345	
Volume to Capacity	0.03	0.38	0.21	0.11	0.14	
Queue Length 95th (ft)	2	0	0	0	12	
Control Delay (s)	1.0	0.0	0.0	0.0	17.2	
Lane LOS	A				C	
Approach Delay (s)	0.4		0.0		17.2	
Approach LOS					C	
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			57.6%		ICU Level of Service	B
Analysis Period (min)			15			

Queues

1: Chestnut St & Washington St

04/02/2024



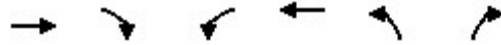
Lane Group	EBT	EBR	WBT	NBL	NBR
Lane Group Flow (vph)	440	34	660	98	236
v/c Ratio	0.44	0.03	0.46	0.58	0.50
Control Delay	19.2	4.9	11.0	64.2	6.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.2	4.9	11.0	64.2	6.8
Queue Length 50th (ft)	132	2	59	74	0
Queue Length 95th (ft)	375	18	177	111	26
Internal Link Dist (ft)	85		428	227	
Turn Bay Length (ft)		50			
Base Capacity (vph)	1007	1130	1452	204	515
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.03	0.45	0.48	0.46

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: Chestnut St & Washington St

04/02/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↖↑	↖	↗
Traffic Volume (vph)	392	30	208	346	78	189
Future Volume (vph)	392	30	208	346	78	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	1.00		0.95	1.00	1.00
Fr _t	1.00	0.85		1.00	1.00	0.85
Fl _t Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1693	1454		3138	1624	1454
Fl _t Permitted	1.00	1.00		0.61	0.95	1.00
Satd. Flow (perm)	1693	1454		1956	1624	1454
Peak-hour factor, PHF	0.89	0.89	0.84	0.84	0.80	0.80
Adj. Flow (vph)	440	34	248	412	98	236
RTOR Reduction (vph)	0	5	0	0	0	198
Lane Group Flow (vph)	440	29	0	660	98	38
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pt+ov
Protected Phases	6	3	5	2	3	3.5
Permitted Phases		6	2			
Actuated Green, G (s)	69.0	81.5		82.1	12.5	19.1
Effective Green, g (s)	69.0	81.5		82.1	12.5	19.1
Actuated g/C Ratio	0.58	0.68		0.68	0.10	0.16
Clearance Time (s)	6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	973	1066		1403	169	231
v/s Ratio Prot	0.26	0.00		c0.03	c0.06	0.03
v/s Ratio Perm		0.02		c0.30		
v/c Ratio	0.45	0.03		0.47	0.58	0.16
Uniform Delay, d ₁	14.6	6.3		8.8	51.2	43.5
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d ₂	1.5	0.0		0.3	4.8	0.3
Delay (s)	16.2	6.3		9.1	56.0	43.9
Level of Service	B	A		A	E	D
Approach Delay (s)	15.5			9.1	47.4	
Approach LOS	B			A	D	

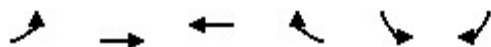
Intersection Summary

HCM 2000 Control Delay	19.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

4: Washington St & Davis Ct

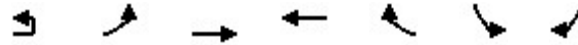
04/02/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↔	
Traffic Volume (veh/h)	0	588	549	0	0	0
Future Volume (Veh/h)	0	588	549	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.87	0.87	0.25	0.25
Hourly flow rate (vph)	0	626	631	0	0	0
Pedestrians					13	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		508				
pX, platoon unblocked						
vC, conflicting volume	644				957	328
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	644				957	328
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	939				256	665
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	209	417	421	210	0	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	939	1700	1700	1700	1700	
Volume to Capacity	0.00	0.25	0.25	0.12	0.03	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			21.4%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 6: Washington St & Dunstan St

04/02/2024

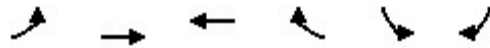


Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↕↕	↕↕		↕	
Traffic Volume (veh/h)	1	27	560	517	13	4	31
Future Volume (Veh/h)	1	27	560	517	13	4	31
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.84	0.84	0.97	0.97
Hourly flow rate (vph)	0	30	615	615	15	4	32
Pedestrians						10	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)			869				
pX, platoon unblocked	0.00						
vC, conflicting volume	0	640				1000	325
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	640				1000	325
tC, single (s)	0.0	4.1				6.8	6.9
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	97				98	95
cM capacity (veh/h)	0	945				233	670
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1		
Volume Total	235	410	410	220	36		
Volume Left	30	0	0	0	4		
Volume Right	0	0	0	15	32		
cSH	945	1700	1700	1700	555		
Volume to Capacity	0.03	0.24	0.24	0.13	0.06		
Queue Length 95th (ft)	2	0	0	0	5		
Control Delay (s)	1.4	0.0	0.0	0.0	11.9		
Lane LOS	A				B		
Approach Delay (s)	0.5		0.0		11.9		
Approach LOS					B		
Intersection Summary							
Average Delay			0.6				
Intersection Capacity Utilization			44.4%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis

8: Washington St & Armory St

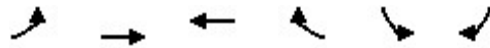
04/02/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↔	
Traffic Volume (veh/h)	54	510	498	112	43	32
Future Volume (Veh/h)	54	510	498	112	43	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.97	0.97	0.89	0.89	0.91	0.91
Hourly flow rate (vph)	56	526	560	126	47	35
Pedestrians					6	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	692				1004	349
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	692				1004	349
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				79	95
cM capacity (veh/h)	907				226	649
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	231	351	373	313	82	
Volume Left	56	0	0	0	47	
Volume Right	0	0	0	126	35	
cSH	907	1700	1700	1700	313	
Volume to Capacity	0.06	0.21	0.22	0.18	0.26	
Queue Length 95th (ft)	5	0	0	0	26	
Control Delay (s)	2.7	0.0	0.0	0.0	20.6	
Lane LOS	A				C	
Approach Delay (s)	1.1		0.0		20.6	
Approach LOS					C	
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			51.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 10: Washington St & Trader Joe's

04/02/2024

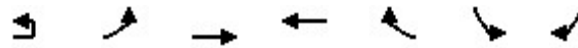


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		∩	
Traffic Volume (veh/h)	0	553	555	0	57	55
Future Volume (Veh/h)	0	553	555	0	57	55
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.94	0.94	0.89	0.89	0.85	0.85
Hourly flow rate (vph)	0	588	624	0	67	65
Pedestrians					5	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	629				923	317
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	629				923	317
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				75	90
cM capacity (veh/h)	958				271	681
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	294	294	312	312	132	
Volume Left	0	0	0	0	67	
Volume Right	0	0	0	0	65	
cSH	1700	1700	1700	1700	386	
Volume to Capacity	0.17	0.17	0.18	0.18	0.34	
Queue Length 95th (ft)	0	0	0	0	37	
Control Delay (s)	0.0	0.0	0.0	0.0	19.1	
Lane LOS					C	
Approach Delay (s)	0.0		0.0		19.1	
Approach LOS					C	
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			31.0%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

12: Washington St & Cross St

04/02/2024

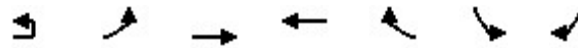


Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↕↕	↕↕		↕	
Traffic Volume (veh/h)	1	21	588	542	24	6	12
Future Volume (Veh/h)	1	21	588	542	24	6	12
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.91	0.91	0.91	0.92	0.92	0.56	0.56
Hourly flow rate (vph)	0	23	646	589	26	11	21
Pedestrians				1		7	
Lane Width (ft)				12.0		12.0	
Walking Speed (ft/s)				3.5		3.5	
Percent Blockage				0		1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	622				979	314
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	622				979	314
tC, single (s)	0.0	4.1				6.8	6.9
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	98				95	97
cM capacity (veh/h)	0	962				243	683
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1		
Volume Total	238	431	393	222	32		
Volume Left	23	0	0	0	11		
Volume Right	0	0	0	26	21		
cSH	962	1700	1700	1700	421		
Volume to Capacity	0.02	0.25	0.23	0.13	0.08		
Queue Length 95th (ft)	2	0	0	0	6		
Control Delay (s)	1.1	0.0	0.0	0.0	14.3		
Lane LOS	A				B		
Approach Delay (s)	0.4		0.0		14.3		
Approach LOS					B		
Intersection Summary							
Average Delay			0.5				
Intersection Capacity Utilization			45.9%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis

14: Washington St & Parsons St

04/02/2024

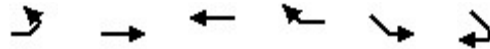


Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↕↕	↕↕		↕	
Traffic Volume (veh/h)	1	15	578	559	25	13	6
Future Volume (Veh/h)	1	15	578	559	25	13	6
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.89	0.89	0.89	0.87	0.87	0.59	0.59
Hourly flow rate (vph)	0	17	649	643	29	22	10
Pedestrians						7	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	679				1023	343
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	679				1023	343
tC, single (s)	0.0	4.1				6.8	6.9
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	98				90	98
cM capacity (veh/h)	0	916				229	654
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1		
Volume Total	233	433	429	243	32		
Volume Left	17	0	0	0	22		
Volume Right	0	0	0	29	10		
cSH	916	1700	1700	1700	288		
Volume to Capacity	0.02	0.25	0.25	0.14	0.11		
Queue Length 95th (ft)	1	0	0	0	9		
Control Delay (s)	0.8	0.0	0.0	0.0	19.1		
Lane LOS	A				C		
Approach Delay (s)	0.3		0.0		19.1		
Approach LOS					C		
Intersection Summary							
Average Delay			0.6				
Intersection Capacity Utilization			40.6%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis

16: Washington St & Eddy St

04/02/2024

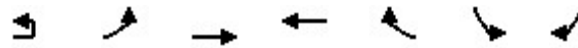


Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↕↕	↕↕		↕↕	
Traffic Volume (veh/h)	30	561	538	129	88	46
Future Volume (Veh/h)	30	561	538	129	88	46
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.88	0.88	0.89	0.89	0.92	0.92
Hourly flow rate (vph)	34	638	604	145	96	50
Pedestrians					5	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	754				1068	380
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	754				1068	380
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				54	92
cM capacity (veh/h)	861				210	621
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	
Volume Total	247	425	403	346	146	
Volume Left	34	0	0	0	96	
Volume Right	0	0	0	145	50	
cSH	861	1700	1700	1700	272	
Volume to Capacity	0.04	0.25	0.24	0.20	0.54	
Queue Length 95th (ft)	3	0	0	0	73	
Control Delay (s)	1.7	0.0	0.0	0.0	32.7	
Lane LOS	A				D	
Approach Delay (s)	0.6		0.0		32.7	
Approach LOS					D	
Intersection Summary						
Average Delay			3.3			
Intersection Capacity Utilization			57.2%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

18: Washington St & Brookside Ave

04/02/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↕↕	↕↕		↕	
Traffic Volume (veh/h)	1	20	628	665	23	3	1
Future Volume (Veh/h)	1	20	628	665	23	3	1
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.88	0.88	0.50	0.50
Hourly flow rate (vph)	0	22	683	756	26	6	2
Pedestrians						7	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)				974			
pX, platoon unblocked	0.00	0.99				0.99	0.99
vC, conflicting volume	0	789				1162	398
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	760				1138	364
tC, single (s)	0.0	4.1				6.8	6.9
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	97				97	100
cM capacity (veh/h)	0	844				189	626
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1		
Volume Total	250	455	504	278	8		
Volume Left	22	0	0	0	6		
Volume Right	0	0	0	26	2		
cSH	844	1700	1700	1700	229		
Volume to Capacity	0.03	0.27	0.30	0.16	0.03		
Queue Length 95th (ft)	2	0	0	0	3		
Control Delay (s)	1.1	0.0	0.0	0.0	21.3		
Lane LOS	A				C		
Approach Delay (s)	0.4		0.0		21.3		
Approach LOS					C		
Intersection Summary							
Average Delay			0.3				
Intersection Capacity Utilization			46.2%		ICU Level of Service		A
Analysis Period (min)			15				

Queues

20: Lowell Ave & Washington St

04/02/2024



Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	666	821	181	249	240
v/c Ratio	0.46	0.85	0.73	0.49	0.84
Control Delay	21.0	37.5	50.9	30.7	69.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	21.0	37.5	50.9	30.7	69.5
Queue Length 50th (ft)	139	245	88	111	160
Queue Length 95th (ft)	250	#433	#196	213	#295
Internal Link Dist (ft)	166	846		193	395
Turn Bay Length (ft)					
Base Capacity (vph)	1445	968	249	528	302
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.46	0.85	0.73	0.47	0.79

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

20: Lowell Ave & Washington St

04/02/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↗	↘			↕↕	
Traffic Volume (vph)	15	460	151	166	506	18	165	135	92	5	192	27
Future Volume (vph)	15	460	151	166	506	18	165	135	92	5	192	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frbp, ped/bikes		1.00			1.00		1.00	0.99			1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Frt		0.96			1.00		1.00	0.94			0.98	
Flt Protected		1.00			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		3105			3142		1608	1535			1649	
Flt Permitted		0.93			0.62		0.28	1.00			0.99	
Satd. Flow (perm)		2878			1956		481	1535			1638	
Peak-hour factor, PHF	0.94	0.94	0.94	0.84	0.84	0.84	0.91	0.91	0.91	0.93	0.93	0.93
Adj. Flow (vph)	16	489	161	198	602	21	181	148	101	5	206	29
RTOR Reduction (vph)	0	23	0	0	2	0	0	21	0	0	4	0
Lane Group Flow (vph)	0	643	0	0	819	0	181	228	0	0	236	0
Confl. Bikes (#/hr)						5			2			1
Heavy Vehicles (%)	0%	1%	0%	1%	2%	0%	1%	2%	7%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	
Protected Phases		1			1		3	3 4			4	
Permitted Phases	1			1			4			4		
Actuated Green, G (s)		53.6			53.6		30.8	35.8			19.2	
Effective Green, g (s)		53.6			53.6		30.8	35.8			19.2	
Actuated g/C Ratio		0.48			0.48		0.28	0.32			0.17	
Clearance Time (s)		5.0			5.0		5.0				5.0	
Vehicle Extension (s)		4.0			4.0		2.0				3.0	
Lane Grp Cap (vph)		1377			936		249	490			280	
v/s Ratio Prot							c0.08	0.15				
v/s Ratio Perm		0.22			c0.42		0.12				c0.14	
v/c Ratio		0.47			0.88		0.73	0.47			0.84	
Uniform Delay, d1		19.6			26.2		34.1	30.4			44.9	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.1			11.3		8.6	0.3			19.9	
Delay (s)		20.7			37.5		42.7	30.7			64.9	
Level of Service		C			D		D	C			E	
Approach Delay (s)		20.7			37.5			35.8			64.9	
Approach LOS		C			D			D			E	

Intersection Summary

HCM 2000 Control Delay	35.0	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	112.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	85.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Queues

21: Walnut St & Washington St

04/02/2024



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	626	856	137	340	143	52	377
v/c Ratio	0.56	1.05	0.79	0.58	0.24	0.25	1.01
Control Delay	30.4	80.2	59.1	35.3	5.2	40.3	93.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.4	80.2	59.1	35.3	5.2	40.3	93.4
Queue Length 50th (ft)	205	~428	71	202	0	32	~280
Queue Length 95th (ft)	270	#557	#150	300	43	67	#454
Internal Link Dist (ft)	846	534		238			255
Turn Bay Length (ft)			175		160	110	
Base Capacity (vph)	1113	816	174	586	597	208	373
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.56	1.05	0.79	0.58	0.24	0.25	1.01

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

21: Walnut St & Washington St

04/02/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔↔			↔↔			↔	↑	↔	↔	↔
Traffic Volume (vph)	21	448	88	176	540	54	7	116	306	129	45	294
Future Volume (vph)	21	448	88	176	540	54	7	116	306	129	45	294
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5
Lane Util. Factor		0.95			0.95			1.00	1.00	1.00	1.00	1.00
Frt		0.98			0.99			1.00	1.00	0.85	1.00	0.98
Flt Protected		1.00			0.99			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3111			3154			1609	1693	1454	1593	1654
Flt Permitted		0.88			0.63			0.14	1.00	1.00	0.56	1.00
Satd. Flow (perm)		2732			2009			243	1693	1454	933	1654
Peak-hour factor, PHF	0.89	0.89	0.89	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.87	0.87
Adj. Flow (vph)	24	503	99	196	600	60	8	129	340	143	52	338
RTOR Reduction (vph)	0	10	0	0	4	0	0	0	0	93	0	4
Lane Group Flow (vph)	0	616	0	0	852	0	0	137	340	50	52	373
Heavy Vehicles (%)	0%	2%	1%	0%	1%	1%	0%	1%	1%	0%	2%	2%
Turn Type	Perm	NA		pm+pt	NA		custom	pm+pt	NA	Perm	Perm	NA
Protected Phases		2		1	6			7	4			8
Permitted Phases	2			6			7	4		4	8	
Actuated Green, G (s)		44.9			44.9			39.5	39.5	39.5	25.5	25.5
Effective Green, g (s)		44.9			44.9			39.5	39.5	39.5	25.5	25.5
Actuated g/C Ratio		0.39			0.39			0.35	0.35	0.35	0.22	0.22
Clearance Time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)		2.0			2.0			2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		1076			791			174	586	503	208	369
v/s Ratio Prot								0.05	c0.20			c0.23
v/s Ratio Perm		0.23			c0.42			0.22		0.03	0.06	
v/c Ratio		0.57			1.08			0.79	0.58	0.10	0.25	1.01
Uniform Delay, d1		27.0			34.5			29.4	30.5	25.2	36.4	44.2
Progression Factor		1.00			1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		2.2			54.7			19.1	0.9	0.0	0.2	49.7
Delay (s)		29.2			89.3			48.6	31.4	25.2	36.6	93.9
Level of Service		C			F			D	C	C	D	F
Approach Delay (s)		29.2			89.3			33.8				87.0
Approach LOS		C			F			C				F

Intersection Summary		
HCM 2000 Control Delay	60.4	HCM 2000 Level of Service
HCM 2000 Volume to Capacity ratio	0.97	E
Actuated Cycle Length (s)	114.0	Sum of lost time (s)
Intersection Capacity Utilization	92.1%	31.0
Analysis Period (min)	15	ICU Level of Service
		F
c Critical Lane Group		

HCM Signalized Intersection Capacity Analysis
 21: Walnut St & Washington St

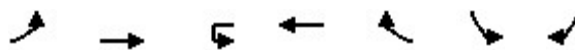
04/02/2024

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	34
Future Volume (vph)	34
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.87
Adj. Flow (vph)	39
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Unsignalized Intersection Capacity Analysis

27: Washington St & Brooks Ave

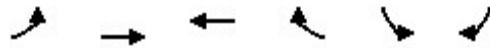
04/02/2024



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations		↔↔		↔↔		↔	
Traffic Volume (veh/h)	1	622	1	694	3	3	0
Future Volume (Veh/h)	1	622	1	694	3	3	0
Sign Control		Free		Free		Stop	
Grade		0%		0%		0%	
Peak Hour Factor	0.91	0.91	0.92	0.92	0.92	0.38	0.38
Hourly flow rate (vph)	1	684	0	754	3	8	0
Pedestrians						10	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type		None		None			
Median storage (veh)							
Upstream signal (ft)				246			
pX, platoon unblocked	0.86		0.00			0.86	0.86
vC, conflicting volume	767		0			1110	388
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	394		0			793	0
tC, single (s)	4.1		0.0			6.8	6.9
tC, 2 stage (s)							
tF (s)	2.2		0.0			3.5	3.3
p0 queue free %	100		0			97	100
cM capacity (veh/h)	998		0			280	926
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1		
Volume Total	229	456	503	254	8		
Volume Left	1	0	0	0	8		
Volume Right	0	0	0	3	0		
cSH	998	1700	1700	1700	280		
Volume to Capacity	0.00	0.27	0.30	0.15	0.03		
Queue Length 95th (ft)	0	0	0	0	2		
Control Delay (s)	0.0	0.0	0.0	0.0	18.3		
Lane LOS	A				C		
Approach Delay (s)	0.0		0.0		18.3		
Approach LOS					C		
Intersection Summary							
Average Delay			0.1				
Intersection Capacity Utilization			32.2%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 30: Washington St & Walker St

04/02/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↗		↘↘	
Traffic Volume (veh/h)	27	604	674	20	19	14
Future Volume (Veh/h)	27	604	674	20	19	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.91	0.91	0.75	0.75
Hourly flow rate (vph)	30	671	741	22	25	19
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			627			
pX, platoon unblocked	0.91				0.91	0.91
vC, conflicting volume	770				1154	388
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	545				969	125
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				89	98
cM capacity (veh/h)	933				223	820
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	254	447	494	269	44	
Volume Left	30	0	0	0	25	
Volume Right	0	0	0	22	19	
cSH	933	1700	1700	1700	325	
Volume to Capacity	0.03	0.26	0.29	0.16	0.14	
Queue Length 95th (ft)	2	0	0	0	12	
Control Delay (s)	1.4	0.0	0.0	0.0	17.8	
Lane LOS	A				C	
Approach Delay (s)	0.5		0.0		17.8	
Approach LOS					C	
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			50.6%		ICU Level of Service	A
Analysis Period (min)			15			

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:12	8:12	8:12	8:12	8:12	8:12	8:12
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3349	3343	3309	3453	3264	3396	3492
Vehs Exited	3350	3313	3313	3428	3258	3411	3462
Starting Vehs	108	103	121	124	108	151	122
Ending Vehs	107	133	117	149	114	136	152
Travel Distance (mi)	1603	1669	1625	1715	1609	1685	1685
Travel Time (hr)	114.8	126.8	121.6	155.1	113.6	134.3	128.5
Total Delay (hr)	55.4	65.3	61.4	91.8	54.3	72.2	66.2
Total Stops	4306	4689	4491	5345	4188	4871	4772
Fuel Used (gal)	70.3	74.7	72.4	82.7	70.2	77.2	75.8

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:12	8:12	8:12	8:12
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3505	3374	3403	3390
Vehs Exited	3473	3355	3395	3376
Starting Vehs	114	117	108	110
Ending Vehs	146	136	116	121
Travel Distance (mi)	1733	1627	1664	1662
Travel Time (hr)	141.5	123.1	130.1	128.9
Total Delay (hr)	77.3	63.0	68.5	67.6
Total Stops	5057	4535	4684	4695
Fuel Used (gal)	80.3	72.9	75.7	75.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:12
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:12
End Time	8:12
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3349	3343	3309	3453	3264	3396	3492
Vehs Exited	3350	3313	3313	3428	3258	3411	3462
Starting Vehs	108	103	121	124	108	151	122
Ending Vehs	107	133	117	149	114	136	152
Travel Distance (mi)	1603	1669	1625	1715	1609	1685	1685
Travel Time (hr)	114.8	126.8	121.6	155.1	113.6	134.3	128.5
Total Delay (hr)	55.4	65.3	61.4	91.8	54.3	72.2	66.2
Total Stops	4306	4689	4491	5345	4188	4871	4772
Fuel Used (gal)	70.3	74.7	72.4	82.7	70.2	77.2	75.8

Interval #1 Information Recording

Start Time	7:12
End Time	8:12
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3505	3374	3403	3390
Vehs Exited	3473	3355	3395	3376
Starting Vehs	114	117	108	110
Ending Vehs	146	136	116	121
Travel Distance (mi)	1733	1627	1664	1662
Travel Time (hr)	141.5	123.1	130.1	128.9
Total Delay (hr)	77.3	63.0	68.5	67.6
Total Stops	5057	4535	4684	4695
Fuel Used (gal)	80.3	72.9	75.7	75.2

Arterial Level of Service: EB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed	Run 1 Speed	Run 1 Delay
Chestnut St	1	15.8	27.2	0.0	6	6	14.8
Davis Ct	4	1.5	12.1	0.1	29	28	1.5
Dunstan St	6	0.3	7.7	0.1	32	32	0.3
Armory St	8	0.7	14.6	0.1	31	31	0.6
Trader Joe's	10	0.2	4.3	0.0	31	31	0.2
Cross St	12	0.2	4.5	0.0	31	31	0.2
Parsons St	14	0.5	9.5	0.1	32	32	0.5
Eddy St	16	0.5	7.3	0.1	31	30	0.5
Brookside Ave	18	0.7	9.4	0.1	29	29	0.6
Walker St	30	0.8	7.9	0.1	30	30	0.6
Brooks Ave	27	10.0	17.9	0.1	14	19	5.5
Lowell Ave	20	27.2	31.8	0.0	5	6	24.8
Walnut St	21	52.4	83.3	0.2	8	10	34.1
Total		110.8	237.5	1.0	15	17	84.2

Arterial Level of Service: EB Washington St

Cross Street	Run 2 Speed	Run 2 Delay	Run 3 Speed	Run 3 Delay	Run 4 Speed	Run 4 Delay	Run 5 Speed
Chestnut St	6	14.8	6	17.3	6	15.6	6
Davis Ct	28	1.5	29	1.5	29	1.5	28
Dunstan St	32	0.3	32	0.3	32	0.4	32
Armory St	31	0.6	31	0.6	31	0.7	31
Trader Joe's	31	0.2	31	0.2	31	0.2	31
Cross St	31	0.2	31	0.2	31	0.3	31
Parsons St	32	0.5	32	0.4	32	0.5	32
Eddy St	31	0.5	31	0.5	30	0.6	31
Brookside Ave	28	0.8	29	0.7	29	0.8	29
Walker St	30	0.8	30	0.7	27	1.6	31
Brooks Ave	11	15.3	18	6.7	8	24.6	19
Lowell Ave	5	29.7	6	25.1	4	35.6	6
Walnut St	10	33.4	7	57.7	5	103.5	11
Total	16	98.7	15	111.9	12	185.9	18

Arterial Level of Service: EB Washington St

Cross Street	Run 5 Delay	Run 6 Speed	Run 6 Delay	Run 7 Speed	Run 7 Delay	Run 8 Speed	Run 8 Delay
Chestnut St	17.6	6	16.4	6	15.9	6	15.7
Davis Ct	1.6	28	1.6	29	1.4	28	1.6
Dunstan St	0.3	31	0.4	32	0.3	31	0.4
Armory St	0.8	31	0.7	31	0.6	31	0.7
Trader Joe's	0.2	31	0.2	31	0.2	31	0.2
Cross St	0.3	31	0.3	31	0.2	31	0.2
Parsons St	0.5	32	0.4	32	0.5	32	0.4
Eddy St	0.5	31	0.5	31	0.5	31	0.5
Brookside Ave	0.7	29	0.7	29	0.7	29	0.7
Walker St	0.5	30	0.8	31	0.6	30	0.9
Brooks Ave	6.1	17	7.3	18	6.7	12	13.3
Lowell Ave	23.3	5	26.7	5	26.1	5	29.3
Walnut St	27.1	7	65.4	8	48.2	9	41.3
Total	79.6	15	121.3	16	102.0	16	105.1

Arterial Level of Service: EB Washington St

Cross Street	Run 9 Speed	Run 9 Delay	Run 10 Speed	Run 10 Delay
Chestnut St	7	14.3	6	15.6
Davis Ct	29	1.5	28	1.5
Dunstan St	32	0.3	32	0.2
Armory St	31	0.6	31	0.6
Trader Joe's	31	0.2	31	0.2
Cross St	31	0.2	31	0.2
Parsons St	32	0.4	32	0.4
Eddy St	31	0.5	31	0.5
Brookside Ave	29	0.6	29	0.7
Walker St	31	0.5	31	0.6
Brooks Ave	17	7.1	18	6.6
Lowell Ave	6	25.0	5	26.1
Walnut St	7	55.2	7	57.7
Total	16	106.4	15	111.0

Arterial Level of Service: WB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed	Run 1 Speed	Run 1 Delay
Walnut St	21	40.3	54.0	0.1	8	8	36.7
Lowell Ave	20	46.8	69.0	0.2	9	11	35.9
Brooks Ave	27	2.0	7.9	0.0	21	22	1.8
Walker St	30	0.5	8.6	0.1	30	30	0.4
Brookside Ave	18	0.7	8.0	0.1	29	30	0.5
Eddy St	16	0.9	9.8	0.1	28	28	0.9
Parsons St	14	0.4	7.4	0.1	30	30	0.5
Cross St	12	0.3	9.7	0.1	31	31	0.3
Trader Joe's	10	0.2	4.8	0.0	29	29	0.2
Armory St	8	0.2	4.2	0.0	32	32	0.2
Dunstan St	6	0.4	14.6	0.1	31	31	0.4
Davis Ct	4	0.2	7.8	0.1	31	31	0.2
Chestnut St	1	10.0	20.4	0.1	17	17	9.5
Total		102.8	226.5	1.1	17	18	87.5

Arterial Level of Service: WB Washington St

Cross Street	Run 2 Speed	Run 2 Delay	Run 3 Speed	Run 3 Delay	Run 4 Speed	Run 4 Delay	Run 5 Speed
Walnut St	8	39.0	8	36.0	7	44.0	9
Lowell Ave	9	49.8	10	44.2	10	39.9	9
Brooks Ave	21	2.0	22	1.8	21	2.0	21
Walker St	30	0.6	30	0.4	30	0.5	31
Brookside Ave	29	0.8	29	0.7	30	0.6	30
Eddy St	28	0.9	28	0.8	28	0.9	28
Parsons St	30	0.4	30	0.4	30	0.4	30
Cross St	31	0.3	32	0.3	31	0.3	32
Trader Joe's	29	0.2	29	0.2	29	0.2	29
Armory St	32	0.3	32	0.2	32	0.2	32
Dunstan St	31	0.4	31	0.4	31	0.4	31
Davis Ct	31	0.3	32	0.2	31	0.3	32
Chestnut St	18	8.3	17	9.8	16	11.8	17
Total	17	103.3	18	95.5	17	101.5	18

Arterial Level of Service: WB Washington St

Cross Street	Run 5 Delay	Run 6 Speed	Run 6 Delay	Run 7 Speed	Run 7 Delay	Run 8 Speed	Run 8 Delay
Walnut St	33.4	7	45.4	8	40.2	8	39.0
Lowell Ave	46.0	9	51.2	10	44.0	6	82.6
Brooks Ave	2.0	21	2.1	21	1.9	21	2.1
Walker St	0.3	30	0.5	30	0.4	29	0.6
Brookside Ave	0.6	29	0.7	29	0.7	29	0.7
Eddy St	1.0	28	0.8	27	1.0	27	1.1
Parsons St	0.4	30	0.4	30	0.5	30	0.4
Cross St	0.2	31	0.3	31	0.3	31	0.3
Trader Joe's	0.2	29	0.2	29	0.2	29	0.2
Armory St	0.2	32	0.2	32	0.3	32	0.2
Dunstan St	0.3	31	0.4	31	0.5	31	0.4
Davis Ct	0.2	32	0.2	31	0.3	31	0.2
Chestnut St	9.7	14	14.2	15	12.4	16	10.8
Total	94.5	16	116.7	17	102.7	15	138.6

Arterial Level of Service: WB Washington St

Cross Street	Run 9 Speed	Run 9 Delay	Run 10 Speed	Run 10 Delay
Walnut St	8	42.1	7	46.0
Lowell Ave	11	36.4	11	36.2
Brooks Ave	22	1.9	21	2.0
Walker St	30	0.5	30	0.5
Brookside Ave	30	0.6	29	0.7
Eddy St	28	0.9	28	1.0
Parsons St	30	0.5	30	0.4
Cross St	31	0.3	31	0.3
Trader Joe's	29	0.2	29	0.2
Armory St	32	0.2	32	0.2
Dunstan St	31	0.5	31	0.4
Davis Ct	31	0.3	31	0.3
Chestnut St	20	7.0	21	6.2
Total	18	91.2	18	94.5

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:12	8:12	8:12	8:12	8:12	8:12	8:12
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3378	3433	3531	3533	3286	3481	3488
Vehs Exited	3433	3415	3543	3468	3280	3444	3529
Starting Vehs	137	119	128	109	107	93	135
Ending Vehs	82	137	116	174	113	130	94
Travel Distance (mi)	1539	1621	1638	1635	1522	1582	1595
Travel Time (hr)	106.8	123.2	127.2	127.1	107.1	128.9	117.1
Total Delay (hr)	49.9	63.4	66.7	66.8	50.8	70.3	58.3
Total Stops	4271	4681	4917	4801	4234	4583	4593
Fuel Used (gal)	68.1	73.9	75.7	75.1	67.2	74.2	72.1

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:12	8:12	8:12	8:12
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3615	3504	3546	3479
Vehs Exited	3583	3523	3555	3478
Starting Vehs	119	124	128	114
Ending Vehs	151	105	119	114
Travel Distance (mi)	1710	1622	1668	1613
Travel Time (hr)	148.8	125.5	129.3	124.1
Total Delay (hr)	85.7	65.4	67.7	64.5
Total Stops	4850	4678	4771	4634
Fuel Used (gal)	81.9	74.7	76.5	74.0

Interval #0 Information Seeding

Start Time	6:57
End Time	7:12
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:12
End Time	8:12
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3378	3433	3531	3533	3286	3481	3488
Vehs Exited	3433	3415	3543	3468	3280	3444	3529
Starting Vehs	137	119	128	109	107	93	135
Ending Vehs	82	137	116	174	113	130	94
Travel Distance (mi)	1539	1621	1638	1635	1522	1582	1595
Travel Time (hr)	106.8	123.2	127.2	127.1	107.1	128.9	117.1
Total Delay (hr)	49.9	63.4	66.7	66.8	50.8	70.3	58.3
Total Stops	4271	4681	4917	4801	4234	4583	4593
Fuel Used (gal)	68.1	73.9	75.7	75.1	67.2	74.2	72.1

Interval #1 Information Recording

Start Time	7:12
End Time	8:12
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3615	3504	3546	3479
Vehs Exited	3583	3523	3555	3478
Starting Vehs	119	124	128	114
Ending Vehs	151	105	119	114
Travel Distance (mi)	1710	1622	1668	1613
Travel Time (hr)	148.8	125.5	129.3	124.1
Total Delay (hr)	85.7	65.4	67.7	64.5
Total Stops	4850	4678	4771	4634
Fuel Used (gal)	81.9	74.7	76.5	74.0

Arterial Level of Service: EB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed	Run 1 Speed	Run 1 Delay
Chestnut St	1	13.3	18.9	0.0	7	8	12.0
Davis Ct	4	1.3	11.8	0.1	29	30	1.3
Dunstan St	6	0.3	7.7	0.1	32	32	0.3
Armory St	8	0.7	14.6	0.1	31	31	0.7
Trader Joe's	10	0.2	4.3	0.0	31	31	0.2
Cross St	12	0.2	4.5	0.0	31	31	0.2
Parsons St	14	0.4	9.4	0.1	32	32	0.4
Eddy St	16	0.4	7.2	0.1	31	31	0.5
Brookside Ave	18	0.4	9.1	0.1	30	30	0.3
Walker St	30	0.4	7.6	0.1	31	32	0.3
Brooks Ave	27	2.2	10.1	0.1	26	29	1.0
Lowell Ave	20	23.3	27.8	0.0	6	7	18.7
Walnut St	21	38.4	69.6	0.2	9	10	30.1
Total		81.6	202.7	1.0	18	19	66.1

Arterial Level of Service: EB Washington St

Cross Street	Run 2 Speed	Run 2 Delay	Run 3 Speed	Run 3 Delay	Run 4 Speed	Run 4 Delay	Run 5 Speed
Chestnut St	6	15.0	7	12.2	6	16.2	7
Davis Ct	29	1.4	29	1.3	29	1.4	29
Dunstan St	32	0.3	32	0.3	32	0.3	32
Armory St	31	0.6	31	0.6	31	0.8	31
Trader Joe's	31	0.3	31	0.2	31	0.3	31
Cross St	31	0.3	32	0.2	31	0.3	31
Parsons St	32	0.3	32	0.4	32	0.4	33
Eddy St	31	0.5	31	0.4	31	0.4	31
Brookside Ave	29	0.5	30	0.4	29	0.5	30
Walker St	31	0.4	31	0.5	31	0.4	32
Brooks Ave	24	3.1	23	3.5	24	2.7	27
Lowell Ave	5	26.2	5	26.2	6	24.0	6
Walnut St	9	37.8	9	38.0	9	37.7	10
Total	17	86.7	17	84.1	17	85.5	18

Arterial Level of Service: EB Washington St

Cross Street	Run 5 Delay	Run 6 Speed	Run 6 Delay	Run 7 Speed	Run 7 Delay	Run 8 Speed	Run 8 Delay
Chestnut St	12.4	7	13.5	7	12.3	8	11.9
Davis Ct	1.3	29	1.3	29	1.3	29	1.3
Dunstan St	0.3	32	0.3	32	0.3	32	0.4
Armory St	0.6	31	0.9	31	0.7	31	0.7
Trader Joe's	0.2	31	0.3	31	0.2	31	0.2
Cross St	0.2	31	0.2	31	0.2	31	0.2
Parsons St	0.3	32	0.4	32	0.4	33	0.3
Eddy St	0.4	31	0.5	31	0.4	31	0.5
Brookside Ave	0.3	30	0.4	30	0.4	30	0.4
Walker St	0.3	32	0.3	31	0.4	32	0.4
Brooks Ave	1.6	28	1.5	27	1.8	25	2.5
Lowell Ave	21.4	7	21.2	6	23.7	5	26.5
Walnut St	33.7	7	60.1	9	35.2	9	36.4
Total	73.0	16	100.7	18	77.3	18	81.8

Arterial Level of Service: EB Washington St

Cross Street	Run 9 Speed	Run 9 Delay	Run 10 Speed	Run 10 Delay
Chestnut St	7	13.1	7	13.7
Davis Ct	29	1.3	29	1.3
Dunstan St	32	0.4	32	0.4
Armory St	31	0.8	31	0.8
Trader Joe's	31	0.3	31	0.3
Cross St	31	0.3	31	0.2
Parsons St	32	0.4	32	0.3
Eddy St	31	0.3	31	0.5
Brookside Ave	30	0.5	30	0.4
Walker St	31	0.5	31	0.5
Brooks Ave	26	1.9	26	2.1
Lowell Ave	7	20.0	6	25.2
Walnut St	9	40.8	10	34.0
Total	18	80.5	18	79.7

Arterial Level of Service: WB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed	Run 1 Speed	Run 1 Delay
Walnut St	21	52.0	68.5	0.1	6	8	39.6
Lowell Ave	20	42.9	65.0	0.2	10	12	32.6
Brooks Ave	27	2.2	8.0	0.0	21	22	2.0
Walker St	30	0.7	8.8	0.1	30	30	0.6
Brookside Ave	18	0.6	8.1	0.1	29	29	0.7
Eddy St	16	1.3	10.2	0.1	27	27	1.2
Parsons St	14	0.5	7.5	0.1	30	30	0.5
Cross St	12	0.4	9.8	0.1	31	31	0.4
Trader Joe's	10	0.3	4.9	0.0	28	28	0.3
Armory St	8	0.5	4.4	0.0	30	30	0.5
Dunstan St	6	0.5	14.6	0.1	31	31	0.4
Davis Ct	4	0.3	7.8	0.1	32	31	0.3
Chestnut St	1	9.2	19.7	0.1	18	16	11.3
Total		111.4	237.4	1.1	16	18	90.4

Arterial Level of Service: WB Washington St

Cross Street	Run 2 Speed	Run 2 Delay	Run 3 Speed	Run 3 Delay	Run 4 Speed	Run 4 Delay	Run 5 Speed
Walnut St	7	45.5	6	58.0	7	44.1	8
Lowell Ave	9	50.7	9	45.1	8	58.8	11
Brooks Ave	21	2.2	20	2.3	20	2.5	22
Walker St	30	0.7	29	0.8	30	0.7	30
Brookside Ave	29	0.7	29	0.7	29	0.7	30
Eddy St	27	1.4	26	1.4	27	1.4	27
Parsons St	30	0.5	29	0.6	30	0.6	30
Cross St	31	0.4	31	0.5	31	0.4	31
Trader Joe's	28	0.4	29	0.3	28	0.4	28
Armory St	30	0.5	31	0.5	30	0.5	31
Dunstan St	31	0.6	31	0.5	31	0.5	31
Davis Ct	31	0.3	32	0.3	32	0.2	32
Chestnut St	18	9.2	17	9.6	17	9.6	17
Total	16	112.9	16	120.5	16	120.3	18

Arterial Level of Service: WB Washington St

Cross Street	Run 5 Delay	Run 6 Speed	Run 6 Delay	Run 7 Speed	Run 7 Delay	Run 8 Speed	Run 8 Delay
Walnut St	36.0	5	78.4	8	40.9	5	67.0
Lowell Ave	33.5	12	32.4	10	39.0	10	40.7
Brooks Ave	2.0	21	2.0	21	2.2	20	2.3
Walker St	0.5	30	0.6	30	0.7	30	0.6
Brookside Ave	0.5	29	0.6	30	0.6	29	0.6
Eddy St	1.3	27	1.1	27	1.3	26	1.4
Parsons St	0.5	30	0.5	30	0.5	29	0.6
Cross St	0.5	31	0.5	31	0.4	31	0.4
Trader Joe's	0.3	28	0.3	28	0.4	28	0.3
Armory St	0.4	30	0.5	30	0.5	30	0.5
Dunstan St	0.4	31	0.5	31	0.5	31	0.5
Davis Ct	0.2	31	0.2	32	0.2	31	0.3
Chestnut St	9.8	17	10.1	19	8.0	18	8.5
Total	85.8	15	127.9	18	95.1	15	123.7

Arterial Level of Service: WB Washington St

Cross Street	Run 9 Speed	Run 9 Delay	Run 10 Speed	Run 10 Delay
Walnut St	6	54.1	6	55.0
Lowell Ave	10	38.6	8	53.0
Brooks Ave	21	2.1	21	2.2
Walker St	30	0.6	29	0.8
Brookside Ave	29	0.6	29	0.8
Eddy St	27	1.3	27	1.3
Parsons St	30	0.4	30	0.5
Cross St	31	0.5	31	0.5
Trader Joe's	28	0.3	28	0.3
Armory St	31	0.5	30	0.5
Dunstan St	31	0.5	30	0.6
Davis Ct	32	0.3	31	0.3
Chestnut St	17	10.1	21	6.2
Total	16	109.8	16	122.0



HOWARD STEIN HUDSON

Engineers + Planners

Appendix C

Collision Diagram and Crash Worksheets

Collision Summary															
Washington St from Chestnut St to Walnut Ave, Newton, MA															
2015-2020															
Crash Number	Crash Date	Crash Severity	Crash Time	Max Injury Severity	Age of Driver	Age of Driver	Age of Driver	Age of Driver	Age of Driver	Driver Contributing Circumstances (All Drivers)	Light Cond	Manner of	Road Surf	Weather Conditions	
1	01/26/2015	Property damage only (none injured)	4:22 PM	No injury	16-17	75-84				D1: (No improper driving) / D2: (Disregarded traffic signs, signals, r	Dusk	Angle	Snow	Snow	Vehicle 1 was traveling westbound on Washington Street. Vehicle 2 was parked facing westbound and attempted to make a u-turn and collided with Vehicle 1. No injuries were reported.
2	03/10/2015	Property damage only (none injured)	4:17 PM	No injury						D1: (No improper driving) / D2: (No improper driving) / D3: (No im	Daylight	Rear-end	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street and yielded for a vehicle turning left. Vehicle 2 was traveling eastbound on Washington Street when struck by Vehicle 3 and pushed into the Vehicle 1. No injuries were reported.
3	04/02/2015	Non-fatal injury	2:28 PM	Non-fatal injury - Pe	65-74	65-74	55-64	55-64		D1: (Operating vehicle in erratic, reckless, careless, negligent or agg	Daylight	Not report	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street and attempted to turn left onto Chestnut Street. A pedestrian was crossing across Chesnut Street and was struck by Vehicle 1. The pedestrian was taken to the hospital via ambulance.
4	04/13/2015	Property damage only (none injured)	7:19 AM	No injury	16-17	35-44				D1: (Glare) / D2: (No improper driving)	Daylight	Rear-end	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street. Vehicle 2 attempted to turn left onto Washington Street from Brooks Ave and collided with the left rear of Vehicle 1. No injuries were reported.
5	06/17/2015	Property damage only (none injured)	6:11 PM	No injury	21-24	45-54				D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street. Vehicle 2 was traveling southbound on Eddy Street and attempting to turn right onto Washington Street and was struck by Vehicle 1. No injuries were reported.
6	06/26/2015	Non-fatal injury	8:59 AM	Non-fatal injury - Pe	21-24	35-44				D1: (No improper driving) / D2: (No improper driving)	Daylight	Angle	Wet	Rain	Vehicle 1 was traveling eastbound on Washington Street. Vehicle 2 attempted to turn left from the 1250 Washington Street driveway and was struck by Vehicle 1. The operator of Vehicle 2 was transported to the hospital via ambulance.
7	07/02/2015	Property damage only (none injured)	3:43 PM	No injury	25-34	55-64				D1: (Failure to keep in proper lane or running off road) / D2: (No in	Daylight	Sideswipe	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street in the left lane approaching Walnut Street. Vehicle 2 was traveling eastbound on Washington Street in the right lane. Vehicle 1 attempted to change lanes and sideswiped Vehicle 2. No injuries were reported.
8	08/06/2015	Property damage only (none injured)	8:35 AM	No injury	25-34	35-44				D1: (No improper driving),(No improper driving) / D2: (Inattention)	Daylight	Rear-end	Dry	Clear	V1 and V2 traveling WB on Washington Street. V1 stopped to let an uninvolved vehicle exit the driveway at 897 Washington Street, and V2 rear-ended V1. No injuries were reported.
9	09/04/2015	Property damage only (none injured)	8:17 PM	No injury	16-17	45-54				D1: (No improper driving) / D2: (Inattention)	Dark - light	Rear-end	Dry	Clear	Vehicle 1 was traveling southbound on Walnut Street and stopped at the intersection of Washington Street. Vehicle 2 was traveling southbound on Walnut Street and rear-ended Vehicle 1. No injuries were reported.
10	09/13/2015	Not Reported	10:56 AM	Not reported							Daylight	Sideswipe	Wet	Rain	Vehicle 1 was parked in front of 1137 Washington Street facing westbound and was sideswiped by an unknown vehicle. No injuries were reported.
11	10/06/2015	Property damage only (none injured)	4:12 PM	No injury	25-34	45-54				D1: (Inattention) / D2: (Inattention)	Daylight	Angle	Dry	Cloudy	Vehicle 1 was traveling westbound on Washington Street and attempted to turn left into the 1200 Washington Street driveway. Vehicle 2 was parked on the eastbound lane and pulled out of their parking start and was struck by Vehicle 1. No injuries were reported.
12	10/15/2015	Non-fatal injury	11:53 AM	Non-fatal injury - No	65-74	75-84				D1: (Failed to yield right of way) / D2: (No improper driving)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street and attempted to make a left turn onto Walnut Street. Vehicle 2 was traveling eastbound on Washington Street and collided with Vehicle 2. No injuries were reported.
13	11/11/2015	Non-fatal injury	8:11 PM	Non-fatal injury - Pe	25-34	55-64				D1: (Inattention) / D2: (No improper driving) / D3: (No improper d	Dark - light	Angle	Wet	Rain	Vehicle 1 was traveling westbound on Washington Street in the frotatear left lane. Vehicle 2 was traveling westbound on Washington Street. Vehicle 1 sideswiped Vehicle 2 and was pushed across the center line into Vehicle 3 which was traveling eastbound on Washington Street. The driver of Vehicle 3 was transported to the hospital.
14	11/16/2015	Non-fatal injury	1:13 PM	Non-fatal injury - Pe	25-34	25-34				D1: (No improper driving) / D2: (Disregarded traffic signs, signals, r	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street Vehicle 2 was traveling southbound on Lowell Street and collided with Vehicle 1. No injuries were reported.
15	11/16/2015	Non-fatal injury	10:02 AM	Non-fatal injury - Pe	35-44	55-64					Daylight	Angle	Dry	Clear	Vehicle 1 was traveling eastbound along Washington Street and attempted to make a left turn onto Harrison Street. Vehicle 2 was traveling westbound along Washington Street and struck vehicle 2. The driver of Vehicle 1 was transferred to the hospital via ambulance.
16	11/20/2015	Non-fatal injury	9:07 PM	Non-fatal injury - Pe	45-54	45-54				D1: (No improper driving) / D2: (No improper driving)	Dark - light	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street. Vehicle 2 was traveling eastbound on Washington Street and attempted to make a left turn onto Eddy Street and was struck by Vehicle 1. Vehicle 1 had aparent injuries.
17	11/23/2015	Property damage only (none injured)	1:06 PM	No injury	35-44	65-74				D1: (Inattention),(Inattention) / D2: (No improper driving),(No imp	Daylight	Angle	Dry	Clear/Clea	Vehicle 1 was traveling eastbound on Washington Street. Vehicle 2 made a left turn from the 1180 Washington Street driveway and collided with Vehicle 1. No injuries were reported.
18	12/02/2015	Non-fatal injury	4:42 PM	Non-fatal injury - No	16-17	16-17	55-64	55-64		D1: (No improper driving)	Dark - light	Sideswipe	Wet	Rain/Rain	Vehicle 1 was traveling eastbound on Washington Street and collided with a pedestrian as he was crossing the street near 1121 Washington Street. The pedestrian was dressed in dark clothes and roadway conditions were sleek. The pedestrian was transferred to the hospital via ambulance.
19	12/18/2015	Property damage only (none injured)	11:00 AM	No injury	18-20	>84				D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	Dry	Cloudy	Vehicle 1 was traveling westbound on Washington Street. Vehicle 2 was traveling southbound on Armony Street and attempted to turn left onto Washington Street and was struck by Vehicle 1. No injuries were reported.
20	12/22/2015	Property damage only (none injured)	6:18 PM	No injury	45-54	65-74				D1: (No improper driving),(No improper driving) / D2: (No improp	Dark - light	Sideswipe	Wet	Rain/Rain	Vehicle 1 was traveling eastbound in the left lane of Washington Street when a vehicle stopped abruptly in front of him. Vehicle 1 swerved into the right lane and collided with Vehicle 2. No injuries were reported.

Crash Number	Crash Date	Crash Severity	Crash Time	Max Injury Severity	Age of Driver	Age of Driver	Age of Driver	Age of Driver	Age of Driver	Driver Contributing Circumstances (All Drivers)	Light Cond	Manner of	Road Surfa	Weather Conditions	
21	12/29/2015	Not Reported	1:35 PM	Not reported							Daylight	Sideswipe,	Dry	Clear	Vehicle 1 was parked in front of 1075 Washington Street and was sideswiped in a hit and run. No injuries were reported.
22	12/30/2015	Property damage only (none injured)	8:55 AM	No injury	25-34	35-44				D1: (No improper driving) / D2: (Inattention)	Daylight	Sideswipe,	Wet	Clear	Vehicle 1 was traveling in the westbound left lane at the Walnut Street intersection. Vehicle 2 attempted to change lanes quickly and sideswiped Vehicle 1. No injuries were reported.
23	01/11/2016	Property damage only (none injured)	2:25 PM	No injury	65-74	65-74				D1: (No improper driving)	Daylight	Rear-end	Dry	Clear	Vehicle 1 was pulling out of the 1121 Washington Street driveway. Vehicle 2 was parked on Washington Street facing east and backed into Vehicle 1. No injuries were reported.
24	01/13/2016	Property damage only (none injured)	8:25 AM	No injury	35-44	45-54				D1: (No improper driving) / D2: (Made an improper turn)	Daylight	Sideswipe,	Dry	Clear	Vehicle 1 was traveling northbound on Chesnut Street approaching Washington Street. Vehicle 2 (a school bus) attempted to turn right onto Washington Street and swung into the left lane and collided with Vehicle 1. No injuries were reported.
25	01/18/2016	Property damage only (none injured)	4:05 PM	No injury	25-34	35-44				D1: (No improper driving) / D2: (Failed to yield right of way)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street in the left lane. Vehicle 2 was traveling eastbound on Washington Street and attempted to switch lanes and collided with Vehicle 1. No injuries were reported.
26	01/20/2016	Unknown	8:23 AM	Not reported	45-54	65-74				D1: (No improper driving) / D2: (Failed to yield right of way)	Daylight	Angle	Dry	Not Report	Vehicle 1 was traveling eastbound on Washington Street and attempted to make a left turn onto Eddy Street. Vehicle 2 was traveling southbound on Eddy Street and attempted to turn left onto Washington Street and collided with Vehicle 1. No injuries were reported.
27	01/25/2016	Property damage only (none injured)	10:31 AM	No injury	55-64	65-74				D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street. Vehicle 2 was traveling eastbound on Washington Street and attempted to turn left onto Cross Street. Vehicle 1 was unable to stop and collided with vehicle 2. No injuries were reported.
28	02/09/2016	Non-fatal injury	8:04 AM	Non-fatal injury - In	55-64	55-64	16-20	16-20		D1: (Unknown)	Daylight	Single vehi	Dry	Cloudy	Vehicle 1 was traveling southbound on Walnut Street and attempted to turn left on Washington Street. A pedestrian was crossing the Washington Street westbound approach and was struck by Vehicle 1. The pedestrian was later transferred to the hospital via ambulance.
29	02/18/2016	Property damage only (none injured)	5:49 PM	No injury	55-64	55-64				D1: (No improper driving)	Dark - light	Sideswipe,	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street in the right lane and was stopped at the Lowell Avenue intersection. Vehicle 2 was traveling eastbound in the left lane and side swiped vehicle 1. No injuries were reported.
30	03/02/2016	Property damage only (none injured)	5:15 PM	No injury	16-17	35-44				D1: (Visibility obstructed) / D2: (No improper driving),(Glare)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling southbound on Cross Street and attempted to make a left turn onto Washington Street. Vehicle 2 was traveling westbound on Washington Street and struck Vehicle 1. No injuries were reported.
31	04/06/2016	Non-fatal injury	11:37 AM	Non-fatal injury - Pe	25-34	45-54				D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling southbound on Walnut Street and was stopped at the intersection of Washington Street. Vehicle 2 attempted to make a u-turn from the northbound side of the intersection and struck Vehicle 1 in the rear. No injuries were reported.
32	04/23/2016	Property damage only (none injured)	11:45 AM	No injury	25-34	55-64				D1: (Inattention) / D2: (No improper driving)	Daylight	Rear-end	Wet	Rain	Vehicle 1 was traveling northbound on Chesnut Street when it rear ended Vehicle 2 as it was stopped at the intersection with Washington Street. No injuries were reported.
33	04/25/2016	Property damage only (none injured)	4:09 PM	No injury	25-34	35-44				D1: (Other improper action) / D2: (No improper driving)	Daylight	Head-on	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street and was attempting to make a left turn onto Lowell Ave. Vehicle 2 was traveling westbound on Washington Street and collided with Vehicle 1. No injuries were reported.
34	05/07/2016	Property damage only (none injured)	1:49 PM	No injury	25-34	45-54				D1: (No improper driving) / D2: (Failure to keep in proper lane or r	Daylight	Sideswipe,	Wet	Cloudy	Vehicle 1 was traveling eastbound on Washington Street in front of 1121 Washington Street in the right lane. Vehicle 2 was traveling eastbound in the left lane and attempted to merge into the right lane and collided with Vehicle 1. No injuries were reported.
35	05/20/2016	Property damage only (none injured)	2:26 PM	No injury	65-74	65-74				D1: (Over-correcting/over-steering)	Daylight	Single vehi	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street and attempted to turn left onto Parsons Street and lost control and ended on the west sidewalk. No injuries were reported.
36	06/07/2016	Unknown	1:06 PM	Not reported						D2: (Inattention)	Daylight	Unknown	Dry	Cloudy	Vehicle 1 was parked on Walker Street facing south just before Washington Street. Vehicle 2 backed into Vehicle 1 before driving away. No injuries were reported.
37	06/13/2016	Property damage only (none injured)	3:58 PM	No injury	35-44	75-84				D1: (Unknown) / D2: (Unknown)	Daylight	Sideswipe,	Dry	Clear	Vehicle 1 was parked on Walnut Street facing southbound and attempted to pull out of the spot. Vehicle 2 was traveling southbound on Walnut Street to turn right onto Washington Street and collided with Vehicle 1. No injuries were reported.
38	06/18/2016	Non-fatal injury	12:38 PM	Non-fatal injury - In	25-34	65-74				D1: (Over-correcting/over-steering) / D2: (No improper driving)	Daylight	Rear-end	Dry	Clear	Vehicle 1 was parked on Washington Street facing east onto Washington Street. Vehicle 2 was traveling eastbound on Washington Street and struck Vehicle 1. The operator of Vehicle 1 was transported to the hospital via ambulance.
39	06/21/2016	Property damage only (none injured)	11:47 AM	No injury	21-24	55-64				D1: (No improper driving) / D2: (Unknown)	Daylight	Rear-end	Dry	Clear	Not enough information to map.
40	06/29/2016	Unknown	1:30 PM	Not reported							Daylight	Sideswipe,	Dry	Clear	V1 parked facing EB in front of 850 Washington Street, sideswiped by a vehicle traveling in the same direction that fled the scene. No injuries were reported.
41	08/22/2016	Non-fatal injury	2:47 PM	No injury	35-44	35-44				D1: (No improper driving) / D2: (Distracted)	Daylight	Rear-end	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street and was stopped at the Lowell Street intersection. Vehicle 2 rear ended Vehicle 1. No injuries were reported.
42	09/14/2016	Property damage only (none injured)	10:06 AM	No injury	35-44	35-44				D1: (Inattention)	Daylight	Single vehi	Dry	Clear/Clea	Vehicle 1 was attempting to park in the westbound direction of Washington Street in front of 1232 Washington Street when it collided with a cement utility pole. No injuries were reported.
43	09/16/2016	Property damage only (none injured)	7:50 PM	No injury	35-44	35-44				D1: (Inattention)	Dark - light	Rear-end	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street near 1015 Washington Street when he looked away from the roadway. Vehicle 1 crashed into parked vehicle 2. No injuries were reported.

Crash Number	Crash Date	Crash Severity	Crash Time	Max Injury Severity	Age of Driver	Age of Driver	Age of Driver	Age of Driver	Driver Contributing Circumstances (All Drivers)	Light Cond	Manner of	Road Surf	Weather Conditions
44	09/20/2016	Non-fatal injury	9:10 AM	Non-fatal injury - No	35-44	35-44			D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	Dry	Cloudy
45	10/19/2016	Property damage only (none injured)	5:39 AM	No injury	25-34	25-34			D2: (No improper driving)	Dark - unkn	Rear-end	Dry	Clear
46	10/31/2016	Non-fatal injury	7:49 PM	Non-fatal injury - No	25-34	25-34			D1: (No improper driving) / D2: (Inattention)	Dark - light	Head-on	Dry	Cloudy
47	11/08/2016	Property damage only (none injured)	3:27 PM	No injury	35-44	55-64			D1: (Failed to yield right of way),(Inattention) / D2: (No improper d	Daylight	Angle	Dry	Clear
48	11/16/2016	Property damage only (none injured)	9:34 AM	No injury	25-34	75-84			D1: (Unknown) / D2: (Unknown)	Daylight	Angle	Wet	Cloudy/Cl
49	11/19/2016	Non-fatal injury	5:43 PM	Non-fatal injury - Po	>84	>84			D1: (Failure to keep in proper lane or running off road)	Dark - light	Sideswipe,	Dry	Clear
50	11/22/2016	Property damage only (none injured)	5:58 PM	No injury	21-24	65-74			D1: (No improper driving) / D2: (Failed to yield right of way)	Dark - light	Sideswipe,	Dry	Clear
51	01/26/2017	Non-fatal injury	5:22 AM	Non-fatal injury - Po	65-74	65-74				Dark - light	Single vehi	Wet	Clear
52	03/09/2017	Property damage only (none injured)	9:33 AM	No injury	65-74	75-84			D1: (No improper driving)	Daylight	Angle	Dry	Clear
53	03/18/2017	Property damage only (none injured)	1:40 AM	No injury	25-34	25-34			D1: (Inattention) / D2: (Inattention)	Dark - light	Angle	Wet	Clear
54	04/21/2017	Property damage only (none injured)	1:36 PM	No injury	18-20	35-44			D1: (No improper driving)	Daylight	Rear-end	Wet	Rain/Cloud
55	04/21/2017	Non-fatal injury	8:23 PM	Non-fatal injury - No	21-24	21-24	25-34	25-34	D1: (No improper driving)	Dark - light	Single vehi	Wet	Rain/Cloud
56	05/13/2017	Property damage only (none injured)	12:41 PM	No injury	25-34	65-74			D1: (No improper driving) / D2: (Made an improper turn)	Daylight	Angle	Dry	Cloudy/Un
57	05/17/2017	Property damage only (none injured)	12:18 PM	No injury	35-44	55-64			D1: (No improper driving) / D2: (No improper driving)	Daylight	Sideswipe,	Dry	Clear
58	05/22/2017	Property damage only (none injured)	7:47 AM	No injury	25-34	45-54			D1: (No improper driving)	Daylight	Angle	Wet	Rain
59	06/07/2017	Property damage only (none injured)	4:54 PM	No injury	25-34	75-84			D1: (No improper driving) / D2: (Failed to yield right of way)	Daylight	Angle	Dry	Clear
60	06/12/2017	Property damage only (none injured)	5:30 PM	No injury	35-44	55-64				Daylight	Angle	Dry	Clear
61	06/16/2017	Property damage only (none injured)	2:07 PM	No injury	45-54	55-64			D1: (No improper driving) / D2: (Failed to yield right of way)	Daylight	Angle	Dry	Clear
62	06/28/2017	Property damage only (none injured)	2:21 PM	No injury	35-44	75-84			D1: (No improper driving) / D2: (Failed to yield right of way)	Daylight	Sideswipe,	Dry	Clear
63	07/03/2017	Non-fatal injury	6:46 PM	Non-fatal injury - In	21-24	45-54			D1: (Inattention),(Failed to yield right of way)	Daylight	Angle	Dry	Clear
64	07/17/2017	Non-fatal injury	11:04 AM	Non-fatal injury - Po	65-74	65-74			D1: (Distracted)	Daylight	Sideswipe,	Dry	Clear
65	07/17/2017	Property damage only (none injured)	12:51 PM	No injury	25-34	75-84			D1: (Unknown) / D2: (Unknown)	Daylight	Angle	Dry	Clear

Crash Number	Crash Date	Crash Severity	Crash Time	Max Injury Severity	Age of Driver	Age of Driver	Age of Driver	Age of Driver	Driver Contributing Circumstances (All Drivers)	Light Cond	Manner of	Road Surfa	Weather Conditions	
66	07/18/2017	Property damage only (none injured)	5:44 PM	No injury	25-34	55-64			D1: (No improper driving) / D2: (Inattention),(Failed to yield right of way)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street. Vehicle 2 attempted to turn left from 1229 Washington Street and was struck by Vehicle 1. No injuries were reported.
67	07/23/2017	Property damage only (none injured)	3:34 PM	No injury	35-44	55-64			D1: (No improper driving)	Daylight	Rear-end	Dry	Clear	Vehicle 1 was stopped at the red light adjacent to 911 Washington Street waiting to turn right onto Lowell Ave. Vehicle 2 rear-ended Vehicle 1. No injuries were reported.
68	07/25/2017	Property damage only (none injured)	2:02 PM	No injury	25-34	45-54			D1: (No improper driving)	Daylight	Sideswipe,	Dry	Cloudy	Vehicle 1 was parked in a metered spot in front of 897 Washington Street. Vehicle 2 attempted to park in the space in front of Vehicle 1 and collided with the front bumper. No injuries were reported.
69	08/01/2017	Property damage only (none injured)	8:41 AM	No injury	45-54	65-74			D1: (No improper driving)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling north on Lowell Ave at the Washington Street intersection in the left lane. Vehicle 2 was traveling north in the right lane and struck Vehicle 1 when it changed lanes. No injuries were reported.
70	08/17/2017	Property damage only (none injured)	12:20 PM	No injury	55-64	65-74				Daylight	Angle	Dry	Clear	Vehicle 1 was traveling northbound on Lowell Ave. Vehicle 2 was traveling westbound on Washington Street and struck Vehicle 1 sending it into the sidewalk. No injuries were reported.
71	08/17/2017	Non-fatal injury	3:04 PM	Non-fatal injury - No	18-20	18-20	16-20	16-20	D1: (No improper driving),(No improper driving)	Daylight	Single vehi	Dry	Clear/Clear	Vehicle 1 was traveling eastbound on Washington Street in front of 979 Washington Street. A pedestrian was running in the far lane and ran across the street. Vehicle 1 struck the pedestrian as it switched lanes. The pedestrian was taken away by a third party.
72	08/24/2017	Property damage only (none injured)	6:56 PM	No injury	16-17	16-17			D1: (No improper driving)	Daylight	Sideswipe,	Dry	Clear	Vehicle 1 was parked on Washington Street facing westbound in front of 1105 Washington Street. Vehicle 1 was sideswiped by an unknown vehicle. No injuries were reported.
73	10/06/2017	Non-fatal injury	7:34 PM	Non-fatal injury - No	16-17	16-17			D1: (Unknown)	Dark - light	Angle	Dry	Clear	Vehicle 1 (a motorcycle) was traveling westbound on Washington Street in the right hand lane. Vehicle 2 was traveling eastbound on Washington Street attempting to take a left-turn onto Lowell Street when he collided with Vehicle 1. The motorcyclist was taken to the hospital via ambulance.
74	10/12/2017	Property damage only (none injured)	3:20 PM	No injury	45-54	45-54			D1: (No improper driving) / D2: (Failed to yield right of way),(Visibility)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street. Vehicle 2 attempted to turn left from the 1185 Washington Street driveway and was struck by Vehicle 1. No injuries were reported.
75	10/24/2017	Property damage only (none injured)	9:31 AM	No injury	25-34	55-64			D1: (Failed to yield right of way)	Daylight	Angle	Dry	Cloudy	Vehicle 1 (a bus) was traveling eastbound on Washington Street and attempted to make a left-turn onto Walnut Street. Vehicle 2 was traveling westbound on Washington Street and collided with Vehicle 1. No injuries were reported.
76	11/08/2017	Property damage only (none injured)	8:42 AM	No injury	25-34	35-44			D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street in the far left lane. Vehicle 2 turned right onto Washington Street and collided with Vehicle 1. No injuries were reported.
77	11/18/2017	Property damage only (none injured)	5:00 PM	No injury						Dark - light	Angle	Wet	Rain	Vehicle 1 was traveling eastbound on Washington Street. Vehicle 2 attempted to make a left-turn from Chesnut Street to Washington Street and struck Vehicle 1. No injuries were reported.
78	11/20/2017	Property damage only (none injured)	6:01 PM	No injury	25-34	25-34				Dark - light	Sideswipe,	Dry	Clear	Vehicle 1 was traveling southbound on Walnut Street and was stopped at the intersection of Washington Street. Vehicle 2 was traveling southbound on Walnut Street and sideswiped Vehicle 1. No injuries were reported.
79	11/27/2017	Non-fatal injury	2:38 PM	Non-fatal injury - Pe						Daylight	Angle	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street. Vehicle 2 was traveling westbound on Washington Street and attempted to turn left on Walnut Street when struck by Vehicle 1. No injuries were reported.
80	12/05/2017	Property damage only (none injured)	5:40 PM	No injury	25-34	25-34			D1: (Unknown)	Dark - light	Head-on	Wet	Cloudy/Rain	Vehicle 1 was traveling eastbound on Washington Street. Vehicle 2 was traveling westbound on Washington Street and attempted to turn left onto Lowell Street. No injuries were reported.
81	12/13/2017	Property damage only (none injured)	5:16 AM	No injury	35-44	35-44			D1: (Inattention)	Dark - light	Single vehi	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street and attempted to turn left onto Walnut Street. Vehicle 1 lost control and collided with the street light on the median. No injuries were reported.
82	12/28/2017	Unknown	9:20 AM	Not reported						Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound in front of 1205 Washington Street. Vehicle 2 pulled out of the 1205 Washington Street driveway and collided with Vehicle 1. No injuries were reported.
83	01/05/2018	Property damage only (none injured)	3:06 PM	No injury	25-34	25-34			D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	Slush	Clear	Vehicle 1 was traveling eastbound on Washington Street. Vehicle 2 was turning left from the West Newton Gas Station and was struck by Vehicle 1. No injuries were reported.
84	01/10/2018	Non-fatal injury	5:14 PM	Non-fatal injury - No			16-20	45-54		Daylight	Single vehi	Slush	Clear	Vehicle 1 (a plow) was traveling westbound on Washington Street and was turning left onto Chestnut Street. A pedestrian was crossing Chestnut Street and was struck by Vehicle 1. The pedestrian was later taken to the hospital by a third party.
85	01/13/2018	Property damage only (none injured)	8:27 PM	No injury						Dark - light	Sideswipe,	Dry	Clear	Vehicle 1 was parked facing west in front of 1251 Washington Street. An unknown vehicle sideswiped the parked vehicle. No injuries were reported.
86	01/18/2018	Property damage only (none injured)	8:14 PM	No injury	55-64	65-74			D1: (No improper driving) / D2: (Distracted)	Dark - light	Rear-end	Dry	Clear/Clear	Vehicle 1 was traveling northbound on Walnut Street and was stopped at the Washington Street intersection. Vehicle 2 rear-ended Vehicle 1. No injuries were reported.

Crash Number	Crash Date	Crash Severity	Crash Time	Max Injury Severity	Age of Driver	Age of Driver	Age of Driver	Age of Driver	Driver Contributing Circumstances (All Drivers)	Light Cond	Manner of	Road Surfa	Weather Conditions	
87	01/22/2018	Property damage only (none injured)	5:40 PM	No injury	55-64	75-84			D1: (Unknown) / D2: (Failed to yield right of way)	Dark - light	Sideswipe,	Wet	Rain	V1 traveling EB on Washington St at 857 Washington St and signaled to turn right into a parking spot in the right hand shoulder. V2 parked on Washington Street, pulled out, and collided with V1. No injuries were reported.
88	01/25/2018	Property damage only (none injured)	3:15 PM	No injury	75-84	75-84			D1: (No improper driving) / D2: (Failed to yield right of way)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street in the right lane. Vehicle 2 was attempting to turn left from the 1121 Washington Street parking lot and was struck by Vehicle 1. No injuries were reported.
89	02/03/2018	Property damage only (none injured)	7:50 AM	No injury	21-24	21-24			D1: (Inattention),(Unknown)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street and ran the red light. Vehicle 2 was traveling southbound on Walnut Street and suddenly stopped and was rear ended with Vehicle 2. No injuries were reported.
90	03/27/2018	Non-fatal injury	6:56 PM	Non-fatal injury - No	55-64	65-74			D1: (Operating vehicle in erratic, reckless, careless, negligent or agg	Daylight	Rear-end	Dry	Clear/Clea	Vehicle 2 was traveling southbound on Walnut Street and was stopped at the red light at Washington Street. Vehicle 1 rearended Vehicle 2. No injuries were reported.
91	04/18/2018	Property damage only (none injured)	1:04 PM	No injury	55-64	75-84			D1: (Failed to yield right of way) / D2: (No improper driving)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street and attempted to turn left onto Walnut Street. Vehicle 2 was traveling eastbound on Washington Street and collided with Vehicle 1. No injuries were reported.
92	04/23/2018	Property damage only (none injured)	4:50 PM	No injury	25-34	25-34			D1: (No improper driving)	Daylight	Sideswipe,	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street and was stopped at the Walnut Street intersection. Vehicle 2 was traveling westbound on Washington Street and sideswiped Vehicle 1 as it tried to pass. No injuries were reported.
93	05/09/2018	Property damage only (none injured)	12:58 PM	No injury	18-20	18-20			D1: (No improper driving)	Daylight	Rear-end	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street. Vehicle 2 abruptly stoppeed at the intersection of Chesnut Street and Washington Street and was rearended. No injuries were reported.
94	06/19/2018	Property damage only (none injured)	5:32 PM	No injury	45-54	55-64			D1: (Unknown) / D2: (Unknown),(Unknown)	Daylight	Sideswipe,	Dry	Clear	V1 and V2 traveling WB at 855 Washington St. V2 in the outside lane sideswept V1 in the inside lane. No injuries were reported.
95	06/21/2018	Property damage only (none injured)	4:17 PM	No injury	35-44	35-44			D1: (No improper driving)	Daylight	Sideswipe,	Dry	Clear	Vehicle 1 was travelin eastbound on Washington Street in the right lane. Vehicle 2 was traveling eastbound on Washington Street and attempted to turn right onto Walnut Street and collided with Vehicle 1. No injuries were reported.
96	06/28/2018	Property damage only (none injured)	4:37 PM	No injury	21-24	21-24				Daylight	Sideswipe,	Wet	Cloudy	Vehicle 1 was parked in front of 1200 Washington Street facing eastbound and reported damage from an unknown vehicle. No injuries were reported.
97	07/04/2018	Property damage only (none injured)	4:37 PM	No injury	25-34	25-34	65-74	65-74	D1: (Inattention)	Daylight	Angle	Dry	Clear	Vehicle 1 was backing from the parking lot of Oakley Spa and struck Vehicle 2 along Walker Street. No injuries were reported.
98	07/09/2018	Property damage only (none injured)	7:14 PM	No injury	21-24	21-24			D1: (No improper driving)	Daylight	Angle	Dry	Clear/Clea	Vehicle 1 was traveling westbound on Washington Street. Vehicle 2 attempted to make a left-turn from Armory Street onto Washington Street and was struck by Vehicle 1. No injuries were reported.
99	07/11/2018	Property damage only (none injured)	12:58 PM	No injury	65-74	65-74			D1: (Inattention),(Inattention)	Daylight	Rear-end	Dry	Clear/Clea	Vehicle 2 (a truck) was stopped at the intersection of Washington Street/Walnut Street to make a delivery. Vehicle 1 was stopped behind Vehicle 2 and attempted to pass Vehicle 2 and struck into the rear of the vehicle. No injuries were reported.
100	07/19/2018	Non-fatal injury	1:50 PM	Non-fatal injury - Po	25-34	45-54			D1: (Unknown)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street and attempted to turn left onto Lowell Street. Vehicle 2 was traveling eastbound on Washington Street and collided with Vehicle 1. No injuries were reported.
101	07/20/2018	Property damage only (none injured)	3:14 PM	No injury	45-54	55-64			D1: (Made an improper turn),(Failed to yield right of way) / D2: (No	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street in the far right lane. Vehicle 2 was traveling eastbound on Washington Street in the left lane when Vehicle 1 attempted to turn left and struck Vehicle 2. No injuries were reported.
102	10/17/2018	Property damage only (none injured)	12:25 PM	No injury	45-54	45-54			D2: (No improper driving),(No improper driving)	Daylight	Unknown	Dry	Clear/Clea	Vehicle 1 was traveling westbound on Washington Street. Vehicle 2 was traveling eastbound on Washington Street and attempted to turn left onto Walnut Street cutting on Vehicle 1 causing a collision. No injuries were reported.
103	10/26/2018	Non-fatal injury	7:34 PM	Non-fatal injury - Po	16-17	75-84				Dark - light	Rear-end	Dry	Cloudy	Vehicle 1 was reaveling westbound on Washington Street near 1201 Washington Street. Vehicle 2 was traveling westbound on Washington Street and was rear ended by Vehicle 1. Vehicle 1 was transferred to the hospital via ambulance.
104	10/29/2018	Property damage only (none injured)	10:14 AM	No injury	35-44	65-74			D1: (No improper driving) / D2: (Failure to keep in proper lane or r	Daylight	Angle	Wet	Cloudy	Vehicle 1 was traveling westbound on Washington Street near 1149 Washington Street. Vehicle 2 was traveling westbound and attempted to make an illegal u-turn causing Vehicle 1 to crash into Vehicle 2. No injuries were reported.
105	11/02/2018	Property damage only (none injured)	12:18 PM	No injury	45-54	>84			D1: (No improper driving)	Daylight	Angle	Dry	Clear	Vehicle 1 was parked at the intersection of Walnut Street/Washington Street and exited the potition. Vehicle 2 was traveling westbound on Washington Street and struck Vehicle 1. No injuries were reported .
106	12/18/2018	Property damage only (none injured)	1:47 PM	No injury	65-74	65-74			D1: (Unknown)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street. Vehicle 2 was traveling westbound on Washington Street and attempted to turn left onto Chesnut Street and was struck by Vehicle 1. No injuries were reported.
107	02/26/2019	Property damage only (none injured)	6:52 PM	No injury	35-44	65-74			D1: (Inattention) / D2: (No improper driving) / D3: (No improper d	Dark - light	Rear-end		Clear	Vehicles 2, 3, and 4 were traveling westbound on Washington Street and were stopped at the Walnut Street intersection. Vehicle 1 was distracted and collided with Vehicle 2 pushing it into Vehicles 3 and 4. No injuries were reported.

Crash Number	Crash Date	Crash Severity	Crash Time	Max Injury Severity	Age of Driver	Age of Driver	Age of Driver	Age of Driver	Driver Contributing Circumstances (All Drivers)	Light Cond	Manner of	Road Surf	Weather Conditions	
108	03/06/2019	Property damage only (none injured)	5:10 PM	No injury	25-34	45-54			D1: (No improper driving) / D2: (Failed to yield right of way)	Dusk	Sideswipe,	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street. Vehicle 2 was traveling westbound on Washington Street attempting to turn left onto Walnut Street and was struck by Vehicle 1. No injuries were reported.
109	03/10/2019	Property damage only (none injured)	1:57 PM	No injury	45-54	45-54			D1: (No improper driving) / D2: (Inattention)	Daylight	Angle	Wet	Rain	V1 traveling WB on Washington St, V2 exiting the driveway at 897 Washington Street. V2 did not yield to V1 and collided with V1 in an angle manner. No injuries were reported.
110	03/29/2019	Property damage only (none injured)	10:45 AM	No injury	35-44	35-44			D1: (Failure to keep in proper lane or running off road)	Daylight	Sideswipe,	Dry	Cloudy/Cld	Vehicle 1 was traveling eastbound on Washington Street in front of 1232 Washington Street in the right lane. Vehicle 2 was traveling eastbound in the left lane and struck the back rear corner of Vehicle 1. No injuries were reported.
111	06/05/2019	Property damage only (none injured)	8:58 AM	No Apparent Injury	25-34	25-34			D1: (No improper driving) / D2: (Inattention)	Daylight	Rear-end		Clear	Vehicle 1 was traveling northbound on Washington Street and was stopped at the Walnut Street intersection. Vehicle 2 rear-ended Vehicle 1. No injuries were reported.
112	06/17/2019	Property damage only (none injured)	3:34 PM	No Apparent Injury	21-24	35-44			D1: (No improper driving)	Daylight	Sideswipe,		Clear	Vehicle 1 was traveling westbound in the right lane on Washington Street approaching the intersection of Lowell Ave. Vehicle 2 was traveling westbound on Washington Street in the left lane and sideswiped Vehicle 1. No injuries were reported.
113	07/15/2019	Non-fatal injury	8:45 AM	Suspected Minor Injury	18-20	18-20			D2: (Fatigued/asleep),(Failure to keep in proper lane or running off	Daylight	Rear-end	Dry	Clear	Vehicle 1 was parked facing facebound in front of 1177 Washington Street. Vehicle 2 was traveling westbound on Washington Street and lost control and collided with vehicle 2. No injuries were reported.
114	08/05/2019	Property damage only (none injured)	10:07 AM	No Apparent Injury	25-34	55-64			D1: (No improper driving) / D2: (Failure to keep in proper lane or r	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street in front of 899 Washington Street. Vehicle 2 attempted to change lanes and struck vehicle 2 in the left rear corner. No injuries were reported.
115	08/10/2019	Property damage only (none injured)	11:00 AM	No Apparent Injury	21-24	35-44			D1: (No improper driving) / D2: (No improper driving)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street and attempted to turn left onto Chesnut Street from the right lane. Vehicle 2 was in the left-lane preparing to turn left onto Chesnut Street when Vehicle 1 cut in front causing a collision.
116	08/16/2019	Non-fatal injury	6:40 PM	Suspected Minor Injury	65-74	65-74	65-74	65-74	D1: (Visibility obstructed)	Dusk	Angle	Dry	Clear	Vehicle 1 was southbound on Dunstan Street and was attempted to pull onto Washington Street. A bicyclist was traveling westbound on Washington Street and was struck by Vehicle 1. No injuries were reported.
117	09/28/2019	Property damage only (none injured)	12:01 PM	No Apparent Injury	25-34	25-34			D1: (Inattention)	Daylight	Sideswipe,	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street and attempted to turn right. Vehicle 2 was traveling eastbound on Washington Street and was struck by Vehicle 1. No injuries were reported.
118	10/15/2019	Property damage only (none injured)	11:29 AM	No Apparent Injury	25-34	45-54			D1: (No improper driving) / D2: (No improper driving)	Daylight	Sideswipe,	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street in the left lane. Vehicle 2 was traveling eastbound on Washington Street in the right lane and was sideswiped by Vehicle 1. No injuries were reported.
119	10/16/2019	Property damage only (none injured)	10:48 PM	No Apparent Injury					D1: (No improper driving)	Dark - light	Single vehi	Wet	Rain	Vehicle 1 was traveling westbound on Washington Street in the area of 1201 Washington Street when a tree limb fell and struck the vehicle. No injuries were reported.
120	10/23/2019	Property damage only (none injured)	3:13 PM	No Apparent Injury	45-54	75-84			D1: (Inattention) / D2: (No improper driving)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street and attempted to make a right turn on Dunstan Street from the left lane. Vehicle 2 was traveling westbound on Washington Street and was struck by Vehicle 1. No injuries were reported.
121	10/31/2019	Property damage only (none injured)	12:27 PM	No Apparent Injury	25-34	25-34			D1: (Distracted)	Daylight	Sideswipe,	Wet	Rain	Vehicle 1 was traveling westbound in front of 993 Washington Street and was on their phone ad struck vehicle 2 which was parked. No injuries were reported.
122	12/05/2019	Property damage only (none injured)	9:10 PM	No Apparent Injury	21-24	55-64			D1: (Failed to yield right of way)	Dark - light	Angle	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street and attempted to turn left onto Cross Street. Vehicle 2 was traveling westbound on Washington Street ad collided with Vehicle 1. No injuries were reported.
123	12/19/2019	Property damage only (none injured)	4:55 PM	No Apparent Injury	18-20	18-20			D1: (No improper driving)	Dark - light	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street and attempted to make a left turn onto Walnut Street when it was struck by Vehicle 2. No injuries were reported.
124	02/14/2020	Property damage only (none injured)	6:58 AM	No Apparent Injury	25-34	55-64			D1: (No improper driving) / D2: (Inattention)	Daylight	Sideswipe,	Dry	Clear	Vehicle 1 was parked outside of 935 Washington Street. Vehicle 2 was traveling westbound and sideswiped Vehicle 2. No injuries were reported.
125	02/21/2020	Property damage only (none injured)	3:56 PM	No Apparent Injury	35-44	65-74			D1: (No improper driving) / D2: (Failed to yield right of way)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling westbound on Washington Street. Vehicle 2 was traveling south on Armory Street and attempted to make a left onto Washington Street and was struck by Vehicle 1. No injuries were reported.
126	02/29/2020	Property damage only (none injured)	5:59 PM	No Apparent Injury	55-64	55-64			D1: (No improper driving) / D2: (Unknown)	Dark - light	Unknown	Dry	Clear	Vehicle 1 was parked out of 1149 Washington Street facing westbound and was sideswiped by an unknown vehicle. No injuries were reported.
127	08/17/2020	Non-fatal injury	5:52 PM	Suspected Minor Injury	21-24	21-24			D1: (No improper driving)	Daylight	Single vehi	Dry	Clear/Clear	Vehicle 1 (a motorcycle) was traveling eastbound on Washington Street and lost control of his motorcycle and fell. The operator was transferred to the hospital via ambulance.
128	08/31/2020	Non-fatal injury	7:00 AM	Possible Injury (C)	18-20	45-54			D1: (No improper driving)	Daylight	Angle	Dry	Clear	Vehicle 1 was traveling northbound on Chestnut Street and attempted to turn left onto Washington Street/ Vehicle 2 was traveling eastbound on Washington Street and collided with Vehicle 1. Vehicle 2 was transferred to the hospital via ambulance.
129	09/17/2020	Non-fatal injury	4:26 PM	Possible Injury (C)	25-34	35-44			D1: (Inattention) / D2: (No improper driving)	Daylight	Sideswipe,	Dry	Clear	Vehicle 1 was traveling eastbound on Washington Street in the left lane and attempted to pull into a parking lot. Vehicle 2 was traveling eastbound on Washington Street in the right lane and was struck by Vehicle 1. The operator of Vehicle 2 was taken to the hospital via ambulance.

Crash Number	Crash Date	Crash Severity	Crash Time	Max Injury Severity	Age of Driver	Age of Driver	Age of Driver	Age of Driver	Driver Contributing Circumstances (All Drivers)	Light Cond	Manner of	Road Surfa	Weather Conditions
130	09/28/2020	Property damage only (none injured)	7:16 AM	No Apparent Injury	35-44	55-64			D1: (Unknown) / D2: (Unknown)	Daylight	Sideswipe,	Dry	Clear Vehicle 1 was traveling eastbound on Washington Street and attempted to turn left onto Lowell Ave. Vehicle 2 was traveling eastbound on Lowell Ave and sideswiped Vehicle 1. No injuries were reported.
131	11/02/2020	Property damage only (none injured)	7:35 PM	No Apparent Injury	55-64	55-64				Dark - light	Rear-end	Dry	Clear Vehicle 1(a semi truck) was pulling out of the 1121 Washington Street parking lot and attempted to turn left onto Washington Street. Vehicle 2 began to back out of the parking lot across the street and was struck by Vehicle 1. No injuries were reported.
132	12/11/2020	Property damage only (none injured)	5:04 PM	No Apparent Injury	75-84	75-84			D1: (Visibility obstructed) / D2: (No improper driving)	Dusk	Head-on	Dry	Clear Vehicle 1 was turning left from 1228 Washington Street. Vehicle 2 was traveling westbound on Washington Street and collided with Vehicle 1. No injuries were reported.
133	7/13/2017	Property damage only (none injured)	2:15 PM	No Apparent Injury (0)					D1: (No improper driving)	Daylight	Angle	Dry	Clear A cyclist was traveling on the sidewalk on Washington Street. Vehicle 1 exited the trader joes parking lot and struck the cyclist. No injuries were reported.

COLLISION DIAGRAM - 1

TIME PERIOD ANALYZED: 2015 - 2020
SOURCE OF CRASH DATA: NEWTON POLICE DEPARTMENT
DATE PREPARED: FEBRUARY 2023
PREPARED BY: E PARISI

SYMBOLS

- Moving Vehicle
- ← Backing Vehicle
- Non-Involved Vehicle
- 🚶 Pedestrian
- 🚲 Bicycle
- 🐾 Animal
- Fixed Object
- 🚗 Parked Vehicle
- * Exact location could not be determined based on crash report

TYPES OF CRASH

- ↔ Rear End
- ↔ Head On
- ↘ Angle
- ↻ Turning Movement
- ↔ Sideswipe
- ⚡ Out of Control

SEVERITY

- Injury
- ⦿ Fatal
- Non-daylight Crash



APPROX SCALE:
1"=180'-0"



TIME PERIOD ANALYZED: 2014 - 2020
SOURCE OF CRASH DATA: NEWTON POLICE DEPARTMENT
DATE PREPARED: FEBRUARY 2023
PREPARED BY: E PARISI

SYMBOLS

- Moving Vehicle
- ← Backing Vehicle
- Non-Involved Vehicle
- 🚶 Pedestrian
- 🚲 Bicycle
- 🐾 Animal
- Fixed Object
- 🚗 Parked Vehicle
- * Exact location could not be determined based on crash report

TYPES OF CRASH

- ↔ Rear End
- ↔ Head On
- ↘ Angle
- ↻ Turning Movement
- ↔ Sideswipe
- ⚡ Out of Control

SEVERITY

- Injury
- ⦿ Fatal

■ Non-daylight Crash



APPROX SCALE:
1"=180'-0"












NEWTON, MA
WASHINGTON STREET
REGION: MAPC

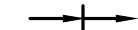
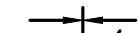




COLLISION DIAGRAM - 3

TIME PERIOD ANALYZED: 2014 - 2020
 SOURCE OF CRASH DATA: NEWTON POLICE DEPARTMENT
 DATE PREPARED: FEBRUARY 2023
 PREPARED BY: E PARISI




SYMBOLS

-  Moving Vehicle
-  Backing Vehicle
-  Non-Involved Vehicle
-  Pedestrian
-  Bicycle
-  Animal
-  Fixed Object
-  Parked Vehicle
-  * Exact location could not be determined based on crash report

TYPES OF CRASH

-  Rear End
-  Head On
-  Angle
-  Turning Movement
-  Sideswipe
-  Out of Control

SEVERITY

-  Injury
-  Fatal
-  Non-daylight Crash



APPROX SCALE:
 1"=180'-0"



MassHighway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton COUNT DATE : 2/1/2023

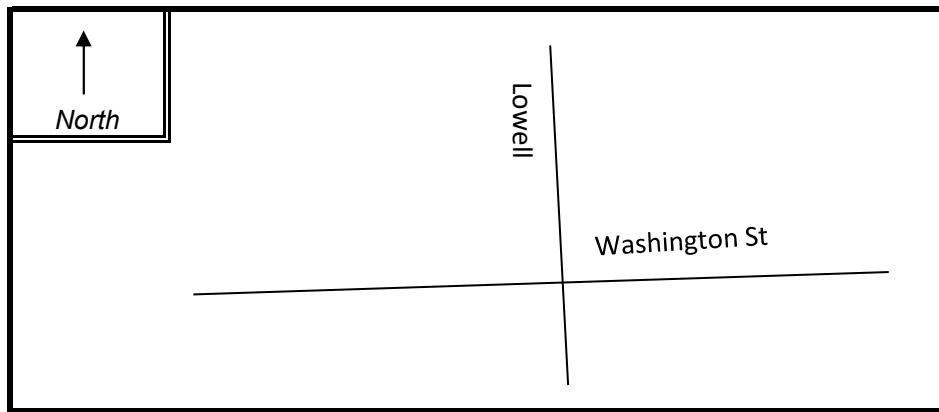
UNIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Lowell Avenue

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	907	394	372	281		1,954

" K " FACTOR : INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (**A**) :

CRASH RATE CALCULATION :

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: February 2023, Newton Washington Street Redesign

MassHighway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton COUNT DATE : 2/1/2023

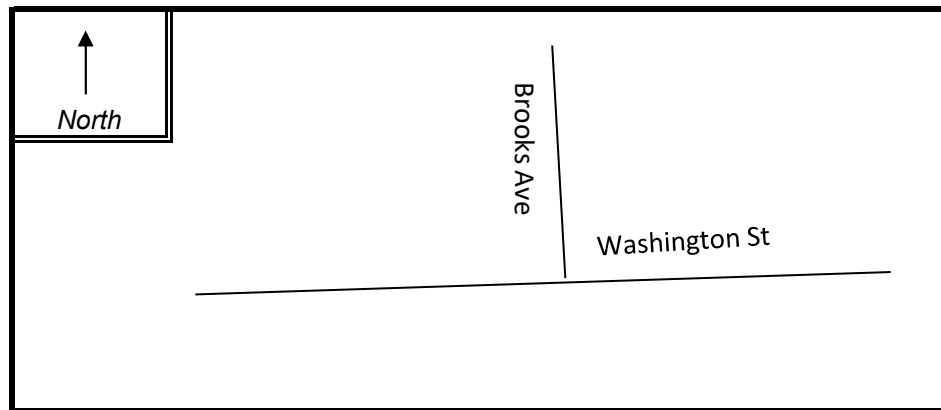
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~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Brooks Avenue

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	903	477		7		1,387

" K " FACTOR : INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (**A**) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: February 2023, Newton Washington Street Redesign

MassHighway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton COUNT DATE : 2/1/2023

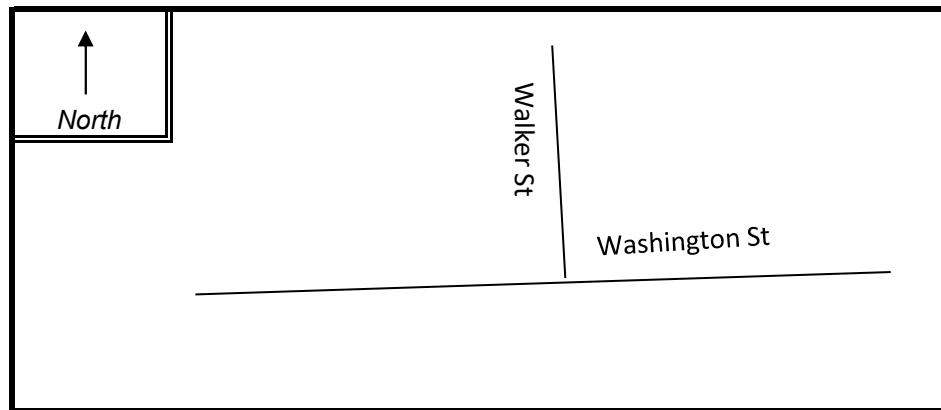
UNIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Walker Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	911	477		43		1,431

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: February 2023, Newton Washington Street Redesign

MassHighway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton COUNT DATE : 2/1/2023

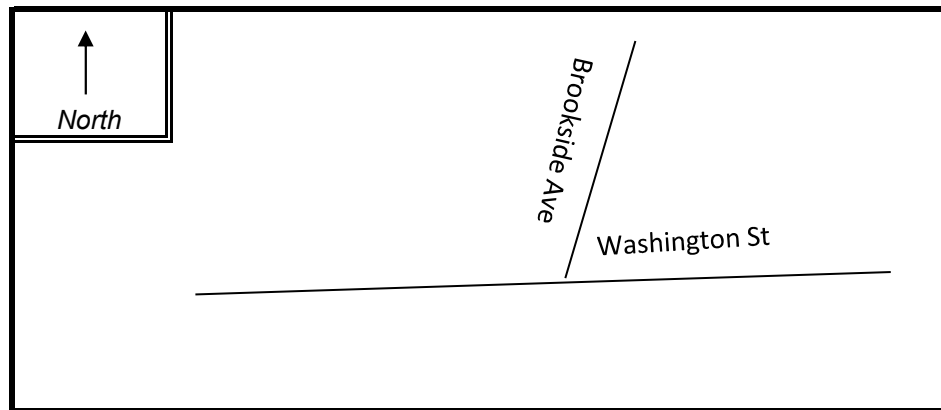
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~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Brookside Avenue

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	951	495		11		1,457

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: February 2023, Newton Washington Street Redesign

MassHighway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton COUNT DATE : 2/1/2023

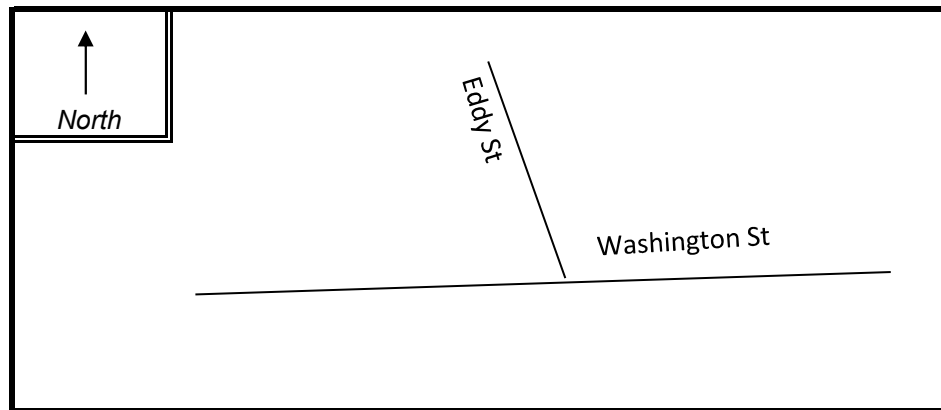
UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Eddy Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	769	476		226		1,471

" K " FACTOR : INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (**A**) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: February 2023, Newton Washington Street Redesign

MassHighway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton COUNT DATE : 2/1/2023

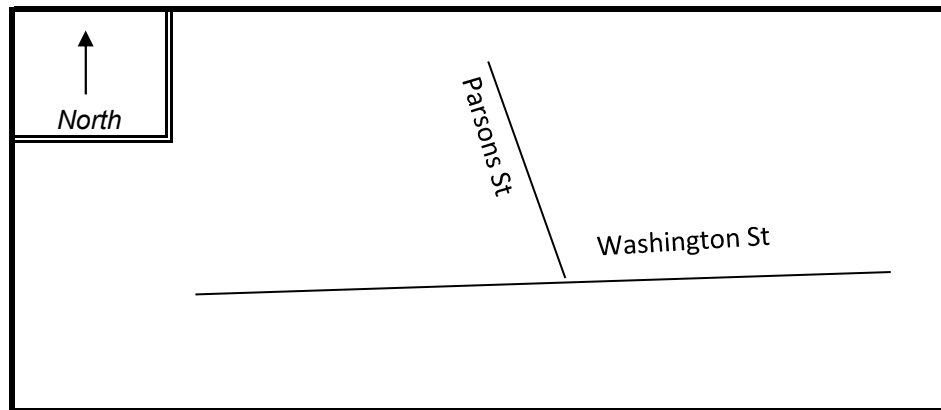
UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Parsons Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	758	438		29		1,225

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: February 2023, Newton Washington Street Redesign

MassHighway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton COUNT DATE : 2/1/2023

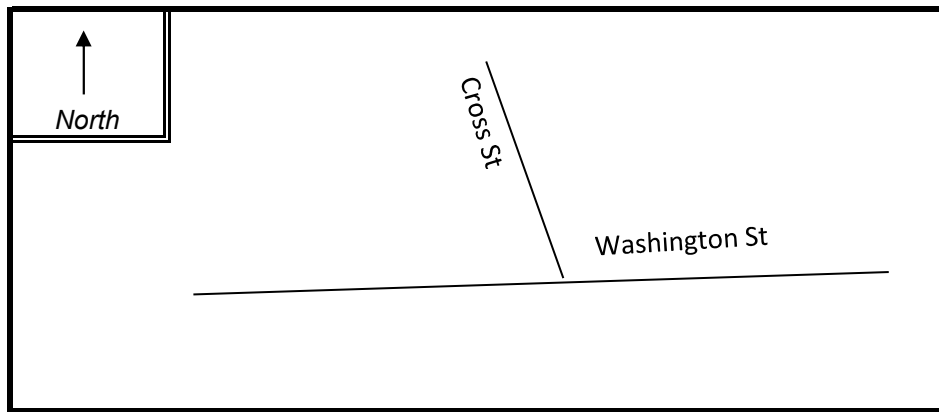
UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Cross Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	758	432		36		1,226

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

CRASH RATE CALCULATION :

$$\text{RATE} = \frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date : February 2023, Newton Washington Street Redesign

MassHighway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton COUNT DATE : 2/1/2023

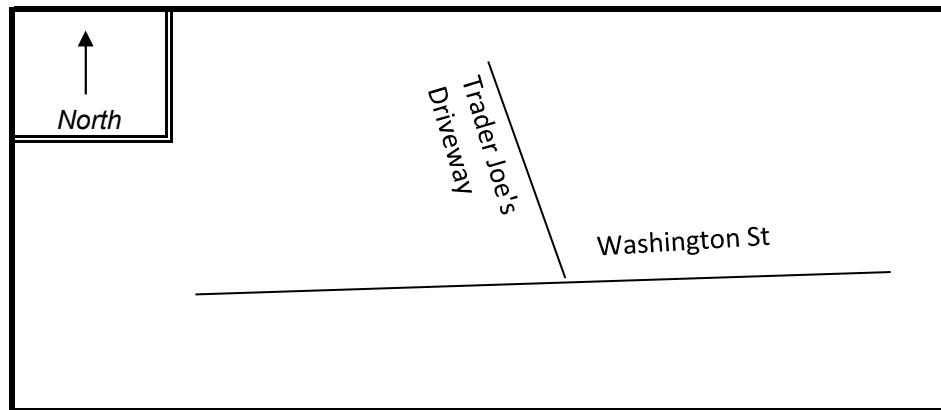
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~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Trader Joe's Driveway

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	750	445				1,195

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: February 2023, Newton Washington Street Redesign

MassHighway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton COUNT DATE : 2/1/2023

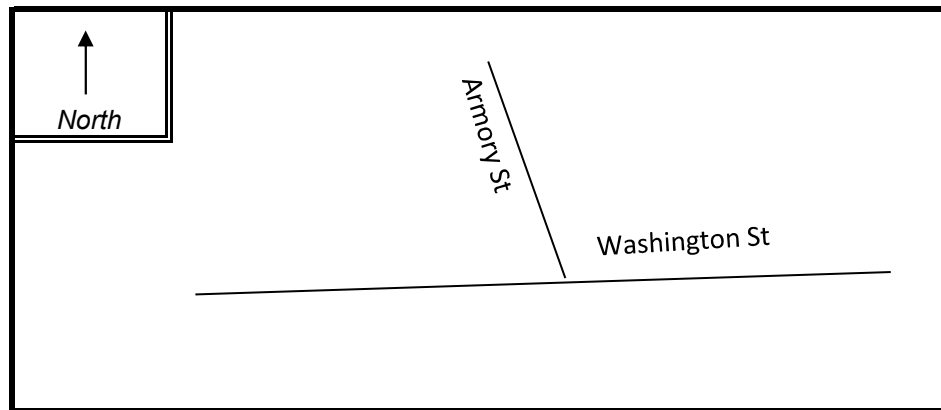
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~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Armory Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	766	455		24		1,245

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: February 2023, Newton Washington Street Redesign

MassHighway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton COUNT DATE : 2/1/2023

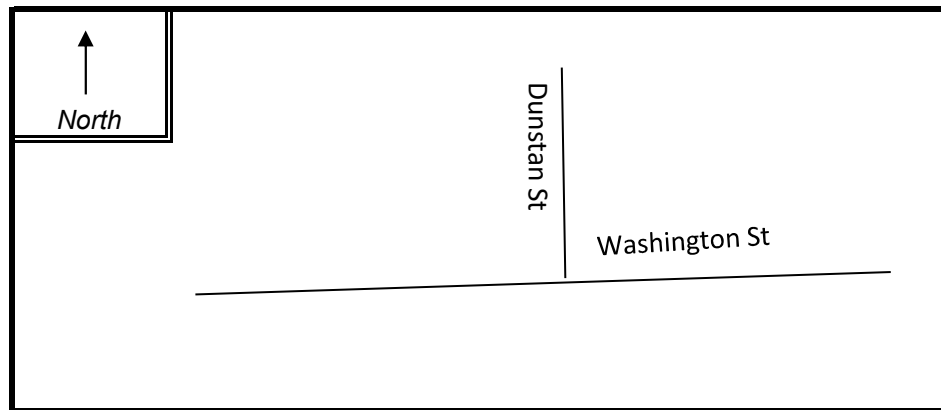
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~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Dunstan Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	786	425		47		1,258

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: February 2023, Newton Washington Street Redesign

MassHighway

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Newton COUNT DATE : 2/1/2023

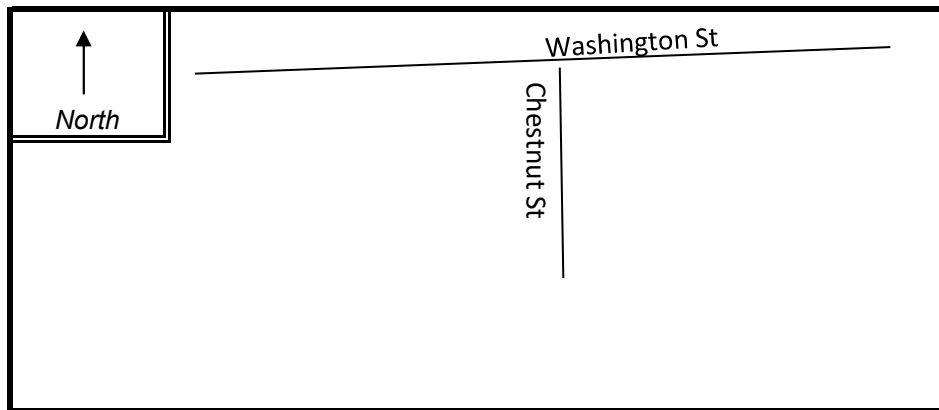
UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Chestnut Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	541	457	332			1,330

" K " FACTOR : INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (**A**) :

CRASH RATE CALCULATION : RATE = $\frac{(A * 1,000,000)}{(V * 365)}$

Comments : _____

Project Title & Date: February 2023, Newton Washington Street Redesign

SEGMENT CRASH RATE WORKSHEET

CITY/TOWN : Newton COUNT DATE : 2015-2020

DISTRICT : 6

~ SEGMENT DATA ~

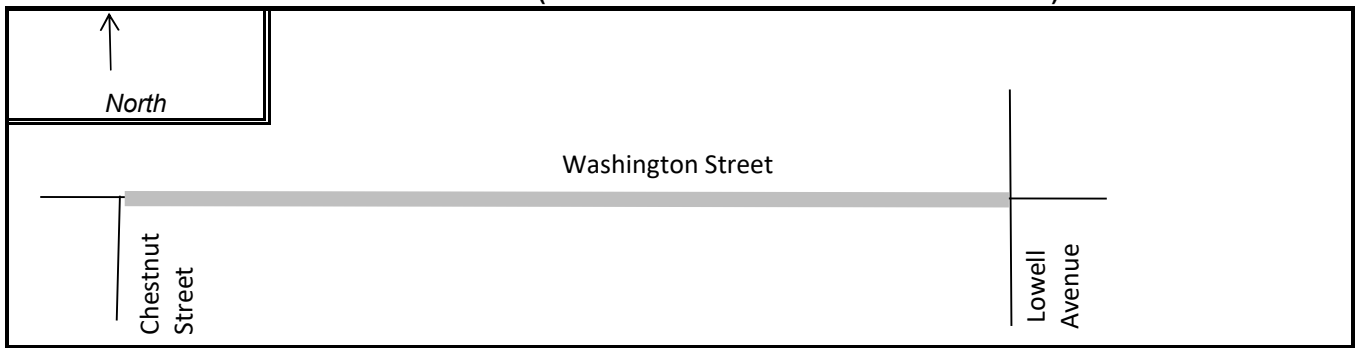
ROADWAY NAME: Washington Street

START POINT: Chestnut Street

END POINT: Lowell Ave

FUNCTIONAL CLASSIFICATION OF ROADWAY: Urban Minor Arterial

ROADWAY DIAGRAM (LABEL ROADWAY AND CROSS STREETS)



AVERAGE DAILY TRAFFIC

SEGMENT LENGTH IN MILES (L): **0.777**

AVERAGE DAILY TRAFFIC VOLUME (V): **14,124**

TOTAL # OF CRASHES: **96** # OF YEARS : **6** AVERAGE # OF CRASHES PER YEAR (A): **16.00**

CRASH RATE CALCULATION : **3.99** RATE = $\frac{(A * 1,000,000)}{(L * V * 365)}$

Comments : MassDOT Average Crash Rate - 2.98

Project Title & Date: Washington Street Pilot



HOWARD STEIN HUDSON

Engineers + Planners

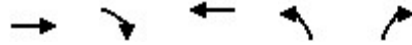
Appendix D

Future Synchro and Simtraffic Analysis

Queues

1: Chestnut St & Washington St

04/02/2024



Lane Group	EBT	EBR	WBT	NBL	NBR
Lane Group Flow (vph)	608	35	580	70	323
v/c Ratio	0.58	0.03	0.42	0.56	0.64
Control Delay	20.3	5.5	8.5	72.0	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	5.5	8.5	72.0	9.1
Queue Length 50th (ft)	202	2	46	55	0
Queue Length 95th (ft)	546	20	143	107	56
Internal Link Dist (ft)	85		428	227	
Turn Bay Length (ft)		50			
Base Capacity (vph)	1045	1089	1385	140	553
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.58	0.03	0.42	0.50	0.58

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: Chestnut St & Washington St

04/02/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑↑	↑	↑
Traffic Volume (vph)	559	32	218	316	64	297
Future Volume (vph)	559	32	218	316	64	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	1.00		0.95	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1660	1411		3140	1593	1439
Flt Permitted	1.00	1.00		0.55	0.95	1.00
Satd. Flow (perm)	1660	1411		1770	1593	1439
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	608	35	237	343	70	323
RTOR Reduction (vph)	0	4	0	0	0	280
Lane Group Flow (vph)	608	31	0	580	70	43
Heavy Vehicles (%)	3%	3%	2%	1%	2%	1%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pt+ov
Protected Phases	6	3	5	2	3	3
Permitted Phases		6	2			
Actuated Green, G (s)	76.3	86.2		89.7	9.9	16.8
Effective Green, g (s)	76.3	86.2		89.7	9.9	16.8
Actuated g/C Ratio	0.61	0.69		0.72	0.08	0.13
Clearance Time (s)	6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1013	1046		1345	126	193
v/s Ratio Prot	c0.37	0.00		c0.02	c0.04	0.03
v/s Ratio Perm		0.02		0.29		
v/c Ratio	0.60	0.03		0.43	0.56	0.22
Uniform Delay, d1	15.0	6.1		7.2	55.4	48.3
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	0.0		0.2	5.2	0.6
Delay (s)	17.6	6.2		7.4	60.7	48.9
Level of Service	B	A		A	E	D
Approach Delay (s)	17.0			7.4	51.0	
Approach LOS	B			A	D	

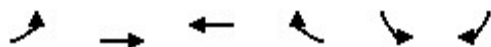
Intersection Summary

HCM 2000 Control Delay	21.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.54		
Actuated Cycle Length (s)	125.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	70.7%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

4: Washington St & Davis Ct

04/02/2024

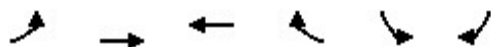


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↔	
Traffic Volume (veh/h)	1	854	533	2	4	0
Future Volume (Veh/h)	1	854	533	2	4	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	928	579	2	4	0
Pedestrians					11	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		508				
pX, platoon unblocked						
vC, conflicting volume	592				1057	302
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	592				1057	302
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	983				221	693
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	310	619	386	195	4	
Volume Left	1	0	0	0	4	
Volume Right	0	0	0	2	0	
cSH	983	1700	1700	1700	221	
Volume to Capacity	0.00	0.36	0.23	0.11	0.02	
Queue Length 95th (ft)	0	0	0	0	1	
Control Delay (s)	0.0	0.0	0.0	0.0	21.6	
Lane LOS	A				C	
Approach Delay (s)	0.0		0.0		21.6	
Approach LOS					C	
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			37.0%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

6: Washington St & Dunstan St

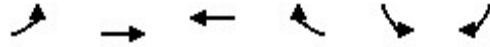
04/02/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↔	
Traffic Volume (veh/h)	53	806	467	28	21	68
Future Volume (Veh/h)	53	806	467	28	21	68
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	876	508	30	23	74
Pedestrians					9	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		869				
pX, platoon unblocked						
vC, conflicting volume	547				1086	278
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	547				1086	278
tC, single (s)	4.2				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				88	90
cM capacity (veh/h)	996				200	719
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	350	584	339	199	97	
Volume Left	58	0	0	0	23	
Volume Right	0	0	0	30	74	
cSH	996	1700	1700	1700	445	
Volume to Capacity	0.06	0.34	0.20	0.12	0.22	
Queue Length 95th (ft)	5	0	0	0	21	
Control Delay (s)	2.0	0.0	0.0	0.0	15.3	
Lane LOS	A				C	
Approach Delay (s)	0.7		0.0		15.3	
Approach LOS					C	
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization			53.0%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 8: Washington St & Armory St

04/02/2024

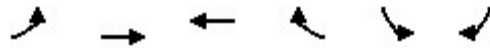


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↘↘	
Traffic Volume (veh/h)	32	796	477	47	19	18
Future Volume (Veh/h)	32	796	477	47	19	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	865	518	51	21	20
Pedestrians					8	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	577				1054	292
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	577				1054	292
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				90	97
cM capacity (veh/h)	999				215	705
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	323	577	345	224	41	
Volume Left	35	0	0	0	21	
Volume Right	0	0	0	51	20	
cSH	999	1700	1700	1700	325	
Volume to Capacity	0.04	0.34	0.20	0.13	0.13	
Queue Length 95th (ft)	3	0	0	0	11	
Control Delay (s)	1.3	0.0	0.0	0.0	17.7	
Lane LOS	A				C	
Approach Delay (s)	0.5		0.0		17.7	
Approach LOS					C	
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			55.2%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

10: Washington St & Trader Joe's

04/02/2024

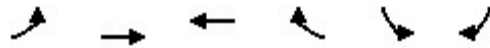


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	
Traffic Volume (veh/h)	0	814	513	0	8	10
Future Volume (Veh/h)	0	814	513	0	8	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	885	558	0	9	11
Pedestrians					8	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	566				1008	287
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	566				1008	287
tC, single (s)	4.1				7.1	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				96	98
cM capacity (veh/h)	1008				217	710
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	442	442	279	279	20	
Volume Left	0	0	0	0	9	
Volume Right	0	0	0	0	11	
cSH	1700	1700	1700	1700	351	
Volume to Capacity	0.26	0.26	0.16	0.16	0.06	
Queue Length 95th (ft)	0	0	0	0	5	
Control Delay (s)	0.0	0.0	0.0	0.0	15.9	
Lane LOS					C	
Approach Delay (s)	0.0		0.0		15.9	
Approach LOS					C	
Intersection Summary						
Average Delay			0.2			
Intersection Capacity Utilization			35.0%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

12: Washington St & Cross St

04/02/2024

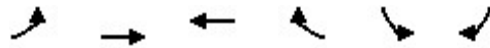


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔↕	↕↔		↕↔	
Traffic Volume (veh/h)	19	804	494	5	19	19
Future Volume (Veh/h)	19	804	494	5	19	19
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	874	537	5	21	21
Pedestrians					9	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	551				1028	280
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	551				1028	280
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				91	97
cM capacity (veh/h)	1020				227	717
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	312	583	358	184	42	
Volume Left	21	0	0	0	21	
Volume Right	0	0	0	5	21	
cSH	1020	1700	1700	1700	345	
Volume to Capacity	0.02	0.34	0.21	0.11	0.12	
Queue Length 95th (ft)	2	0	0	0	10	
Control Delay (s)	0.8	0.0	0.0	0.0	16.9	
Lane LOS	A				C	
Approach Delay (s)	0.3		0.0		16.9	
Approach LOS					C	
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			49.8%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

14: Washington St & Parsons St

04/02/2024

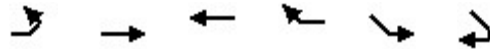


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↔	
Traffic Volume (veh/h)	8	815	487	18	19	12
Future Volume (Veh/h)	8	815	487	18	19	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	886	529	20	21	13
Pedestrians			1		14	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	563				1015	288
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	563				1015	288
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				91	98
cM capacity (veh/h)	1005				232	699
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	304	591	353	196	34	
Volume Left	9	0	0	0	21	
Volume Right	0	0	0	20	13	
cSH	1005	1700	1700	1700	312	
Volume to Capacity	0.01	0.35	0.21	0.12	0.11	
Queue Length 95th (ft)	1	0	0	0	9	
Control Delay (s)	0.3	0.0	0.0	0.0	17.9	
Lane LOS	A				C	
Approach Delay (s)	0.1		0.0		17.9	
Approach LOS					C	
Intersection Summary						
Average Delay			0.5			
Intersection Capacity Utilization			41.3%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

16: Washington St & Eddy St

04/02/2024

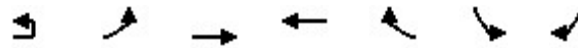


Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↕↕	↕↕		↕↕	
Traffic Volume (veh/h)	9	826	462	78	200	41
Future Volume (Veh/h)	9	826	462	78	200	41
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	898	502	85	217	45
Pedestrians		1			17	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	604				1030	312
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	604				1030	312
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				3	93
cM capacity (veh/h)	968				225	678
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	
Volume Total	309	599	335	252	262	
Volume Left	10	0	0	0	217	
Volume Right	0	0	0	85	45	
cSH	968	1700	1700	1700	254	
Volume to Capacity	0.01	0.35	0.20	0.15	1.03	
Queue Length 95th (ft)	1	0	0	0	261	
Control Delay (s)	0.4	0.0	0.0	0.0	107.9	
Lane LOS	A				F	
Approach Delay (s)	0.1		0.0		107.9	
Approach LOS					F	
Intersection Summary						
Average Delay			16.2			
Intersection Capacity Utilization			54.2%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

18: Washington St & Brookside Ave

04/02/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↕↕	↕↕		↘	
Traffic Volume (veh/h)	1	52	974	539	33	10	2
Future Volume (Veh/h)	1	52	974	539	33	10	2
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	57	1059	586	36	11	2
Pedestrians							21
Lane Width (ft)							12.0
Walking Speed (ft/s)							3.5
Percent Blockage							2
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)				974			
pX, platoon unblocked	0.00	0.96				0.96	0.96
vC, conflicting volume	0	643				1268	332
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	535				1189	210
tC, single (s)	0.0	4.1				7.0	7.0
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.6	3.3
p0 queue free %	0	94				93	100
cM capacity (veh/h)	0	977				148	737
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1		
Volume Total	410	706	391	231	13		
Volume Left	57	0	0	0	11		
Volume Right	0	0	0	36	2		
cSH	977	1700	1700	1700	169		
Volume to Capacity	0.06	0.42	0.23	0.14	0.08		
Queue Length 95th (ft)	5	0	0	0	6		
Control Delay (s)	1.8	0.0	0.0	0.0	28.1		
Lane LOS	A				D		
Approach Delay (s)	0.7		0.0		28.1		
Approach LOS					D		
Intersection Summary							
Average Delay			0.6				
Intersection Capacity Utilization			62.8%		ICU Level of Service	B	
Analysis Period (min)			15				

Queues

20: Lowell Ave & Washington St

04/02/2024



Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1063	489	148	293	331
v/c Ratio	0.92	0.88dl	0.61	0.50	0.86
Control Delay	44.2	33.4	41.7	29.2	65.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	33.4	41.7	29.2	65.4
Queue Length 50th (ft)	381	155	83	153	~273
Queue Length 95th (ft)	#535	223	#139	248	#456
Internal Link Dist (ft)	166	846		193	395
Turn Bay Length (ft)					
Base Capacity (vph)	1160	734	244	585	384
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.92	0.67	0.61	0.50	0.86

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

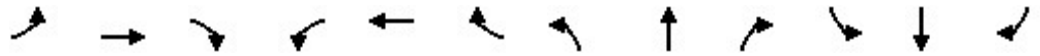
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

HCM Signalized Intersection Capacity Analysis
 20: Lowell Ave & Washington St

04/02/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↔	↔			↔	
Traffic Volume (vph)	37	695	247	63	378	9	136	135	134	7	260	37
Future Volume (vph)	37	695	247	63	378	9	136	135	134	7	260	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frbp, ped/bikes		1.00			1.00		1.00	0.99			1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Frt		0.96			1.00		1.00	0.93			0.98	
Flt Protected		1.00			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		3062			3098		1608	1541			1646	
Flt Permitted		0.91			0.58		0.28	1.00			0.99	
Satd. Flow (perm)		2800			1813		471	1541			1631	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	755	268	68	411	10	148	147	146	8	283	40
RTOR Reduction (vph)	0	28	0	0	1	0	0	29	0	0	4	0
Lane Group Flow (vph)	0	1035	0	0	488	0	148	264	0	0	327	0
Confl. Bikes (#/hr)						1			1			
Heavy Vehicles (%)	6%	2%	1%	3%	4%	0%	1%	3%	1%	0%	2%	3%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	
Protected Phases		1			1		3	3 4			4	
Permitted Phases	1			1			4			4		
Actuated Green, G (s)		44.1			44.1		35.5	40.5			26.1	
Effective Green, g (s)		44.1			44.1		35.5	40.5			26.1	
Actuated g/C Ratio		0.39			0.39		0.32	0.36			0.23	
Clearance Time (s)		5.0			5.0		5.0				5.0	
Vehicle Extension (s)		4.0			4.0		2.0				3.0	
Lane Grp Cap (vph)		1102			713		244	557			380	
v/s Ratio Prot							c0.05	0.17				
v/s Ratio Perm		c0.37			0.27		0.14				c0.20	
v/c Ratio		0.94			0.88dl		0.61	0.47			0.86	
Uniform Delay, d1		32.7			28.2		30.2	27.5			41.2	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		15.9			5.3		2.9	0.2			17.7	
Delay (s)		48.5			33.4		33.1	27.8			58.9	
Level of Service		D			C		C	C			E	
Approach Delay (s)		48.5			33.4			29.6			58.9	
Approach LOS		D			C			C			E	
Intersection Summary												
HCM 2000 Control Delay			43.2				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			112.0				Sum of lost time (s)				18.0	
Intersection Capacity Utilization			97.1%				ICU Level of Service				F	
Analysis Period (min)			15									
dl Defacto Left Lane. Recode with 1 though lane as a left lane.												
c Critical Lane Group												

Queues

21: Walnut St & Washington St

04/02/2024



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	910	637	89	318	172	37	372
v/c Ratio	0.76	1.40dl	0.51	0.59	0.30	0.17	0.97
Control Delay	36.1	56.7	36.8	36.3	5.4	38.5	83.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	56.7	36.8	36.3	5.4	38.5	83.3
Queue Length 50th (ft)	343	~302	45	188	0	22	~275
Queue Length 95th (ft)	#490	#421	83	282	47	53	#476
Internal Link Dist (ft)	846	534		238			255
Turn Bay Length (ft)			175		160	110	
Base Capacity (vph)	1194	682	178	569	586	212	384
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.93	0.50	0.56	0.29	0.17	0.97

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

HCM Signalized Intersection Capacity Analysis

21: Walnut St & Washington St

04/02/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT		
Lane Configurations		↔↔			↔↔			↔	↑	↔	↔	↔		
Traffic Volume (vph)	28	663	146	181	360	45	6	75	293	158	34	329		
Future Volume (vph)	28	663	146	181	360	45	6	75	293	158	34	329		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Total Lost time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5		
Lane Util. Factor		0.95			0.95			1.00	1.00	1.00	1.00	1.00		
Frbp, ped/bikes		1.00			1.00			1.00	1.00	0.99	1.00	1.00		
Flpb, ped/bikes		1.00			1.00			1.00	1.00	1.00	1.00	1.00		
Frt		0.97			0.99			1.00	1.00	0.85	1.00	0.99		
Flt Protected		1.00			0.98			0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)		3091			3059			1595	1644	1367	1533	1651		
Flt Permitted		0.91			0.52			0.17	1.00	1.00	0.57	1.00		
Satd. Flow (perm)		2810			1613			278	1644	1367	916	1651		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92		
Adj. Flow (vph)	30	721	159	197	391	49	7	82	318	172	37	358		
RTOR Reduction (vph)	0	12	0	0	5	0	0	0	0	113	0	2		
Lane Group Flow (vph)	0	898	0	0	632	0	0	89	318	59	37	370		
Confl. Bikes (#/hr)										1				
Heavy Vehicles (%)	8%	2%	2%	2%	3%	12%	0%	2%	4%	5%	6%	2%		
Turn Type	Perm	NA		pm+pt	NA		custom	pm+pt	NA	Perm	Perm	NA		
Protected Phases		2		1	6			7	4			8		
Permitted Phases	2			6			7	4		4	8			
Actuated Green, G (s)		45.5			45.5			38.9	38.9	38.9	26.4	26.4		
Effective Green, g (s)		45.5			45.5			38.9	38.9	38.9	26.4	26.4		
Actuated g/C Ratio		0.40			0.40			0.34	0.34	0.34	0.23	0.23		
Clearance Time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5		
Vehicle Extension (s)		2.0			2.0			2.0	2.0	2.0	2.0	2.0		
Lane Grp Cap (vph)		1121			643			164	560	466	212	382		
v/s Ratio Prot								0.03	c0.19			c0.22		
v/s Ratio Perm		0.32			c0.39			0.16		0.04	0.04			
v/c Ratio		0.80			1.40dl			0.54	0.57	0.13	0.17	0.97		
Uniform Delay, d1		30.3			33.9			28.7	30.7	25.8	35.1	43.4		
Progression Factor		1.00			1.00			1.00	1.00	1.00	1.00	1.00		
Incremental Delay, d2		6.1			31.0			2.0	0.8	0.0	0.1	37.4		
Delay (s)		36.3			64.9			30.7	31.5	25.9	35.2	80.8		
Level of Service		D			E			C	C	C	D	F		
Approach Delay (s)		36.3			64.9			29.7				76.7		
Approach LOS		D			E			C				E		
Intersection Summary														
HCM 2000 Control Delay			48.5									HCM 2000 Level of Service	D	
HCM 2000 Volume to Capacity ratio			0.91											
Actuated Cycle Length (s)			114.0							31.0				
Intersection Capacity Utilization			93.7%										ICU Level of Service	F
Analysis Period (min)			15											
dl Defacto Left Lane. Recode with 1 though lane as a left lane.														
c Critical Lane Group														

HCM Signalized Intersection Capacity Analysis
 21: Walnut St & Washington St

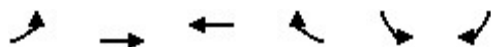
04/02/2024

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	13
Future Volume (vph)	13
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frbp, ped/bikes	
Flpb, ped/bikes	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	14
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Confl. Bikes (#/hr)	3
Heavy Vehicles (%)	27%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Unsignalized Intersection Capacity Analysis

27: Washington St & Brooks Ave

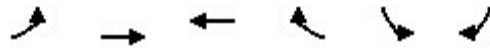
04/02/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↕↕	
Traffic Volume (veh/h)	0	975	548	3	4	3
Future Volume (Veh/h)	0	975	548	3	4	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1060	596	3	4	3
Pedestrians					24	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			246			
pX, platoon unblocked	0.90				0.90	0.90
vC, conflicting volume	623				1152	324
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	373				957	42
tC, single (s)	4.1				7.3	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	1058				193	908
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	353	707	397	202	7	
Volume Left	0	0	0	0	4	
Volume Right	0	0	0	3	3	
cSH	1058	1700	1700	1700	291	
Volume to Capacity	0.00	0.42	0.23	0.12	0.02	
Queue Length 95th (ft)	0	0	0	0	2	
Control Delay (s)	0.0	0.0	0.0	0.0	17.7	
Lane LOS					C	
Approach Delay (s)	0.0		0.0		17.7	
Approach LOS					C	
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			39.9%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 30: Washington St & Walker St

04/02/2024

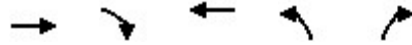


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↕		↕↕	
Traffic Volume (veh/h)	31	953	547	4	22	25
Future Volume (Veh/h)	31	953	547	4	22	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	1036	595	4	24	27
Pedestrians		4	2		17	
Lane Width (ft)		12.0	12.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			627			
pX, platoon unblocked	0.93				0.93	0.93
vC, conflicting volume	616				1202	320
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	433				1064	115
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				88	97
cM capacity (veh/h)	1039				195	833
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	379	691	397	202	51	
Volume Left	34	0	0	0	24	
Volume Right	0	0	0	4	27	
cSH	1039	1700	1700	1700	328	
Volume to Capacity	0.03	0.41	0.23	0.12	0.16	
Queue Length 95th (ft)	3	0	0	0	14	
Control Delay (s)	1.1	0.0	0.0	0.0	18.0	
Lane LOS	A				C	
Approach Delay (s)	0.4		0.0		18.0	
Approach LOS					C	
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			61.8%		ICU Level of Service	B
Analysis Period (min)			15			

Queues

1: Chestnut St & Washington St

04/02/2024



Lane Group	EBT	EBR	WBT	NBL	NBR
Lane Group Flow (vph)	479	35	663	90	228
v/c Ratio	0.47	0.03	0.46	0.57	0.50
Control Delay	19.3	5.1	10.7	64.9	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	5.1	10.7	64.9	7.0
Queue Length 50th (ft)	146	2	58	68	0
Queue Length 95th (ft)	413	19	189	119	44
Internal Link Dist (ft)	85		428	227	
Turn Bay Length (ft)		50			
Base Capacity (vph)	1018	1135	1432	199	504
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.47	0.03	0.46	0.45	0.45

Intersection Summary

HCM Signalized Intersection Capacity Analysis

1: Chestnut St & Washington St

04/02/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↖↑	↘	↗
Traffic Volume (vph)	441	32	225	385	83	210
Future Volume (vph)	441	32	225	385	83	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	1.00		0.95	1.00	1.00
Frt	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1693	1454		3139	1624	1454
Flt Permitted	1.00	1.00		0.60	0.95	1.00
Satd. Flow (perm)	1693	1454		1916	1624	1454
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	479	35	245	418	90	228
RTOR Reduction (vph)	0	5	0	0	0	193
Lane Group Flow (vph)	479	30	0	663	90	35
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pt+ov
Protected Phases	6	3	5	2	3	3
Permitted Phases		6	2			
Actuated Green, G (s)	69.8	81.5		82.9	11.7	18.3
Effective Green, g (s)	69.8	81.5		82.9	11.7	18.3
Actuated g/C Ratio	0.58	0.68		0.69	0.10	0.15
Clearance Time (s)	6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	984	1066		1390	158	221
v/s Ratio Prot	0.28	0.00		c0.03	c0.06	0.02
v/s Ratio Perm		0.02		c0.30		
v/c Ratio	0.49	0.03		0.48	0.57	0.16
Uniform Delay, d1	14.6	6.3		8.6	51.7	44.2
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.0		0.3	4.7	0.3
Delay (s)	16.4	6.3		8.8	56.4	44.5
Level of Service	B	A		A	E	D
Approach Delay (s)	15.7			8.8	47.9	
Approach LOS	B			A	D	

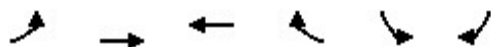
Intersection Summary

HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	23.5
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Unsignalized Intersection Capacity Analysis

4: Washington St & Davis Ct

04/02/2024

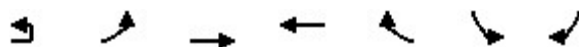


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↘↘	
Traffic Volume (veh/h)	0	658	605	0	0	0
Future Volume (Veh/h)	0	658	605	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	715	658	0	0	0
Pedestrians					13	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		508				
pX, platoon unblocked						
vC, conflicting volume	671				1028	342
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	671				1028	342
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	917				230	652
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	238	477	439	219	0	
Volume Left	0	0	0	0	0	
Volume Right	0	0	0	0	0	
cSH	917	1700	1700	1700	1700	
Volume to Capacity	0.00	0.28	0.26	0.13	0.02	
Queue Length 95th (ft)	0	0	0	0	0	
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	
Lane LOS					A	
Approach Delay (s)	0.0		0.0		0.0	
Approach LOS					A	
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			23.5%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

6: Washington St & Dunstan St

04/02/2024

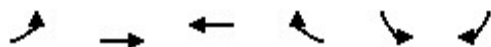


Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑	↑↑		↑	
Traffic Volume (veh/h)	1	49	608	556	24	14	48
Future Volume (Veh/h)	1	49	608	556	24	14	48
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	53	661	604	26	15	52
Pedestrians						10	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)			869				
pX, platoon unblocked	0.00						
vC, conflicting volume	0	640				1064	325
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	640				1064	325
tC, single (s)	0.0	4.1				6.8	6.9
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	94				93	92
cM capacity (veh/h)	0	945				207	670
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1		
Volume Total	273	441	403	227	67		
Volume Left	53	0	0	0	15		
Volume Right	0	0	0	26	52		
cSH	945	1700	1700	1700	446		
Volume to Capacity	0.06	0.26	0.24	0.13	0.15		
Queue Length 95th (ft)	4	0	0	0	13		
Control Delay (s)	2.2	0.0	0.0	0.0	14.5		
Lane LOS	A				B		
Approach Delay (s)	0.9		0.0		14.5		
Approach LOS					B		
Intersection Summary							
Average Delay			1.1				
Intersection Capacity Utilization			48.2%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis

8: Washington St & Armory St

04/02/2024

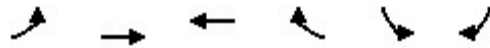


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↔	
Traffic Volume (veh/h)	65	548	541	125	49	39
Future Volume (Veh/h)	65	548	541	125	49	39
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	71	596	588	136	53	42
Pedestrians					6	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	730				1102	368
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	730				1102	368
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				72	93
cM capacity (veh/h)	878				191	631
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	270	397	392	332	95	
Volume Left	71	0	0	0	53	
Volume Right	0	0	0	136	42	
cSH	878	1700	1700	1700	276	
Volume to Capacity	0.08	0.23	0.23	0.20	0.34	
Queue Length 95th (ft)	7	0	0	0	37	
Control Delay (s)	3.1	0.0	0.0	0.0	24.7	
Lane LOS	A				C	
Approach Delay (s)	1.3		0.0		24.7	
Approach LOS					C	
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization			55.8%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

10: Washington St & Trader Joe's

04/02/2024

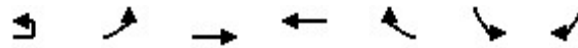


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑		↘	
Traffic Volume (veh/h)	0	598	607	0	57	55
Future Volume (Veh/h)	0	598	607	0	57	55
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	650	660	0	62	60
Pedestrians					5	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	665				990	335
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	665				990	335
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				75	91
cM capacity (veh/h)	929				246	663
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	325	325	330	330	122	
Volume Left	0	0	0	0	62	
Volume Right	0	0	0	0	60	
cSH	1700	1700	1700	1700	356	
Volume to Capacity	0.19	0.19	0.19	0.19	0.34	
Queue Length 95th (ft)	0	0	0	0	37	
Control Delay (s)	0.0	0.0	0.0	0.0	20.3	
Lane LOS					C	
Approach Delay (s)	0.0		0.0		20.3	
Approach LOS					C	
Intersection Summary						
Average Delay			1.7			
Intersection Capacity Utilization			32.6%		ICU Level of Service	A
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis

12: Washington St & Cross St

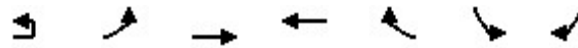
04/02/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑	↑↑		↘	
Traffic Volume (veh/h)	1	22	635	593	25	6	13
Future Volume (Veh/h)	1	22	635	593	25	6	13
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	24	690	645	27	7	14
Pedestrians				1		7	
Lane Width (ft)				12.0		12.0	
Walking Speed (ft/s)				3.5		3.5	
Percent Blockage				0		1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	679				1060	343
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	679				1060	343
tC, single (s)	0.0	4.1				6.8	6.9
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	97				97	98
cM capacity (veh/h)	0	916				215	654
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1		
Volume Total	254	460	430	242	21		
Volume Left	24	0	0	0	7		
Volume Right	0	0	0	27	14		
cSH	916	1700	1700	1700	389		
Volume to Capacity	0.03	0.27	0.25	0.14	0.05		
Queue Length 95th (ft)	2	0	0	0	4		
Control Delay (s)	1.1	0.0	0.0	0.0	14.8		
Lane LOS	A				B		
Approach Delay (s)	0.4		0.0		14.8		
Approach LOS					B		
Intersection Summary							
Average Delay			0.4				
Intersection Capacity Utilization			48.1%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis
 14: Washington St & Parsons St

04/02/2024

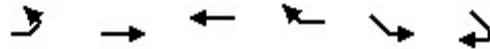


Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↑↑	↑↑		↑	
Traffic Volume (veh/h)	1	16	624	611	27	14	6
Future Volume (Veh/h)	1	16	624	611	27	14	6
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	17	678	664	29	15	7
Pedestrians						7	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	700				1058	354
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	700				1058	354
tC, single (s)	0.0	4.1				6.8	6.9
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	98				93	99
cM capacity (veh/h)	0	900				217	644
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1		
Volume Total	243	452	443	250	22		
Volume Left	17	0	0	0	15		
Volume Right	0	0	0	29	7		
cSH	900	1700	1700	1700	275		
Volume to Capacity	0.02	0.27	0.26	0.15	0.08		
Queue Length 95th (ft)	1	0	0	0	6		
Control Delay (s)	0.8	0.0	0.0	0.0	19.2		
Lane LOS	A				C		
Approach Delay (s)	0.3		0.0		19.2		
Approach LOS					C		
Intersection Summary							
Average Delay			0.4				
Intersection Capacity Utilization			42.8%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis

16: Washington St & Eddy St

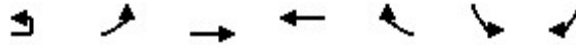
04/02/2024



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations		↕↕	↕↕		↕↕	
Traffic Volume (veh/h)	32	606	588	137	93	50
Future Volume (Veh/h)	32	606	588	137	93	50
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	659	639	149	101	54
Pedestrians					5	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	793				1118	399
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	793				1118	399
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				48	91
cM capacity (veh/h)	833				195	603
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SE 1	
Volume Total	255	439	426	362	155	
Volume Left	35	0	0	0	101	
Volume Right	0	0	0	149	54	
cSH	833	1700	1700	1700	255	
Volume to Capacity	0.04	0.26	0.25	0.21	0.61	
Queue Length 95th (ft)	3	0	0	0	90	
Control Delay (s)	1.7	0.0	0.0	0.0	38.9	
Lane LOS	A				E	
Approach Delay (s)	0.6		0.0		38.9	
Approach LOS					E	
Intersection Summary						
Average Delay			3.9			
Intersection Capacity Utilization			60.8%		ICU Level of Service	B
Analysis Period (min)			15			

HCM Unsignalized Intersection Capacity Analysis
 18: Washington St & Brookside Ave

04/02/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↔↔	↔↔		↔	
Traffic Volume (veh/h)	1	21	677	722	24	3	1
Future Volume (Veh/h)	1	21	677	722	24	3	1
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	23	736	785	26	3	1
Pedestrians						7	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)				974			
pX, platoon unblocked	0.00	0.92				0.92	0.92
vC, conflicting volume	0	818				1219	412
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	632				1067	192
tC, single (s)	0.0	4.1				6.8	6.9
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	97				98	100
cM capacity (veh/h)	0	879				196	754
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1		
Volume Total	268	491	523	288	4		
Volume Left	23	0	0	0	3		
Volume Right	0	0	0	26	1		
cSH	879	1700	1700	1700	241		
Volume to Capacity	0.03	0.29	0.31	0.17	0.02		
Queue Length 95th (ft)	2	0	0	0	1		
Control Delay (s)	1.0	0.0	0.0	0.0	20.2		
Lane LOS	A				C		
Approach Delay (s)	0.4		0.0		20.2		
Approach LOS					C		
Intersection Summary							
Average Delay			0.2				
Intersection Capacity Utilization			48.5%		ICU Level of Service		A
Analysis Period (min)			15				

Queues

20: Lowell Ave & Washington St

04/02/2024



Lane Group	EBT	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	734	812	191	259	257
v/c Ratio	0.53	0.91	0.71	0.48	0.85
Control Delay	23.1	45.1	48.0	29.7	69.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	23.1	45.1	48.0	29.7	69.5
Queue Length 50th (ft)	167	259	91	113	169
Queue Length 95th (ft)	284	#490	#219	223	#324
Internal Link Dist (ft)	166	846		193	395
Turn Bay Length (ft)					
Base Capacity (vph)	1386	891	269	553	311
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.91	0.71	0.47	0.83

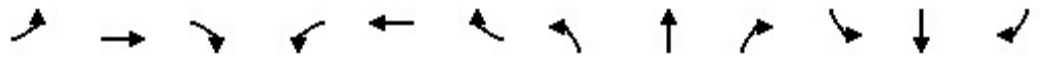
Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

20: Lowell Ave & Washington St

04/02/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↗	↘			↕↕	
Traffic Volume (vph)	16	498	162	176	552	19	176	142	97	5	202	29
Future Volume (vph)	16	498	162	176	552	19	176	142	97	5	202	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0			5.0	
Lane Util. Factor		0.95			0.95		1.00	1.00			1.00	
Frbp, ped/bikes		1.00			1.00		1.00	0.99			1.00	
Flpb, ped/bikes		1.00			1.00		1.00	1.00			1.00	
Frt		0.96			1.00		1.00	0.94			0.98	
Flt Protected		1.00			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		3106			3143		1608	1536			1649	
Flt Permitted		0.93			0.59		0.28	1.00			0.99	
Satd. Flow (perm)		2879			1878		468	1536			1638	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	541	176	191	600	21	191	154	105	5	220	32
RTOR Reduction (vph)	0	23	0	0	2	0	0	20	0	0	5	0
Lane Group Flow (vph)	0	711	0	0	810	0	191	239	0	0	252	0
Confl. Bikes (#/hr)						5			2			1
Heavy Vehicles (%)	0%	1%	0%	1%	2%	0%	1%	2%	7%	0%	2%	0%
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	
Protected Phases		1			1		3	3 4			4	
Permitted Phases	1			1			4			4		
Actuated Green, G (s)		51.2			51.2		33.2	38.2			20.3	
Effective Green, g (s)		51.2			51.2		33.2	38.2			20.3	
Actuated g/C Ratio		0.46			0.46		0.30	0.34			0.18	
Clearance Time (s)		5.0			5.0		5.0				5.0	
Vehicle Extension (s)		4.0			4.0		2.0				3.0	
Lane Grp Cap (vph)		1316			858		270	523			296	
v/s Ratio Prot							c0.08	0.16				
v/s Ratio Perm		0.25			c0.43		0.13				c0.15	
v/c Ratio		0.54			0.94		0.71	0.46			0.85	
Uniform Delay, d1		21.9			29.0		32.5	28.8			44.4	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.6			19.9		6.7	0.2			20.3	
Delay (s)		23.5			48.9		39.3	29.0			64.7	
Level of Service		C			D		D	C			E	
Approach Delay (s)		23.5			48.9			33.4			64.7	
Approach LOS		C			D			C			E	
Intersection Summary												
HCM 2000 Control Delay			39.3				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			112.0				Sum of lost time (s)				18.0	
Intersection Capacity Utilization			90.5%				ICU Level of Service				E	
Analysis Period (min)			15									

c Critical Lane Group

Queues

21: Walnut St & Washington St

04/02/2024



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	653	902	144	352	149	52	374
v/c Ratio	0.60	1.12	0.82	0.60	0.25	0.25	1.00
Control Delay	31.4	103.5	63.1	35.9	5.3	40.4	91.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.4	103.5	63.1	35.9	5.3	40.4	91.7
Queue Length 50th (ft)	219	~470	75	211	0	32	~274
Queue Length 95th (ft)	291	#601	#161	312	44	69	#477
Internal Link Dist (ft)	846	534		238			255
Turn Bay Length (ft)			175		160	110	
Base Capacity (vph)	1092	805	176	586	601	206	373
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	1.12	0.82	0.60	0.25	0.25	1.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

21: Walnut St & Washington St

04/02/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔↔			↔↔			↔	↑	↔	↔	↔
Traffic Volume (vph)	22	484	95	186	587	57	8	124	324	137	48	311
Future Volume (vph)	22	484	95	186	587	57	8	124	324	137	48	311
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5
Lane Util. Factor		0.95			0.95			1.00	1.00	1.00	1.00	1.00
Frt		0.98			0.99			1.00	1.00	0.85	1.00	0.99
Flt Protected		1.00			0.99			0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)		3111			3155			1609	1693	1454	1593	1655
Flt Permitted		0.86			0.62			0.15	1.00	1.00	0.55	1.00
Satd. Flow (perm)		2678			1982			251	1693	1454	922	1655
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	526	103	202	638	62	9	135	352	149	52	338
RTOR Reduction (vph)	0	10	0	0	4	0	0	0	0	97	0	3
Lane Group Flow (vph)	0	643	0	0	898	0	0	144	352	52	52	371
Heavy Vehicles (%)	0%	2%	1%	0%	1%	1%	0%	1%	1%	0%	2%	2%
Turn Type	Perm	NA		pm+pt	NA		custom	pm+pt	NA	Perm	Perm	NA
Protected Phases		2		1	6			7	4			8
Permitted Phases	2			6			7	4		4	8	
Actuated Green, G (s)		44.9			44.9			39.5	39.5	39.5	25.5	25.5
Effective Green, g (s)		44.9			44.9			39.5	39.5	39.5	25.5	25.5
Actuated g/C Ratio		0.39			0.39			0.35	0.35	0.35	0.22	0.22
Clearance Time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5
Vehicle Extension (s)		2.0			2.0			2.0	2.0	2.0	2.0	2.0
Lane Grp Cap (vph)		1054			780			176	586	503	206	370
v/s Ratio Prot								0.05	c0.21			c0.22
v/s Ratio Perm		0.24			c0.45			0.23		0.04	0.06	
v/c Ratio		0.61			1.15			0.82	0.60	0.10	0.25	1.00
Uniform Delay, d1		27.6			34.5			29.5	30.7	25.2	36.4	44.2
Progression Factor		1.00			1.00			1.00	1.00	1.00	1.00	1.00
Incremental Delay, d2		2.6			82.4			23.5	1.2	0.0	0.2	47.4
Delay (s)		30.2			117.0			53.1	31.9	25.3	36.6	91.6
Level of Service		C			F			D	C	C	D	F
Approach Delay (s)		30.2			117.0			35.1				84.9
Approach LOS		C			F			D				F

Intersection Summary			
HCM 2000 Control Delay	70.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.01		
Actuated Cycle Length (s)	114.0	Sum of lost time (s)	31.0
Intersection Capacity Utilization	96.9%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis
 21: Walnut St & Washington St

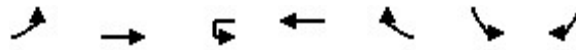
04/02/2024

Movement	SBR
Lane Configurations	
Traffic Volume (vph)	33
Future Volume (vph)	33
Ideal Flow (vphpl)	1900
Total Lost time (s)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Peak-hour factor, PHF	0.92
Adj. Flow (vph)	36
RTOR Reduction (vph)	0
Lane Group Flow (vph)	0
Heavy Vehicles (%)	0%
Turn Type	
Protected Phases	
Permitted Phases	
Actuated Green, G (s)	
Effective Green, g (s)	
Actuated g/C Ratio	
Clearance Time (s)	
Vehicle Extension (s)	
Lane Grp Cap (vph)	
v/s Ratio Prot	
v/s Ratio Perm	
v/c Ratio	
Uniform Delay, d1	
Progression Factor	
Incremental Delay, d2	
Delay (s)	
Level of Service	
Approach Delay (s)	
Approach LOS	
Intersection Summary	

HCM Unsignalized Intersection Capacity Analysis

27: Washington St & Brooks Ave

04/02/2024

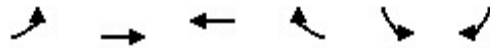


Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations		↔↕		↕↔		↔↕	
Traffic Volume (veh/h)	1	671	1	753	3	3	0
Future Volume (Veh/h)	1	671	1	753	3	3	0
Sign Control		Free		Free		Stop	
Grade		0%		0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	729	0	818	3	3	0
Pedestrians						10	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type		None		None			
Median storage (veh)							
Upstream signal (ft)				246			
pX, platoon unblocked	0.84		0.00			0.84	0.84
vC, conflicting volume	831		0			1196	420
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	416		0			851	0
tC, single (s)	4.1		0.0			6.8	6.9
tC, 2 stage (s)							
tF (s)	2.2		0.0			3.5	3.3
p0 queue free %	100		0			99	100
cM capacity (veh/h)	959		0			252	907
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1		
Volume Total	244	486	545	276	3		
Volume Left	1	0	0	0	3		
Volume Right	0	0	0	3	0		
cSH	959	1700	1700	1700	252		
Volume to Capacity	0.00	0.29	0.32	0.16	0.01		
Queue Length 95th (ft)	0	0	0	0	1		
Control Delay (s)	0.0	0.0	0.0	0.0	19.5		
Lane LOS	A				C		
Approach Delay (s)	0.0		0.0		19.5		
Approach LOS					C		
Intersection Summary							
Average Delay			0.0				
Intersection Capacity Utilization			34.0%		ICU Level of Service		A
Analysis Period (min)			15				

HCM Unsignalized Intersection Capacity Analysis

30: Washington St & Walker St

04/02/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕↔		↔↔	
Traffic Volume (veh/h)	29	652	732	21	20	15
Future Volume (Veh/h)	29	652	732	21	20	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	709	796	23	22	16
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			627			
pX, platoon unblocked	0.87				0.87	0.87
vC, conflicting volume	826				1233	416
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	515				980	47
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				90	98
cM capacity (veh/h)	922				210	886
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1	
Volume Total	268	473	531	288	38	
Volume Left	32	0	0	0	22	
Volume Right	0	0	0	23	16	
cSH	922	1700	1700	1700	310	
Volume to Capacity	0.03	0.28	0.31	0.17	0.12	
Queue Length 95th (ft)	3	0	0	0	10	
Control Delay (s)	1.4	0.0	0.0	0.0	18.2	
Lane LOS	A				C	
Approach Delay (s)	0.5		0.0		18.2	
Approach LOS					C	
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization			53.7%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
1: Chestnut St & Washington St

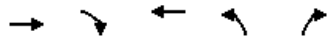
04/01/2024

	→	↘	↙	←	↖	↗	Ø9
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø9
Lane Configurations	↑	↗		↖	↖	↗	
Traffic Volume (vph)	511	30	188	269	60	272	
Future Volume (vph)	511	30	188	269	60	272	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		50	300		0	0	
Storage Lanes		1	0		1	1	
Taper Length (ft)			25		25		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	
Fr		0.850				0.850	
Fit Protected				0.980	0.950		
Satd. Flow (prot)	1660	1411	0	3140	1593	1439	
Fit Permitted				0.570	0.950		
Satd. Flow (perm)	1660	1411	0	1826	1593	1439	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		12				296	
Link Speed (mph)	33			32	25		
Link Distance (ft)	165			508	307		
Travel Time (s)	3.4			10.8	8.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	3%	3%	2%	1%	2%	1%	
Adj. Flow (vph)	555	33	204	292	65	296	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	555	33	0	496	65	296	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	11			11	12		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	1	1	1	1	1	1	
Detector Template		Right	Left		Left		
Leading Detector (ft)	40	40	40	40	40	40	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	40	40	40	40	40	40	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pt+ov	
Protected Phases	6	3	5	2	3	3.5	9
Permitted Phases		6	2				
Detector Phase	6	3	5	2	3	3.5	
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		5.0
Minimum Split (s)	12.5	12.5	12.5	12.5	12.5		25.0
Total Split (s)	63.0	17.0	20.0	83.0	17.0		25.0
Total Split (%)	50.4%	13.6%	16.0%	66.4%	13.6%		20%
Maximum Green (s)	56.5	10.5	13.5	76.5	10.5		21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		2.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		
Total Lost Time (s)	6.5	6.5		6.5	6.5		
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	C-Min	None	None	C-Min	None		None
Walk Time (s)							7.0
Flash Dont Walk (s)							14.0
Pedestrian Calls (#/hr)							12
Act Effect Green (s)	79.1	95.2		92.4	9.6	20.3	
Actuated g/C Ratio	0.63	0.76		0.74	0.08	0.16	
v/c Ratio	0.53	0.03		0.35	0.53	0.62	
Control Delay	18.6	5.3		7.8	71.1	9.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	
Total Delay	18.6	5.3		7.8	71.1	9.0	
LOS	B	A		A	E	A	
Approach Delay	17.9			7.8	20.2		

Queues

1: Chestnut St & Washington St

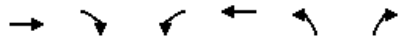
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Lane Group	EBT	EBR	WBT	NBL	NBR
Lane Group Flow (vph)	555	33	496	65	296
v/c Ratio	0.53	0.03	0.35	0.53	0.62
Control Delay	18.6	5.3	7.8	71.1	9.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.6	5.3	7.8	71.1	9.0
Queue Length 50th (ft)	173	2	37	51	0
Queue Length 95th (ft)	473	19	121	100	55
Internal Link Dist (ft)	85		428	227	
Turn Bay Length (ft)		50			
Base Capacity (vph)	1050	1091	1426	137	518
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.03	0.35	0.47	0.57
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
 1: Chestnut St & Washington St

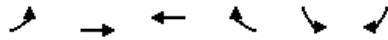
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Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↖↑	↘	↗
Traffic Volume (vph)	511	30	188	269	60	272
Future Volume (vph)	511	30	188	269	60	272
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	1.00		0.95	1.00	1.00
Fr't	1.00	0.85		1.00	1.00	0.85
Fit Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1660	1411		3139	1593	1439
Fit Permitted	1.00	1.00		0.57	0.95	1.00
Satd. Flow (perm)	1660	1411		1825	1593	1439
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	555	33	204	292	65	296
RTOR Reduction (vph)	0	4	0	0	0	257
Lane Group Flow (vph)	555	29	0	496	65	39
Heavy Vehicles (%)	3%	3%	2%	1%	2%	1%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pt+ov
Protected Phases	6	3	5	2	3	3
Permitted Phases		6	2			
Actuated Green, G (s)	76.7	86.3		90.0	9.6	16.4
Effective Green, g (s)	76.7	86.3		90.0	9.6	16.4
Actuated g/C Ratio	0.61	0.69		0.72	0.08	0.13
Clearance Time (s)	6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1018	1047		1385	122	188
v/s Ratio Prot	c0.33	0.00		c0.02	c0.04	0.03
v/s Ratio Perm		0.02		0.24		
v/c Ratio	0.55	0.03		0.36	0.53	0.21
Uniform Delay, d1	14.0	6.1		6.6	55.5	48.5
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.1	0.0		0.2	4.4	0.5
Delay (s)	16.1	6.1		6.8	60.0	49.0
Level of Service	B	A		A	E	D
Approach Delay (s)	15.6			6.8	51.0	
Approach LOS	B			A	D	
Intersection Summary						
HCM 2000 Control Delay			21.4		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.49			
Actuated Cycle Length (s)			125.0		Sum of lost time (s)	23.5
Intersection Capacity Utilization			65.5%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
4: Washington St & Davis Ct

04/01/2024



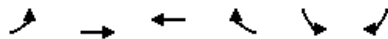
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↶	↷	↶	↷
Traffic Volume (vph)	1	782	457	2	4	0
Future Volume (vph)	1	782	457	2	4	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.999			
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1570	1621	1619	0	1624	0
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1570	1621	1619	0	1624	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		508	361		146	
Travel Time (s)		10.5	7.7		4.0	
Confl. Peds. (#/hr)	11			11		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	1	850	497	2	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	850	499	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		11	11		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary	
Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	55.7%
	ICU Level of Service B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

4: Washington St & Davis Ct

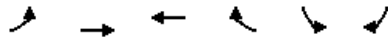
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↷		↶	
Traffic Volume (veh/h)	1	782	457	2	4	0
Future Volume (Veh/h)	1	782	457	2	4	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	850	497	2	4	0
Pedestrians					11	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		508				
pX, platoon unblocked					0.81	
vC, conflicting volume	510				1361	509
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	510				1328	509
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				97	100
cM capacity (veh/h)	1054				138	562
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	1	850	499	4		
Volume Left	1	0	0	4		
Volume Right	0	0	2	0		
cSH	1054	1700	1700	138		
Volume to Capacity	0.00	0.50	0.29	0.03		
Queue Length 95th (ft)	0	0	0	2		
Control Delay (s)	8.4	0.0	0.0	31.9		
Lane LOS	A			D		
Approach Delay (s)	0.0		0.0	31.9		
Approach LOS				D		
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			55.7%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: Washington St & Dunstan St

04/01/2024



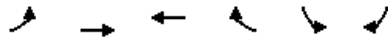
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Volume (vph)	26	760	418	7	6	41
Future Volume (vph)	26	760	418	7	6	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.998		0.883	
Flt Protected		0.998			0.993	
Satd. Flow (prot)	0	1616	1618	0	1499	0
Flt Permitted		0.998			0.993	
Satd. Flow (perm)	0	1616	1618	0	1499	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		361	663		223	
Travel Time (s)		7.5	14.1		6.1	
Confl. Peds. (#/hr)	9			9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	2%	0%	0%	0%
Adj. Flow (vph)	28	826	454	8	7	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	854	462	0	52	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	77.8%
ICU Level of Service	D
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 6: Washington St & Dunstan St

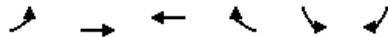
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Volume (veh/h)	26	760	418	7	6	41
Future Volume (Veh/h)	26	760	418	7	6	41
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	28	826	454	8	7	45
Pedestrians					9	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		869				
pX, platoon unblocked					0.81	
vC, conflicting volume	471				1349	467
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	471				1313	467
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				95	92
cM capacity (veh/h)	1071				138	595
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	854	462	52			
Volume Left	28	0	7			
Volume Right	0	8	45			
cSH	1071	1700	411			
Volume to Capacity	0.03	0.27	0.13			
Queue Length 95th (ft)	2	0	11			
Control Delay (s)	0.7	0.0	15.0			
Lane LOS	A		C			
Approach Delay (s)	0.7	0.0	15.0			
Approach LOS			C			
Intersection Summary						
Average Delay			1.0			
Intersection Capacity Utilization			77.8%		ICU Level of Service	D
Analysis Period (min)			15			

Lanes, Volumes, Timings
8: Washington St & Armory St

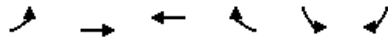
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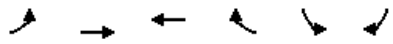
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	28	738	413	42	12	12
Future Volume (vph)	28	738	413	42	12	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	55			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.987		0.932	
Flt Protected	0.950				0.976	
Satd. Flow (prot)	1516	1614	1600	0	1555	0
Flt Permitted	0.950				0.976	
Satd. Flow (perm)	1516	1614	1600	0	1555	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		663	197		265	
Travel Time (s)		13.7	4.2		7.2	
Confl. Peds. (#/hr)	8			8		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	2%	0%	0%
Bus Blockages (#/hr)	0	1	0	0	0	0
Adj. Flow (vph)	30	802	449	46	13	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	802	495	0	26	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.20	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	CBD					
Control Type:	Unsignalized					
Intersection Capacity Utilization	53.2%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 8: Washington St & Armory St

04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↕	↕		↙	↙
Traffic Volume (veh/h)	28	738	413	42	12	12
Future Volume (Veh/h)	28	738	413	42	12	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	30	802	449	46	13	13
Pedestrians					8	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	503				1342	480
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	503				1342	480
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				92	98
cM capacity (veh/h)	1064				163	585
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	30	802	495	26		
Volume Left	30	0	0	13		
Volume Right	0	0	46	13		
cSH	1064	1700	1700	256		
Volume to Capacity	0.03	0.47	0.29	0.10		
Queue Length 95th (ft)	2	0	0	8		
Control Delay (s)	8.5	0.0	0.0	20.7		
Lane LOS	A			C		
Approach Delay (s)	0.3		0.0	20.7		
Approach LOS				C		
Intersection Summary						
Average Delay			0.6			
Intersection Capacity Utilization			53.2%		ICU Level of Service	A
Analysis Period (min)			15			

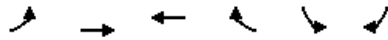


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Volume (vph)	0	750	445	0	8	10
Future Volume (vph)	0	750	445	0	8	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Friction					0.926	
Flt Protected					0.978	
Satd. Flow (prot)	0	1621	1621	0	1463	0
Flt Permitted					0.978	
Satd. Flow (perm)	0	1621	1621	0	1463	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		197	204		128	
Travel Time (s)		4.1	4.3		3.5	
Confl. Peds. (#/hr)	8			8		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	13%	0%
Adj. Flow (vph)	0	815	484	0	9	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	815	484	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary
 Area Type: CBD
 Control Type: Unsignalized
 Intersection Capacity Utilization 53.9% ICU Level of Service A
 Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
 10: Washington St & Trader Joe's

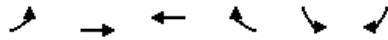
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Volume (veh/h)	0	750	445	0	8	10
Future Volume (Veh/h)	0	750	445	0	8	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	815	484	0	9	11
Pedestrians					8	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	492				1307	492
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	492				1307	492
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				95	98
cM capacity (veh/h)	1074				166	576
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	815	484	20			
Volume Left	0	0	9			
Volume Right	0	0	11			
cSH	1700	1700	273			
Volume to Capacity	0.48	0.28	0.07			
Queue Length 95th (ft)	0	0	6			
Control Delay (s)	0.0	0.0	19.3			
Lane LOS			C			
Approach Delay (s)	0.0	0.0	19.3			
Approach LOS			C			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			53.9%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
12: Washington St & Cross St

04/01/2024



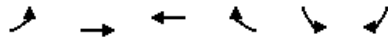
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	18	740	427	5	18	18
Future Volume (vph)	18	740	427	5	18	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.932	
Flt Protected	0.950				0.976	
Satd. Flow (prot)	1516	1621	1619	0	1555	0
Flt Permitted	0.950				0.976	
Satd. Flow (perm)	1516	1621	1619	0	1555	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		204	445		262	
Travel Time (s)		4.2	9.5		7.1	
Confl. Peds. (#/hr)	9			9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	20	804	464	5	20	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	804	469	0	40	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	53.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 12: Washington St & Cross St

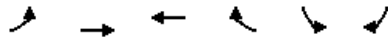
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	18	740	427	5	18	18
Future Volume (Veh/h)	18	740	427	5	18	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	20	804	464	5	20	20
Pedestrians					9	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	478				1320	476
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	478				1320	476
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				88	97
cM capacity (veh/h)	1085				170	588
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	20	804	469	40		
Volume Left	20	0	0	20		
Volume Right	0	0	5	20		
cSH	1085	1700	1700	264		
Volume to Capacity	0.02	0.47	0.28	0.15		
Queue Length 95th (ft)	1	0	0	13		
Control Delay (s)	8.4	0.0	0.0	21.1		
Lane LOS	A			C		
Approach Delay (s)	0.2		0.0	21.1		
Approach LOS				C		
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			53.3%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
14: Washington St & Parsons St

04/01/2024



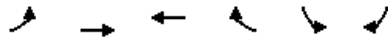
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Volume (vph)	7	751	421	17	18	11
Future Volume (vph)	7	751	421	17	18	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.995		0.949	
Flt Protected					0.970	
Satd. Flow (prot)	0	1621	1610	0	1562	0
Flt Permitted					0.970	
Satd. Flow (perm)	0	1621	1610	0	1562	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		445	326		709	
Travel Time (s)		9.2	6.9		19.3	
Confl. Peds. (#/hr)	14			14	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	6%	0%	2%
Adj. Flow (vph)	8	816	458	18	20	12
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	824	476	0	32	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	60.1%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 14: Washington St & Parsons St

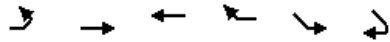
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Volume (veh/h)	7	751	421	17	18	11
Future Volume (Veh/h)	7	751	421	17	18	11
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	8	816	458	18	20	12
Pedestrians			1		14	
Lane Width (ft)			11.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	490				1314	481
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	490				1314	481
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				88	98
cM capacity (veh/h)	1069				172	577
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	824	476	32			
Volume Left	8	0	20			
Volume Right	0	18	12			
cSH	1069	1700	234			
Volume to Capacity	0.01	0.28	0.14			
Queue Length 95th (ft)	1	0	12			
Control Delay (s)	0.2	0.0	22.8			
Lane LOS	A		C			
Approach Delay (s)	0.2	0.0	22.8			
Approach LOS			C			
Intersection Summary						
Average Delay			0.7			
Intersection Capacity Utilization		60.1%		ICU Level of Service	B	
Analysis Period (min)			15			

Lanes, Volumes, Timings
16: Washington St & Eddy St

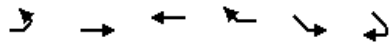
04/01/2024



Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations	↔	↔	↔		↔	↔
Traffic Volume (vph)	8	761	402	74	190	36
Future Volume (vph)	8	761	402	74	190	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.979		0.979	
Flt Protected	0.950				0.960	
Satd. Flow (prot)	1516	1614	1591	0	1594	0
Flt Permitted	0.950				0.960	
Satd. Flow (perm)	1516	1614	1591	0	1594	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		326	399		684	
Travel Time (s)		6.7	8.5		18.7	
Confl. Peds. (#/hr)	17			17		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	1%	0%
Bus Blockages (#/hr)	0	1	0	0	0	0
Adj. Flow (vph)	9	827	437	80	207	39
Shared Lane Traffic (%)						
Lane Group Flow (vph)	9	827	517	0	246	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.20	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	CBD					
Control Type:	Unsignalized					
Intersection Capacity Utilization	65.3%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 16: Washington St & Eddy St

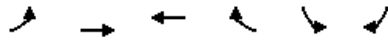
04/01/2024



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations	↖	↖	↖		↘	↘
Traffic Volume (veh/h)	8	761	402	74	190	36
Future Volume (Veh/h)	8	761	402	74	190	36
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	827	437	80	207	39
Pedestrians		1			17	
Lane Width (ft)		10.5			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	534				1339	495
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	534				1339	495
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				0	93
cM capacity (veh/h)	1027				165	569
Direction, Lane #	EB 1	EB 2	WB 1	SE 1		
Volume Total	9	827	517	246		
Volume Left	9	0	0	207		
Volume Right	0	0	80	39		
cSH	1027	1700	1700	186		
Volume to Capacity	0.01	0.49	0.30	1.32		
Queue Length 95th (ft)	1	0	0	351		
Control Delay (s)	8.5	0.0	0.0	226.4		
Lane LOS	A			F		
Approach Delay (s)	0.1		0.0	226.4		
Approach LOS				F		
Intersection Summary						
Average Delay			34.9			
Intersection Capacity Utilization			65.3%		ICU Level of Service	C
Analysis Period (min)			15			

Lanes, Volumes, Timings
 18: Washington St & Brookside Ave

04/01/2024



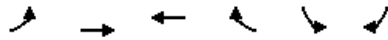
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Volume (vph)	48	902	473	31	9	2
Future Volume (vph)	48	902	473	31	9	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	75			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.992		0.977	
Flt Protected		0.997			0.960	
Satd. Flow (prot)	0	1617	1610	0	1469	0
Flt Permitted		0.997			0.960	
Satd. Flow (perm)	0	1617	1610	0	1469	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		399	347		767	
Travel Time (s)		8.2	7.4		20.9	
Confl. Peds. (#/hr)	21			21		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	11%	0%
Adj. Flow (vph)	52	980	514	34	10	2
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1032	548	0	12	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	98.9%
ICU Level of Service	F
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 18: Washington St & Brookside Ave

04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↔	↔		↔	
Traffic Volume (veh/h)	48	902	473	31	9	2
Future Volume (Veh/h)	48	902	473	31	9	2
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	980	514	34	10	2
Pedestrians					21	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			974			
pX, platoon unblocked	0.84				0.84	0.84
vC, conflicting volume	569				1636	552
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	387				1663	367
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	95				87	100
cM capacity (veh/h)	969				79	560
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	1032	548	12			
Volume Left	52	0	10			
Volume Right	0	34	2			
cSH	969	1700	92			
Volume to Capacity	0.05	0.32	0.13			
Queue Length 95th (ft)	4	0	11			
Control Delay (s)	1.5	0.0	50.0			
Lane LOS	A		E			
Approach Delay (s)	1.5	0.0	50.0			
Approach LOS			E			
Intersection Summary						
Average Delay			1.4			
Intersection Capacity Utilization		98.9%		ICU Level of Service	F	
Analysis Period (min)			15			

Lanes, Volumes, Timings
20: Lowell Ave & Washington St

04/01/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↔↔		↔	↔		↔	↔			↔↔		
Traffic Volume (vph)	35	642	230	59	333	8	120	128	127	7	247	33	
Future Volume (vph)	35	642	230	59	333	8	120	128	127	7	247	33	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor					1.00			0.99					
Frt		0.962			0.996			0.925			0.984		
Fit Protected		0.998		0.950			0.950				0.999		
Satd. Flow (prot)	0	3061	0	1577	1638	0	1608	1541	0	0	1647	0	
Fit Permitted		0.923		0.161			0.263				0.989		
Satd. Flow (perm)	0	2831	0	267	1638	0	445	1541	0	0	1630	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		48			1			45			5		
Link Speed (mph)		33			27			25			25		
Link Distance (ft)		246			934			273			475		
Travel Time (s)		5.1			23.6			7.4			13.0		
Confl. Bikes (#/hr)						1			1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	6%	2%	1%	3%	4%	0%	1%	3%	1%	0%	2%	3%	
Bus Blockages (#/hr)	0	0	1	0	0	0	0	0	0	0	0	0	
Adj. Flow (vph)	38	698	250	64	362	9	130	139	138	8	268	36	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	986	0	64	371	0	130	277	0	0	312	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	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	1		1	1		1	1		1	1		
Detector Template	Left			Left			Left			Left			
Leading Detector (ft)	20	40		20	40		40	40		20	40		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Detector 1 Position(ft)	0	0		0	0		0	0		0	0		
Detector 1 Size(ft)	20	40		20	40		40	40		20	40		
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		
Detector 1 Channel													
Detector 1 Extend (s)	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		
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA		
Protected Phases		1			1		3	3 4			4		9
Permitted Phases	1			1			4			4			
Detector Phase	1	1		1	1		3	3 4		4	4		
Switch Phase													
Minimum Initial (s)	15.0	15.0		15.0	15.0		6.0			8.0	8.0		5.0
Minimum Split (s)	20.0	20.0		20.0	20.0		11.0			13.0	13.0		27.0
Total Split (s)	48.0	48.0		48.0	48.0		11.0			26.0	26.0		27.0
Total Split (%)	42.9%	42.9%		42.9%	42.9%		9.8%			23.2%	23.2%		24%
Maximum Green (s)	43.0	43.0		43.0	43.0		6.0			21.0	21.0		24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0			4.0	4.0		2.0
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0			1.0	1.0		1.0
Lost Time Adjust (s)		0.0		0.0	0.0		0.0				0.0		
Total Lost Time (s)		5.0		5.0	5.0		5.0				5.0		
Lead/Lag							Lead			Lag	Lag		
Lead-Lag Optimize?							Yes			Yes	Yes		
Vehicle Extension (s)	4.0	4.0		4.0	4.0		2.0			3.0	3.0		3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None			None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													17.0
Pedestrian Calls (#/hr)													23
Act Effect Green (s)		48.7		48.7	48.7		32.1	37.1			23.8		
Actuated g/C Ratio		0.43		0.43	0.43		0.29	0.33			0.21		
v/c Ratio		0.78		0.55	0.52		0.61	0.51			0.89		
Control Delay		32.7		49.1	28.1		45.8	30.5			71.6		
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0		
Total Delay		32.7		49.1	28.1		45.8	30.5			71.6		
LOS		C		D	C		D	C			E		
Approach Delay		32.7			31.2			35.4			71.6		

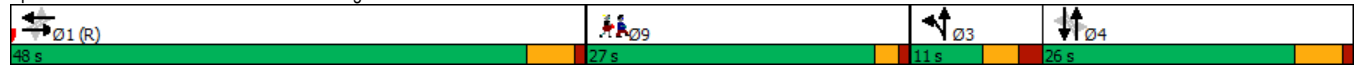


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Approach LOS	C			C			D			E			

Intersection Summary

Area Type:	CBD
Cycle Length:	112
Actuated Cycle Length:	112
Offset:	91 (81%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.89
Intersection Signal Delay:	38.6
Intersection LOS:	D
Intersection Capacity Utilization:	98.9%
ICU Level of Service:	F
Analysis Period (min):	15

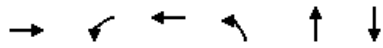
Splits and Phases: 20: Lowell Ave & Washington St



Queues

20: Lowell Ave & Washington St

04/01/2024



Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	986	64	371	130	277	312
v/c Ratio	0.78	0.55	0.52	0.61	0.51	0.89
Control Delay	32.7	49.1	28.1	45.8	30.5	71.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	32.7	49.1	28.1	45.8	30.5	71.6
Queue Length 50th (ft)	329	37	209	73	143	~226
Queue Length 95th (ft)	#456	#111	311	#127	234	#412
Internal Link Dist (ft)	166		854		193	395
Turn Bay Length (ft)						
Base Capacity (vph)	1259	116	713	213	540	349
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.55	0.52	0.61	0.51	0.89

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 20: Lowell Ave & Washington St

04/01/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔			↔	
Traffic Volume (vph)	35	642	230	59	333	8	120	128	127	7	247	33
Future Volume (vph)	35	642	230	59	333	8	120	128	127	7	247	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0	5.0			5.0	
Lane Util. Factor		0.95		1.00	1.00		1.00	1.00			1.00	
Frb, ped/bikes		1.00		1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00			1.00	
Frt		0.96		1.00	1.00		1.00	0.93			0.98	
Fit Protected		1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3061		1577	1639		1608	1541			1647	
Fit Permitted		0.92		0.16	1.00		0.26	1.00			0.99	
Satd. Flow (perm)		2832		268	1639		445	1541			1632	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	38	698	250	64	362	9	130	139	138	8	268	36
RTOR Reduction (vph)	0	28	0	0	1	0	0	30	0	0	4	0
Lane Group Flow (vph)	0	958	0	64	370	0	130	247	0	0	308	0
Confl. Bikes (#/hr)							1				1	
Heavy Vehicles (%)	6%	2%	1%	3%	4%	0%	1%	3%	1%	0%	2%	3%
Bus Blockages (#/hr)	0	0	1	0	0	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	
Protected Phases		1			1		3	3			4	
Permitted Phases	1			1			4			4		
Actuated Green, G (s)		47.5		47.5	47.5		32.1	37.1			23.8	
Effective Green, g (s)		47.5		47.5	47.5		32.1	37.1			23.8	
Actuated g/C Ratio		0.42		0.42	0.42		0.29	0.33			0.21	
Clearance Time (s)		5.0		5.0	5.0		5.0				5.0	
Vehicle Extension (s)		4.0		4.0	4.0		2.0				3.0	
Lane Grp Cap (vph)		1201		113	695		213	510			346	
v/s Ratio Prot					0.23		0.05	c0.16				
v/s Ratio Perm		c0.34		0.24			0.13				c0.19	
v/c Ratio		0.80		0.57	0.53		0.61	0.48			0.89	
Uniform Delay, d1		28.1		24.4	24.0		32.4	29.8			42.8	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		5.6		19.0	2.9		3.6	0.3			23.6	
Delay (s)		33.7		43.4	26.9		36.0	30.1			66.4	
Level of Service		C		D	C		D	C			E	
Approach Delay (s)		33.7			29.3			32.0			66.4	
Approach LOS		C			C			C			E	
Intersection Summary												
HCM 2000 Control Delay			37.2			HCM 2000 Level of Service					D	
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			112.0			Sum of lost time (s)					18.0	
Intersection Capacity Utilization			98.9%			ICU Level of Service					F	
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
21: Walnut St & Washington St

04/01/2024

																Ø9
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR			
Lane Configurations																
Traffic Volume (vph)	26	614	136	169	322	42	6	67	277	149	32	311	11			
Future Volume (vph)	26	614	136	169	322	42	6	67	277	149	32	311	11			
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900			
Storage Length (ft)	0		0	0		0		175		160	110		0			
Storage Lanes	0		0	0		0		1		1	1		0			
Taper Length (ft)	25			25				25			25					
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Ped Bike Factor										0.99		1.00				
Frnt		0.974			0.988					0.850		0.995				
Flt Protected		0.998			0.984			0.950			0.950					
Satd. Flow (prot)	0	3090	0	0	3055	0	0	1595	1644	1384	1533	1653	0			
Flt Permitted		0.914			0.536			0.177			0.577					
Satd. Flow (perm)	0	2830	0	0	1664	0	0	297	1644	1367	931	1653	0			
Right Turn on Red			Yes			Yes				Yes			Yes			
Satd. Flow (RTOR)		20			8					162		1				
Link Speed (mph)		20			29				25			25				
Link Distance (ft)		934			614				318			335				
Travel Time (s)		31.8			14.4				8.7			9.1				
Confl. Bikes (#/hr)										1			3			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92			
Heavy Vehicles (%)	8%	2%	2%	2%	3%	12%	0%	2%	4%	5%	6%	2%	27%			
Adj. Flow (vph)	28	667	148	184	350	46	7	73	301	162	35	338	12			
Shared Lane Traffic (%)																
Lane Group Flow (vph)	0	843	0	0	580	0	0	80	301	162	35	350	0			
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No			
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right			
Median Width(ft)		0			0				18			12				
Link Offset(ft)		0			0				0			0				
Crosswalk Width(ft)		16			16				16			16				
Two way Left Turn Lane																
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14			
Turning Speed (mph)	15		9	15		9	9	15		9	15		9			
Number of Detectors	1	1		1	1		1	1	1	1	1	1	1			
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru	Right	Left	Thru				
Leading Detector (ft)	20	40		20	40		20	20	40	20	20	40				
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0				
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0				
Detector 1 Size(ft)	20	40		20	40		20	20	40	20	20	40				
Detector 1 Type	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				
Detector 1 Queue (s)	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				
Turn Type	Perm	NA		pm+pt	NA		custom	pm+pt	NA	Perm	Perm	NA				
Protected Phases		2		1	6			7	4			8		9		
Permitted Phases	2			6			7	4		4	8					
Detector Phase	2	2		1	6		7	7	4	4	8	8				
Switch Phase																
Minimum Initial (s)	10.0	10.0		6.0	10.0		6.0	6.0	6.0	6.0	10.0	10.0		5.0		
Minimum Split (s)	17.5	17.5		13.5	17.5		12.5	12.5	12.5	12.5	16.5	16.5		24.0		
Total Split (s)	30.0	30.0		14.0	44.0		14.0	14.0	46.0	46.0	32.0	32.0		24.0		
Total Split (%)	26.3%	26.3%		12.3%	38.6%		12.3%	12.3%	40.4%	40.4%	28.1%	28.1%		21%		
Maximum Green (s)	22.5	22.5		6.5	36.5		7.5	7.5	39.5	39.5	25.5	25.5		21.0		
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0		2.0		
All-Red Time (s)	3.5	3.5		3.5	3.5		2.5	2.5	2.5	2.5	2.5	2.5		1.0		
Lost Time Adjust (s)		0.0			0.0			0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5				
Lead/Lag	Lag	Lag		Lead			Lead	Lead			Lag	Lag				
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes			Yes	Yes				
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		3.0		
Recall Mode	C-Min	C-Min		None	C-Min		None	None	None	None	None	None		None		
Walk Time (s)														7.0		
Flash Dont Walk (s)														14.0		
Pedestrian Calls (#/hr)														23		
Act Effect Green (s)		49.3			49.3			36.3	36.3	36.3	25.1	25.1				
Actuated g/C Ratio		0.43			0.43			0.32	0.32	0.32	0.22	0.22				
v/c Ratio		0.68			1.07dl			0.45	0.58	0.30	0.17	0.96				
Control Delay		33.0			42.2			34.7	36.5	5.6	38.4	82.8				
Queue Delay		0.0			0.0			0.0	0.0	0.0	0.0	0.0				
Total Delay		33.0			42.2			34.7	36.5	5.6	38.4	82.8				

Lanes, Volumes, Timings
 21: Walnut St & Washington St

04/01/2024

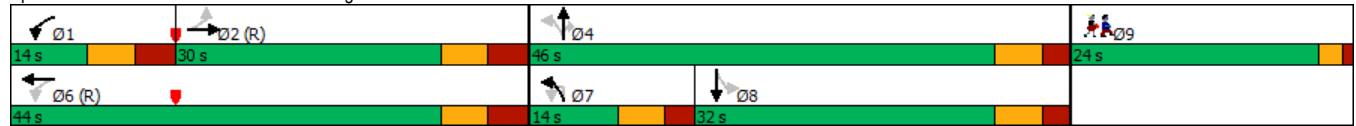


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
LOS		C			D			C	D	A	D	F		
Approach Delay		33.0			42.2				27.0			78.8		
Approach LOS		C			D			C	C			E		

Intersection Summary

Area Type: CBD
 Cycle Length: 114
 Actuated Cycle Length: 114
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 125
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.96
 Intersection Signal Delay: 41.4 Intersection LOS: D
 Intersection Capacity Utilization 89.2% ICU Level of Service E
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 21: Walnut St & Washington St



Queues

21: Walnut St & Washington St

04/01/2024



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	843	580	80	301	162	35	350
v/c Ratio	0.68	1.07dl	0.45	0.58	0.30	0.17	0.96
Control Delay	33.0	42.2	34.7	36.5	5.6	38.4	82.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.0	42.2	34.7	36.5	5.6	38.4	82.8
Queue Length 50th (ft)	305	~248	40	175	0	21	254
Queue Length 95th (ft)	#430	#365	77	264	46	51	#439
Internal Link Dist (ft)	854	534		238			255
Turn Bay Length (ft)			175		160	110	
Base Capacity (vph)	1235	724	180	569	579	208	370
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.80	0.44	0.53	0.28	0.17	0.95

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

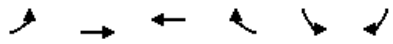
HCM Signalized Intersection Capacity Analysis
 21: Walnut St & Washington St

04/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔↔			↔↔			↔	↑	↔	↔	↔	↔	
Traffic Volume (vph)	26	614	136	169	322	42	6	67	277	149	32	311	11	
Future Volume (vph)	26	614	136	169	322	42	6	67	277	149	32	311	11	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5		
Lane Util. Factor		0.95			0.95			1.00	1.00	1.00	1.00	1.00		
Frb, ped/bikes		1.00			1.00			1.00	1.00	0.99	1.00	1.00		
Flpb, ped/bikes		1.00			1.00			1.00	1.00	1.00	1.00	1.00		
Frt		0.97			0.99			1.00	1.00	0.85	1.00	0.99		
Fit Protected		1.00			0.98			0.95	1.00	1.00	0.95	1.00		
Satd. Flow (prot)		3090			3056			1595	1644	1367	1533	1653		
Fit Permitted		0.91			0.54			0.18	1.00	1.00	0.58	1.00		
Satd. Flow (perm)		2828			1664			297	1644	1367	930	1653		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Adj. Flow (vph)	28	667	148	184	350	46	7	73	301	162	35	338	12	
RTOR Reduction (vph)	0	12	0	0	5	0	0	0	0	109	0	1	0	
Lane Group Flow (vph)	0	831	0	0	575	0	0	80	301	53	35	349	0	
Confl. Bikes (#/hr)										1			3	
Heavy Vehicles (%)	8%	2%	2%	2%	3%	12%	0%	2%	4%	5%	6%	2%	27%	
Turn Type	Perm	NA		pm+pt	NA		custom	pm+pt	NA	Perm	Perm	NA		
Protected Phases		2		1	6			7	4				8	
Permitted Phases	2			6			7	4		4		8		
Actuated Green, G (s)		46.8			46.8			37.6	37.6	37.6	25.1		25.1	
Effective Green, g (s)		46.8			46.8			37.6	37.6	37.6	25.1		25.1	
Actuated g/C Ratio		0.41			0.41			0.33	0.33	0.33	0.22		0.22	
Clearance Time (s)		7.5			7.5			6.5	6.5	6.5	6.5		6.5	
Vehicle Extension (s)		2.0			2.0			2.0	2.0	2.0	2.0		2.0	
Lane Grp Cap (vph)		1160			683			166	542	450	204		363	
v/s Ratio Prot								0.03	c0.18				c0.21	
v/s Ratio Perm		0.29			c0.35			0.13		0.04	0.04			
v/c Ratio		0.72			1.07dl			0.48	0.56	0.12	0.17		0.96	
Uniform Delay, d1		28.1			30.3			29.2	31.3	26.6	36.0		44.0	
Progression Factor		1.00			1.00			1.00	1.00	1.00	1.00		1.00	
Incremental Delay, d2		3.8			8.9			0.8	0.7	0.0	0.1		36.9	
Delay (s)		31.9			39.2			30.0	32.0	26.7	36.2		80.9	
Level of Service		C			D			C	C	C	D		F	
Approach Delay (s)		31.9			39.2				30.1				76.8	
Approach LOS		C			D				C				E	
Intersection Summary														
HCM 2000 Control Delay			40.6										HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.83											
Actuated Cycle Length (s)			114.0										Sum of lost time (s)	31.0
Intersection Capacity Utilization			89.2%										ICU Level of Service	E
Analysis Period (min)			15											
dl Defacto Left Lane. Recode with 1 though lane as a left lane.														
c Critical Lane Group														

Lanes, Volumes, Timings
27: Washington St & Brooks Ave

04/01/2024



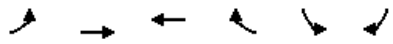
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕↕	↕		↘	↘
Traffic Volume (vph)	0	903	483	3	4	3
Future Volume (vph)	0	903	483	3	4	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	45			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr			0.999		0.942	
Flt Protected					0.972	
Satd. Flow (prot)	0	3185	1656	0	1370	0
Flt Permitted					0.972	
Satd. Flow (perm)	0	3185	1656	0	1370	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		381	246		576	
Travel Time (s)		7.9	5.2		15.7	
Confl. Peds. (#/hr)	24			24		
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	33%	25%	0%
Adj. Flow (vph)	0	982	525	3	4	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	982	528	0	7	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	60			60	60	60
Sign Control		Free	Free		Stop	

Intersection Summary

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

HCM Unsignalized Intersection Capacity Analysis
 27: Washington St & Brooks Ave

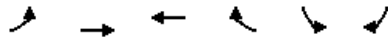
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↓	
Traffic Volume (veh/h)	0	903	483	3	4	3
Future Volume (Veh/h)	0	903	483	3	4	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	982	525	3	4	3
Pedestrians					24	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			246			
pX, platoon unblocked	0.77				0.77	0.77
vC, conflicting volume	552				1042	550
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	276				908	274
tC, single (s)	4.1				7.3	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.3
p0 queue free %	100				98	99
cM capacity (veh/h)	983				178	552
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	327	655	528	7		
Volume Left	0	0	0	4		
Volume Right	0	0	3	3		
cSH	983	1700	1700	251		
Volume to Capacity	0.00	0.39	0.31	0.03		
Queue Length 95th (ft)	0	0	0	2		
Control Delay (s)	0.0	0.0	0.0	19.7		
Lane LOS				C		
Approach Delay (s)	0.0		0.0	19.7		
Approach LOS				C		
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			38.5%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
30: Washington St & Walker St

04/01/2024



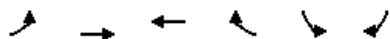
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	29	882	482	4	21	22
Future Volume (vph)	29	882	482	4	21	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.931	
Flt Protected	0.950				0.976	
Satd. Flow (prot)	1516	1621	1601	0	1515	0
Flt Permitted	0.950				0.976	
Satd. Flow (perm)	1516	1621	1601	0	1515	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		347	381		595	
Travel Time (s)		7.2	8.1		16.2	
Confl. Peds. (#/hr)	17			17	2	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	25%	0%	5%
Adj. Flow (vph)	32	959	524	4	23	24
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	959	528	0	47	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	1.25	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	60			60	60	60
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	62.8%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 30: Washington St & Walker St

04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖		↖	↗
Traffic Volume (veh/h)	29	882	482	4	21	22
Future Volume (Veh/h)	29	882	482	4	21	22
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	959	524	4	23	24
Pedestrians		4	2		17	
Lane Width (ft)		10.5	11.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			627			
pX, platoon unblocked	0.80				0.80	0.80
vC, conflicting volume	545				1568	547
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	307				1585	310
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	97				75	96
cM capacity (veh/h)	996				92	568
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	32	959	528	47		
Volume Left	32	0	0	23		
Volume Right	0	0	4	24		
cSH	996	1700	1700	160		
Volume to Capacity	0.03	0.56	0.31	0.29		
Queue Length 95th (ft)	2	0	0	29		
Control Delay (s)	8.7	0.0	0.0	36.5		
Lane LOS	A			E		
Approach Delay (s)	0.3		0.0	36.5		
Approach LOS				E		
Intersection Summary						
Average Delay			1.3			
Intersection Capacity Utilization			62.8%		ICU Level of Service	B
Analysis Period (min)			15			

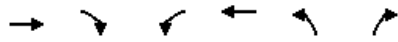
Lanes, Volumes, Timings
1: Chestnut St & Washington St

04/01/2024

	→	↘	↙	←	↖	↗	Ø9
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø9
Lane Configurations	↑	↗		↖	↘	↗	
Traffic Volume (vph)	399	30	208	341	78	189	
Future Volume (vph)	399	30	208	341	78	189	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		50	300		0	0	
Storage Lanes		1	0		1	1	
Taper Length (ft)			25		25		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	
Fr		0.850				0.850	
Fit Protected				0.981	0.950		
Satd. Flow (prot)	1693	1454	0	3136	1624	1454	
Fit Permitted				0.616	0.950		
Satd. Flow (perm)	1693	1454	0	1969	1624	1454	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		16				205	
Link Speed (mph)	33			32	25		
Link Distance (ft)	165			508	307		
Travel Time (s)	3.4			10.8	8.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%	
Adj. Flow (vph)	434	33	226	371	85	205	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	434	33	0	597	85	205	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	11			11	12		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	1	1	1	1	1	1	
Detector Template		Right	Left		Left		
Leading Detector (ft)	40	40	40	40	40	40	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	40	40	40	40	40	40	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pt+ov	
Protected Phases	6	3	5	2	3	3.5	9
Permitted Phases		6	2				
Detector Phase	6	3	5	2	3	3.5	
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		5.0
Minimum Split (s)	12.5	12.5	12.5	12.5	12.5		25.0
Total Split (s)	55.0	21.0	19.0	74.0	21.0		25.0
Total Split (%)	45.8%	17.5%	15.8%	61.7%	17.5%		21%
Maximum Green (s)	48.5	14.5	12.5	67.5	14.5		21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		2.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		
Total Lost Time (s)	6.5	6.5		6.5	6.5		
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	C-Min	None	None	C-Min	None		None
Walk Time (s)							7.0
Flash Dont Walk (s)							14.0
Pedestrian Calls (#/hr)							15
Act Effect Green (s)	72.4	90.5		85.4	11.6	22.0	
Actuated g/C Ratio	0.60	0.75		0.71	0.10	0.18	
v/c Ratio	0.43	0.03		0.41	0.54	0.47	
Control Delay	18.3	4.9		10.0	63.9	6.9	
Queue Delay	0.0	0.0		0.0	0.0	0.0	
Total Delay	18.3	4.9		10.0	63.9	6.9	
LOS	B	A		A	E	A	
Approach Delay	17.3			10.0	23.6		

Lanes, Volumes, Timings
 1: Chestnut St & Washington St

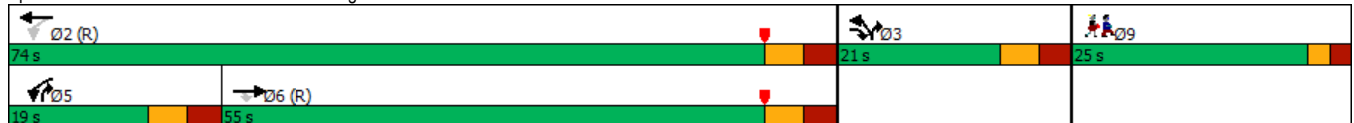
04/01/2024



Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø9
Approach LOS	B		A		C		

Intersection Summary
 Area Type: CBD
 Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 10 (8%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow
 Natural Cycle: 80
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.54
 Intersection Signal Delay: 15.4
 Intersection LOS: B
 Intersection Capacity Utilization 61.8%
 ICU Level of Service B
 Analysis Period (min) 15

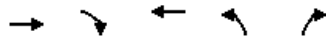
Splits and Phases: 1: Chestnut St & Washington St



Queues

1: Chestnut St & Washington St

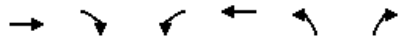
04/01/2024



Lane Group	EBT	EBR	WBT	NBL	NBR
Lane Group Flow (vph)	434	33	597	85	205
v/c Ratio	0.43	0.03	0.41	0.54	0.47
Control Delay	18.3	4.9	10.0	63.9	6.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	18.3	4.9	10.0	63.9	6.9
Queue Length 50th (ft)	126	2	50	64	0
Queue Length 95th (ft)	365	18	168	113	42
Internal Link Dist (ft)	85		428	227	
Turn Bay Length (ft)		50			
Base Capacity (vph)	1021	1139	1471	201	487
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.43	0.03	0.41	0.42	0.42
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
 1: Chestnut St & Washington St

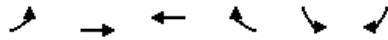
04/01/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↖↑	↘	↗
Traffic Volume (vph)	399	30	208	341	78	189
Future Volume (vph)	399	30	208	341	78	189
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	1.00		0.95	1.00	1.00
Fr't	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1693	1454		3138	1624	1454
Flt Permitted	1.00	1.00		0.62	0.95	1.00
Satd. Flow (perm)	1693	1454		1968	1624	1454
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	434	33	226	371	85	205
RTOR Reduction (vph)	0	5	0	0	0	174
Lane Group Flow (vph)	434	28	0	597	85	31
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pt+ov
Protected Phases	6	3	5	2	3	3
Permitted Phases		6	2			
Actuated Green, G (s)	70.0	81.6		83.0	11.6	18.1
Effective Green, g (s)	70.0	81.6		83.0	11.6	18.1
Actuated g/C Ratio	0.58	0.68		0.69	0.10	0.15
Clearance Time (s)	6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	987	1067		1424	156	219
v/s Ratio Prot	c0.26	0.00		c0.02	c0.05	0.02
v/s Ratio Perm		0.02		0.27		
v/c Ratio	0.44	0.03		0.42	0.54	0.14
Uniform Delay, d1	14.0	6.3		8.0	51.7	44.2
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.4	0.0		0.2	3.9	0.3
Delay (s)	15.4	6.3		8.2	55.5	44.5
Level of Service	B	A		A	E	D
Approach Delay (s)	14.8			8.2	47.7	
Approach LOS	B			A	D	
Intersection Summary						
HCM 2000 Control Delay			19.0		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.42			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	23.5
Intersection Capacity Utilization			61.8%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
4: Washington St & Davis Ct

04/01/2024



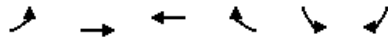
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	588	549	0	0	0
Future Volume (vph)	0	588	549	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Fit Protected						
Satd. Flow (prot)	1653	1637	1637	0	1710	0
Fit Permitted						
Satd. Flow (perm)	1653	1637	1637	0	1710	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		508	361		146	
Travel Time (s)		10.5	7.7		4.0	
Confl. Peds. (#/hr)	13			13		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	639	597	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	639	597	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		11	11		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	37.7%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 4: Washington St & Davis Ct

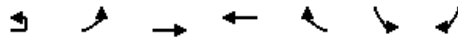
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↙	↕	↕		↘	
Traffic Volume (veh/h)	0	588	549	0	0	0
Future Volume (Veh/h)	0	588	549	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	639	597	0	0	0
Pedestrians					13	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		508				
pX, platoon unblocked					0.86	
vC, conflicting volume	610				1249	610
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	610				1208	610
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	966				173	492
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	0	639	597	0		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.38	0.35	0.03		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS				A		
Approach Delay (s)	0.0		0.0	0.0		
Approach LOS				A		
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			37.7%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: Washington St & Dunstan St

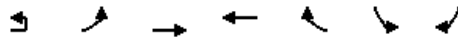
04/01/2024



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	1	27	560	517	13	4	31
Future Volume (vph)	1	27	560	517	13	4	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	11	12	12
Storage Length (ft)		50			0	0	0
Storage Lanes		0			0	1	0
Taper Length (ft)		25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt				0.997		0.879	
Flt Protected			0.998			0.995	
Satd. Flow (prot)	0	0	1634	1616	0	1496	0
Flt Permitted			0.998			0.995	
Satd. Flow (perm)	0	0	1634	1616	0	1496	0
Link Speed (mph)			33	32		25	
Link Distance (ft)			361	663		223	
Travel Time (s)			7.5	14.1		6.1	
Confl. Peds. (#/hr)		10			10		
Confl. Bikes (#/hr)					3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	2%	0%	0%	0%
Adj. Flow (vph)	1	29	609	562	14	4	34
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	639	576	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(ft)			10	10		12	
Link Offset(ft)			0	0		0	
Crosswalk Width(ft)			16	16		16	
Two way Left Turn Lane							
Headway Factor	1.14	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	9	15			9	15	9
Sign Control			Free	Free		Stop	
Intersection Summary							
Area Type:	CBD						
Control Type:	Unsignalized						
Intersection Capacity Utilization	68.1%			ICU Level of Service C			
Analysis Period (min)	15						

HCM Unsignalized Intersection Capacity Analysis
 6: Washington St & Dunstan St

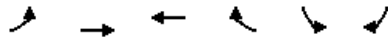
04/01/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↗	↘		↖	↙
Traffic Volume (veh/h)	1	27	560	517	13	4	31
Future Volume (Veh/h)	1	27	560	517	13	4	31
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	29	609	562	14	4	34
Pedestrians						10	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)			869				
pX, platoon unblocked	0.00					0.86	
vC, conflicting volume	0	586				1246	579
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	586				1206	579
tC, single (s)	0.0	4.1				6.4	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	97				98	93
cM capacity (veh/h)	0	989				170	514
Direction, Lane #	EB 1	WB 1	SB 1				
Volume Total	638	576	38				
Volume Left	29	0	4				
Volume Right	0	14	34				
cSH	989	1700	424				
Volume to Capacity	0.03	0.34	0.09				
Queue Length 95th (ft)	2	0	7				
Control Delay (s)	0.8	0.0	14.3				
Lane LOS	A		B				
Approach Delay (s)	0.8	0.0	14.3				
Approach LOS			B				
Intersection Summary							
Average Delay			0.8				
Intersection Capacity Utilization			68.1%		ICU Level of Service		C
Analysis Period (min)			15				

Lanes, Volumes, Timings
8: Washington St & Armory St

04/01/2024



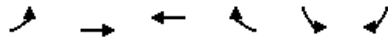
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	54	510	498	112	43	32
Future Volume (vph)	54	510	498	112	43	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	55			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.975		0.942	
Flt Protected	0.950				0.972	
Satd. Flow (prot)	1516	1630	1599	0	1566	0
Flt Permitted	0.950				0.972	
Satd. Flow (perm)	1516	1630	1599	0	1566	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		663	197		265	
Travel Time (s)		13.7	4.2		7.2	
Confl. Peds. (#/hr)	6			6		
Confl. Bikes (#/hr)				3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Bus Blockages (#/hr)	0	1	0	0	0	0
Adj. Flow (vph)	59	554	541	122	47	35
Shared Lane Traffic (%)						
Lane Group Flow (vph)	59	554	663	0	82	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.20	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

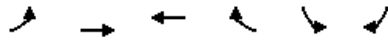
Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	55.0%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 8: Washington St & Armory St

04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	54	510	498	112	43	32
Future Volume (Veh/h)	54	510	498	112	43	32
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	59	554	541	122	47	35
Pedestrians					6	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	669				1280	608
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	669				1280	608
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				73	93
cM capacity (veh/h)	925				172	497
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	59	554	663	82		
Volume Left	59	0	0	47		
Volume Right	0	0	122	35		
cSH	925	1700	1700	239		
Volume to Capacity	0.06	0.33	0.39	0.34		
Queue Length 95th (ft)	5	0	0	37		
Control Delay (s)	9.2	0.0	0.0	27.8		
Lane LOS	A			D		
Approach Delay (s)	0.9		0.0	27.8		
Approach LOS				D		
Intersection Summary						
Average Delay			2.1			
Intersection Capacity Utilization			55.0%	ICU Level of Service	A	
Analysis Period (min)			15			



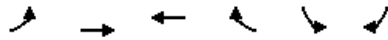
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Volume (vph)	0	553	555	0	57	55
Future Volume (vph)	0	553	555	0	57	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr t					0.934	
Flt Protected					0.975	
Satd. Flow (prot)	0	1637	1621	0	1557	0
Flt Permitted					0.975	
Satd. Flow (perm)	0	1637	1621	0	1557	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		197	204		128	
Travel Time (s)		4.1	4.3		3.5	
Confl. Peds. (#/hr)	5			5		
Confl. Bikes (#/hr)				2		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%
Adj. Flow (vph)	0	601	603	0	62	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	601	603	0	122	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	46.4%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 10: Washington St & Trader Joe's

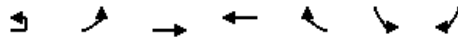
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Volume (veh/h)	0	553	555	0	57	55
Future Volume (Veh/h)	0	553	555	0	57	55
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	601	603	0	62	60
Pedestrians					5	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	608				1209	608
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	608				1209	608
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				69	88
cM capacity (veh/h)	976				203	497
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	601	603	122			
Volume Left	0	0	62			
Volume Right	0	0	60			
cSH	1700	1700	286			
Volume to Capacity	0.35	0.35	0.43			
Queue Length 95th (ft)	0	0	51			
Control Delay (s)	0.0	0.0	26.6			
Lane LOS			D			
Approach Delay (s)	0.0	0.0	26.6			
Approach LOS			D			
Intersection Summary						
Average Delay			2.4			
Intersection Capacity Utilization			46.4%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
12: Washington St & Cross St

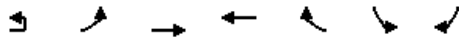
04/01/2024



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	1	21	588	542	24	6	12
Future Volume (vph)	1	21	588	542	24	6	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	11	11	11	12	12
Storage Length (ft)		50			0	0	0
Storage Lanes		1			0	1	0
Taper Length (ft)		25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt				0.994		0.912	
Flt Protected		0.950				0.983	
Satd. Flow (prot)	0	1516	1637	1627	0	1533	0
Flt Permitted		0.950				0.983	
Satd. Flow (perm)	0	1516	1637	1627	0	1533	0
Link Speed (mph)			33	32		25	
Link Distance (ft)			204	445		262	
Travel Time (s)			4.2	9.5		7.1	
Confl. Peds. (#/hr)		7			7	1	
Confl. Bikes (#/hr)					2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	1	23	639	589	26	7	13
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	24	639	615	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(ft)			10	10		12	
Link Offset(ft)			0	0		0	
Crosswalk Width(ft)			16	16		16	
Two way Left Turn Lane							
Headway Factor	1.14	1.25	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	9	15			9	15	9
Sign Control			Free	Free		Stop	
Intersection Summary							
Area Type:	CBD						
Control Type:	Unsignalized						
Intersection Capacity Utilization	44.4%			ICU Level of Service A			
Analysis Period (min)	15						

HCM Unsignalized Intersection Capacity Analysis
 12: Washington St & Cross St

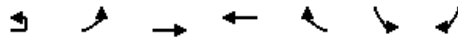
04/01/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↖	↗	↖	↗	↖	↗
Traffic Volume (veh/h)	1	21	588	542	24	6	12
Future Volume (Veh/h)	1	21	588	542	24	6	12
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	23	639	589	26	7	13
Pedestrians				1		7	
Lane Width (ft)				11.0		12.0	
Walking Speed (ft/s)				3.5		3.5	
Percent Blockage				0		1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	622				1295	609
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	622				1295	609
tC, single (s)	0.0	4.1				6.4	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	98				96	97
cM capacity (veh/h)	0	962				175	495
Direction, Lane #	EB 1	EB 2	WB 1	SB 1			
Volume Total	23	639	615	20			
Volume Left	23	0	0	7			
Volume Right	0	0	26	13			
cSH	962	1700	1700	302			
Volume to Capacity	0.02	0.38	0.36	0.07			
Queue Length 95th (ft)	2	0	0	5			
Control Delay (s)	8.8	0.0	0.0	17.8			
Lane LOS	A			C			
Approach Delay (s)	0.3		0.0	17.8			
Approach LOS				C			
Intersection Summary							
Average Delay			0.4				
Intersection Capacity Utilization			44.4%		ICU Level of Service		A
Analysis Period (min)			15				

Lanes, Volumes, Timings
 14: Washington St & Parsons St

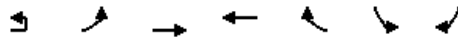
04/01/2024



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	1	15	578	559	25	13	6
Future Volume (vph)	1	15	578	559	25	13	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	11	12	12
Storage Length (ft)		50			0	0	0
Storage Lanes		0			0	1	0
Taper Length (ft)		25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt				0.994		0.955	
Flt Protected			0.999			0.968	
Satd. Flow (prot)	0	0	1635	1627	0	1581	0
Flt Permitted			0.999			0.968	
Satd. Flow (perm)	0	0	1635	1627	0	1581	0
Link Speed (mph)			33	32		25	
Link Distance (ft)			445	326		709	
Travel Time (s)			9.2	6.9		19.3	
Confl. Peds. (#/hr)		7			7		
Confl. Bikes (#/hr)					4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	1	16	628	608	27	14	7
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	645	635	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(ft)			10	10		12	
Link Offset(ft)			0	0		0	
Crosswalk Width(ft)			16	16		16	
Two way Left Turn Lane							
Headway Factor	1.14	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	9	15			9	15	9
Sign Control			Free	Free		Stop	
Intersection Summary							
Area Type:	CBD						
Control Type:	Unsignalized						
Intersection Capacity Utilization	58.1%			ICU Level of Service B			
Analysis Period (min)	15						

HCM Unsignalized Intersection Capacity Analysis
 14: Washington St & Parsons St

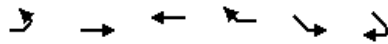
04/01/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↕	↕		↕	
Traffic Volume (veh/h)	1	15	578	559	25	13	6
Future Volume (Veh/h)	1	15	578	559	25	13	6
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	16	628	608	27	14	7
Pedestrians						7	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	642				1288	628
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	642				1288	628
tC, single (s)	0.0	4.1				6.4	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	98				92	99
cM capacity (veh/h)	0	946				178	483
Direction, Lane #	EB 1	WB 1	SB 1				
Volume Total	644	635	21				
Volume Left	16	0	14				
Volume Right	0	27	7				
cSH	946	1700	226				
Volume to Capacity	0.02	0.37	0.09				
Queue Length 95th (ft)	1	0	8				
Control Delay (s)	0.5	0.0	22.6				
Lane LOS	A		C				
Approach Delay (s)	0.5	0.0	22.6				
Approach LOS			C				
Intersection Summary							
Average Delay			0.6				
Intersection Capacity Utilization			58.1%		ICU Level of Service		B
Analysis Period (min)			15				

Lanes, Volumes, Timings
16: Washington St & Eddy St

04/01/2024



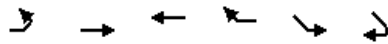
Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	30	561	538	129	88	46
Future Volume (vph)	30	561	538	129	88	46
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.974		0.954	
Flt Protected	0.950				0.968	
Satd. Flow (prot)	1516	1630	1597	0	1579	0
Flt Permitted	0.950				0.968	
Satd. Flow (perm)	1516	1630	1597	0	1579	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		326	399		684	
Travel Time (s)		6.7	8.5		18.7	
Confl. Peds. (#/hr)	5			5		
Confl. Bikes (#/hr)				4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Bus Blockages (#/hr)	0	1	0	0	0	0
Adj. Flow (vph)	33	610	585	140	96	50
Shared Lane Traffic (%)						
Lane Group Flow (vph)	33	610	725	0	146	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.20	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

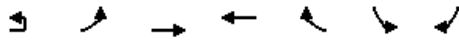
Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	55.5%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 16: Washington St & Eddy St

04/01/2024



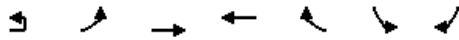
Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (veh/h)	30	561	538	129	88	46
Future Volume (Veh/h)	30	561	538	129	88	46
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	610	585	140	96	50
Pedestrians					5	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	730				1336	660
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	730				1336	660
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				41	89
cM capacity (veh/h)	879				164	464
Direction, Lane #	EB 1	EB 2	WB 1	SE 1		
Volume Total	33	610	725	146		
Volume Left	33	0	0	96		
Volume Right	0	0	140	50		
cSH	879	1700	1700	210		
Volume to Capacity	0.04	0.36	0.43	0.69		
Queue Length 95th (ft)	3	0	0	110		
Control Delay (s)	9.3	0.0	0.0	53.7		
Lane LOS	A			F		
Approach Delay (s)	0.5		0.0	53.7		
Approach LOS				F		
Intersection Summary						
Average Delay			5.4			
Intersection Capacity Utilization			55.5%		ICU Level of Service	B
Analysis Period (min)			15			



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	1	20	628	665	23	3	1
Future Volume (vph)	1	20	628	665	23	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	11	11	11	12	12
Storage Length (ft)		75			0	0	0
Storage Lanes		0			0	1	0
Taper Length (ft)		25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt				0.995		0.966	
Flt Protected			0.998			0.964	
Satd. Flow (prot)	0	0	1634	1629	0	1592	0
Flt Permitted			0.998			0.964	
Satd. Flow (perm)	0	0	1634	1629	0	1592	0
Link Speed (mph)			33	32		25	
Link Distance (ft)			399	347		767	
Travel Time (s)			8.2	7.4		20.9	
Confl. Peds. (#/hr)		7			7		
Confl. Bikes (#/hr)					3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	1	22	683	723	25	3	1
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	706	748	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(ft)			10	10		12	
Link Offset(ft)			0	0		0	
Crosswalk Width(ft)			16	16		16	
Two way Left Turn Lane							
Headway Factor	1.14	1.25	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	9	15			9	15	9
Sign Control			Free	Free		Stop	
Intersection Summary							
Area Type:	CBD						
Control Type:	Unsignalized						
Intersection Capacity Utilization	65.6%			ICU Level of Service C			
Analysis Period (min)	15						

HCM Unsignalized Intersection Capacity Analysis
 18: Washington St & Brookside Ave

04/01/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↗	↖		↘	↙
Traffic Volume (veh/h)	1	20	628	665	23	3	1
Future Volume (Veh/h)	1	20	628	665	23	3	1
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	22	683	723	25	3	1
Pedestrians						7	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)				974			
pX, platoon unblocked	0.00	0.68				0.68	0.68
vC, conflicting volume	0	755				1470	742
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	407				1455	389
tC, single (s)	0.0	4.1				6.4	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	97				97	100
cM capacity (veh/h)	0	787				95	450
Direction, Lane #	EB 1	WB 1	SB 1				
Volume Total	705	748	4				
Volume Left	22	0	3				
Volume Right	0	25	1				
cSH	787	1700	119				
Volume to Capacity	0.03	0.44	0.03				
Queue Length 95th (ft)	2	0	3				
Control Delay (s)	0.7	0.0	36.4				
Lane LOS	A		E				
Approach Delay (s)	0.7	0.0	36.4				
Approach LOS			E				
Intersection Summary							
Average Delay			0.5				
Intersection Capacity Utilization			65.6%		ICU Level of Service		C
Analysis Period (min)			15				

Lanes, Volumes, Timings
20: Lowell Ave & Washington St

04/01/2024



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Lane Configurations		↔↔		↔	↔		↔	↔			↔↔		
Traffic Volume (vph)	15	460	151	166	506	18	165	135	92	5	192	27	
Future Volume (vph)	15	460	151	166	506	18	165	135	92	5	192	27	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor					1.00			0.99			1.00		
Frt		0.964			0.995			0.939			0.984		
Fit Protected		0.999		0.950			0.950				0.999		
Satd. Flow (prot)	0	3106	0	1608	1668	0	1608	1535	0	0	1648	0	
Fit Permitted		0.936		0.323			0.283				0.992		
Satd. Flow (perm)	0	2910	0	547	1668	0	479	1535	0	0	1637	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		43			2			31			5		
Link Speed (mph)		33			27			25			25		
Link Distance (ft)		246			934			273			475		
Travel Time (s)		5.1			23.6			7.4			13.0		
Confl. Bikes (#/hr)						5			2			1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	1%	0%	1%	2%	0%	1%	2%	7%	0%	2%	0%	
Bus Blockages (#/hr)	0	0	1	0	0	0	0	0	0	0	0	0	
Adj. Flow (vph)	16	500	164	180	550	20	179	147	100	5	209	29	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	680	0	180	570	0	179	247	0	0	243	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	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	1		1	1		1	1		1	1		
Detector Template	Left			Left			Left			Left			
Leading Detector (ft)	20	40		20	40		40	40		20	40		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Detector 1 Position(ft)	0	0		0	0		0	0		0	0		
Detector 1 Size(ft)	20	40		20	40		40	40		20	40		
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		
Detector 1 Channel													
Detector 1 Extend (s)	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		
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA		
Protected Phases		1			1		3	3 4			4		2
Permitted Phases	1			1			4			4			
Detector Phase	1	1		1	1		3	3 4		4	4		
Switch Phase													
Minimum Initial (s)	15.0	15.0		15.0	15.0		6.0			8.0	8.0		5.0
Minimum Split (s)	20.0	20.0		20.0	20.0		11.0			13.0	13.0		27.0
Total Split (s)	47.0	47.0		47.0	47.0		13.0			25.0	25.0		27.0
Total Split (%)	42.0%	42.0%		42.0%	42.0%		11.6%			22.3%	22.3%		24%
Maximum Green (s)	42.0	42.0		42.0	42.0		8.0			20.0	20.0		24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0			4.0	4.0		2.0
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0			1.0	1.0		1.0
Lost Time Adjust (s)		0.0		0.0	0.0		0.0				0.0		
Total Lost Time (s)		5.0		5.0	5.0		5.0				5.0		
Lead/Lag	Lead	Lead		Lead	Lead		Lead			Lag	Lag		Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes			Yes	Yes		Yes
Vehicle Extension (s)	4.0	4.0		4.0	4.0		2.0			3.0	3.0		3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None			None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													17.0
Pedestrian Calls (#/hr)													16
Act Effect Green (s)		55.3		55.3	55.3		30.9	35.9			19.4		
Actuated g/C Ratio		0.49		0.49	0.49		0.28	0.32			0.17		
v/c Ratio		0.47		0.67	0.69		0.72	0.48			0.85		
Control Delay		21.1		41.0	30.8		50.4	30.5			69.6		
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0		
Total Delay		21.1		41.0	30.8		50.4	30.5			69.6		
LOS		C		D	C		D	C			E		
Approach Delay		21.1			33.2			38.8			69.6		



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø2
Approach LOS	C			C			D			E			

Intersection Summary

Area Type:	CBD
Cycle Length:	112
Actuated Cycle Length:	112
Offset:	91 (81%), Referenced to phase 1:EBWB, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.85
Intersection Signal Delay:	34.6
Intersection LOS:	C
Intersection Capacity Utilization:	94.9%
ICU Level of Service:	F
Analysis Period (min):	15

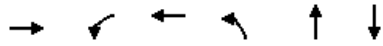
Splits and Phases: 20: Lowell Ave & Washington St



Queues

20: Lowell Ave & Washington St

04/01/2024



Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	680	180	570	179	247	243
v/c Ratio	0.47	0.67	0.69	0.72	0.48	0.85
Control Delay	21.1	41.0	30.8	50.4	30.5	69.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.1	41.0	30.8	50.4	30.5	69.6
Queue Length 50th (ft)	144	89	286	87	110	162
Queue Length 95th (ft)	256	#259	#603	#195	212	#300
Internal Link Dist (ft)	166		854		193	395
Turn Bay Length (ft)						
Base Capacity (vph)	1458	270	824	248	528	303
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.67	0.69	0.72	0.47	0.80

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
 20: Lowell Ave & Washington St

04/01/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔			↔	
Traffic Volume (vph)	15	460	151	166	506	18	165	135	92	5	192	27
Future Volume (vph)	15	460	151	166	506	18	165	135	92	5	192	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0	5.0			5.0	
Lane Util. Factor		0.95		1.00	1.00		1.00	1.00			1.00	
Frbp, ped/bikes		1.00		1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00			1.00	
Frt		0.96		1.00	0.99		1.00	0.94			0.98	
Fit Protected		1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3105		1608	1667		1608	1536			1648	
Fit Permitted		0.94		0.32	1.00		0.28	1.00			0.99	
Satd. Flow (perm)		2911		547	1667		479	1536			1637	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	500	164	180	550	20	179	147	100	5	209	29
RTOR Reduction (vph)	0	22	0	0	1	0	0	21	0	0	4	0
Lane Group Flow (vph)	0	658	0	180	569	0	179	226	0	0	239	0
Confl. Bikes (#/hr)						5			2			1
Heavy Vehicles (%)	0%	1%	0%	1%	2%	0%	1%	2%	7%	0%	2%	0%
Bus Blockages (#/hr)	0	0	1	0	0	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	
Protected Phases		1			1		3	3			4	
Permitted Phases	1			1			4			4		
Actuated Green, G (s)		53.5		53.5	53.5		30.9	35.9			19.4	
Effective Green, g (s)		53.5		53.5	53.5		30.9	35.9			19.4	
Actuated g/C Ratio		0.48		0.48	0.48		0.28	0.32			0.17	
Clearance Time (s)		5.0		5.0	5.0		5.0				5.0	
Vehicle Extension (s)		4.0		4.0	4.0		2.0				3.0	
Lane Grp Cap (vph)		1390		261	796		248	492			283	
v/s Ratio Prot					c0.34		c0.07	0.15				
v/s Ratio Perm		0.23		0.33			0.13				c0.15	
v/c Ratio		0.47		0.69	0.71		0.72	0.46			0.84	
Uniform Delay, d1		19.7		22.8	23.2		34.0	30.3			44.8	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		1.2		13.9	5.4		8.5	0.2			19.9	
Delay (s)		20.9		36.7	28.6		42.5	30.6			64.8	
Level of Service		C		D	C		D	C			E	
Approach Delay (s)		20.9			30.6			35.6			64.8	
Approach LOS		C			C			D			E	
Intersection Summary												
HCM 2000 Control Delay			32.4			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			112.0			Sum of lost time (s)					18.0	
Intersection Capacity Utilization			94.9%			ICU Level of Service					F	
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
21: Walnut St & Washington St

04/01/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	21	448	88	176	540	54	7	116	306	129	45	294	34	
Future Volume (vph)	21	448	88	176	540	54	7	116	306	129	45	294	34	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0		175		160	110		0	
Storage Lanes	0		0	0		0		1		1	1		0	
Taper Length (ft)	25			25				25			25			
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frnt		0.976			0.989					0.850		0.984		
Fit Protected		0.998			0.989			0.950			0.950			
Satd. Flow (prot)	0	3110	0	0	3154	0	0	1609	1693	1454	1593	1653	0	
Fit Permitted		0.892			0.639			0.168			0.560			
Satd. Flow (perm)	0	2779	0	0	2038	0	0	285	1693	1454	939	1653	0	
Right Turn on Red			Yes			Yes				Yes			Yes	
Satd. Flow (RTOR)		17			7					144			5	
Link Speed (mph)		20			29				25			25		
Link Distance (ft)		934			614				318			335		
Travel Time (s)		31.8			14.4				8.7			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	2%	1%	0%	1%	1%	0%	1%	1%	0%	2%	2%	0%	
Adj. Flow (vph)	23	487	96	191	587	59	8	126	333	140	49	320	37	
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	606	0	0	837	0	0	134	333	140	49	357	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	
Median Width(ft)		0			0				18			12		
Link Offset(ft)		0			0				0			0		
Crosswalk Width(ft)		16			16				16			16		
Two way Left Turn Lane														
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)	15		9	15		9	9	15		9	15		9	
Number of Detectors	1	1		1	1		1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru	Right	Left	Thru		
Leading Detector (ft)	20	40		20	40		20	20	40	20	20	40		
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0		
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0		
Detector 1 Size(ft)	20	40		20	40		20	20	40	20	20	40		
Detector 1 Type	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		
Detector 1 Queue (s)	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		
Turn Type	Perm	NA		pm+pt	NA		custom	pm+pt	NA	Perm	Perm	NA		
Protected Phases		2		1	6			7	4			8		9
Permitted Phases	2			6			7	4		4	8			
Detector Phase	2	2		1	6		7	7	4	4	8	8		
Switch Phase														
Minimum Initial (s)	10.0	10.0		6.0	10.0		6.0	6.0	6.0	6.0	10.0	10.0		5.0
Minimum Split (s)	17.5	17.5		13.5	17.5		12.5	12.5	12.5	12.5	16.5	16.5		24.0
Total Split (s)	30.0	30.0		14.0	44.0		14.0	14.0	46.0	46.0	32.0	32.0		24.0
Total Split (%)	26.3%	26.3%		12.3%	38.6%		12.3%	12.3%	40.4%	40.4%	28.1%	28.1%		21%
Maximum Green (s)	22.5	22.5		6.5	36.5		7.5	7.5	39.5	39.5	25.5	25.5		21.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0		2.0
All-Red Time (s)	3.5	3.5		3.5	3.5		2.5	2.5	2.5	2.5	2.5	2.5		1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5		
Lead/Lag	Lag	Lag		Lead			Lead	Lead			Lag	Lag		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes			Yes	Yes		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		3.0
Recall Mode	C-Min	C-Min		None	C-Min		None	None	None	None	None	None		None
Walk Time (s)														7.0
Flash Dont Walk (s)														14.0
Pedestrian Calls (#/hr)														24
Act Effect Green (s)		46.4			46.4			39.2	39.2	39.2	25.2	25.2		
Actuated g/C Ratio		0.41			0.41			0.34	0.34	0.34	0.22	0.22		
v/c Ratio		0.53			1.00			0.73	0.57	0.24	0.24	0.97		
Control Delay		29.6			68.3			51.2	35.1	5.0	39.9	83.4		
Queue Delay		0.0			0.0			0.0	0.0	0.0	0.0	0.0		
Total Delay		29.6			68.3			51.2	35.1	5.0	39.9	83.4		
LOS		C			E			D	D	A	D	F		
Approach Delay		29.6			68.3				31.7			78.2		

Lanes, Volumes, Timings
 21: Walnut St & Washington St

04/01/2024

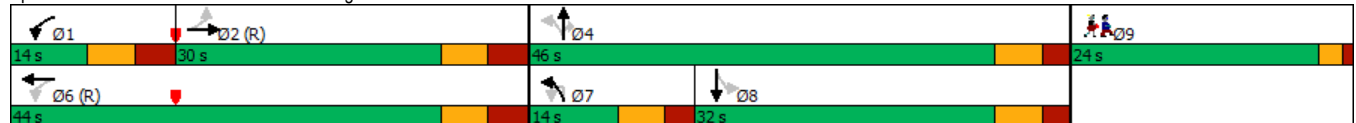


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Approach LOS	C			E			C			E				

Intersection Summary

Area Type:	CBD
Cycle Length:	114
Actuated Cycle Length:	114
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	145
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.00
Intersection Signal Delay:	51.3
Intersection LOS:	D
Intersection Capacity Utilization:	92.1%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 21: Walnut St & Washington St



Queues

21: Walnut St & Washington St

04/01/2024



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	606	837	134	333	140	49	357
v/c Ratio	0.53	1.00	0.73	0.57	0.24	0.24	0.97
Control Delay	29.6	68.3	51.2	35.1	5.0	39.9	83.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	29.6	68.3	51.2	35.1	5.0	39.9	83.4
Queue Length 50th (ft)	196	~409	70	197	0	30	257
Queue Length 95th (ft)	262	#538	#127	293	40	66	#446
Internal Link Dist (ft)	854	534		238			255
Turn Bay Length (ft)			175		160	110	
Base Capacity (vph)	1140	833	184	586	597	210	373
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	1.00	0.73	0.57	0.23	0.23	0.96

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

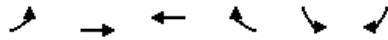
HCM Signalized Intersection Capacity Analysis
 21: Walnut St & Washington St

04/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	21	448	88	176	540	54	7	116	306	129	45	294	34
Future Volume (vph)	21	448	88	176	540	54	7	116	306	129	45	294	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5	
Lane Util. Factor		0.95			0.95			1.00	1.00	1.00	1.00	1.00	
Fr't		0.98			0.99			1.00	1.00	0.85	1.00	0.98	
Flt Protected		1.00			0.99			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3111			3154			1609	1693	1454	1593	1654	
Flt Permitted		0.89			0.64			0.17	1.00	1.00	0.56	1.00	
Satd. Flow (perm)		2781			2039			285	1693	1454	939	1654	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	23	487	96	191	587	59	8	126	333	140	49	320	37
RTOR Reduction (vph)	0	10	0	0	4	0	0	0	0	92	0	4	0
Lane Group Flow (vph)	0	596	0	0	833	0	0	134	333	48	49	353	0
Heavy Vehicles (%)	0%	2%	1%	0%	1%	1%	0%	1%	1%	0%	2%	2%	0%
Turn Type	Perm	NA		pm+pt	NA		custom	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6			7	4			8	
Permitted Phases	2			6			7	4		4		8	
Actuated Green, G (s)		45.2			45.2			39.2	39.2	39.2	25.2	25.2	
Effective Green, g (s)		45.2			45.2			39.2	39.2	39.2	25.2	25.2	
Actuated g/C Ratio		0.40			0.40			0.34	0.34	0.34	0.22	0.22	
Clearance Time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5	
Vehicle Extension (s)		2.0			2.0			2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		1102			808			185	582	499	207	365	
v/s Ratio Prot								0.05	c0.20			c0.21	
v/s Ratio Perm		0.21			c0.41			0.20		0.03	0.05		
v/c Ratio		0.54			1.03			0.72	0.57	0.10	0.24	0.97	
Uniform Delay, d1		26.4			34.4			29.2	30.6	25.4	36.5	44.0	
Progression Factor		1.00			1.00			1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		1.9			39.8			11.3	0.8	0.0	0.2	37.9	
Delay (s)		28.3			74.2			40.5	31.4	25.4	36.7	81.9	
Level of Service		C			E			D	C	C	D	F	
Approach Delay (s)		28.3			74.2				32.0			76.4	
Approach LOS		C			E				C			E	
Intersection Summary													
HCM 2000 Control Delay			52.8			HCM 2000 Level of Service						D	
HCM 2000 Volume to Capacity ratio			0.93										
Actuated Cycle Length (s)			114.0			Sum of lost time (s)						31.0	
Intersection Capacity Utilization			92.1%			ICU Level of Service						F	
Analysis Period (min)			15										
c	Critical Lane Group												

Lanes, Volumes, Timings
27: Washington St & Brooks Ave

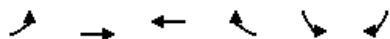
04/01/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↓	
Traffic Volume (vph)	1	622	694	3	3	0
Future Volume (vph)	1	622	694	3	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	45			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frnt			0.999			
Flt Protected					0.950	
Satd. Flow (prot)	0	3210	1708	0	1624	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3210	1708	0	1624	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		381	246		576	
Travel Time (s)		7.9	5.2		15.7	
Confl. Peds. (#/hr)	10			10		
Confl. Bikes (#/hr)				4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%
Bus Blockages (#/hr)	0	1	0	0	0	0
Adj. Flow (vph)	1	676	754	3	3	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	677	757	0	3	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.15	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	CBD					
Control Type:	Unsignalized					
Intersection Capacity Utilization	50.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 27: Washington St & Brooks Ave

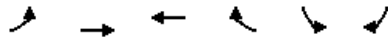
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↓	
Traffic Volume (veh/h)	1	622	694	3	3	0
Future Volume (Veh/h)	1	622	694	3	3	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	676	754	3	3	0
Pedestrians					10	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			246			
pX, platoon unblocked	0.63				0.63	0.63
vC, conflicting volume	767				1106	766
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	344				878	342
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	770				183	415
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	226	451	757	3		
Volume Left	1	0	0	3		
Volume Right	0	0	3	0		
cSH	770	1700	1700	183		
Volume to Capacity	0.00	0.27	0.45	0.02		
Queue Length 95th (ft)	0	0	0	1		
Control Delay (s)	0.1	0.0	0.0	25.0		
Lane LOS	A			D		
Approach Delay (s)	0.0		0.0	25.0		
Approach LOS				D		
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			50.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
30: Washington St & Walker St

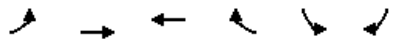
04/01/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	27	604	674	20	19	14
Future Volume (vph)	27	604	674	20	19	14
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.996		0.944	
Flt Protected	0.950				0.972	
Satd. Flow (prot)	1516	1637	1631	0	1569	0
Flt Permitted	0.950				0.972	
Satd. Flow (perm)	1516	1637	1631	0	1569	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		347	381		595	
Travel Time (s)		7.2	8.1		16.2	
Confl. Peds. (#/hr)	7			7		
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	29	657	733	22	21	15
Shared Lane Traffic (%)						
Lane Group Flow (vph)	29	657	755	0	36	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	1.25	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	CBD					
Control Type:	Unsignalized					
Intersection Capacity Utilization	50.8%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 30: Washington St & Walker St

04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	27	604	674	20	19	14
Future Volume (Veh/h)	27	604	674	20	19	14
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	29	657	733	22	21	15
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			627			
pX, platoon unblocked	0.65				0.65	0.65
vC, conflicting volume	762				1466	751
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	365				1448	348
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				77	97
cM capacity (veh/h)	778				91	452
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	29	657	755	36		
Volume Left	29	0	0	21		
Volume Right	0	0	22	15		
cSH	778	1700	1700	136		
Volume to Capacity	0.04	0.39	0.44	0.26		
Queue Length 95th (ft)	3	0	0	25		
Control Delay (s)	9.8	0.0	0.0	40.7		
Lane LOS	A			E		
Approach Delay (s)	0.4		0.0	40.7		
Approach LOS				E		
Intersection Summary						
Average Delay			1.2			
Intersection Capacity Utilization			50.8%		ICU Level of Service	A
Analysis Period (min)			15			

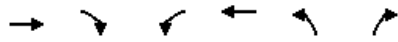
Lanes, Volumes, Timings
1: Chestnut St & Washington St

04/01/2024

	→	↘	↙	←	↖	↗	Ø9
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø9
Lane Configurations	↑	↗		↖	↘	↗	
Traffic Volume (vph)	559	32	218	316	64	297	
Future Volume (vph)	559	32	218	316	64	297	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		50	300		0	0	
Storage Lanes		1	0		1	1	
Taper Length (ft)			25		25		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	
Fr		0.850				0.850	
Fit Protected				0.980	0.950		
Satd. Flow (prot)	1660	1411	0	3140	1593	1439	
Fit Permitted				0.552	0.950		
Satd. Flow (perm)	1660	1411	0	1769	1593	1439	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		12				323	
Link Speed (mph)	33			32	25		
Link Distance (ft)	165			508	307		
Travel Time (s)	3.4			10.8	8.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	3%	3%	2%	1%	2%	1%	
Adj. Flow (vph)	608	35	237	343	70	323	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	608	35	0	580	70	323	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	11			11	12		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	1	1	1	1	1	1	
Detector Template		Right	Left		Left		
Leading Detector (ft)	40	40	40	40	40	40	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	40	40	40	40	40	40	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pt+ov	
Protected Phases	6	3	5	2	3	3.5	9
Permitted Phases		6	2				
Detector Phase	6	3	5	2	3	3.5	
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		5.0
Minimum Split (s)	12.5	12.5	12.5	12.5	12.5		25.0
Total Split (s)	63.0	17.0	20.0	83.0	17.0		25.0
Total Split (%)	50.4%	13.6%	16.0%	66.4%	13.6%		20%
Maximum Green (s)	56.5	10.5	13.5	76.5	10.5		21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		2.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		
Total Lost Time (s)	6.5	6.5		6.5	6.5		
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	C-Min	None	None	C-Min	None		None
Walk Time (s)							7.0
Flash Dont Walk (s)							14.0
Pedestrian Calls (#/hr)							12
Act Effect Green (s)	78.7	95.1		92.1	9.9	20.7	
Actuated g/C Ratio	0.63	0.76		0.74	0.08	0.17	
v/c Ratio	0.58	0.03		0.42	0.56	0.64	
Control Delay	20.3	5.5		8.5	72.0	9.1	
Queue Delay	0.0	0.0		0.0	0.0	0.0	
Total Delay	20.3	5.5		8.5	72.0	9.1	
LOS	C	A		A	E	A	
Approach Delay	19.5			8.5	20.3		

Lanes, Volumes, Timings
 1: Chestnut St & Washington St

04/01/2024

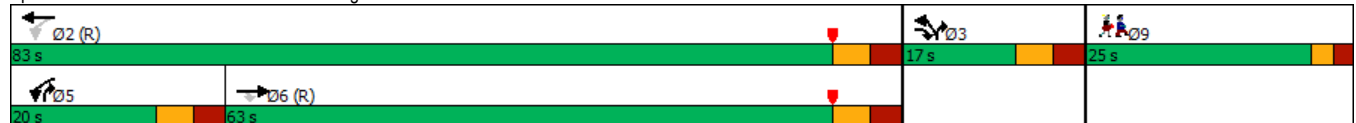


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø9
Approach LOS	B		A			C	

Intersection Summary

Area Type:	CBD
Cycle Length:	125
Actuated Cycle Length:	125
Offset:	20 (16%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	15.7
Intersection LOS:	B
Intersection Capacity Utilization	70.7%
ICU Level of Service	C
Analysis Period (min)	15

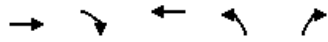
Splits and Phases: 1: Chestnut St & Washington St



Queues

1: Chestnut St & Washington St

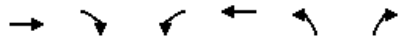
04/01/2024



Lane Group	EBT	EBR	WBT	NBL	NBR
Lane Group Flow (vph)	608	35	580	70	323
v/c Ratio	0.58	0.03	0.42	0.56	0.64
Control Delay	20.3	5.5	8.5	72.0	9.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	20.3	5.5	8.5	72.0	9.1
Queue Length 50th (ft)	202	2	46	55	0
Queue Length 95th (ft)	546	20	143	107	56
Internal Link Dist (ft)	85		428	227	
Turn Bay Length (ft)		50			
Base Capacity (vph)	1045	1089	1385	140	553
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.58	0.03	0.42	0.50	0.58
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
 1: Chestnut St & Washington St

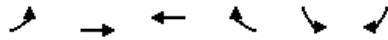
04/01/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↑		↑↑	↑	↑
Traffic Volume (vph)	559	32	218	316	64	297
Future Volume (vph)	559	32	218	316	64	297
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	1.00		0.95	1.00	1.00
Fr't	1.00	0.85		1.00	1.00	0.85
Fit Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1660	1411		3140	1593	1439
Fit Permitted	1.00	1.00		0.55	0.95	1.00
Satd. Flow (perm)	1660	1411		1770	1593	1439
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	608	35	237	343	70	323
RTOR Reduction (vph)	0	4	0	0	0	280
Lane Group Flow (vph)	608	31	0	580	70	43
Heavy Vehicles (%)	3%	3%	2%	1%	2%	1%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pt+ov
Protected Phases	6	3	5	2	3	3
Permitted Phases		6	2			
Actuated Green, G (s)	76.3	86.2		89.7	9.9	16.8
Effective Green, g (s)	76.3	86.2		89.7	9.9	16.8
Actuated g/C Ratio	0.61	0.69		0.72	0.08	0.13
Clearance Time (s)	6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	1013	1046		1345	126	193
v/s Ratio Prot	c0.37	0.00		c0.02	c0.04	0.03
v/s Ratio Perm		0.02		0.29		
v/c Ratio	0.60	0.03		0.43	0.56	0.22
Uniform Delay, d1	15.0	6.1		7.2	55.4	48.3
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	2.6	0.0		0.2	5.2	0.6
Delay (s)	17.6	6.2		7.4	60.7	48.9
Level of Service	B	A		A	E	D
Approach Delay (s)	17.0			7.4	51.0	
Approach LOS	B			A	D	
Intersection Summary						
HCM 2000 Control Delay			21.8		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			125.0		Sum of lost time (s)	23.5
Intersection Capacity Utilization			70.7%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
4: Washington St & Davis Ct

04/01/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↶	↷	↷		↶	↶
Traffic Volume (vph)	1	854	533	2	4	0
Future Volume (vph)	1	854	533	2	4	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Flt Protected	0.950				0.950	
Satd. Flow (prot)	1570	1621	1621	0	1624	0
Flt Permitted	0.950				0.950	
Satd. Flow (perm)	1570	1621	1621	0	1624	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		508	361		146	
Travel Time (s)		10.5	7.7		4.0	
Confl. Peds. (#/hr)	11			11		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	1	928	579	2	4	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1	928	581	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		11	11		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

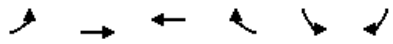
Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	59.9%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

4: Washington St & Davis Ct

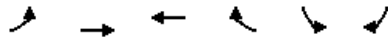
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖		↘	
Traffic Volume (veh/h)	1	854	533	2	4	0
Future Volume (Veh/h)	1	854	533	2	4	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	928	579	2	4	0
Pedestrians					11	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		508				
pX, platoon unblocked					0.77	
vC, conflicting volume	592				1521	591
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	592				1527	591
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	100
cM capacity (veh/h)	983				100	505
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	1	928	581	4		
Volume Left	1	0	0	4		
Volume Right	0	0	2	0		
cSH	983	1700	1700	100		
Volume to Capacity	0.00	0.55	0.34	0.04		
Queue Length 95th (ft)	0	0	0	3		
Control Delay (s)	8.7	0.0	0.0	42.5		
Lane LOS	A			E		
Approach Delay (s)	0.0		0.0	42.5		
Approach LOS				E		
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			59.9%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: Washington St & Dunstan St

04/01/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Volume (vph)	53	806	467	28	21	68
Future Volume (vph)	53	806	467	28	21	68
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr			0.992		0.897	
Flt Protected		0.997			0.988	
Satd. Flow (prot)	0	1614	1609	0	1515	0
Flt Permitted		0.997			0.988	
Satd. Flow (perm)	0	1614	1609	0	1515	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		361	663		223	
Travel Time (s)		7.5	14.1		6.1	
Confl. Peds. (#/hr)	9			9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	2%	0%	0%	0%
Adj. Flow (vph)	58	876	508	30	23	74
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	934	538	0	97	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

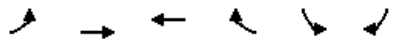
Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	95.6%
ICU Level of Service	F
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis

6: Washington St & Dunstan St

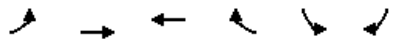
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Volume (veh/h)	53	806	467	28	21	68
Future Volume (Veh/h)	53	806	467	28	21	68
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	58	876	508	30	23	74
Pedestrians					9	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		869				
pX, platoon unblocked					0.77	
vC, conflicting volume	547				1524	532
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	547				1531	532
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	94				76	86
cM capacity (veh/h)	1004				94	547
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	934	538	97			
Volume Left	58	0	23			
Volume Right	0	30	74			
cSH	1004	1700	255			
Volume to Capacity	0.06	0.32	0.38			
Queue Length 95th (ft)	5	0	42			
Control Delay (s)	1.5	0.0	27.5			
Lane LOS	A		D			
Approach Delay (s)	1.5	0.0	27.5			
Approach LOS			D			
Intersection Summary						
Average Delay			2.6			
Intersection Capacity Utilization		95.6%		ICU Level of Service	F	
Analysis Period (min)			15			

Lanes, Volumes, Timings
8: Washington St & Armory St

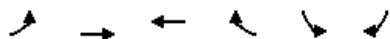
04/01/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	32	796	477	47	19	18
Future Volume (vph)	32	796	477	47	19	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	55			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.988		0.934	
Flt Protected	0.950				0.975	
Satd. Flow (prot)	1516	1614	1601	0	1557	0
Flt Permitted	0.950				0.975	
Satd. Flow (perm)	1516	1614	1601	0	1557	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		663	197		265	
Travel Time (s)		13.7	4.2		7.2	
Confl. Peds. (#/hr)	8			8		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	2%	0%	0%
Bus Blockages (#/hr)	0	1	0	0	0	0
Adj. Flow (vph)	35	865	518	51	21	20
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	865	569	0	41	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.20	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	CBD					
Control Type:	Unsignalized					
Intersection Capacity Utilization	56.5%			ICU Level of Service B		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 8: Washington St & Armory St

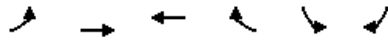
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Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑	↱		↰	↱
Traffic Volume (veh/h)	32	796	477	47	19	18
Future Volume (Veh/h)	32	796	477	47	19	18
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	865	518	51	21	20
Pedestrians					8	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	577				1486	552
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	577				1486	552
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				84	96
cM capacity (veh/h)	999				133	533
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	35	865	569	41		
Volume Left	35	0	0	21		
Volume Right	0	0	51	20		
cSH	999	1700	1700	209		
Volume to Capacity	0.04	0.51	0.33	0.20		
Queue Length 95th (ft)	3	0	0	18		
Control Delay (s)	8.7	0.0	0.0	26.3		
Lane LOS	A			D		
Approach Delay (s)	0.3		0.0	26.3		
Approach LOS				D		
Intersection Summary						
Average Delay			0.9			
Intersection Capacity Utilization			56.5%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes, Volumes, Timings
 10: Washington St & Trader Joe's

04/01/2024

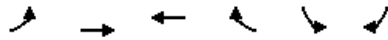


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Volume (vph)	0	814	513	0	8	10
Future Volume (vph)	0	814	513	0	8	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Friction					0.926	
Flt Protected					0.978	
Satd. Flow (prot)	0	1621	1621	0	1463	0
Flt Permitted					0.978	
Satd. Flow (perm)	0	1621	1621	0	1463	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		197	204		128	
Travel Time (s)		4.1	4.3		3.5	
Confl. Peds. (#/hr)	8			8		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	13%	0%
Adj. Flow (vph)	0	885	558	0	9	11
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	885	558	0	20	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary
 Area Type: CBD
 Control Type: Unsignalized
 Intersection Capacity Utilization 57.6% ICU Level of Service B
 Analysis Period (min) 15

HCM Unsignalized Intersection Capacity Analysis
 10: Washington St & Trader Joe's

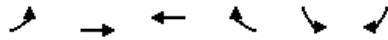
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Volume (veh/h)	0	814	513	0	8	10
Future Volume (Veh/h)	0	814	513	0	8	10
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	885	558	0	9	11
Pedestrians					8	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	566				1451	566
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	566				1451	566
tC, single (s)	4.1				6.5	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.6	3.3
p0 queue free %	100				93	98
cM capacity (veh/h)	1008				135	524
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	885	558	20			
Volume Left	0	0	9			
Volume Right	0	0	11			
cSH	1700	1700	228			
Volume to Capacity	0.52	0.33	0.09			
Queue Length 95th (ft)	0	0	7			
Control Delay (s)	0.0	0.0	22.3			
Lane LOS			C			
Approach Delay (s)	0.0	0.0	22.3			
Approach LOS			C			
Intersection Summary						
Average Delay			0.3			
Intersection Capacity Utilization			57.6%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes, Volumes, Timings
12: Washington St & Cross St

04/01/2024



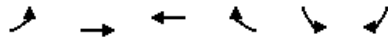
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	19	804	494	5	19	19
Future Volume (vph)	19	804	494	5	19	19
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.932	
Flt Protected	0.950				0.976	
Satd. Flow (prot)	1516	1621	1619	0	1555	0
Flt Permitted	0.950				0.976	
Satd. Flow (perm)	1516	1621	1619	0	1555	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		204	445		262	
Travel Time (s)		4.2	9.5		7.1	
Confl. Peds. (#/hr)	9			9		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	0%	0%	0%
Adj. Flow (vph)	21	874	537	5	21	21
Shared Lane Traffic (%)						
Lane Group Flow (vph)	21	874	542	0	42	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	57.0%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 12: Washington St & Cross St

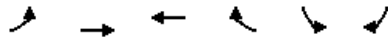
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑	↱		↰	↱
Traffic Volume (veh/h)	19	804	494	5	19	19
Future Volume (Veh/h)	19	804	494	5	19	19
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	21	874	537	5	21	21
Pedestrians					9	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	551				1464	548
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	551				1464	548
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				85	96
cM capacity (veh/h)	1020				139	535
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	21	874	542	42		
Volume Left	21	0	0	21		
Volume Right	0	0	5	21		
cSH	1020	1700	1700	220		
Volume to Capacity	0.02	0.51	0.32	0.19		
Queue Length 95th (ft)	2	0	0	17		
Control Delay (s)	8.6	0.0	0.0	25.2		
Lane LOS	A			D		
Approach Delay (s)	0.2		0.0	25.2		
Approach LOS				D		
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			57.0%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes, Volumes, Timings
 14: Washington St & Parsons St

04/01/2024



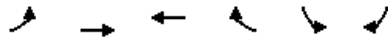
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Volume (vph)	8	815	487	18	19	12
Future Volume (vph)	8	815	487	18	19	12
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	0			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr			0.995		0.948	
Flt Protected		0.999			0.970	
Satd. Flow (prot)	0	1619	1610	0	1561	0
Flt Permitted		0.999			0.970	
Satd. Flow (perm)	0	1619	1610	0	1561	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		445	326		709	
Travel Time (s)		9.2	6.9		19.3	
Confl. Peds. (#/hr)	14			14	1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	6%	0%	2%
Adj. Flow (vph)	9	886	529	20	21	13
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	895	549	0	34	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	64.7%
ICU Level of Service	C
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 14: Washington St & Parsons St

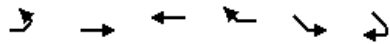
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Volume (veh/h)	8	815	487	18	19	12
Future Volume (Veh/h)	8	815	487	18	19	12
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	9	886	529	20	21	13
Pedestrians			1		14	
Lane Width (ft)			11.0		12.0	
Walking Speed (ft/s)			3.5		3.5	
Percent Blockage			0		1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	563				1458	553
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	563				1458	553
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				85	98
cM capacity (veh/h)	1005				141	526
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	895	549	34			
Volume Left	9	0	21			
Volume Right	0	20	13			
cSH	1005	1700	195			
Volume to Capacity	0.01	0.32	0.17			
Queue Length 95th (ft)	1	0	15			
Control Delay (s)	0.2	0.0	27.3			
Lane LOS	A		D			
Approach Delay (s)	0.2	0.0	27.3			
Approach LOS			D			
Intersection Summary						
Average Delay			0.8			
Intersection Capacity Utilization			64.7%		ICU Level of Service	C
Analysis Period (min)			15			

Lanes, Volumes, Timings
16: Washington St & Eddy St

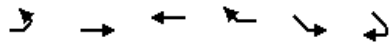
04/01/2024



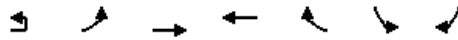
Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	9	826	462	78	200	41
Future Volume (vph)	9	826	462	78	200	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.980		0.977	
Flt Protected	0.950				0.960	
Satd. Flow (prot)	1516	1614	1581	0	1591	0
Flt Permitted	0.950				0.960	
Satd. Flow (perm)	1516	1614	1581	0	1591	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		326	399		684	
Travel Time (s)		6.7	8.5		18.7	
Confl. Peds. (#/hr)	17			17		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	2%	5%	1%	0%
Bus Blockages (#/hr)	0	1	0	0	0	0
Adj. Flow (vph)	10	898	502	85	217	45
Shared Lane Traffic (%)						
Lane Group Flow (vph)	10	898	587	0	262	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.20	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	CBD					
Control Type:	Unsignalized					
Intersection Capacity Utilization	70.1%			ICU Level of Service C		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 16: Washington St & Eddy St

04/01/2024



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations	↙	↕	↕		↘	↘
Traffic Volume (veh/h)	9	826	462	78	200	41
Future Volume (Veh/h)	9	826	462	78	200	41
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	10	898	502	85	217	45
Pedestrians		1			17	
Lane Width (ft)		10.5			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	604				1480	562
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	604				1480	562
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	99				0	91
cM capacity (veh/h)	968				135	521
Direction, Lane #	EB 1	EB 2	WB 1	SE 1		
Volume Total	10	898	587	262		
Volume Left	10	0	0	217		
Volume Right	0	0	85	45		
cSH	968	1700	1700	155		
Volume to Capacity	0.01	0.53	0.35	1.69		
Queue Length 95th (ft)	1	0	0	466		
Control Delay (s)	8.8	0.0	0.0	387.4		
Lane LOS	A			F		
Approach Delay (s)	0.1		0.0	387.4		
Approach LOS				F		
Intersection Summary						
Average Delay			57.8			
Intersection Capacity Utilization			70.1%		ICU Level of Service	C
Analysis Period (min)			15			



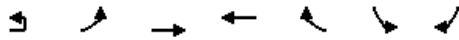
Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	1	52	974	539	33	10	2
Future Volume (vph)	1	52	974	539	33	10	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	11	11	11	12	12
Storage Length (ft)		75			0	0	0
Storage Lanes		0			0	1	0
Taper Length (ft)		25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt				0.992		0.979	
Flt Protected			0.997			0.959	
Satd. Flow (prot)	0	0	1617	1609	0	1469	0
Flt Permitted			0.997			0.959	
Satd. Flow (perm)	0	0	1617	1609	0	1469	0
Link Speed (mph)			33	32		25	
Link Distance (ft)			399	347		767	
Travel Time (s)			8.2	7.4		20.9	
Confl. Peds. (#/hr)		21			21		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	2%	2%	0%	11%	0%
Adj. Flow (vph)	1	57	1059	586	36	11	2
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	1117	622	0	13	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(ft)			10	10		12	
Link Offset(ft)			0	0		0	
Crosswalk Width(ft)			16	16		16	
Two way Left Turn Lane							
Headway Factor	1.14	1.25	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	9	15			9	15	9
Sign Control			Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	107.4%
ICU Level of Service	G
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 18: Washington St & Brookside Ave

04/01/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	1	52	974	539	33	10	2
Future Volume (Veh/h)	1	52	974	539	33	10	2
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	57	1059	586	36	11	2
Pedestrians						21	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						2	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)				974			
pX, platoon unblocked	0.00	0.78				0.78	0.78
vC, conflicting volume	0	643				1798	625
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	403				1882	379
tC, single (s)	0.0	4.1				6.5	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.6	3.3
p0 queue free %	0	94				79	100
cM capacity (veh/h)	0	893				53	514
Direction, Lane #	EB 1	WB 1	SB 1				
Volume Total	1116	622	13				
Volume Left	57	0	11				
Volume Right	0	36	2				
cSH	893	1700	61				
Volume to Capacity	0.06	0.37	0.21				
Queue Length 95th (ft)	5	0	18				
Control Delay (s)	2.0	0.0	78.7				
Lane LOS	A		F				
Approach Delay (s)	2.0	0.0	78.7				
Approach LOS			F				
Intersection Summary							
Average Delay			1.8				
Intersection Capacity Utilization			107.4%		ICU Level of Service		G
Analysis Period (min)			15				

Lanes, Volumes, Timings
20: Lowell Ave & Washington St

04/01/2024

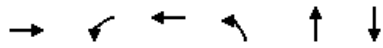


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	37	695	247	63	378	9	135	135	134	7	260	37	
Future Volume (vph)	37	695	247	63	378	9	135	135	134	7	260	37	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor					1.00								
Frt		0.962			0.996			0.925			0.984		
Fit Protected		0.998		0.950			0.950				0.999		
Satd. Flow (prot)	0	3061	0	1577	1638	0	1608	1541	0	0	1647	0	
Fit Permitted		0.871		0.116			0.278				0.990		
Satd. Flow (perm)	0	2672	0	193	1638	0	471	1541	0	0	1632	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		49			1			44			5		
Link Speed (mph)		33			27			25			25		
Link Distance (ft)		246			934			273			475		
Travel Time (s)		5.1			23.6			7.4			13.0		
Confl. Bikes (#/hr)						1			1				
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	6%	2%	1%	3%	4%	0%	1%	3%	1%	0%	2%	3%	
Bus Blockages (#/hr)	0	0	1	0	0	0	0	0	0	0	0	0	
Adj. Flow (vph)	40	755	268	68	411	10	147	147	146	8	283	40	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	1063	0	68	421	0	147	293	0	0	331	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	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	1		1	1		1	1		1	1		
Detector Template	Left			Left			Left			Left			
Leading Detector (ft)	20	40		20	40		40	40		20	40		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Detector 1 Position(ft)	0	0		0	0		0	0		0	0		
Detector 1 Size(ft)	20	40		20	40		40	40		20	40		
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		
Detector 1 Channel													
Detector 1 Extend (s)	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		
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA		
Protected Phases		1			1		3	3 4			4		9
Permitted Phases	1			1			4			4			
Detector Phase	1	1		1	1		3	3 4		4	4		
Switch Phase													
Minimum Initial (s)	15.0	15.0		15.0	15.0		6.0			8.0	8.0		5.0
Minimum Split (s)	20.0	20.0		20.0	20.0		11.0			13.0	13.0		27.0
Total Split (s)	49.0	49.0		49.0	49.0		11.0			25.0	25.0		27.0
Total Split (%)	43.8%	43.8%		43.8%	43.8%		9.8%			22.3%	22.3%		24%
Maximum Green (s)	44.0	44.0		44.0	44.0		6.0			20.0	20.0		24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0			4.0	4.0		2.0
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0			1.0	1.0		1.0
Lost Time Adjust (s)		0.0		0.0	0.0		0.0				0.0		
Total Lost Time (s)		5.0		5.0	5.0		5.0				5.0		
Lead/Lag							Lead			Lag	Lag		
Lead-Lag Optimize?							Yes			Yes	Yes		
Vehicle Extension (s)	4.0	4.0		4.0	4.0		2.0			3.0	3.0		3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None			None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													17.0
Pedestrian Calls (#/hr)													23
Act Effect Green (s)		45.8		45.8	45.8		35.0	40.0			26.1		
Actuated g/C Ratio		0.41		0.41	0.41		0.31	0.36			0.23		
v/c Ratio		0.95		0.87	0.63		0.62	0.51			0.86		
Control Delay		48.5		107.0	31.8		45.7	30.4			65.4		
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0		
Total Delay		48.5		107.0	31.8		45.7	30.4			65.4		
LOS		D		F	C		D	C			E		
Approach Delay		48.5			42.3			35.5			65.4		

Queues

20: Lowell Ave & Washington St

04/01/2024



Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	1063	68	421	147	293	331
v/c Ratio	0.95	0.87	0.63	0.62	0.51	0.86
Control Delay	48.5	107.0	31.8	45.7	30.4	65.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.5	107.0	31.8	45.7	30.4	65.4
Queue Length 50th (ft)	380	45	244	84	158	~273
Queue Length 95th (ft)	#535	#140	357	#159	256	#456
Internal Link Dist (ft)	166		854		193	395
Turn Bay Length (ft)						
Base Capacity (vph)	1121	78	670	237	579	384
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.95	0.87	0.63	0.62	0.51	0.86

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis
 20: Lowell Ave & Washington St

04/01/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔			↔	
Traffic Volume (vph)	37	695	247	63	378	9	135	135	134	7	260	37
Future Volume (vph)	37	695	247	63	378	9	135	135	134	7	260	37
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0	5.0			5.0	
Lane Util. Factor		0.95		1.00	1.00		1.00	1.00			1.00	
Frb, ped/bikes		1.00		1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00			1.00	
Frt		0.96		1.00	1.00		1.00	0.93			0.98	
Fit Protected		1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3062		1577	1639		1608	1541			1646	
Fit Permitted		0.87		0.12	1.00		0.28	1.00			0.99	
Satd. Flow (perm)		2672		192	1639		471	1541			1631	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	40	755	268	68	411	10	147	147	146	8	283	40
RTOR Reduction (vph)	0	29	0	0	1	0	0	28	0	0	4	0
Lane Group Flow (vph)	0	1034	0	68	420	0	147	265	0	0	327	0
Confl. Bikes (#/hr)							1				1	
Heavy Vehicles (%)	6%	2%	1%	3%	4%	0%	1%	3%	1%	0%	2%	3%
Bus Blockages (#/hr)	0	0	1	0	0	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	
Protected Phases		1			1		3	3			4	
Permitted Phases	1			1			4			4		
Actuated Green, G (s)		44.6		44.6	44.6		35.0	40.0			26.1	
Effective Green, g (s)		44.6		44.6	44.6		35.0	40.0			26.1	
Actuated g/C Ratio		0.40		0.40	0.40		0.31	0.36			0.23	
Clearance Time (s)		5.0		5.0	5.0		5.0				5.0	
Vehicle Extension (s)		4.0		4.0	4.0		2.0				3.0	
Lane Grp Cap (vph)		1064		76	652		237	550			380	
v/s Ratio Prot					0.26		c0.05	0.17				
v/s Ratio Perm		c0.39		0.35			0.14				c0.20	
v/c Ratio		0.97		0.89	0.64		0.62	0.48			0.86	
Uniform Delay, d1		33.1		31.5	27.3		30.6	27.9			41.2	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		21.5		76.8	4.9		3.6	0.2			17.7	
Delay (s)		54.6		108.3	32.1		34.2	28.2			58.9	
Level of Service		D		F	C		C	C			E	
Approach Delay (s)		54.6			42.7			30.2			58.9	
Approach LOS		D			D			C			E	
Intersection Summary												
HCM 2000 Control Delay			48.1			HCM 2000 Level of Service					D	
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			112.0			Sum of lost time (s)					18.0	
Intersection Capacity Utilization			105.8%			ICU Level of Service					G	
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
21: Walnut St & Washington St

04/01/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	28	663	146	181	360	45	6	75	293	158	34	329	13	
Future Volume (vph)	28	663	146	181	360	45	6	75	293	158	34	329	13	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0		175		160	110		0	
Storage Lanes	0		0	0		0		1		1	1		0	
Taper Length (ft)	25			25				25			25			
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor										0.99		1.00		
Frt		0.974			0.988					0.850		0.994		
Flt Protected		0.998			0.985			0.950			0.950			
Satd. Flow (prot)	0	3090	0	0	3058	0	0	1595	1644	1384	1533	1650	0	
Flt Permitted		0.908			0.519			0.166			0.568			
Satd. Flow (perm)	0	2812	0	0	1611	0	0	279	1644	1367	916	1650	0	
Right Turn on Red			Yes			Yes				Yes			Yes	
Satd. Flow (RTOR)		20			8					172		2		
Link Speed (mph)		20			29				25			25		
Link Distance (ft)		934			614				318			335		
Travel Time (s)		31.8			14.4				8.7			9.1		
Confl. Bikes (#/hr)										1			3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	8%	2%	2%	2%	3%	12%	0%	2%	4%	5%	6%	2%	27%	
Adj. Flow (vph)	30	721	159	197	391	49	7	82	318	172	37	358	14	
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	910	0	0	637	0	0	89	318	172	37	372	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	
Median Width(ft)		0			0				18			12		
Link Offset(ft)		0			0				0			0		
Crosswalk Width(ft)		16			16				16			16		
Two way Left Turn Lane														
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)	15		9	15		9	9	15		9	15		9	
Number of Detectors	1	1		1	1		1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru	Right	Left	Thru		
Leading Detector (ft)	20	40		20	40		20	20	40	20	20	40		
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0		
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0		
Detector 1 Size(ft)	20	40		20	40		20	20	40	20	20	40		
Detector 1 Type	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		
Detector 1 Queue (s)	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		
Turn Type	Perm	NA		pm+pt	NA		custom	pm+pt	NA	Perm	Perm	NA		
Protected Phases		2		1	6			7	4			8		9
Permitted Phases	2			6			7	4		4	8			
Detector Phase	2	2		1	6		7	7	4	4	8	8		
Switch Phase														
Minimum Initial (s)	10.0	10.0		6.0	10.0		6.0	6.0	6.0	6.0	10.0	10.0		5.0
Minimum Split (s)	17.5	17.5		13.5	17.5		12.5	12.5	12.5	12.5	16.5	16.5		24.0
Total Split (s)	30.0	30.0		14.0	44.0		14.0	14.0	46.0	46.0	32.0	32.0		24.0
Total Split (%)	26.3%	26.3%		12.3%	38.6%		12.3%	12.3%	40.4%	40.4%	28.1%	28.1%		21%
Maximum Green (s)	22.5	22.5		6.5	36.5		7.5	7.5	39.5	39.5	25.5	25.5		21.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0		2.0
All-Red Time (s)	3.5	3.5		3.5	3.5		2.5	2.5	2.5	2.5	2.5	2.5		1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5		
Lead/Lag	Lag	Lag		Lead			Lead	Lead			Lag	Lag		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes			Yes	Yes		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		3.0
Recall Mode	C-Min	C-Min		None	C-Min		None	None	None	None	None	None		None
Walk Time (s)														7.0
Flash Dont Walk (s)														14.0
Pedestrian Calls (#/hr)														23
Act Effect Green (s)		48.0			48.0			37.6	37.6	37.6	26.4	26.4		
Actuated g/C Ratio		0.42			0.42			0.33	0.33	0.33	0.23	0.23		
v/c Ratio		0.76			1.40dl			0.51	0.59	0.30	0.17	0.97		
Control Delay		36.1			56.7			36.8	36.3	5.4	38.5	83.3		
Queue Delay		0.0			0.0			0.0	0.0	0.0	0.0	0.0		
Total Delay		36.1			56.7			36.8	36.3	5.4	38.5	83.3		

Lanes, Volumes, Timings
 21: Walnut St & Washington St

04/01/2024

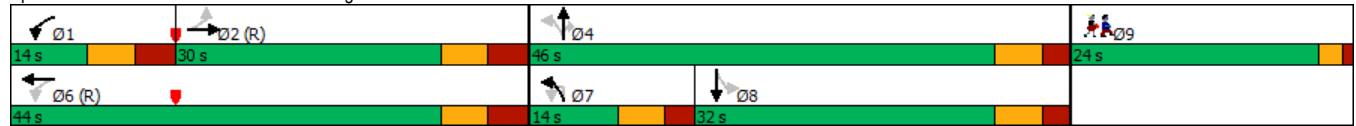


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
LOS		D			E				D	D	A	D	F	
Approach Delay		36.1			56.7				27.2				79.2	
Approach LOS		D			E				C				E	

Intersection Summary

Area Type: CBD
 Cycle Length: 114
 Actuated Cycle Length: 114
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
 Natural Cycle: 145
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.97
 Intersection Signal Delay: 46.2 Intersection LOS: D
 Intersection Capacity Utilization 93.7% ICU Level of Service F
 Analysis Period (min) 15
 dl Defacto Left Lane. Recode with 1 though lane as a left lane.

Splits and Phases: 21: Walnut St & Washington St



Queues

21: Walnut St & Washington St

04/01/2024



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	910	637	89	318	172	37	372
v/c Ratio	0.76	1.40dl	0.51	0.59	0.30	0.17	0.97
Control Delay	36.1	56.7	36.8	36.3	5.4	38.5	83.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	56.7	36.8	36.3	5.4	38.5	83.3
Queue Length 50th (ft)	343	~302	45	188	0	22	~275
Queue Length 95th (ft)	#490	#421	83	282	47	53	#476
Internal Link Dist (ft)	854	534		238			255
Turn Bay Length (ft)			175		160	110	
Base Capacity (vph)	1194	682	178	569	586	212	384
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.93	0.50	0.56	0.29	0.17	0.97

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

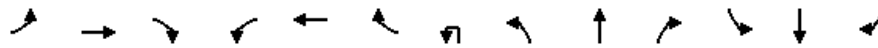
95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

dl Defacto Left Lane. Recode with 1 though lane as a left lane.

HCM Signalized Intersection Capacity Analysis
 21: Walnut St & Washington St

04/01/2024

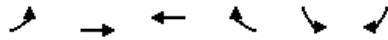


Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	28	663	146	181	360	45	6	75	293	158	34	329	13
Future Volume (vph)	28	663	146	181	360	45	6	75	293	158	34	329	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5	
Lane Util. Factor		0.95			0.95			1.00	1.00	1.00	1.00	1.00	
Frb, ped/bikes		1.00			1.00			1.00	1.00	0.99	1.00	1.00	
Flpb, ped/bikes		1.00			1.00			1.00	1.00	1.00	1.00	1.00	
Frt		0.97			0.99			1.00	1.00	0.85	1.00	0.99	
Fit Protected		1.00			0.98			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3091			3059			1595	1644	1367	1533	1651	
Fit Permitted		0.91			0.52			0.17	1.00	1.00	0.57	1.00	
Satd. Flow (perm)		2810			1613			278	1644	1367	916	1651	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	30	721	159	197	391	49	7	82	318	172	37	358	14
RTOR Reduction (vph)	0	12	0	0	5	0	0	0	0	113	0	2	0
Lane Group Flow (vph)	0	898	0	0	632	0	0	89	318	59	37	370	0
Confl. Bikes (#/hr)										1			3
Heavy Vehicles (%)	8%	2%	2%	2%	3%	12%	0%	2%	4%	5%	6%	2%	27%
Turn Type	Perm	NA		pm+pt	NA		custom	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6			7	4				8
Permitted Phases	2			6			7	4		4		8	
Actuated Green, G (s)		45.5			45.5			38.9	38.9	38.9	26.4	26.4	
Effective Green, g (s)		45.5			45.5			38.9	38.9	38.9	26.4	26.4	
Actuated g/C Ratio		0.40			0.40			0.34	0.34	0.34	0.23	0.23	
Clearance Time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5	
Vehicle Extension (s)		2.0			2.0			2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		1121			643			164	560	466	212	382	
v/s Ratio Prot								0.03	c0.19			c0.22	
v/s Ratio Perm		0.32			c0.39			0.16		0.04	0.04		
v/c Ratio		0.80			1.40dl			0.54	0.57	0.13	0.17	0.97	
Uniform Delay, d1		30.3			33.9			28.7	30.7	25.8	35.1	43.4	
Progression Factor		1.00			1.00			1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		6.1			31.0			2.0	0.8	0.0	0.1	37.4	
Delay (s)		36.3			64.9			30.7	31.5	25.9	35.2	80.8	
Level of Service		D			E			C	C	C	D	F	
Approach Delay (s)		36.3			64.9				29.7			76.7	
Approach LOS		D			E				C			E	

Intersection Summary			
HCM 2000 Control Delay	48.5	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	114.0	Sum of lost time (s)	31.0
Intersection Capacity Utilization	93.7%	ICU Level of Service	F
Analysis Period (min)	15		
dl Defacto Left Lane. Recode with 1 though lane as a left lane.			
c Critical Lane Group			

Lanes, Volumes, Timings
27: Washington St & Brooks Ave

04/01/2024



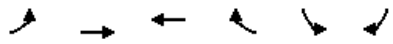
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	←	↑	↓	↓
Traffic Volume (vph)	0	975	548	3	4	3
Future Volume (vph)	0	975	548	3	4	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	45			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr t			0.999		0.942	
Flt Protected					0.972	
Satd. Flow (prot)	0	3185	1656	0	1370	0
Flt Permitted					0.972	
Satd. Flow (perm)	0	3185	1656	0	1370	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		381	246		576	
Travel Time (s)		7.9	5.2		15.7	
Confl. Peds. (#/hr)	24			24		
Confl. Bikes (#/hr)				1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	33%	25%	0%
Adj. Flow (vph)	0	1060	596	3	4	3
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	1060	599	0	7	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	60			60	60	60
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	42.3%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 27: Washington St & Brooks Ave

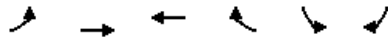
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↓	
Traffic Volume (veh/h)	0	975	548	3	4	3
Future Volume (Veh/h)	0	975	548	3	4	3
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1060	596	3	4	3
Pedestrians					24	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			246			
pX, platoon unblocked	0.73				0.73	0.73
vC, conflicting volume	623				1152	622
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	293				1020	290
tC, single (s)	4.1				7.3	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.8	3.3
p0 queue free %	100				97	99
cM capacity (veh/h)	909				140	505
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	353	707	599	7		
Volume Left	0	0	0	4		
Volume Right	0	0	3	3		
cSH	909	1700	1700	203		
Volume to Capacity	0.00	0.42	0.35	0.03		
Queue Length 95th (ft)	0	0	0	3		
Control Delay (s)	0.0	0.0	0.0	23.4		
Lane LOS				C		
Approach Delay (s)	0.0		0.0	23.4		
Approach LOS				C		
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			42.3%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
30: Washington St & Walker St

04/01/2024



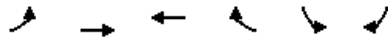
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	31	953	547	4	22	25
Future Volume (vph)	31	953	547	4	22	25
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.999		0.929	
Flt Protected	0.950				0.977	
Satd. Flow (prot)	1516	1621	1601	0	1512	0
Flt Permitted	0.950				0.977	
Satd. Flow (perm)	1516	1621	1601	0	1512	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		347	381		595	
Travel Time (s)		7.2	8.1		16.2	
Confl. Peds. (#/hr)	17			17	2	4
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	3%	25%	0%	5%
Adj. Flow (vph)	34	1036	595	4	24	27
Shared Lane Traffic (%)						
Lane Group Flow (vph)	34	1036	599	0	51	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	1.25	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	60			60	60	60
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	67.0%
ICU Level of Service	C
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 30: Washington St & Walker St

04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↖	↗	↖		↖	↗
Traffic Volume (veh/h)	31	953	547	4	22	25
Future Volume (Veh/h)	31	953	547	4	22	25
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	34	1036	595	4	24	27
Pedestrians		4	2		17	
Lane Width (ft)		10.5	11.0		12.0	
Walking Speed (ft/s)		3.5	3.5		3.5	
Percent Blockage		0	0		2	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			627			
pX, platoon unblocked	0.75				0.75	0.75
vC, conflicting volume	616				1720	618
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	320				1794	323
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				62	95
cM capacity (veh/h)	922				64	522
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	34	1036	599	51		
Volume Left	34	0	0	24		
Volume Right	0	0	4	27		
cSH	922	1700	1700	119		
Volume to Capacity	0.04	0.61	0.35	0.43		
Queue Length 95th (ft)	3	0	0	46		
Control Delay (s)	9.1	0.0	0.0	56.4		
Lane LOS	A			F		
Approach Delay (s)	0.3		0.0	56.4		
Approach LOS				F		
Intersection Summary						
Average Delay			1.9			
Intersection Capacity Utilization			67.0%		ICU Level of Service	C
Analysis Period (min)			15			

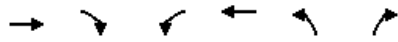
Lanes, Volumes, Timings
1: Chestnut St & Washington St

04/01/2024

	→	↘	↙	←	↖	↗	
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø9
Lane Configurations	↑	↗		↖	↘	↗	
Traffic Volume (vph)	441	32	225	385	83	210	
Future Volume (vph)	441	32	225	385	83	210	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Storage Length (ft)		50	300		0	0	
Storage Lanes		1	0		1	1	
Taper Length (ft)			25		25		
Lane Util. Factor	1.00	1.00	0.95	0.95	1.00	1.00	
Frt		0.850				0.850	
Fit Protected				0.982	0.950		
Satd. Flow (prot)	1693	1454	0	3139	1624	1454	
Fit Permitted				0.599	0.950		
Satd. Flow (perm)	1693	1454	0	1915	1624	1454	
Right Turn on Red		Yes				Yes	
Satd. Flow (RTOR)		16				228	
Link Speed (mph)	33			32	25		
Link Distance (ft)	165			508	307		
Travel Time (s)	3.4			10.8	8.4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%	
Adj. Flow (vph)	479	35	245	418	90	228	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	479	35	0	663	90	228	
Enter Blocked Intersection	No	No	No	No	No	No	
Lane Alignment	Left	Right	Left	Left	Left	Right	
Median Width(ft)	11			11	12		
Link Offset(ft)	0			0	0		
Crosswalk Width(ft)	16			16	16		
Two way Left Turn Lane							
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)		9	15		15	9	
Number of Detectors	1	1	1	1	1	1	
Detector Template		Right	Left		Left		
Leading Detector (ft)	40	40	40	40	40	40	
Trailing Detector (ft)	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0	0	0	0	0	
Detector 1 Size(ft)	40	40	40	40	40	40	
Detector 1 Type	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	
Detector 1 Queue (s)	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	
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pt+ov	
Protected Phases	6	3	5	2	3	3.5	9
Permitted Phases		6	2				
Detector Phase	6	3	5	2	3	3.5	
Switch Phase							
Minimum Initial (s)	6.0	6.0	6.0	6.0	6.0		5.0
Minimum Split (s)	12.5	12.5	12.5	12.5	12.5		25.0
Total Split (s)	55.0	21.0	19.0	74.0	21.0		25.0
Total Split (%)	45.8%	17.5%	15.8%	61.7%	17.5%		21%
Maximum Green (s)	48.5	14.5	12.5	67.5	14.5		21.0
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5		2.0
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0		2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		
Total Lost Time (s)	6.5	6.5		6.5	6.5		
Lead/Lag	Lag		Lead				
Lead-Lag Optimize?	Yes		Yes				
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0
Recall Mode	C-Min	None	None	C-Min	None		None
Walk Time (s)							7.0
Flash Dont Walk (s)							14.0
Pedestrian Calls (#/hr)							15
Act Effect Green (s)	72.2	90.4		85.3	11.7	22.2	
Actuated g/C Ratio	0.60	0.75		0.71	0.10	0.18	
v/c Ratio	0.47	0.03		0.46	0.57	0.50	
Control Delay	19.3	5.1		10.7	64.9	7.0	
Queue Delay	0.0	0.0		0.0	0.0	0.0	
Total Delay	19.3	5.1		10.7	64.9	7.0	
LOS	B	A		B	E	A	
Approach Delay	18.3			10.7	23.4		

Lanes, Volumes, Timings
 1: Chestnut St & Washington St

04/01/2024

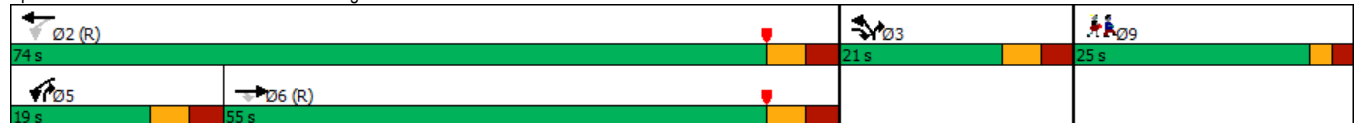


Lane Group	EBT	EBR	WBL	WBT	NBL	NBR	Ø9
Approach LOS	B		B		C		

Intersection Summary

Area Type:	CBD	
Cycle Length:	120	
Actuated Cycle Length:	120	
Offset:	10 (8%), Referenced to phase 2:WBTL and 6:EBT, Start of Yellow	
Natural Cycle:	80	
Control Type:	Actuated-Coordinated	
Maximum v/c Ratio:	0.57	
Intersection Signal Delay:	16.0	Intersection LOS: B
Intersection Capacity Utilization	66.2%	ICU Level of Service C
Analysis Period (min)	15	

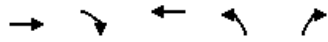
Splits and Phases: 1: Chestnut St & Washington St



Queues

1: Chestnut St & Washington St

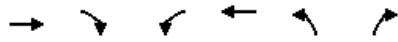
04/01/2024



Lane Group	EBT	EBR	WBT	NBL	NBR
Lane Group Flow (vph)	479	35	663	90	228
v/c Ratio	0.47	0.03	0.46	0.57	0.50
Control Delay	19.3	5.1	10.7	64.9	7.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	19.3	5.1	10.7	64.9	7.0
Queue Length 50th (ft)	146	2	58	68	0
Queue Length 95th (ft)	413	19	189	119	44
Internal Link Dist (ft)	85		428	227	
Turn Bay Length (ft)		50			
Base Capacity (vph)	1018	1135	1432	199	504
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.47	0.03	0.46	0.45	0.45
Intersection Summary					

HCM Signalized Intersection Capacity Analysis
 1: Chestnut St & Washington St

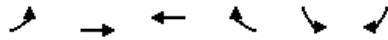
04/01/2024



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑	↗		↖↑	↘	↗
Traffic Volume (vph)	441	32	225	385	83	210
Future Volume (vph)	441	32	225	385	83	210
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5	6.5
Lane Util. Factor	1.00	1.00		0.95	1.00	1.00
Fr't	1.00	0.85		1.00	1.00	0.85
Flt Protected	1.00	1.00		0.98	0.95	1.00
Satd. Flow (prot)	1693	1454		3139	1624	1454
Flt Permitted	1.00	1.00		0.60	0.95	1.00
Satd. Flow (perm)	1693	1454		1916	1624	1454
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	479	35	245	418	90	228
RTOR Reduction (vph)	0	5	0	0	0	193
Lane Group Flow (vph)	479	30	0	663	90	35
Heavy Vehicles (%)	1%	0%	1%	2%	0%	0%
Turn Type	NA	pm+ov	pm+pt	NA	Prot	pt+ov
Protected Phases	6	3	5	2	3	3
Permitted Phases		6	2			
Actuated Green, G (s)	69.8	81.5		82.9	11.7	18.3
Effective Green, g (s)	69.8	81.5		82.9	11.7	18.3
Actuated g/C Ratio	0.58	0.68		0.69	0.10	0.15
Clearance Time (s)	6.5	6.5		6.5	6.5	
Vehicle Extension (s)	3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)	984	1066		1390	158	221
v/s Ratio Prot	0.28	0.00		c0.03	c0.06	0.02
v/s Ratio Perm		0.02		c0.30		
v/c Ratio	0.49	0.03		0.48	0.57	0.16
Uniform Delay, d1	14.6	6.3		8.6	51.7	44.2
Progression Factor	1.00	1.00		1.00	1.00	1.00
Incremental Delay, d2	1.7	0.0		0.3	4.7	0.3
Delay (s)	16.4	6.3		8.8	56.4	44.5
Level of Service	B	A		A	E	D
Approach Delay (s)	15.7			8.8	47.9	
Approach LOS	B			A	D	
Intersection Summary						
HCM 2000 Control Delay			19.5		HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.47			
Actuated Cycle Length (s)			120.0		Sum of lost time (s)	23.5
Intersection Capacity Utilization			66.2%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
4: Washington St & Davis Ct

04/01/2024



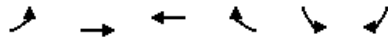
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	0	658	605	0	0	0
Future Volume (vph)	0	658	605	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt						
Fit Protected						
Satd. Flow (prot)	1653	1637	1637	0	1710	0
Fit Permitted						
Satd. Flow (perm)	1653	1637	1637	0	1710	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		508	361		146	
Travel Time (s)		10.5	7.7		4.0	
Confl. Peds. (#/hr)	13			13		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	0	715	658	0	0	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	715	658	0	0	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		11	11		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	41.8%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 4: Washington St & Davis Ct

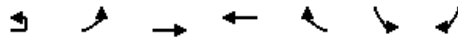
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↵	↑	↵		↵	
Traffic Volume (veh/h)	0	658	605	0	0	0
Future Volume (Veh/h)	0	658	605	0	0	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	715	658	0	0	0
Pedestrians					13	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)		508				
pX, platoon unblocked					0.84	
vC, conflicting volume	671				1386	671
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	671				1364	671
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	100
cM capacity (veh/h)	917				136	454
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	0	715	658	0		
Volume Left	0	0	0	0		
Volume Right	0	0	0	0		
cSH	1700	1700	1700	1700		
Volume to Capacity	0.00	0.42	0.39	0.04		
Queue Length 95th (ft)	0	0	0	0		
Control Delay (s)	0.0	0.0	0.0	0.0		
Lane LOS				A		
Approach Delay (s)	0.0		0.0	0.0		
Approach LOS				A		
Intersection Summary						
Average Delay			0.0			
Intersection Capacity Utilization			41.8%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
6: Washington St & Dunstan St

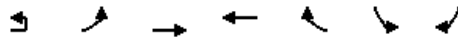
04/01/2024



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	1	49	608	556	24	14	48
Future Volume (vph)	1	49	608	556	24	14	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	11	12	12
Storage Length (ft)		50			0	0	0
Storage Lanes		0			0	1	0
Taper Length (ft)		25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt				0.994		0.895	
Flt Protected			0.996			0.989	
Satd. Flow (prot)	0	0	1631	1612	0	1514	0
Flt Permitted			0.996			0.989	
Satd. Flow (perm)	0	0	1631	1612	0	1514	0
Link Speed (mph)			33	32		25	
Link Distance (ft)			361	663		223	
Travel Time (s)			7.5	14.1		6.1	
Confl. Peds. (#/hr)		10			10		
Confl. Bikes (#/hr)					3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	2%	0%	0%	0%
Adj. Flow (vph)	1	53	661	604	26	15	52
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	715	630	0	67	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(ft)			10	10		12	
Link Offset(ft)			0	0		0	
Crosswalk Width(ft)			16	16		16	
Two way Left Turn Lane							
Headway Factor	1.14	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	9	15			9	15	9
Sign Control			Free	Free		Stop	
Intersection Summary							
Area Type:	CBD						
Control Type:	Unsignalized						
Intersection Capacity Utilization	86.9%			ICU Level of Service E			
Analysis Period (min)	15						

HCM Unsignalized Intersection Capacity Analysis
 6: Washington St & Dunstan St

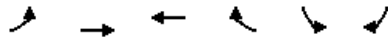
04/01/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↗	↘		↖	↙
Traffic Volume (veh/h)	1	49	608	556	24	14	48
Future Volume (Veh/h)	1	49	608	556	24	14	48
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	53	661	604	26	15	52
Pedestrians						10	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)			869				
pX, platoon unblocked	0.00					0.84	
vC, conflicting volume	0	640				1394	627
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	640				1374	627
tC, single (s)	0.0	4.1				6.4	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	94				88	89
cM capacity (veh/h)	0	945				127	483
Direction, Lane #	EB 1	WB 1	SB 1				
Volume Total	714	630	67				
Volume Left	53	0	15				
Volume Right	0	26	52				
cSH	945	1700	297				
Volume to Capacity	0.06	0.37	0.23				
Queue Length 95th (ft)	4	0	21				
Control Delay (s)	1.4	0.0	20.6				
Lane LOS	A		C				
Approach Delay (s)	1.4	0.0	20.6				
Approach LOS			C				
Intersection Summary							
Average Delay			1.7				
Intersection Capacity Utilization			86.9%		ICU Level of Service		E
Analysis Period (min)			15				

Lanes, Volumes, Timings
8: Washington St & Armory St

04/01/2024



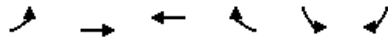
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	64	548	541	125	49	39
Future Volume (vph)	64	548	541	125	49	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	55			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.975		0.940	
Flt Protected	0.950				0.973	
Satd. Flow (prot)	1516	1630	1599	0	1564	0
Flt Permitted	0.950				0.973	
Satd. Flow (perm)	1516	1630	1599	0	1564	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		663	197		265	
Travel Time (s)		13.7	4.2		7.2	
Confl. Peds. (#/hr)	6			6		
Confl. Bikes (#/hr)				3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Bus Blockages (#/hr)	0	1	0	0	0	0
Adj. Flow (vph)	70	596	588	136	53	42
Shared Lane Traffic (%)						
Lane Group Flow (vph)	70	596	724	0	95	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.20	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

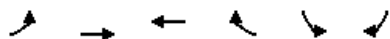
Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	59.8%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 8: Washington St & Armory St

04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	64	548	541	125	49	39
Future Volume (Veh/h)	64	548	541	125	49	39
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	70	596	588	136	53	42
Pedestrians					6	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	730				1398	662
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	730				1398	662
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	92				63	91
cM capacity (veh/h)	878				143	463
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	70	596	724	95		
Volume Left	70	0	0	53		
Volume Right	0	0	136	42		
cSH	878	1700	1700	206		
Volume to Capacity	0.08	0.35	0.43	0.46		
Queue Length 95th (ft)	6	0	0	55		
Control Delay (s)	9.5	0.0	0.0	36.5		
Lane LOS	A			E		
Approach Delay (s)	1.0		0.0	36.5		
Approach LOS				E		
Intersection Summary						
Average Delay			2.8			
Intersection Capacity Utilization			59.8%	ICU Level of Service	B	
Analysis Period (min)			15			



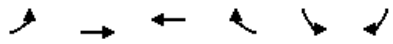
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Volume (vph)	0	598	607	0	57	55
Future Volume (vph)	0	598	607	0	57	55
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	12	12
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr					0.934	
Flt Protected					0.975	
Satd. Flow (prot)	0	1637	1621	0	1557	0
Flt Permitted					0.975	
Satd. Flow (perm)	0	1637	1621	0	1557	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		197	204		128	
Travel Time (s)		4.1	4.3		3.5	
Confl. Peds. (#/hr)	5			5		
Confl. Bikes (#/hr)				2		2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	2%	0%	0%	0%
Adj. Flow (vph)	0	650	660	0	62	60
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	650	660	0	122	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	49.4%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 10: Washington St & Trader Joe's

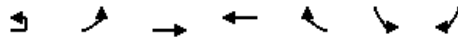
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		↓	↓
Traffic Volume (veh/h)	0	598	607	0	57	55
Future Volume (Veh/h)	0	598	607	0	57	55
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	650	660	0	62	60
Pedestrians					5	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	665				1315	665
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	665				1315	665
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				65	87
cM capacity (veh/h)	929				175	461
Direction, Lane #	EB 1	WB 1	SB 1			
Volume Total	650	660	122			
Volume Left	0	0	62			
Volume Right	0	0	60			
cSH	1700	1700	252			
Volume to Capacity	0.38	0.39	0.48			
Queue Length 95th (ft)	0	0	61			
Control Delay (s)	0.0	0.0	32.0			
Lane LOS			D			
Approach Delay (s)	0.0	0.0	32.0			
Approach LOS			D			
Intersection Summary						
Average Delay			2.7			
Intersection Capacity Utilization		49.4%		ICU Level of Service	A	
Analysis Period (min)			15			

Lanes, Volumes, Timings
12: Washington St & Cross St

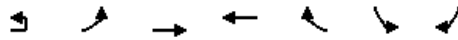
04/01/2024



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	1	22	635	593	25	6	13
Future Volume (vph)	1	22	635	593	25	6	13
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	11	11	11	12	12
Storage Length (ft)		50			0	0	0
Storage Lanes		1			0	1	0
Taper Length (ft)		25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt				0.995		0.910	
Flt Protected		0.950				0.984	
Satd. Flow (prot)	0	1516	1637	1629	0	1531	0
Flt Permitted		0.950				0.984	
Satd. Flow (perm)	0	1516	1637	1629	0	1531	0
Link Speed (mph)			33	32		25	
Link Distance (ft)			204	445		262	
Travel Time (s)			4.2	9.5		7.1	
Confl. Peds. (#/hr)		7			7	1	
Confl. Bikes (#/hr)					2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	1	24	690	645	27	7	14
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	25	690	672	0	21	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(ft)			10	10		12	
Link Offset(ft)			0	0		0	
Crosswalk Width(ft)			16	16		16	
Two way Left Turn Lane							
Headway Factor	1.14	1.25	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	9	15			9	15	9
Sign Control			Free	Free		Stop	
Intersection Summary							
Area Type:	CBD						
Control Type:	Unsignalized						
Intersection Capacity Utilization	47.1%			ICU Level of Service A			
Analysis Period (min)	15						

HCM Unsignalized Intersection Capacity Analysis
 12: Washington St & Cross St

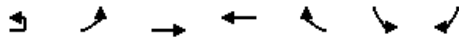
04/01/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↖	↗	↖	↗	↖	↗
Traffic Volume (veh/h)	1	22	635	593	25	6	13
Future Volume (Veh/h)	1	22	635	593	25	6	13
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	24	690	645	27	7	14
Pedestrians				1		7	
Lane Width (ft)				11.0		12.0	
Walking Speed (ft/s)				3.5		3.5	
Percent Blockage				0		1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	679				1404	666
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	679				1404	666
tC, single (s)	0.0	4.1				6.4	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	97				95	97
cM capacity (veh/h)	0	916				150	460
Direction, Lane #	EB 1	EB 2	WB 1	SB 1			
Volume Total	24	690	672	21			
Volume Left	24	0	0	7			
Volume Right	0	0	27	14			
cSH	916	1700	1700	272			
Volume to Capacity	0.03	0.41	0.40	0.08			
Queue Length 95th (ft)	2	0	0	6			
Control Delay (s)	9.0	0.0	0.0	19.3			
Lane LOS	A			C			
Approach Delay (s)	0.3		0.0	19.3			
Approach LOS				C			
Intersection Summary							
Average Delay			0.4				
Intersection Capacity Utilization			47.1%		ICU Level of Service		A
Analysis Period (min)			15				

Lanes, Volumes, Timings
 14: Washington St & Parsons St

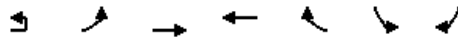
04/01/2024



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	1	16	624	611	27	14	6
Future Volume (vph)	1	16	624	611	27	14	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	11	11	12	12
Storage Length (ft)		50			0	0	0
Storage Lanes		0			0	1	0
Taper Length (ft)		25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt				0.994		0.957	
Flt Protected			0.999			0.967	
Satd. Flow (prot)	0	0	1635	1627	0	1582	0
Flt Permitted			0.999			0.967	
Satd. Flow (perm)	0	0	1635	1627	0	1582	0
Link Speed (mph)			33	32		25	
Link Distance (ft)			445	326		709	
Travel Time (s)			9.2	6.9		19.3	
Confl. Peds. (#/hr)		7			7		
Confl. Bikes (#/hr)					4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	1	17	678	664	29	15	7
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	696	693	0	22	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(ft)			10	10		12	
Link Offset(ft)			0	0		0	
Crosswalk Width(ft)			16	16		16	
Two way Left Turn Lane							
Headway Factor	1.14	1.19	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	9	15			9	15	9
Sign Control			Free	Free		Stop	
Intersection Summary							
Area Type:	CBD						
Control Type:	Unsignalized						
Intersection Capacity Utilization	61.7%			ICU Level of Service B			
Analysis Period (min)	15						

HCM Unsignalized Intersection Capacity Analysis
 14: Washington St & Parsons St

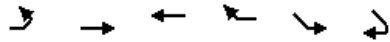
04/01/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations			↗	↖		↘	↙
Traffic Volume (veh/h)	1	16	624	611	27	14	6
Future Volume (Veh/h)	1	16	624	611	27	14	6
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	17	678	664	29	15	7
Pedestrians						7	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)							
pX, platoon unblocked	0.00						
vC, conflicting volume	0	700				1398	686
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	700				1398	686
tC, single (s)	0.0	4.1				6.4	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	98				90	98
cM capacity (veh/h)	0	900				153	448
Direction, Lane #	EB 1	WB 1	SB 1				
Volume Total	695	693	22				
Volume Left	17	0	15				
Volume Right	0	29	7				
cSH	900	1700	193				
Volume to Capacity	0.02	0.41	0.11				
Queue Length 95th (ft)	1	0	9				
Control Delay (s)	0.5	0.0	26.0				
Lane LOS	A		D				
Approach Delay (s)	0.5	0.0	26.0				
Approach LOS			D				
Intersection Summary							
Average Delay			0.7				
Intersection Capacity Utilization			61.7%		ICU Level of Service		B
Analysis Period (min)			15				

Lanes, Volumes, Timings
16: Washington St & Eddy St

04/01/2024



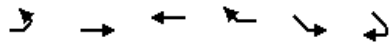
Lane Group	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations						
Traffic Volume (vph)	32	606	588	137	93	50
Future Volume (vph)	32	606	588	137	93	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.974		0.953	
Flt Protected	0.950				0.968	
Satd. Flow (prot)	1516	1630	1597	0	1577	0
Flt Permitted	0.950				0.968	
Satd. Flow (perm)	1516	1630	1597	0	1577	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		326	399		684	
Travel Time (s)		6.7	8.5		18.7	
Confl. Peds. (#/hr)	5			5		
Confl. Bikes (#/hr)				4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Bus Blockages (#/hr)	0	1	0	0	0	0
Adj. Flow (vph)	35	659	639	149	101	54
Shared Lane Traffic (%)						
Lane Group Flow (vph)	35	659	788	0	155	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		10	10		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.25	1.20	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	59.5%
ICU Level of Service	B
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 16: Washington St & Eddy St

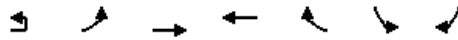
04/01/2024



Movement	EBL	EBT	WBT	WBR	SEL	SER
Lane Configurations	↙	↕	↕		↘	↘
Traffic Volume (veh/h)	32	606	588	137	93	50
Future Volume (Veh/h)	32	606	588	137	93	50
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	35	659	639	149	101	54
Pedestrians					5	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					0	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	793				1448	718
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	793				1448	718
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				28	87
cM capacity (veh/h)	833				139	430
Direction, Lane #	EB 1	EB 2	WB 1	SE 1		
Volume Total	35	659	788	155		
Volume Left	35	0	0	101		
Volume Right	0	0	149	54		
cSH	833	1700	1700	182		
Volume to Capacity	0.04	0.39	0.46	0.85		
Queue Length 95th (ft)	3	0	0	153		
Control Delay (s)	9.5	0.0	0.0	84.2		
Lane LOS	A			F		
Approach Delay (s)	0.5		0.0	84.2		
Approach LOS				F		
Intersection Summary						
Average Delay			8.2			
Intersection Capacity Utilization			59.5%		ICU Level of Service	B
Analysis Period (min)			15			

Lanes, Volumes, Timings
 18: Washington St & Brookside Ave

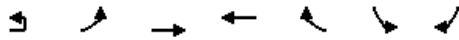
04/01/2024



Lane Group	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	1	21	677	722	24	3	1
Future Volume (vph)	1	21	677	722	24	3	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	10	11	11	11	12	12
Storage Length (ft)		75			0	0	0
Storage Lanes		0			0	1	0
Taper Length (ft)		25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor							
Frt				0.996		0.966	
Flt Protected			0.998			0.964	
Satd. Flow (prot)	0	0	1634	1631	0	1592	0
Flt Permitted			0.998			0.964	
Satd. Flow (perm)	0	0	1634	1631	0	1592	0
Link Speed (mph)			33	32		25	
Link Distance (ft)			399	347		767	
Travel Time (s)			8.2	7.4		20.9	
Confl. Peds. (#/hr)		7			7		
Confl. Bikes (#/hr)					3		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	1	23	736	785	26	3	1
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	0	760	811	0	4	0
Enter Blocked Intersection	No	No	No	No	No	No	No
Lane Alignment	R NA	Left	Left	Left	Right	Left	Right
Median Width(ft)			10	10		12	
Link Offset(ft)			0	0		0	
Crosswalk Width(ft)			16	16		16	
Two way Left Turn Lane							
Headway Factor	1.14	1.25	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	9	15			9	15	9
Sign Control			Free	Free		Stop	
Intersection Summary							
Area Type:	CBD						
Control Type:	Unsignalized						
Intersection Capacity Utilization	69.3%			ICU Level of Service C			
Analysis Period (min)	15						

HCM Unsignalized Intersection Capacity Analysis
 18: Washington St & Brookside Ave

04/01/2024



Movement	EBU	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (veh/h)	1	21	677	722	24	3	1
Future Volume (Veh/h)	1	21	677	722	24	3	1
Sign Control			Free	Free		Stop	
Grade			0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	23	736	785	26	3	1
Pedestrians						7	
Lane Width (ft)						12.0	
Walking Speed (ft/s)						3.5	
Percent Blockage						1	
Right turn flare (veh)							
Median type			None	None			
Median storage (veh)							
Upstream signal (ft)				974			
pX, platoon unblocked	0.00	0.60				0.60	0.60
vC, conflicting volume	0	818				1587	805
vC1, stage 1 conf vol							
vC2, stage 2 conf vol							
vCu, unblocked vol	0	372				1644	350
tC, single (s)	0.0	4.1				6.4	6.2
tC, 2 stage (s)							
tF (s)	0.0	2.2				3.5	3.3
p0 queue free %	0	97				95	100
cM capacity (veh/h)	0	719				64	419
Direction, Lane #	EB 1	WB 1	SB 1				
Volume Total	759	811	4				
Volume Left	23	0	3				
Volume Right	0	26	1				
cSH	719	1700	82				
Volume to Capacity	0.03	0.48	0.05				
Queue Length 95th (ft)	2	0	4				
Control Delay (s)	0.9	0.0	51.3				
Lane LOS	A		F				
Approach Delay (s)	0.9	0.0	51.3				
Approach LOS			F				
Intersection Summary							
Average Delay			0.5				
Intersection Capacity Utilization			69.3%		ICU Level of Service		C
Analysis Period (min)			15				

Lanes, Volumes, Timings
20: Lowell Ave & Washington St

04/01/2024

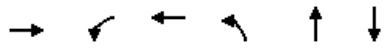


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations		↔↔		↔	↔		↔	↔			↔↔		
Traffic Volume (vph)	16	498	162	176	552	19	176	142	97	5	202	29	
Future Volume (vph)	16	498	162	176	552	19	176	142	97	5	202	29	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor					1.00				0.99		1.00		
Frt		0.964			0.995			0.939			0.983		
Fit Protected		0.999		0.950			0.950				0.999		
Satd. Flow (prot)	0	3106	0	1608	1668	0	1608	1535	0	0	1646	0	
Fit Permitted		0.870		0.275			0.337				0.993		
Satd. Flow (perm)	0	2705	0	466	1668	0	571	1535	0	0	1636	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)		46			2			30			5		
Link Speed (mph)		33			27			25			25		
Link Distance (ft)		246			934			273			475		
Travel Time (s)		5.1			23.6			7.4			13.0		
Confl. Bikes (#/hr)						5			2			1	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	1%	0%	1%	2%	0%	1%	2%	7%	0%	2%	0%	
Bus Blockages (#/hr)	0	0	1	0	0	0	0	0	0	0	0	0	
Adj. Flow (vph)	17	541	176	191	600	21	191	154	105	5	220	32	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	734	0	191	621	0	191	259	0	0	257	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	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)	15		9	15		9	15		9	15		9	
Number of Detectors	1	1		1	1		1	1		1	1		
Detector Template	Left			Left			Left			Left			
Leading Detector (ft)	20	40		20	40		40	40		20	40		
Trailing Detector (ft)	0	0		0	0		0	0		0	0		
Detector 1 Position(ft)	0	0		0	0		0	0		0	0		
Detector 1 Size(ft)	20	40		20	40		40	40		20	40		
Detector 1 Type	CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		CI+Ex	CI+Ex		
Detector 1 Channel													
Detector 1 Extend (s)	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		
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0		
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA		
Protected Phases		1			1		3	3 4			4		9
Permitted Phases	1			1			4			4			
Detector Phase	1	1		1	1		3	3 4		4	4		
Switch Phase													
Minimum Initial (s)	15.0	15.0		15.0	15.0		6.0			8.0	8.0		5.0
Minimum Split (s)	20.0	20.0		20.0	20.0		11.0			13.0	13.0		27.0
Total Split (s)	51.0	51.0		51.0	51.0		14.0			20.0	20.0		27.0
Total Split (%)	45.5%	45.5%		45.5%	45.5%		12.5%			17.9%	17.9%		24%
Maximum Green (s)	46.0	46.0		46.0	46.0		9.0			15.0	15.0		24.0
Yellow Time (s)	4.0	4.0		4.0	4.0		3.0			4.0	4.0		2.0
All-Red Time (s)	1.0	1.0		1.0	1.0		2.0			1.0	1.0		1.0
Lost Time Adjust (s)		0.0		0.0	0.0		0.0				0.0		
Total Lost Time (s)		5.0		5.0	5.0		5.0				5.0		
Lead/Lag							Lead			Lag	Lag		
Lead-Lag Optimize?							Yes			Yes	Yes		
Vehicle Extension (s)	4.0	4.0		4.0	4.0		2.0			3.0	3.0		3.0
Recall Mode	C-Max	C-Max		C-Max	C-Max		None			None	None		None
Walk Time (s)													7.0
Flash Dont Walk (s)													17.0
Pedestrian Calls (#/hr)													16
Act Effect Green (s)		49.5		49.5	49.5		36.7	41.7			23.4		
Actuated g/C Ratio		0.44		0.44	0.44		0.33	0.37			0.21		
v/c Ratio		0.60		0.93	0.84		0.62	0.44			0.74		
Control Delay		25.1		79.5	40.4		41.0	29.1			57.3		
Queue Delay		0.0		0.0	0.0		0.0	0.0			0.0		
Total Delay		25.1		79.5	40.4		41.0	29.1			57.3		
LOS		C		E	D		D	C			E		
Approach Delay		25.1			49.6			34.1			57.3		

Queues

20: Lowell Ave & Washington St

04/01/2024



Lane Group	EBT	WBL	WBT	NBL	NBT	SBT
Lane Group Flow (vph)	734	191	621	191	259	257
v/c Ratio	0.60	0.93	0.84	0.62	0.44	0.74
Control Delay	25.1	79.5	40.4	41.0	29.1	57.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.1	79.5	40.4	41.0	29.1	57.3
Queue Length 50th (ft)	180	118	360	87	108	163
Queue Length 95th (ft)	273	#289	#639	#219	236	#382
Internal Link Dist (ft)	166		854		193	395
Turn Bay Length (ft)						
Base Capacity (vph)	1221	206	738	310	590	345
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.60	0.93	0.84	0.62	0.44	0.74

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
 20: Lowell Ave & Washington St

04/01/2024



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔		↔	↔		↔	↔			↔	
Traffic Volume (vph)	16	498	162	176	552	19	176	142	97	5	202	29
Future Volume (vph)	16	498	162	176	552	19	176	142	97	5	202	29
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0		5.0	5.0			5.0	
Lane Util. Factor		0.95		1.00	1.00		1.00	1.00			1.00	
Frb, ped/bikes		1.00		1.00	1.00		1.00	0.99			1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00			1.00	
Frt		0.96		1.00	0.99		1.00	0.94			0.98	
Fit Protected		1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)		3106		1608	1668		1608	1536			1647	
Fit Permitted		0.87		0.27	1.00		0.34	1.00			0.99	
Satd. Flow (perm)		2705		465	1668		570	1536			1637	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	541	176	191	600	21	191	154	105	5	220	32
RTOR Reduction (vph)	0	26	0	0	1	0	0	19	0	0	4	0
Lane Group Flow (vph)	0	708	0	191	620	0	191	240	0	0	253	0
Confl. Bikes (#/hr)						5			2			1
Heavy Vehicles (%)	0%	1%	0%	1%	2%	0%	1%	2%	7%	0%	2%	0%
Bus Blockages (#/hr)	0	0	1	0	0	0	0	0	0	0	0	0
Turn Type	Perm	NA		Perm	NA		D.P+P	NA		Perm	NA	
Protected Phases		1			1		3	3			4	
Permitted Phases	1			1			4			4		
Actuated Green, G (s)		47.7		47.7	47.7		36.7	41.7			23.4	
Effective Green, g (s)		47.7		47.7	47.7		36.7	41.7			23.4	
Actuated g/C Ratio		0.43		0.43	0.43		0.33	0.37			0.21	
Clearance Time (s)		5.0		5.0	5.0		5.0				5.0	
Vehicle Extension (s)		4.0		4.0	4.0		2.0				3.0	
Lane Grp Cap (vph)		1152		198	710		310	571			342	
v/s Ratio Prot					0.37		c0.07	0.16				
v/s Ratio Perm		0.26		c0.41			0.13				c0.15	
v/c Ratio		0.61		0.96	0.87		0.62	0.42			0.74	
Uniform Delay, d1		25.0		31.3	29.4		29.7	26.2			41.5	
Progression Factor		1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2		2.5		55.4	14.0		2.6	0.2			8.1	
Delay (s)		27.4		86.7	43.4		32.3	26.3			49.6	
Level of Service		C		F	D		C	C			D	
Approach Delay (s)		27.4			53.6			28.9			49.6	
Approach LOS		C			D			C			D	
Intersection Summary												
HCM 2000 Control Delay			39.7			HCM 2000 Level of Service					D	
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			112.0			Sum of lost time (s)				18.0		
Intersection Capacity Utilization			100.7%			ICU Level of Service				G		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
21: Walnut St & Washington St

04/01/2024

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations														
Traffic Volume (vph)	22	484	94	186	587	57	8	124	324	137	48	311	33	
Future Volume (vph)	22	484	94	186	587	57	8	124	324	137	48	311	33	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		0	0		0		175		160	110		0	
Storage Lanes	0		0	0		0		1		1	1		0	
Taper Length (ft)	25			25				25			25			
Lane Util. Factor	0.95	0.95	0.95	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Frt		0.977			0.990					0.850		0.986		
Fit Protected		0.998			0.989			0.950			0.950			
Satd. Flow (prot)	0	3113	0	0	3157	0	0	1609	1693	1454	1593	1656	0	
Fit Permitted		0.859			0.622			0.148			0.550			
Satd. Flow (perm)	0	2679	0	0	1985	0	0	251	1693	1454	922	1656	0	
Right Turn on Red			Yes			Yes				Yes			Yes	
Satd. Flow (RTOR)		17			7					149			4	
Link Speed (mph)		20			29				25			25		
Link Distance (ft)		934			614				318			335		
Travel Time (s)		31.8			14.4				8.7			9.1		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	2%	1%	0%	1%	1%	0%	1%	1%	0%	2%	2%	0%	
Adj. Flow (vph)	24	526	102	202	638	62	9	135	352	149	52	338	36	
Shared Lane Traffic (%)														
Lane Group Flow (vph)	0	652	0	0	902	0	0	144	352	149	52	374	0	
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No	No	
Lane Alignment	Left	Left	Right	Left	Left	Right	R NA	Left	Left	Right	Left	Left	Right	
Median Width(ft)		0			0				18			12		
Link Offset(ft)		0			0				0			0		
Crosswalk Width(ft)		16			16				16			16		
Two way Left Turn Lane														
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	
Turning Speed (mph)	15		9	15		9	9	15		9	15		9	
Number of Detectors	1	1		1	1		1	1	1	1	1	1	1	
Detector Template	Left	Thru		Left	Thru		Left	Left	Thru	Right	Left	Thru		
Leading Detector (ft)	20	40		20	40		20	20	40	20	20	40		
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0		
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0		
Detector 1 Size(ft)	20	40		20	40		20	20	40	20	20	40		
Detector 1 Type	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		
Detector 1 Queue (s)	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		
Turn Type	Perm	NA		pm+pt	NA		custom	pm+pt	NA	Perm	Perm	NA		
Protected Phases		2		1	6			7	4			8		9
Permitted Phases	2			6			7	4		4	8			
Detector Phase	2	2		1	6		7	7	4	4	8	8		
Switch Phase														
Minimum Initial (s)	10.0	10.0		6.0	10.0		6.0	6.0	6.0	6.0	10.0	10.0		5.0
Minimum Split (s)	17.5	17.5		13.5	17.5		12.5	12.5	12.5	12.5	16.5	16.5		24.0
Total Split (s)	30.0	30.0		14.0	44.0		14.0	14.0	46.0	46.0	32.0	32.0		24.0
Total Split (%)	26.3%	26.3%		12.3%	38.6%		12.3%	12.3%	40.4%	40.4%	28.1%	28.1%		21%
Maximum Green (s)	22.5	22.5		6.5	36.5		7.5	7.5	39.5	39.5	25.5	25.5		21.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0		2.0
All-Red Time (s)	3.5	3.5		3.5	3.5		2.5	2.5	2.5	2.5	2.5	2.5		1.0
Lost Time Adjust (s)		0.0			0.0			0.0	0.0	0.0	0.0	0.0		
Total Lost Time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5		
Lead/Lag	Lag	Lag		Lead			Lead	Lead			Lag	Lag		
Lead-Lag Optimize?	Yes	Yes		Yes			Yes	Yes			Yes	Yes		
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0		3.0
Recall Mode	C-Min	C-Min		None	C-Min		None	None	None	None	None	None		None
Walk Time (s)														7.0
Flash Dont Walk (s)														14.0
Pedestrian Calls (#/hr)														24
Act Effect Green (s)		46.1			46.1			39.5	39.5	39.5	25.5	25.5		
Actuated g/C Ratio		0.40			0.40			0.35	0.35	0.35	0.22	0.22		
v/c Ratio		0.60			1.12			0.82	0.60	0.25	0.25	1.00		
Control Delay		31.3			103.0			63.1	35.9	5.3	40.4	91.7		
Queue Delay		0.0			0.0			0.0	0.0	0.0	0.0	0.0		
Total Delay		31.3			103.0			63.1	35.9	5.3	40.4	91.7		
LOS		C			F			E	D	A	D	F		
Approach Delay		31.3			103.0				34.9			85.5		

Lanes, Volumes, Timings
 21: Walnut St & Washington St

04/01/2024

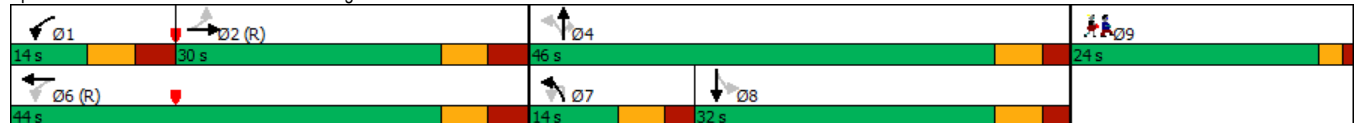


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR	Ø9	
Approach LOS		C			F				C			F			

Intersection Summary

Area Type:	CBD
Cycle Length:	114
Actuated Cycle Length:	114
Offset:	0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle:	145
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.12
Intersection Signal Delay:	65.6
Intersection LOS:	E
Intersection Capacity Utilization:	96.8%
ICU Level of Service:	F
Analysis Period (min):	15

Splits and Phases: 21: Walnut St & Washington St



Queues

21: Walnut St & Washington St

04/01/2024



Lane Group	EBT	WBT	NBL	NBT	NBR	SBL	SBT
Lane Group Flow (vph)	652	902	144	352	149	52	374
v/c Ratio	0.60	1.12	0.82	0.60	0.25	0.25	1.00
Control Delay	31.3	103.0	63.1	35.9	5.3	40.4	91.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	103.0	63.1	35.9	5.3	40.4	91.7
Queue Length 50th (ft)	218	~470	75	211	0	32	~274
Queue Length 95th (ft)	291	#601	#161	312	44	69	#477
Internal Link Dist (ft)	854	534		238			255
Turn Bay Length (ft)			175		160	110	
Base Capacity (vph)	1093	806	176	586	601	206	373
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.60	1.12	0.82	0.60	0.25	0.25	1.00

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

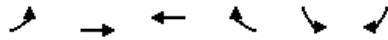
HCM Signalized Intersection Capacity Analysis
 21: Walnut St & Washington St

04/01/2024

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations													
Traffic Volume (vph)	22	484	94	186	587	57	8	124	324	137	48	311	33
Future Volume (vph)	22	484	94	186	587	57	8	124	324	137	48	311	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5	
Lane Util. Factor		0.95			0.95			1.00	1.00	1.00	1.00	1.00	
Fr't		0.98			0.99			1.00	1.00	0.85	1.00	0.99	
Flt Protected		1.00			0.99			0.95	1.00	1.00	0.95	1.00	
Satd. Flow (prot)		3112			3155			1609	1693	1454	1593	1655	
Flt Permitted		0.86			0.62			0.15	1.00	1.00	0.55	1.00	
Satd. Flow (perm)		2678			1983			251	1693	1454	922	1655	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	24	526	102	202	638	62	9	135	352	149	52	338	36
RTOR Reduction (vph)	0	10	0	0	4	0	0	0	0	97	0	3	0
Lane Group Flow (vph)	0	642	0	0	898	0	0	144	352	52	52	371	0
Heavy Vehicles (%)	0%	2%	1%	0%	1%	1%	0%	1%	1%	0%	2%	2%	0%
Turn Type	Perm	NA		pm+pt	NA		custom	pm+pt	NA	Perm	Perm	NA	
Protected Phases		2		1	6			7	4			8	
Permitted Phases	2			6			7	4		4		8	
Actuated Green, G (s)		44.9			44.9			39.5	39.5	39.5	25.5	25.5	
Effective Green, g (s)		44.9			44.9			39.5	39.5	39.5	25.5	25.5	
Actuated g/C Ratio		0.39			0.39			0.35	0.35	0.35	0.22	0.22	
Clearance Time (s)		7.5			7.5			6.5	6.5	6.5	6.5	6.5	
Vehicle Extension (s)		2.0			2.0			2.0	2.0	2.0	2.0	2.0	
Lane Grp Cap (vph)		1054			781			176	586	503	206	370	
v/s Ratio Prot								0.05	c0.21			c0.22	
v/s Ratio Perm		0.24			c0.45			0.23		0.04	0.06		
v/c Ratio		0.61			1.15			0.82	0.60	0.10	0.25	1.00	
Uniform Delay, d1		27.5			34.5			29.5	30.7	25.2	36.4	44.2	
Progression Factor		1.00			1.00			1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2		2.6			81.8			23.5	1.2	0.0	0.2	47.4	
Delay (s)		30.2			116.4			53.1	31.9	25.3	36.6	91.6	
Level of Service		C			F			D	C	C	D	F	
Approach Delay (s)		30.2			116.4				35.1			84.9	
Approach LOS		C			F				D			F	
Intersection Summary													
HCM 2000 Control Delay			69.9			HCM 2000 Level of Service						E	
HCM 2000 Volume to Capacity ratio			1.01										
Actuated Cycle Length (s)			114.0			Sum of lost time (s)						31.0	
Intersection Capacity Utilization			96.8%			ICU Level of Service						F	
Analysis Period (min)			15										
c	Critical Lane Group												

Lanes, Volumes, Timings
27: Washington St & Brooks Ave

04/01/2024



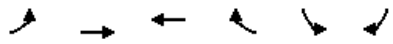
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	1	671	753	3	3	0
Future Volume (vph)	1	671	753	3	3	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Storage Length (ft)	45			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00
Ped Bike Factor						
Fr						
Flt Protected					0.950	
Satd. Flow (prot)	0	3217	1710	0	1624	0
Flt Permitted					0.950	
Satd. Flow (perm)	0	3217	1710	0	1624	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		381	246		576	
Travel Time (s)		7.9	5.2		15.7	
Confl. Peds. (#/hr)	10			10		
Confl. Bikes (#/hr)				4		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	0%	1%	0%	0%
Adj. Flow (vph)	1	729	818	3	3	0
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	730	821	0	3	0
Enter Blocked Intersection	Yes	Yes	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
Median Width(ft)		0	0		12	
Link Offset(ft)		0	0		0	
Crosswalk Width(ft)		16	16		16	
Two way Left Turn Lane						
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	

Intersection Summary

Area Type:	CBD
Control Type:	Unsignalized
Intersection Capacity Utilization	54.2%
ICU Level of Service	A
Analysis Period (min)	15

HCM Unsignalized Intersection Capacity Analysis
 27: Washington St & Brooks Ave

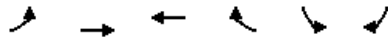
04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↓	
Traffic Volume (veh/h)	1	671	753	3	3	0
Future Volume (Veh/h)	1	671	753	3	3	0
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	1	729	818	3	3	0
Pedestrians					10	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			246			
pX, platoon unblocked	0.56				0.56	0.56
vC, conflicting volume	831				1196	830
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	306				958	304
tC, single (s)	4.1				6.8	6.9
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				98	100
cM capacity (veh/h)	703				144	388
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	244	486	821	3		
Volume Left	1	0	0	3		
Volume Right	0	0	3	0		
cSH	703	1700	1700	144		
Volume to Capacity	0.00	0.29	0.48	0.02		
Queue Length 95th (ft)	0	0	0	2		
Control Delay (s)	0.1	0.0	0.0	30.6		
Lane LOS	A			D		
Approach Delay (s)	0.0		0.0	30.6		
Approach LOS				D		
Intersection Summary						
Average Delay			0.1			
Intersection Capacity Utilization			54.2%		ICU Level of Service	A
Analysis Period (min)			15			

Lanes, Volumes, Timings
30: Washington St & Walker St

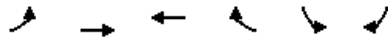
04/01/2024



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	29	652	732	21	20	15
Future Volume (vph)	29	652	732	21	20	15
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	12	12
Storage Length (ft)	50			0	0	0
Storage Lanes	1			0	1	0
Taper Length (ft)	25				25	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor						
Frt			0.996		0.943	
Flt Protected	0.950				0.972	
Satd. Flow (prot)	1516	1637	1631	0	1567	0
Flt Permitted	0.950				0.972	
Satd. Flow (perm)	1516	1637	1631	0	1567	0
Link Speed (mph)		33	32		25	
Link Distance (ft)		347	381		595	
Travel Time (s)		7.2	8.1		16.2	
Confl. Peds. (#/hr)	7			7		
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%
Adj. Flow (vph)	32	709	796	23	22	16
Shared Lane Traffic (%)						
Lane Group Flow (vph)	32	709	819	0	38	0
Enter Blocked Intersection	No	No	No	No	No	No
Lane Alignment	Left	Left	Left	Right	Left	Right
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	1.25	1.19	1.19	1.19	1.14	1.14
Turning Speed (mph)	15			9	15	9
Sign Control		Free	Free		Stop	
Intersection Summary						
Area Type:	CBD					
Control Type:	Unsignalized					
Intersection Capacity Utilization	54.2%			ICU Level of Service A		
Analysis Period (min)	15					

HCM Unsignalized Intersection Capacity Analysis
 30: Washington St & Walker St

04/01/2024



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	29	652	732	21	20	15
Future Volume (Veh/h)	29	652	732	21	20	15
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	32	709	796	23	22	16
Pedestrians					7	
Lane Width (ft)					12.0	
Walking Speed (ft/s)					3.5	
Percent Blockage					1	
Right turn flare (veh)						
Median type		None	None			
Median storage (veh)						
Upstream signal (ft)			627			
pX, platoon unblocked	0.57				0.57	0.57
vC, conflicting volume	826				1588	814
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	327				1652	307
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	95				63	96
cM capacity (veh/h)	710				60	421
Direction, Lane #	EB 1	EB 2	WB 1	SB 1		
Volume Total	32	709	819	38		
Volume Left	32	0	0	22		
Volume Right	0	0	23	16		
cSH	710	1700	1700	93		
Volume to Capacity	0.05	0.42	0.48	0.41		
Queue Length 95th (ft)	4	0	0	41		
Control Delay (s)	10.3	0.0	0.0	67.7		
Lane LOS	B			F		
Approach Delay (s)	0.4		0.0	67.7		
Approach LOS				F		
Intersection Summary						
Average Delay			1.8			
Intersection Capacity Utilization			54.2%	ICU Level of Service	A	
Analysis Period (min)			15			

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:12	8:12	8:12	8:12	8:12	8:12	8:12
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3626	3675	3715	3730	3610	3673	3749
Vehs Exited	3623	3665	3632	3701	3568	3633	3720
Starting Vehs	160	148	131	135	156	138	162
Ending Vehs	163	158	214	164	198	178	191
Travel Distance (mi)	1792	1821	1818	1837	1731	1798	1838
Travel Time (hr)	144.3	141.2	171.1	166.5	142.3	147.0	155.3
Total Delay (hr)	78.5	74.3	104.4	98.7	78.2	80.7	87.7
Total Stops	5130	5235	5976	5859	5291	5406	5392
Fuel Used (gal)	83.1	83.1	90.2	89.4	80.9	84.1	86.8

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:12	8:12	8:12	8:12
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3681	3708	3655	3679
Vehs Exited	3612	3690	3653	3650
Starting Vehs	128	191	139	143
Ending Vehs	197	209	141	171
Travel Distance (mi)	1828	1829	1847	1814
Travel Time (hr)	144.0	166.4	154.5	153.3
Total Delay (hr)	77.0	99.2	86.6	86.5
Total Stops	5180	5707	5259	5442
Fuel Used (gal)	83.6	89.1	86.3	85.7

Interval #0 Information Seeding

Start Time	6:57
End Time	7:12
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:12
End Time	8:12
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3626	3675	3715	3730	3610	3673	3749
Vehs Exited	3623	3665	3632	3701	3568	3633	3720
Starting Vehs	160	148	131	135	156	138	162
Ending Vehs	163	158	214	164	198	178	191
Travel Distance (mi)	1792	1821	1818	1837	1731	1798	1838
Travel Time (hr)	144.3	141.2	171.1	166.5	142.3	147.0	155.3
Total Delay (hr)	78.5	74.3	104.4	98.7	78.2	80.7	87.7
Total Stops	5130	5235	5976	5859	5291	5406	5392
Fuel Used (gal)	83.1	83.1	90.2	89.4	80.9	84.1	86.8

Interval #1 Information Recording

Start Time	7:12
End Time	8:12
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3681	3708	3655	3679
Vehs Exited	3612	3690	3653	3650
Starting Vehs	128	191	139	143
Ending Vehs	197	209	141	171
Travel Distance (mi)	1828	1829	1847	1814
Travel Time (hr)	144.0	166.4	154.5	153.3
Total Delay (hr)	77.0	99.2	86.6	86.5
Total Stops	5180	5707	5259	5442
Fuel Used (gal)	83.6	89.1	86.3	85.7

Arterial Level of Service: EB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed	Run 1 Speed	Run 1 Delay
Chestnut St	1	15.3	28.8	0.0	6	6	14.8
Davis Ct	4	1.6	12.2	0.1	28	28	1.6
Dunstan St	6	0.5	7.9	0.1	31	31	0.4
Armory St	8	0.8	14.6	0.1	31	31	0.7
Trader Joe's	10	0.2	4.3	0.0	31	31	0.2
Cross St	12	0.3	4.5	0.0	31	31	0.3
Parsons St	14	0.5	9.5	0.1	32	32	0.5
Eddy St	16	0.5	7.3	0.1	30	31	0.5
Brookside Ave	18	0.8	9.5	0.1	29	29	0.8
Walker St	30	2.0	9.1	0.1	26	30	0.7
Brooks Ave	27	16.9	24.8	0.1	10	15	9.7
Lowell Ave	20	29.4	34.0	0.0	5	5	27.4
Walnut St	21	71.2	101.5	0.2	6	8	51.3
Total		139.9	268.1	1.0	14	16	109.0

Arterial Level of Service: EB Washington St

Cross Street	Run 2 Speed	Run 2 Delay	Run 3 Speed	Run 3 Delay	Run 4 Speed	Run 4 Delay	Run 5 Speed
Chestnut St	7	14.3	7	13.8	6	17.3	6
Davis Ct	29	1.5	29	1.6	28	1.6	28
Dunstan St	32	0.4	31	0.5	31	0.6	31
Armory St	31	0.7	31	0.8	31	0.7	31
Trader Joe's	31	0.2	31	0.2	31	0.2	31
Cross St	31	0.3	31	0.3	31	0.3	31
Parsons St	32	0.5	32	0.5	32	0.5	32
Eddy St	31	0.5	30	0.6	30	0.5	31
Brookside Ave	28	0.8	28	1.1	29	0.8	29
Walker St	30	0.7	17	7.1	23	2.9	30
Brooks Ave	15	9.7	7	28.7	7	27.4	11
Lowell Ave	5	28.0	5	32.2	5	31.8	5
Walnut St	9	42.3	4	118.8	6	73.4	7
Total	16	99.9	11	206.2	13	158.0	14

Arterial Level of Service: EB Washington St

Cross Street	Run 5 Delay	Run 6 Speed	Run 6 Delay	Run 7 Speed	Run 7 Delay	Run 8 Speed	Run 8 Delay
Chestnut St	15.4	6	15.5	6	17.1	7	14.4
Davis Ct	1.6	28	1.6	28	1.7	28	1.6
Dunstan St	0.4	31	0.5	31	0.5	31	0.4
Armory St	0.8	31	0.7	31	0.8	31	0.8
Trader Joe's	0.2	31	0.3	31	0.3	31	0.2
Cross St	0.2	31	0.2	30	0.4	31	0.2
Parsons St	0.5	32	0.5	32	0.5	32	0.5
Eddy St	0.5	30	0.5	31	0.5	30	0.5
Brookside Ave	0.7	28	0.9	29	0.9	29	0.7
Walker St	0.8	21	4.0	30	0.7	29	0.9
Brooks Ave	15.6	7	27.6	13	12.3	13	11.7
Lowell Ave	30.3	5	31.1	5	28.9	5	26.9
Walnut St	64.1	9	39.1	7	57.3	8	49.5
Total	131.1	15	122.4	15	121.8	16	108.4

Arterial Level of Service: EB Washington St

Cross Street	Run 9 Speed	Run 9 Delay	Run 10 Speed	Run 10 Delay
Chestnut St	6	16.3	7	14.5
Davis Ct	28	1.6	28	1.6
Dunstan St	31	0.6	31	0.4
Armory St	31	0.7	30	0.8
Trader Joe's	31	0.2	31	0.2
Cross St	31	0.3	31	0.3
Parsons St	32	0.5	32	0.5
Eddy St	31	0.5	30	0.7
Brookside Ave	29	0.7	29	0.7
Walker St	29	1.0	30	0.8
Brooks Ave	11	16.7	15	9.7
Lowell Ave	5	32.3	6	25.5
Walnut St	5	106.9	5	105.6
Total	12	178.3	13	161.3

Arterial Level of Service: WB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed	Run 1 Speed	Run 1 Delay
Walnut St	21	43.4	57.0	0.1	7	8	41.2
Lowell Ave	20	45.5	67.5	0.2	9	10	39.3
Brooks Ave	27	2.1	8.0	0.0	21	21	2.0
Walker St	30	0.5	8.6	0.1	30	30	0.4
Brookside Ave	18	0.7	8.1	0.1	29	30	0.5
Eddy St	16	1.0	9.8	0.1	28	28	1.0
Parsons St	14	0.5	7.4	0.1	30	30	0.4
Cross St	12	0.3	9.7	0.1	31	31	0.3
Trader Joe's	10	0.2	4.8	0.0	29	29	0.2
Armory St	8	0.3	4.3	0.0	32	31	0.3
Dunstan St	6	0.5	14.7	0.1	31	31	0.5
Davis Ct	4	0.3	7.9	0.1	31	31	0.3
Chestnut St	1	10.9	21.3	0.1	16	18	8.8
Total		106.0	229.2	1.1	17	18	95.2

Arterial Level of Service: WB Washington St

Cross Street	Run 2 Speed	Run 2 Delay	Run 3 Speed	Run 3 Delay	Run 4 Speed	Run 4 Delay	Run 5 Speed
Walnut St	7	45.2	7	43.8	7	44.6	8
Lowell Ave	10	43.0	9	44.6	8	55.7	10
Brooks Ave	21	2.0	21	2.1	21	2.1	21
Walker St	30	0.4	30	0.5	30	0.5	30
Brookside Ave	30	0.5	29	0.6	29	0.6	29
Eddy St	27	1.0	28	1.0	28	0.9	28
Parsons St	30	0.4	30	0.4	30	0.5	30
Cross St	31	0.3	31	0.2	31	0.3	31
Trader Joe's	29	0.2	29	0.2	29	0.2	29
Armory St	32	0.3	32	0.2	31	0.3	32
Dunstan St	31	0.6	31	0.5	31	0.5	31
Davis Ct	31	0.3	31	0.3	31	0.3	31
Chestnut St	15	12.3	16	11.5	17	10.5	14
Total	17	106.4	17	106.0	16	116.9	17

Arterial Level of Service: WB Washington St

Cross Street	Run 5 Delay	Run 6 Speed	Run 6 Delay	Run 7 Speed	Run 7 Delay	Run 8 Speed	Run 8 Delay
Walnut St	36.7	8	37.8	7	46.6	8	41.8
Lowell Ave	44.6	9	50.1	10	41.0	10	39.3
Brooks Ave	2.2	20	2.2	21	2.1	21	2.0
Walker St	0.4	30	0.5	30	0.5	30	0.5
Brookside Ave	0.8	29	0.7	29	0.8	29	0.7
Eddy St	0.8	27	1.1	28	0.9	28	1.1
Parsons St	0.5	30	0.5	30	0.5	30	0.5
Cross St	0.3	31	0.3	31	0.4	31	0.3
Trader Joe's	0.2	29	0.2	29	0.2	29	0.2
Armory St	0.2	31	0.3	31	0.3	32	0.3
Dunstan St	0.5	31	0.5	31	0.5	31	0.6
Davis Ct	0.3	31	0.2	31	0.3	31	0.3
Chestnut St	13.5	17	10.4	17	10.3	16	10.8
Total	100.9	17	104.6	17	104.4	17	98.4

Arterial Level of Service: WB Washington St

Cross Street	Run 9 Speed	Run 9 Delay	Run 10 Speed	Run 10 Delay
Walnut St	7	50.5	7	46.1
Lowell Ave	9	50.8	9	46.0
Brooks Ave	21	2.1	21	2.1
Walker St	30	0.6	30	0.4
Brookside Ave	29	0.8	30	0.6
Eddy St	28	1.0	28	0.9
Parsons St	30	0.4	30	0.4
Cross St	31	0.3	31	0.3
Trader Joe's	29	0.2	29	0.2
Armory St	32	0.3	32	0.2
Dunstan St	31	0.6	31	0.5
Davis Ct	31	0.3	31	0.3
Chestnut St	16	11.5	18	9.3
Total	16	119.6	17	107.3

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:12	8:12	8:12	8:12	8:12	8:12	8:12
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3750	3828	3717	3616	3797	3787	3833
Vehs Exited	3646	3829	3715	3526	3800	3780	3726
Starting Vehs	129	139	133	123	137	156	111
Ending Vehs	233	138	135	213	134	163	218
Travel Distance (mi)	1693	1791	1756	1690	1729	1794	1757
Travel Time (hr)	159.6	180.5	136.3	199.1	158.0	151.3	180.9
Total Delay (hr)	97.0	114.1	71.8	136.5	94.0	85.1	115.8
Total Stops	5226	5244	5050	5058	5386	5290	5668
Fuel Used (gal)	83.7	91.2	80.3	92.2	84.8	85.2	90.7

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:12	8:12	8:12	8:12
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3868	3817	3781	3774
Vehs Exited	3858	3807	3736	3745
Starting Vehs	169	149	141	134
Ending Vehs	179	159	186	170
Travel Distance (mi)	1818	1782	1803	1761
Travel Time (hr)	194.5	167.7	170.8	169.9
Total Delay (hr)	127.3	101.8	104.1	104.7
Total Stops	5261	5500	5134	5277
Fuel Used (gal)	95.8	88.5	89.3	88.2

Interval #0 Information Seeding

Start Time	6:57
End Time	7:12
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:12
End Time	8:12
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3750	3828	3717	3616	3797	3787	3833
Vehs Exited	3646	3829	3715	3526	3800	3780	3726
Starting Vehs	129	139	133	123	137	156	111
Ending Vehs	233	138	135	213	134	163	218
Travel Distance (mi)	1693	1791	1756	1690	1729	1794	1757
Travel Time (hr)	159.6	180.5	136.3	199.1	158.0	151.3	180.9
Total Delay (hr)	97.0	114.1	71.8	136.5	94.0	85.1	115.8
Total Stops	5226	5244	5050	5058	5386	5290	5668
Fuel Used (gal)	83.7	91.2	80.3	92.2	84.8	85.2	90.7

Interval #1 Information Recording

Start Time	7:12
End Time	8:12
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3868	3817	3781	3774
Vehs Exited	3858	3807	3736	3745
Starting Vehs	169	149	141	134
Ending Vehs	179	159	186	170
Travel Distance (mi)	1818	1782	1803	1761
Travel Time (hr)	194.5	167.7	170.8	169.9
Total Delay (hr)	127.3	101.8	104.1	104.7
Total Stops	5261	5500	5134	5277
Fuel Used (gal)	95.8	88.5	89.3	88.2

Arterial Level of Service: EB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed	Run 1 Speed	Run 1 Delay
Chestnut St	1	14.5	22.9	0.0	6	7	12.8
Davis Ct	4	1.4	11.9	0.1	29	30	1.3
Dunstan St	6	0.5	7.9	0.1	31	31	0.5
Armory St	8	0.8	14.6	0.1	31	31	0.8
Trader Joe's	10	0.2	4.3	0.0	31	31	0.2
Cross St	12	0.2	4.5	0.0	31	31	0.2
Parsons St	14	0.4	9.5	0.1	32	32	0.3
Eddy St	16	0.6	7.3	0.1	30	31	0.4
Brookside Ave	18	0.5	9.2	0.1	30	30	0.5
Walker St	30	0.5	7.6	0.1	31	31	0.4
Brooks Ave	27	3.2	11.1	0.1	23	23	3.4
Lowell Ave	20	25.3	29.9	0.0	6	5	28.0
Walnut St	21	48.2	79.1	0.2	8	8	47.6
Total		96.5	219.8	1.0	16	16	96.4

Arterial Level of Service: EB Washington St

Cross Street	Run 2 Speed	Run 2 Delay	Run 3 Speed	Run 3 Delay	Run 4 Speed	Run 4 Delay	Run 5 Speed
Chestnut St	7	13.3	7	13.6	5	18.4	6
Davis Ct	29	1.4	29	1.4	29	1.6	29
Dunstan St	31	0.5	31	0.5	31	0.6	31
Armory St	31	0.8	31	0.8	31	0.9	31
Trader Joe's	31	0.2	31	0.2	31	0.2	31
Cross St	31	0.2	31	0.2	32	0.2	31
Parsons St	32	0.4	32	0.4	32	0.4	32
Eddy St	30	0.8	31	0.5	31	0.5	30
Brookside Ave	29	0.6	29	0.7	30	0.5	30
Walker St	31	0.3	31	0.5	31	0.6	31
Brooks Ave	25	2.6	26	2.3	20	5.0	26
Lowell Ave	5	26.2	7	21.3	5	28.2	5
Walnut St	9	39.6	11	28.3	10	35.0	7
Total	17	86.9	19	70.6	17	92.2	15

Arterial Level of Service: EB Washington St

Cross Street	Run 5 Delay	Run 6 Speed	Run 6 Delay	Run 7 Speed	Run 7 Delay	Run 8 Speed	Run 8 Delay
Chestnut St	15.0	6	16.5	7	13.1	7	13.6
Davis Ct	1.5	29	1.5	29	1.4	29	1.4
Dunstan St	0.5	31	0.5	31	0.4	31	0.5
Armory St	0.9	31	1.0	31	0.8	31	0.7
Trader Joe's	0.3	31	0.3	31	0.2	31	0.3
Cross St	0.3	31	0.2	31	0.2	31	0.2
Parsons St	0.5	32	0.4	32	0.4	32	0.4
Eddy St	0.7	31	0.5	30	0.5	30	0.7
Brookside Ave	0.5	29	0.6	29	0.5	30	0.5
Walker St	0.5	31	0.4	31	0.5	31	0.6
Brooks Ave	2.3	26	2.2	23	3.5	24	3.1
Lowell Ave	26.6	6	21.3	6	24.6	6	24.8
Walnut St	62.9	8	47.5	7	58.2	6	67.3
Total	112.5	17	93.0	16	104.4	15	114.1

Arterial Level of Service: EB Washington St

Cross Street	Run 9 Speed	Run 9 Delay	Run 10 Speed	Run 10 Delay
Chestnut St	7	14.2	7	13.9
Davis Ct	29	1.4	29	1.4
Dunstan St	31	0.6	31	0.4
Armory St	31	0.6	31	0.9
Trader Joe's	31	0.2	31	0.3
Cross St	31	0.3	31	0.3
Parsons St	32	0.4	32	0.4
Eddy St	31	0.4	30	0.7
Brookside Ave	30	0.5	29	0.6
Walker St	31	0.5	31	0.4
Brooks Ave	21	4.2	23	3.5
Lowell Ave	6	25.5	5	26.8
Walnut St	10	32.1	7	62.4
Total	18	81.0	15	112.0

Arterial Level of Service: WB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed	Run 1 Speed	Run 1 Delay
Walnut St	21	93.3	129.7	0.1	4	4	83.7
Lowell Ave	20	79.8	102.1	0.2	6	6	80.5
Brooks Ave	27	2.4	8.3	0.0	20	20	2.4
Walker St	30	0.7	8.8	0.1	30	30	0.6
Brookside Ave	18	0.6	8.0	0.1	29	29	0.6
Eddy St	16	1.3	10.3	0.1	27	26	1.4
Parsons St	14	0.6	7.6	0.1	29	29	0.6
Cross St	12	0.5	9.9	0.1	31	31	0.4
Trader Joe's	10	0.4	5.0	0.0	28	28	0.4
Armory St	8	0.5	4.4	0.0	30	30	0.5
Dunstan St	6	0.6	14.7	0.1	31	31	0.5
Davis Ct	4	0.3	7.8	0.1	31	32	0.2
Chestnut St	1	10.8	21.2	0.1	16	16	11.4
Total		191.8	337.8	1.1	12	13	183.2

Arterial Level of Service: WB Washington St

Cross Street	Run 2 Speed	Run 2 Delay	Run 3 Speed	Run 3 Delay	Run 4 Speed	Run 4 Delay	Run 5 Speed
Walnut St	3	114.6	8	41.2	4	101.0	5
Lowell Ave	5	112.9	9	48.0	4	151.5	10
Brooks Ave	20	2.5	20	2.4	20	2.6	20
Walker St	30	0.6	29	0.8	30	0.6	30
Brookside Ave	29	0.7	30	0.6	29	0.7	30
Eddy St	26	1.4	27	1.2	26	1.4	26
Parsons St	29	0.6	29	0.6	29	0.6	29
Cross St	31	0.5	31	0.4	30	0.4	31
Trader Joe's	28	0.4	28	0.3	28	0.3	28
Armory St	30	0.5	30	0.5	30	0.5	30
Dunstan St	31	0.6	31	0.6	31	0.6	31
Davis Ct	31	0.3	32	0.3	31	0.3	31
Chestnut St	16	10.9	16	11.0	17	9.9	15
Total	10	246.4	17	108.0	10	270.4	15

Arterial Level of Service: WB Washington St

Cross Street	Run 5 Delay	Run 6 Speed	Run 6 Delay	Run 7 Speed	Run 7 Delay	Run 8 Speed	Run 8 Delay
Walnut St	68.2	4	84.7	4	89.2	3	153.5
Lowell Ave	42.5	8	52.7	4	119.8	10	42.9
Brooks Ave	2.3	20	2.3	20	2.5	20	2.3
Walker St	0.6	29	0.8	29	0.8	30	0.6
Brookside Ave	0.5	29	0.7	29	0.6	29	0.6
Eddy St	1.4	27	1.3	26	1.3	26	1.5
Parsons St	0.6	29	0.6	29	0.6	29	0.6
Cross St	0.5	30	0.6	30	0.5	31	0.5
Trader Joe's	0.4	28	0.4	28	0.4	28	0.4
Armory St	0.5	30	0.6	30	0.5	30	0.5
Dunstan St	0.5	31	0.6	31	0.5	31	0.6
Davis Ct	0.3	31	0.3	31	0.3	32	0.3
Chestnut St	13.0	16	11.3	17	10.5	16	11.0
Total	131.3	14	156.7	11	227.6	11	215.2

Arterial Level of Service: WB Washington St

Cross Street	Run 9 Speed	Run 9 Delay	Run 10 Speed	Run 10 Delay
Walnut St	4	90.1	3	106.9
Lowell Ave	5	108.2	9	45.1
Brooks Ave	20	2.5	21	2.3
Walker St	30	0.6	29	0.8
Brookside Ave	30	0.5	30	0.6
Eddy St	27	1.2	27	1.2
Parsons St	30	0.5	29	0.5
Cross St	30	0.6	30	0.6
Trader Joe's	28	0.4	28	0.4
Armory St	30	0.5	30	0.5
Dunstan St	31	0.6	31	0.6
Davis Ct	31	0.3	31	0.3
Chestnut St	20	6.8	15	11.8
Total	11	212.9	13	171.5

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:45	6:45	6:45	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3281	3366	3345	3392	3351	3470	3510
Vehs Exited	3283	3365	3382	3383	3346	3443	3528
Starting Vehs	130	132	175	138	137	147	185
Ending Vehs	128	133	138	147	142	174	167
Travel Distance (mi)	1650	1663	1670	1671	1648	1736	1712
Travel Time (hr)	153.5	132.0	147.3	138.0	127.3	207.9	182.1
Total Delay (hr)	92.7	70.7	85.7	76.5	66.4	144.1	118.9
Total Stops	4698	4549	4732	4380	4431	5297	5031
Fuel Used (gal)	79.8	75.4	79.1	77.0	73.8	93.7	88.4

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:45	6:45	6:45	6:45
End Time	8:00	8:00	8:00	8:00
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3365	3347	3347	3375
Vehs Exited	3348	3336	3309	3371
Starting Vehs	115	139	107	140
Ending Vehs	132	150	145	143
Travel Distance (mi)	1662	1665	1646	1672
Travel Time (hr)	127.8	145.4	135.9	149.7
Total Delay (hr)	66.4	84.0	75.0	88.0
Total Stops	4537	4647	4723	4697
Fuel Used (gal)	74.0	78.2	75.8	79.5

Interval #0 Information Seeding

Start Time	6:45
End Time	7:00
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:00						
End Time	8:00						
Total Time (min)	60						
Volumes adjusted by Growth Factors.							
Run Number	1	2	3	4	5	6	7
Vehs Entered	3281	3366	3345	3392	3351	3470	3510
Vehs Exited	3283	3365	3382	3383	3346	3443	3528
Starting Vehs	130	132	175	138	137	147	185
Ending Vehs	128	133	138	147	142	174	167
Travel Distance (mi)	1650	1663	1670	1671	1648	1736	1712
Travel Time (hr)	153.5	132.0	147.3	138.0	127.3	207.9	182.1
Total Delay (hr)	92.7	70.7	85.7	76.5	66.4	144.1	118.9
Total Stops	4698	4549	4732	4380	4431	5297	5031
Fuel Used (gal)	79.8	75.4	79.1	77.0	73.8	93.7	88.4

Interval #1 Information Recording

Start Time	7:00			
End Time	8:00			
Total Time (min)	60			
Volumes adjusted by Growth Factors.				
Run Number	8	9	10	Avg
Vehs Entered	3365	3347	3347	3375
Vehs Exited	3348	3336	3309	3371
Starting Vehs	115	139	107	140
Ending Vehs	132	150	145	143
Travel Distance (mi)	1662	1665	1646	1672
Travel Time (hr)	127.8	145.4	135.9	149.7
Total Delay (hr)	66.4	84.0	75.0	88.0
Total Stops	4537	4647	4723	4697
Fuel Used (gal)	74.0	78.2	75.8	79.5

Arterial Level of Service: EB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Chestnut St	1	15.9	28.1	0.0	6
Davis Ct	4	3.3	13.8	0.1	25
Dunstan St	6	1.2	8.7	0.1	28
Armory St	8	1.7	15.6	0.1	29
Trader Joe's	10	0.4	4.5	0.0	30
Cross St	12	0.5	4.7	0.0	30
Parsons St	14	1.1	10.2	0.1	30
Eddy St	16	1.6	8.4	0.1	27
Brookside Ave	18	4.4	13.1	0.1	21
Walker St	30	5.6	12.7	0.1	19
Brooks Ave	27	16.0	23.9	0.1	11
Lowell Ave	20	33.2	37.8	0.0	4
Walnut St	21	45.0	75.7	0.2	8
Total		130.0	257.2	1.0	14

Arterial Level of Service: WB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Walnut St	21	24.4	38.3	0.1	11
Lowell Ave	20	37.1	60.0	0.2	11
Brooks Ave	27	2.1	8.1	0.0	21
Walker St	30	0.9	9.0	0.1	29
Brookside Ave	18	1.2	8.5	0.1	28
Eddy St	16	2.2	11.0	0.1	25
Parsons St	14	1.0	8.0	0.1	28
Cross St	12	0.7	10.1	0.1	30
Trader Joe's	10	0.4	5.0	0.0	28
Armory St	8	0.7	4.7	0.0	29
Dunstan St	6	1.1	15.4	0.1	29
Davis Ct	4	0.5	8.2	0.1	30
Chestnut St	1	11.2	21.8	0.1	16
Total		83.5	208.2	1.1	18

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:12	8:12	8:12	8:12	8:12	8:12	8:12
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3447	3463	3504	3437	3429	3563	3538
Vehs Exited	3474	3450	3490	3407	3418	3531	3547
Starting Vehs	151	115	118	152	120	142	112
Ending Vehs	124	128	132	182	131	174	103
Travel Distance (mi)	1635	1649	1620	1566	1564	1628	1603
Travel Time (hr)	131.1	123.4	121.1	233.5	163.1	136.6	114.1
Total Delay (hr)	70.7	62.5	61.2	175.6	105.1	76.2	54.8
Total Stops	4400	4427	4386	4848	4638	4689	4413
Fuel Used (gal)	75.3	73.7	72.8	97.2	80.6	76.5	71.0

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:12	8:12	8:12	8:12
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3527	3564	3551	3501
Vehs Exited	3560	3560	3562	3498
Starting Vehs	150	104	123	127
Ending Vehs	117	108	112	128
Travel Distance (mi)	1641	1672	1667	1624
Travel Time (hr)	131.9	138.5	122.5	141.6
Total Delay (hr)	71.3	76.7	60.8	81.5
Total Stops	4602	4799	4687	4583
Fuel Used (gal)	76.0	77.9	74.6	77.6

Interval #0 Information Seeding

Start Time	6:57
End Time	7:12
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:12
End Time	8:12
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3447	3463	3504	3437	3429	3563	3538
Vehs Exited	3474	3450	3490	3407	3418	3531	3547
Starting Vehs	151	115	118	152	120	142	112
Ending Vehs	124	128	132	182	131	174	103
Travel Distance (mi)	1635	1649	1620	1566	1564	1628	1603
Travel Time (hr)	131.1	123.4	121.1	233.5	163.1	136.6	114.1
Total Delay (hr)	70.7	62.5	61.2	175.6	105.1	76.2	54.8
Total Stops	4400	4427	4386	4848	4638	4689	4413
Fuel Used (gal)	75.3	73.7	72.8	97.2	80.6	76.5	71.0

Interval #1 Information Recording

Start Time	7:12
End Time	8:12
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3527	3564	3551	3501
Vehs Exited	3560	3560	3562	3498
Starting Vehs	150	104	123	127
Ending Vehs	117	108	112	128
Travel Distance (mi)	1641	1672	1667	1624
Travel Time (hr)	131.9	138.5	122.5	141.6
Total Delay (hr)	71.3	76.7	60.8	81.5
Total Stops	4602	4799	4687	4583
Fuel Used (gal)	76.0	77.9	74.6	77.6

Arterial Level of Service: EB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Chestnut St	1	14.5	20.7	0.0	6
Davis Ct	4	2.4	12.9	0.1	27
Dunstan St	6	1.2	8.6	0.1	29
Armory St	8	1.6	15.4	0.1	29
Trader Joe's	10	0.4	4.5	0.0	30
Cross St	12	0.4	4.6	0.0	30
Parsons St	14	1.0	10.1	0.1	30
Eddy St	16	0.9	7.6	0.1	29
Brookside Ave	18	2.2	10.9	0.1	25
Walker St	30	0.9	8.0	0.1	30
Brooks Ave	27	2.3	10.1	0.1	26
Lowell Ave	20	23.0	27.5	0.0	6
Walnut St	21	37.2	68.3	0.2	9
Total		87.8	209.2	1.0	17

Arterial Level of Service: WB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Walnut St	21	51.5	85.1	0.1	6
Lowell Ave	20	48.7	71.1	0.2	9
Brooks Ave	27	2.6	8.5	0.0	20
Walker St	30	1.4	9.5	0.1	27
Brookside Ave	18	1.3	8.8	0.1	27
Eddy St	16	3.2	12.0	0.1	23
Parsons St	14	1.6	8.5	0.1	26
Cross St	12	1.0	10.5	0.1	29
Trader Joe's	10	0.9	5.4	0.0	26
Armory St	8	1.4	5.3	0.0	25
Dunstan St	6	1.4	15.5	0.1	29
Davis Ct	4	0.5	8.1	0.1	31
Chestnut St	1	9.7	20.2	0.1	17
Total		125.2	268.5	1.1	15

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	7:30	7:30	7:30	7:30	7:30	7:30	7:30
End Time	8:45	8:45	8:45	8:45	8:45	8:45	8:45
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3634	3608	3677	3640	3687	3672	3656
Vehs Exited	3551	3613	3607	3596	3602	3638	3550
Starting Vehs	152	193	162	146	101	186	178
Ending Vehs	235	188	232	190	186	220	284
Travel Distance (mi)	1749	1790	1805	1805	1764	1813	1797
Travel Time (hr)	207.3	219.5	231.0	215.8	173.0	260.9	317.2
Total Delay (hr)	142.9	153.5	164.7	149.1	107.8	194.2	251.3
Total Stops	5729	5410	5926	5430	5267	6031	6682
Fuel Used (gal)	94.9	99.1	102.0	98.5	87.4	109.1	121.1

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	7:30	7:30	7:30	7:30
End Time	8:45	8:45	8:45	8:45
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3621	3675	3776	3664
Vehs Exited	3527	3532	3721	3591
Starting Vehs	145	124	187	152
Ending Vehs	239	267	242	217
Travel Distance (mi)	1773	1781	1886	1796
Travel Time (hr)	209.5	189.9	248.4	227.2
Total Delay (hr)	144.1	124.3	179.5	161.1
Total Stops	5742	5716	6230	5817
Fuel Used (gal)	95.9	92.1	107.9	100.8

Interval #0 Information Seeding

Start Time	7:30
End Time	7:45
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:45
End Time	8:45
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3634	3608	3677	3640	3687	3672	3656
Vehs Exited	3551	3613	3607	3596	3602	3638	3550
Starting Vehs	152	193	162	146	101	186	178
Ending Vehs	235	188	232	190	186	220	284
Travel Distance (mi)	1749	1790	1805	1805	1764	1813	1797
Travel Time (hr)	207.3	219.5	231.0	215.8	173.0	260.9	317.2
Total Delay (hr)	142.9	153.5	164.7	149.1	107.8	194.2	251.3
Total Stops	5729	5410	5926	5430	5267	6031	6682
Fuel Used (gal)	94.9	99.1	102.0	98.5	87.4	109.1	121.1

Interval #1 Information Recording

Start Time	7:45
End Time	8:45
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3621	3675	3776	3664
Vehs Exited	3527	3532	3721	3591
Starting Vehs	145	124	187	152
Ending Vehs	239	267	242	217
Travel Distance (mi)	1773	1781	1886	1796
Travel Time (hr)	209.5	189.9	248.4	227.2
Total Delay (hr)	144.1	124.3	179.5	161.1
Total Stops	5742	5716	6230	5817
Fuel Used (gal)	95.9	92.1	107.9	100.8

Arterial Level of Service: EB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Chestnut St	1	16.3	31.4	0.0	6
Davis Ct	4	3.7	14.2	0.1	24
Dunstan St	6	2.5	10.0	0.1	25
Armory St	8	2.0	15.8	0.1	29
Trader Joe's	10	0.5	4.6	0.0	29
Cross St	12	0.5	4.8	0.0	29
Parsons St	14	2.1	11.2	0.1	27
Eddy St	16	4.1	10.9	0.1	20
Brookside Ave	18	12.8	21.6	0.1	13
Walker St	30	15.7	22.9	0.1	10
Brooks Ave	27	27.5	35.7	0.1	7
Lowell Ave	20	37.8	42.4	0.0	4
Walnut St	21	70.3	101.3	0.2	6
Total		195.7	326.7	1.0	11

Arterial Level of Service: WB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Walnut St	21	28.6	42.4	0.1	10
Lowell Ave	20	24.5	47.6	0.2	13
Brooks Ave	27	2.3	8.2	0.0	20
Walker St	30	0.9	9.0	0.1	29
Brookside Ave	18	1.4	8.7	0.1	27
Eddy St	16	2.3	11.1	0.1	25
Parsons St	14	1.2	8.2	0.1	27
Cross St	12	0.8	10.3	0.1	29
Trader Joe's	10	0.5	5.1	0.0	27
Armory St	8	0.8	4.8	0.0	28
Dunstan St	6	1.6	15.8	0.1	29
Davis Ct	4	0.6	8.3	0.1	30
Chestnut St	1	10.9	21.4	0.1	16
Total		76.5	200.8	1.1	19

Summary of All Intervals

Run Number	1	2	3	4	5	6	7
Start Time	6:57	6:57	6:57	6:57	6:57	6:57	6:57
End Time	8:12	8:12	8:12	8:12	8:12	8:12	8:12
Total Time (min)	75	75	75	75	75	75	75
Time Recorded (min)	60	60	60	60	60	60	60
# of Intervals	2	2	2	2	2	2	2
# of Recorded Intervals	1	1	1	1	1	1	1
Vehs Entered	3689	3742	3885	3712	3703	3701	3848
Vehs Exited	3692	3686	3840	3737	3608	3675	3851
Starting Vehs	162	149	186	156	132	156	146
Ending Vehs	159	205	231	131	227	182	143
Travel Distance (mi)	1762	1709	1787	1740	1697	1732	1767
Travel Time (hr)	150.8	214.9	203.3	165.6	170.4	205.0	143.4
Total Delay (hr)	85.9	151.7	137.3	101.2	107.6	141.1	77.8
Total Stops	5061	5248	5486	5401	5037	5037	5096
Fuel Used (gal)	83.6	97.0	96.5	86.4	86.0	95.4	82.4

Summary of All Intervals

Run Number	8	9	10	Avg
Start Time	6:57	6:57	6:57	6:57
End Time	8:12	8:12	8:12	8:12
Total Time (min)	75	75	75	75
Time Recorded (min)	60	60	60	60
# of Intervals	2	2	2	2
# of Recorded Intervals	1	1	1	1
Vehs Entered	3622	3703	3727	3732
Vehs Exited	3519	3663	3699	3699
Starting Vehs	120	166	166	152
Ending Vehs	223	206	194	185
Travel Distance (mi)	1652	1664	1727	1724
Travel Time (hr)	216.1	156.9	218.1	184.4
Total Delay (hr)	155.1	94.8	154.3	120.7
Total Stops	4938	4851	5384	5151
Fuel Used (gal)	95.4	82.0	98.1	90.3

Interval #0 Information Seeding

Start Time	6:57
End Time	7:12
Total Time (min)	15
Volumes adjusted by Growth Factors.	
No data recorded this interval.	

Interval #1 Information Recording

Start Time	7:12
End Time	8:12
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	1	2	3	4	5	6	7
Vehs Entered	3689	3742	3885	3712	3703	3701	3848
Vehs Exited	3692	3686	3840	3737	3608	3675	3851
Starting Vehs	162	149	186	156	132	156	146
Ending Vehs	159	205	231	131	227	182	143
Travel Distance (mi)	1762	1709	1787	1740	1697	1732	1767
Travel Time (hr)	150.8	214.9	203.3	165.6	170.4	205.0	143.4
Total Delay (hr)	85.9	151.7	137.3	101.2	107.6	141.1	77.8
Total Stops	5061	5248	5486	5401	5037	5037	5096
Fuel Used (gal)	83.6	97.0	96.5	86.4	86.0	95.4	82.4

Interval #1 Information Recording

Start Time	7:12
End Time	8:12
Total Time (min)	60

Volumes adjusted by Growth Factors.

Run Number	8	9	10	Avg
Vehs Entered	3622	3703	3727	3732
Vehs Exited	3519	3663	3699	3699
Starting Vehs	120	166	166	152
Ending Vehs	223	206	194	185
Travel Distance (mi)	1652	1664	1727	1724
Travel Time (hr)	216.1	156.9	218.1	184.4
Total Delay (hr)	155.1	94.8	154.3	120.7
Total Stops	4938	4851	5384	5151
Fuel Used (gal)	95.4	82.0	98.1	90.3

Arterial Level of Service: EB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Chestnut St	1	14.4	21.2	0.0	7
Davis Ct	4	2.6	13.1	0.1	27
Dunstan St	6	2.0	9.4	0.1	26
Armory St	8	1.9	15.6	0.1	29
Trader Joe's	10	0.4	4.5	0.0	30
Cross St	12	0.4	4.6	0.0	30
Parsons St	14	1.0	10.1	0.1	30
Eddy St	16	0.9	7.7	0.1	29
Brookside Ave	18	2.6	11.2	0.1	24
Walker St	30	1.0	8.1	0.1	29
Brooks Ave	27	3.1	11.0	0.1	24
Lowell Ave	20	24.9	29.4	0.0	6
Walnut St	21	61.7	92.5	0.2	7
Total		116.8	238.5	1.0	15

Arterial Level of Service: WB Washington St

Cross Street	Node	Delay (s/veh)	Travel time (s)	Dist (mi)	Arterial Speed
Walnut St	21	96.7	152.0	0.1	4
Lowell Ave	20	63.4	86.0	0.2	7
Brooks Ave	27	2.7	8.5	0.0	20
Walker St	30	1.5	9.6	0.1	27
Brookside Ave	18	1.5	8.9	0.1	27
Eddy St	16	3.5	12.3	0.1	22
Parsons St	14	1.7	8.7	0.1	26
Cross St	12	1.1	10.6	0.1	29
Trader Joe's	10	0.9	5.5	0.0	26
Armory St	8	1.4	5.4	0.0	25
Dunstan St	6	1.6	15.6	0.1	29
Davis Ct	4	0.5	8.1	0.1	30
Chestnut St	1	10.4	21.0	0.1	16
Total		186.9	352.1	1.1	12



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