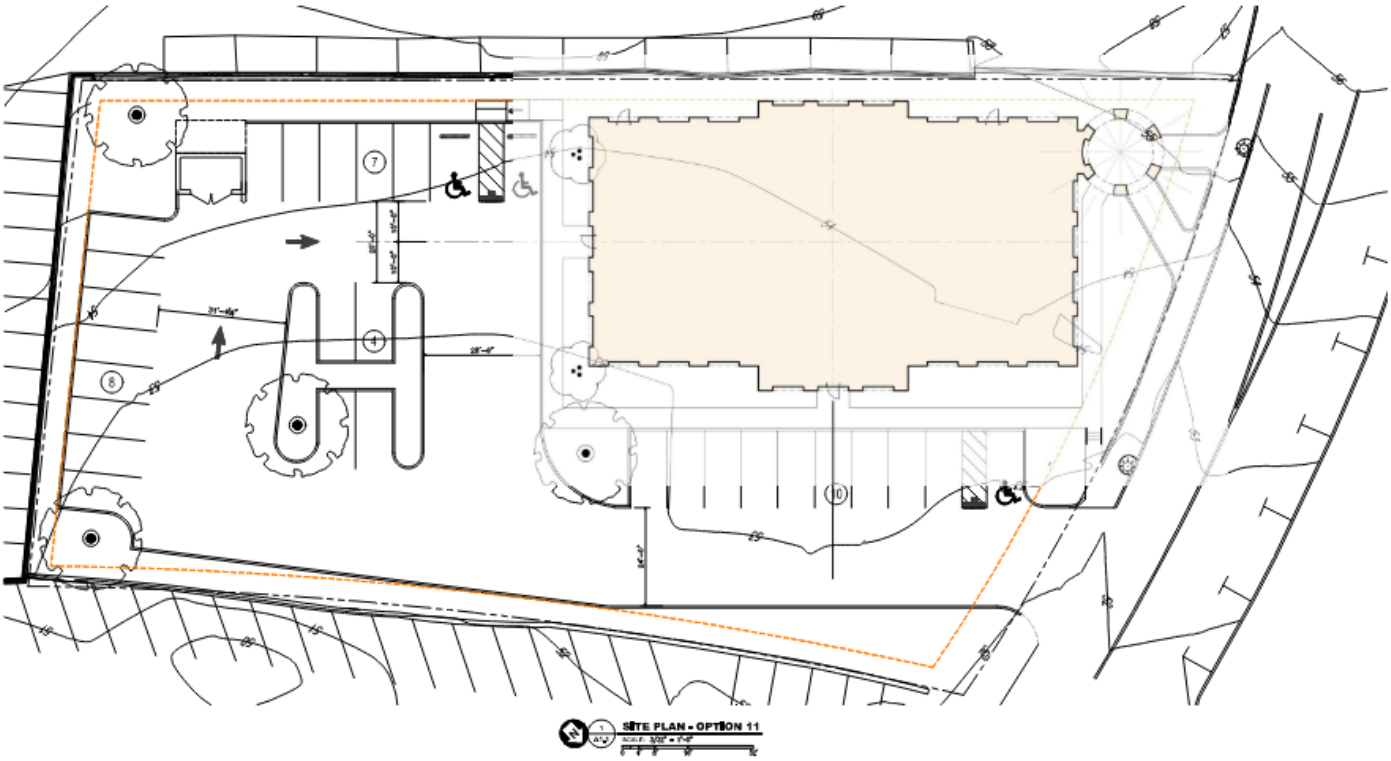
Traffic Impact & Access Study for a Proposed Redevelopment of a Walk-In Bank

FIRST CITIZENS BANK

26 WASHINGTON STREET
WELLESLEY, MASSACHUSETTS



Kimley»Horn

December 2025
011737473

26 WASHINGTON STREET
WELLESLEY, MASSCHUSETTS

Proposed Redevelopment of a Walk-In Bank Traffic Impact & Access Study

PREPARED FOR
FIRST CITIZENS BANK

PREPARED BY
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EXECUTIVE SUMMARY

PURPOSE OF REPORT AND STUDY OBJECTIVES

The report presents the results of the traffic impact and access study for the redevelopment of a walk-in bank, First Citizens Bank, in the Town of Wellesley, located at 26 Washington Street. This report describes the area transportation system, existing traffic volumes and analysis, and the calculation of Future No-Build and Future Build traffic volumes and analysis. The Future Build year for this project is 2032. The methodology is consistent with the Massachusetts Department of Transportation (MassDOT) traffic analysis guidelines.

SITE LOCATION AND STUDY AREA

The existing building, which previously served as a hardware store and is no longer in operation, is located at 26 Washington Street in the Town of Wellesley, Massachusetts. There are two (2) existing curb cuts along Washington Street, with one (1) being a primary driveway and the other being gated. The proposed redevelopment will include a walk-in bank, also known as First Citizens Bank, consisting of two (2) stories: the first floor as a walk-in bank, with a gross area of 7,349 square feet (SF), and the second floor as small office space, with a gross area of 7,385 SF. The total gross area of the redevelopment is 14,374 SF. In addition to the walk-in bank and the small office building, there will be an ATM which can be accessed 24/7. As part of the redevelopment, there will be one (1) curb cut for site access along Washington Street.

PRINCIPAL FINDINGS AND CONCLUSIONS

The analysis of traffic with respect to the redevelopment of a First Citizens Bank in the Town of Wellesley, located at 26 Washington Street, was completed following standard practice. The key findings of this traffic impact and access study are as follows:

- The redevelopment of the walk-in bank, First Citizens Bank, is expected to generate 64 net new trips (40 entering and 24 exiting) during the weekday AM peak hour and 73 net new trips (30 entering and 43 exiting) during the weekday PM peak hour.
- There were 55 reported crashes at the four (4) study intersections, with Washington Street at River Street experiencing 62% of the total crashes within the study area. The calculated intersection crash rate for Washington Street at River Street is 0.67, which is above the MassDOT District 6 average unsignalized intersection crash rate, 0.52. Additionally, left-turn movements on River Street are prohibited between 7:00 AM – 9:00 AM and 4:00 PM – 6:00 PM.
- The measured sight distances exceed the required distances at the proposed Site Driveway along Washington Street.
- There are specific movements that are or will operate at LOS D or worse, regardless of the Project, but there are no minor approaches that will have 50 or more peak hour vehicle trips.
- The Project is not expected to result in significant changes to the overall operating conditions at the study area intersections.
- The westbound (exiting) movements at the proposed Site Driveway are anticipated to operate at a LOS F during the 2032 Build Condition AM and PM peak hours.

MITIGATION

While the Project itself is not expected to result in significant changes, the importance of creating safe and efficient access for the Project is essential to maintain a safe multimodal traveling network for non-site related traffic. The following mitigation measure have been identified below and are intended to provide for safe site access:

- STOP control on Site Driveway with STOP sign (R1-1) installed compliant with the Manual on Uniform Traffic Control Devices (MUTCD).

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INTRODUCTION

Kimley-Horn and Associates, Inc. has prepared this report to document the analysis and potential traffic impacts associated with the redevelopment of a walk-in bank, also known as First Citizens Bank, located at 26 Washington Street, in the Town of Wellesley. The existing building previously served as a hardware store and is no longer in operation. There are two (2) existing curb cuts along Washington Street, with one (1) being a primary driveway and the other being gated. The proposed redevelopment will consist of two (2) stories: the first floor as a walk-in bank of 7,349 square feet (SF) and the second floor as small office space of 7,385 SF, with a total gross area of 14,374 SF. In addition to the walk-in bank and the small office building, an ATM will be available 24/7. As part of the redevelopment, there will be one (1) curb cut for site access along Washington Street.

The Site Plan is included in **Appendix K** The purpose of this study was to assess the redevelopment's impact on the abutting roadway network, review the site access, and internal circulation. **Figure 1** illustrates the location of the proposed redevelopment and study intersections.

This report summarizes the data collection, trip generation, trip distribution and assignment, intersection capacity analysis, and sight distance analysis for the redevelopment of the First Citizens Bank.

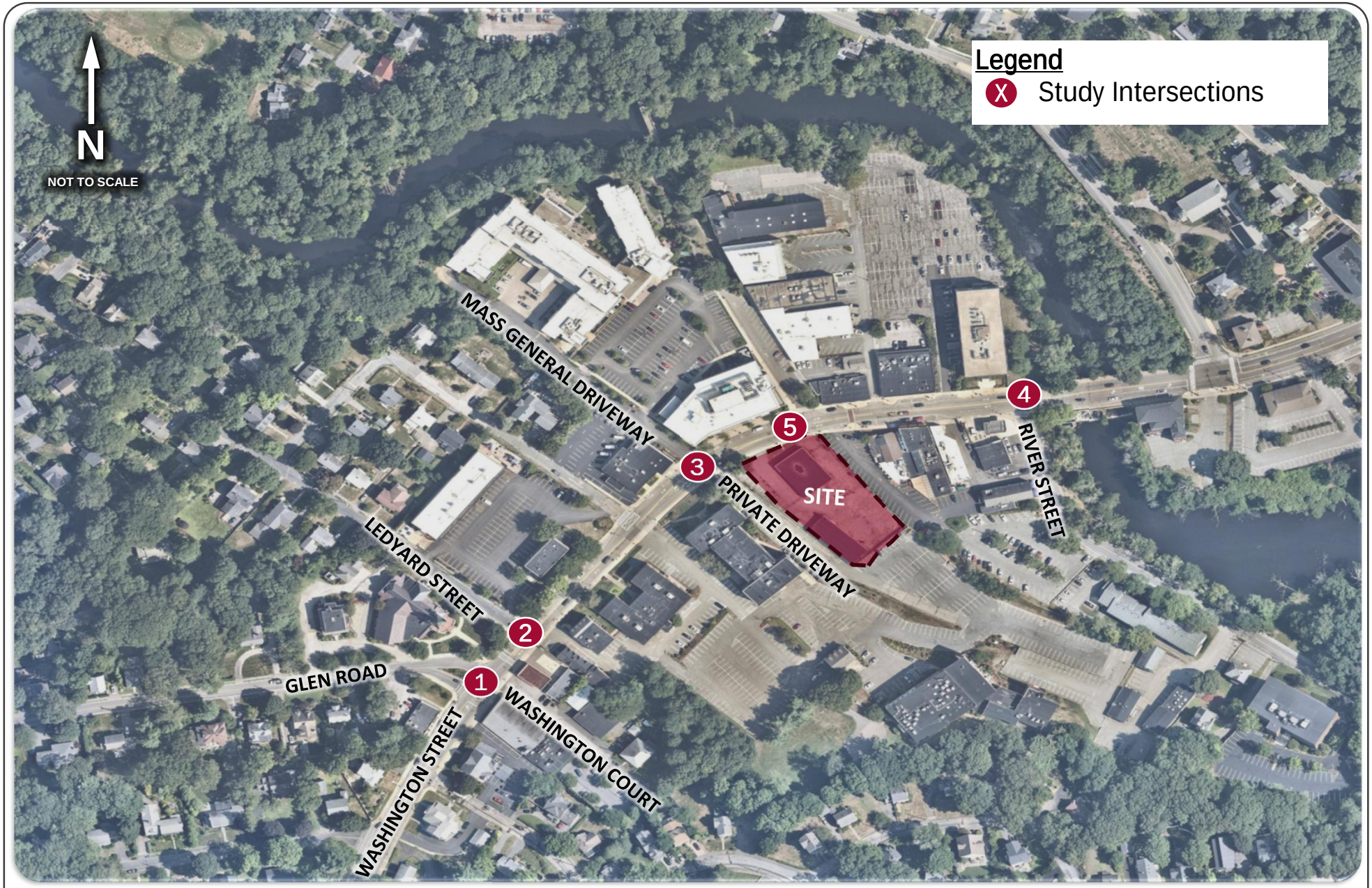

Figure 1
Site Location
First Citizens Bank TIAS
Wellesley, MA 02481

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EXISTING CONDITIONS

ROADWAY NETWORKS

Evaluation of the traffic impacts associated with the proposed redevelopment in the surrounding roadway network in the Town of Wellesley requires a thorough understanding of the existing roadway system in the vicinity of the site. The existing conditions observed in the study area include an inventory of the roadways, speed limits, intersection geometry, and traffic control devices. Key roadways in the study area include Washington Street, Glen Road, Washington Court, Ledyard Street, and River Street. For orientation purposes, Washington Street is considered northbound/southbound, Glen Road, Ledyard Street, and River Street are considered eastbound/westbound in the vicinity.

Washington Street (Route 16) is a north-south, two-lane undivided roadway, without a posted speed limit available within the study area. Washington Street is classified by the Massachusetts Department of Transportation (MassDOT) as a Principal Arterial and is under the jurisdiction of the Town of Wellesley. There are on-street parallel parking spaces on the west side of Washington Street throughout the study area, and on the east side between the Site Driveway and River Street.

Glen Road is an east-west, two-lane undivided roadway with a posted speed limit of 25 miles per hour (MPH). Glen Road is classified by MassDOT as a Major Collector and is under the jurisdiction of the Town of Wellesley.

Washington Court is an east-west, two-lane undivided roadway without a posted speed limit available within the study area. Washington Court is classified by MassDOT as a Local roadway and is under the jurisdiction of the Town of Wellesley.

Ledyard Street is an east-west, two-lane undivided roadway without a posted speed limit available within the study area. Ledyard Street is classified by MassDOT as a Local roadway and is under the jurisdiction of the Town of Wellesley.

River Street is an east-west, two-lane undivided roadway without a posted speed limit available within the study area. River Street is classified by MassDOT as a Local roadway and is under the jurisdiction of the Town of Wellesley.

DESCRIPTION OF STUDY INTERSECTIONS

Washington Street at Glen Road/Washington Court is a four-legged signalized intersection. The northbound approach provided by Washington Street permits all movements via one (1) dedicated left-turn lane, and one (1) shared through/right-turn lane, and the southbound approach permits all movements via one (1) shared left-turn/through/right-turn lane. The eastbound approach provided by Glen Road and the westbound approach provided by Washington Court permit all movement via one (1) shared left-turn/through/right-turn lane. Ladder crosswalk markings are provided on the north and west legs of the intersection. Pedestrians push buttons, and pedestrian signal heads without a countdown display are provided on both sides of the north and west legs.

Washington Street at Ledyard Street is a three-legged unsignalized intersection. The northbound approach provided by Washington Street permits all movement via one (1) shared left-turn/through lane, and the southbound approach permits all movement via one (1) shared through/right-turn lane. The eastbound approach provided by Ledyard Street permits all movement via one (1) shared left-turn/right-turn lane and is STOP controlled. Ladder crosswalk markings are provided on the west leg

of the intersection. There are DO NOT BLOCK INTERSECTION pavement markings on the west side of Washington Street, in front of Ledyard Street, and signage provided on the northwest corner of the intersections, which provide access to/from Ledyard Street. There are no pedestrian push buttons or pedestrian signal heads.

Washington Street at Mass General Driveway/Private Driveway is a four-legged unsignalized intersection. The northbound approach provided by Washington Street permits all movement via one (1) dedicated left-turn lane and one (1) shared through/right-turn lane, and the southbound approach permits all movements via one (1) shared left-turn/through/right-turn lane. The eastbound approach provided by Mass General Driveway, and the westbound approach provided by the Private Driveway permit all movements via one (1) shared left-turn/through/right-turn lane. There are no crosswalk markings, pedestrian push buttons, or pedestrian signal heads.

Washington Street at River Street is a three-legged unsignalized intersection. The northbound approach provided by Washington Street permits through and right-turn movement via (1) dedicated through lane and one (1) shared through/right-turn lane, and the southbound approach permits left-turn and through movements via (1) dedicated through lane and one (1) shared through/left-turn lane. The westbound approach is provided by River Street and permits left-turn and right-turn movements via one (1) shared left-turn/right-turn lane and is STOP controlled. Left-turn movements on the westbound approach via River Street are prohibited between 7:00 AM – 9:00 AM, and 4:00 PM – 6:00 PM. There is a ladder crosswalk marking located on the east leg of the intersection. There are no pedestrian push buttons or pedestrian signal heads.

PEDESTRIAN, BICYCLE, AND TRANSIT FACILITIES

Sidewalk facilities are provided on both sides of Washington Street, Glen Road, Ledyard Street, and River Street along the study corridor. There are no sidewalk facility gaps within 600 feet of the proposed redevelopment. Pavement throughout the study corridor along Washington Street is in average condition, with noticeable physical limitations at the intersection of Washington Street and Ledyard Street. There are ADA-compliant ramps located specifically at Washington Street at Glen Road, on both sides of the west leg pedestrian crosswalk, and the west side of Washington Street at the north leg pedestrian crosswalk. The sidewalk facilities along the study corridor are five (5) to seven (7) feet wide on average along Washington Street.

Shared lane markings are provided along Washington Street near the proposed redevelopment. There is an on-road bicycle lane, approximately five (5) feet in width located on the west side of Washington Street, just south of Crescent Street in close proximity to the study area.

Near to the study intersection of Washington Street at Site Driveway, the Charles River Path Trail provides pedestrians to explore the surrounding areas of the Town of Wellesley. There is a stop along the trail located on the west side of Washington Street across from the proposed First Citizens Bank Site Driveway. A map of the Charles River Path trail and other trails in Wellesley are provided in **Appendix A**.

Public transportation service in the Town of Wellesley is provided by the MetroWest Regional Transportation Authority (MWRTA). Bus Route 1 runs along Washington Street with one (1) stop located east of River Street at the Lower Falls stop location. The stop is located approximately 300 feet from the intersection of Washington Street at River Street. Service is provided from 5:22 am to 9:24 pm during the weekdays, and provided from 8:15 am to 5:15 pm during the weekend hours. The headways are typically 50 minutes during the weekdays and 1 hour and 50 minutes during the weekends. A map of the route is shown in **Figure 2**.

The full schedule for the bus route is included in **Appendix A**.

Figure 2. Bus Route 1 Blandin Hub/Woodland T Station

TRAFFIC DATA COLLECTION

Automatic traffic recorders (ATRs) were conducted for 48 hours from Wednesday, October 8, 2025, to Thursday, October 9, 2025, on Washington Street, west of Columbia Street, to collect daily traffic flow data. The ATR counts provide information on hourly volume variation, volume by vehicle type, and traffic speeds, and are included in **Appendix B.**

Along Washington Street, there are more vehicles traveling northbound in the AM peak hour and more traveling southbound in the PM peak hour. The summary of traffic volume data is shown in **Table 1**.

Table 1. Summary of Traffic Volume Data

Location	Posted Speed Limit (MPH)	85th Percentile Speed (MPH)	Average Weekday Volume[1]	Weekday AM Peak Hour			Weekday PM Peak Hour		
				Time	Veh. Vol.	Dir. Dist.	Time	Veh. Vol.	Dir. Dist.
Washington Street (west of Columbia Street)	speed limit not present	29 NB / 26 SB	14,000	7:00 – 8:00	825	60% NB / 40% SB	6:00 – 7:00	901	47% NB / 53% SB

[1] Weekday Volumes are rounded to the nearest 1,000.

The average weekday volume on Washington Street, west of Columbia Street, is approximately 14,000 vehicles per day (VPD). The average hourly volume variation is shown in **Figure 3**. The AM peak hour starts at 7:00 AM, and the PM peak hour starts at 6:00 PM. Peak hour flows represent approximately 6% and 6% of the weekday average 24-hour volume during the AM and PM peak hours, respectively. The AM

and PM distributions differ: the northbound direction accounts for 60% of traffic volume in the morning, and the southbound direction accounts for 53% in the evening. The 85th percentile speed is 29 MPH in the northbound direction and 26 MPH in the southbound direction.

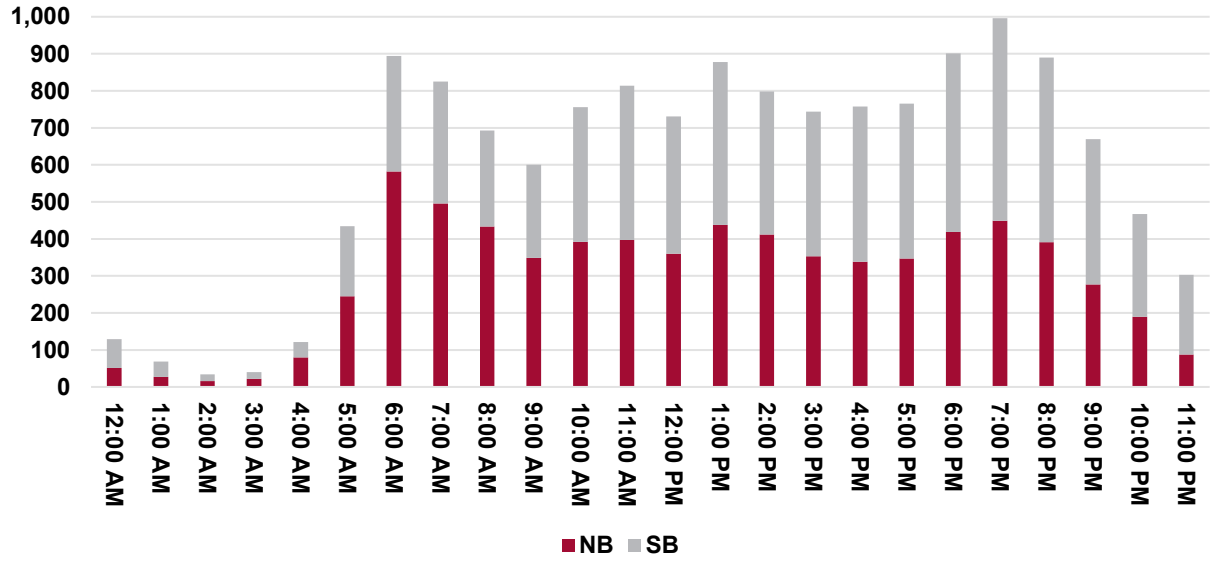

Figure 3. Hourly Volume Variation Washington Street, west of Columbia Street

Existing traffic volumes were based upon turning movements counts (TMCs) collected on Wednesday, October 8, 2025, at the four (4) study intersections as part of this analysis. Peak period TMCs were conducted during the weekday AM peak period (6:00 AM – 9:00 AM) and the weekday PM peak period (3:00 PM – 6:00 PM).

- Washington Street at Glen Road/Washington Court (signalized)
- Washington Street at Ledyard Street (one-way STOP controlled)
- Washington Street at Mass General Driveway/Private Driveway (two-way STOP controlled)
- Washington Street at River Street (one-way STOP controlled)

At the study intersections of Washington Street at Glen Road/Washington Court, and Washington Street at River Street, the percentage of heavy vehicles remained below 15 percent (15%) during the weekday AM and PM peak hours. At the study intersections of Washington Street at Ledyard Street, and Washington Street at Mass General Driveway/Private Driveway, the heavy vehicle percentage remained below 10 percent (10%) during the weekday AM and PM peak hours. The northbound and southbound directions of Washington Street experienced the highest volume of traffic during both the weekday AM and PM peak hours. At the study intersection of Washington Street at River Street, the signage prohibiting westbound left movements along River Street between 7:00 AM – 9:00 AM, and 4:00 PM – 6:00 PM is not fully enforced, as volumes are shown during the peak hours.

Based on the 2024 MassDOT weekday seasonal and axle correction factors, the October traffic volumes along study roadways are of average condition; therefore, a seasonal adjustment factor was not applied to the existing traffic volumes. The 2024 MassDOT weekday seasonal and axle correction factors can be found in **Appendix C**.

Figure 4 presents the existing turning movement volumes at the study intersection during the weekday AM and weekday PM peak hours, and the traffic data are included in **Appendix B**.

In addition to the TMCs, pedestrian and bicycle counts were collected on Wednesday, October 8, 2025. During both the weekday AM and PM peak hours, pedestrian volumes did not exceed thirteen (13) persons at any study intersection. Most pedestrian movements occurred along Washington Street, specifically on the west side, and at the study intersections of Washington Street at River Street and Washington Street at Mass General Driveway/Private Driveway. Bicycle volumes at the study intersections did not exceed more than four (4) people for any movement in both the AM and PM peak hours. Most of the bicycle volumes traveled along Washington Street within the study area. Pedestrian volumes for the weekday AM and PM peak hours are shown in **Figure 5** and bicycle volumes for the weekday AM and PM peak hours are shown in **Figure 6**.

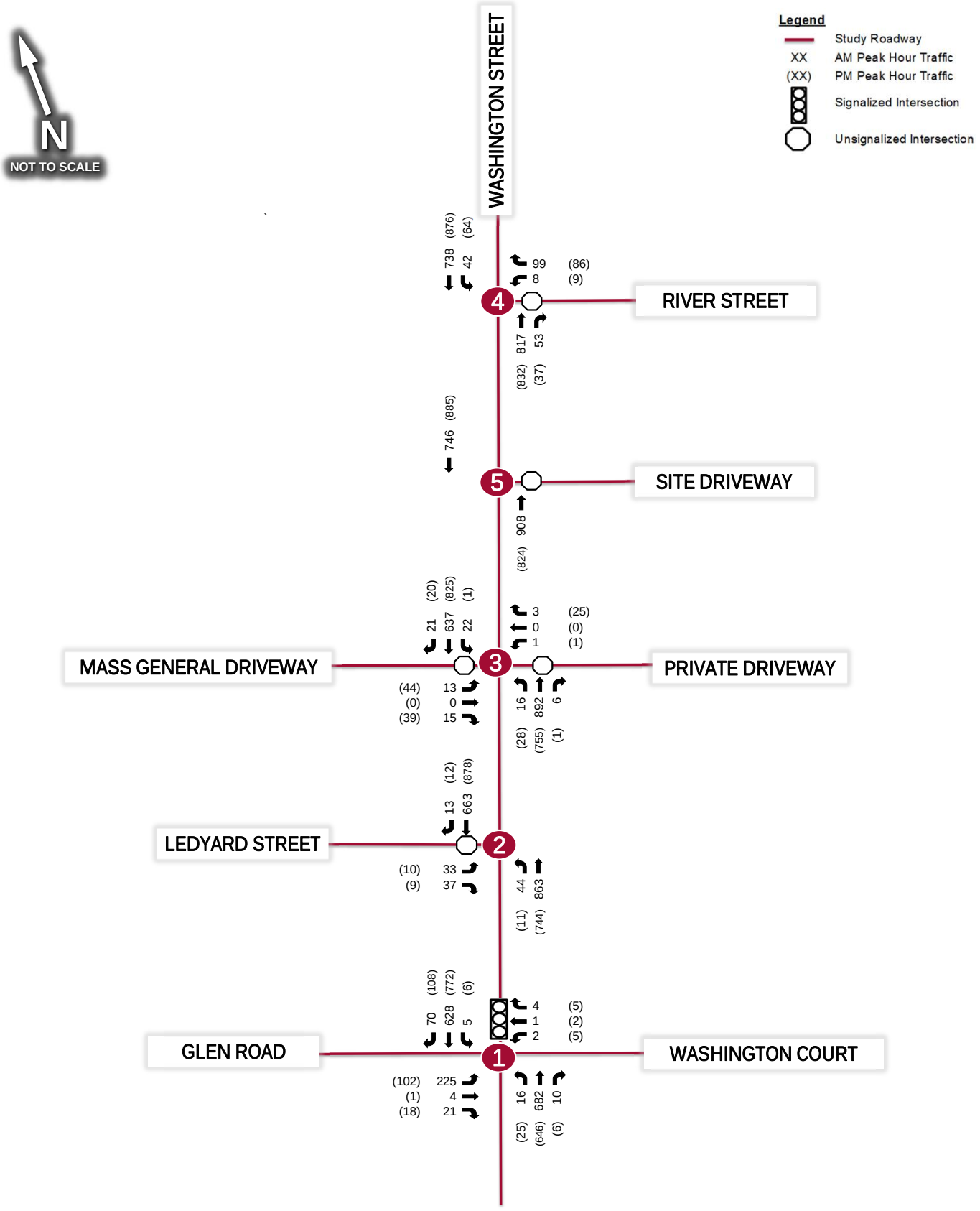

Figure 4
2025 Existing Condition Volumes
First Citizens Bank TIAS
Wellesley, MA 02481

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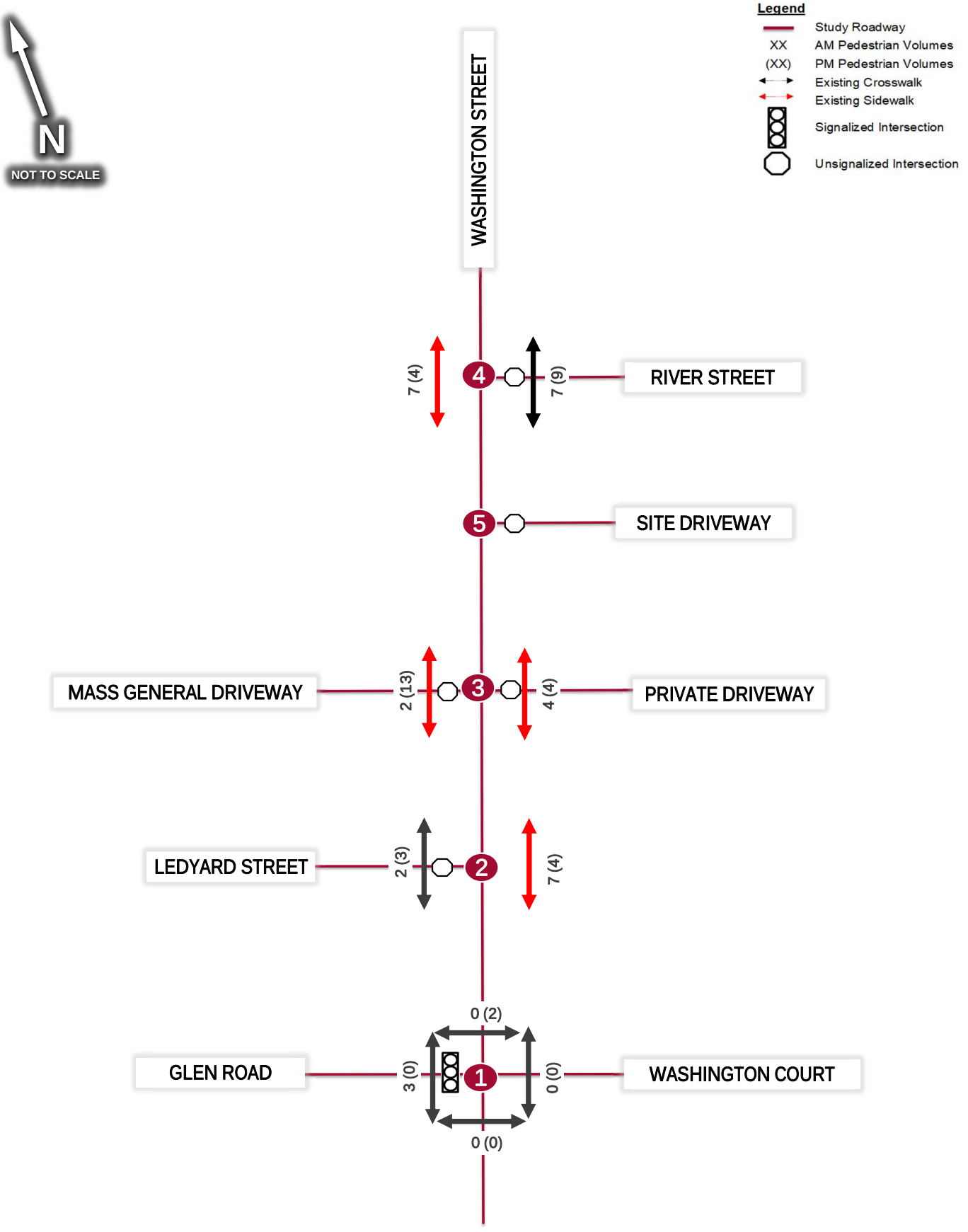

Figure 5
2025 Existing Condition Pedestrian Volumes
First Citizens Bank TIAS
Wellesley, MA 02481

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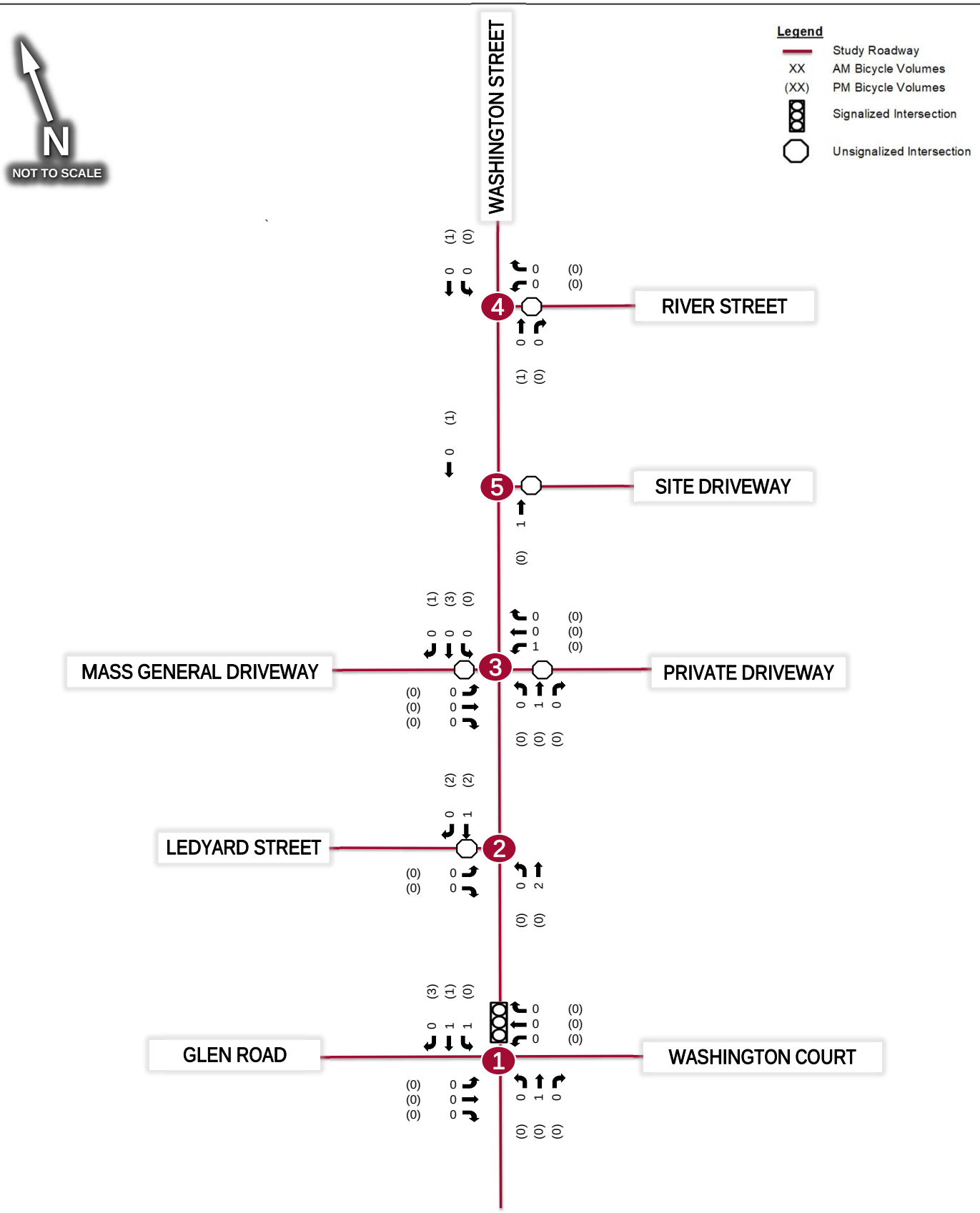

Figure 6
2025 Existing Condition Bicycle Volumes
First Citizens Bank TIAS
Wellesley, MA 02481

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CRASH HISTORY

Crash data were obtained from the MassDOT Crash Query and Visualization tool for a five-year period from January 1, 2020, to December 31, 2024, at the study intersections. **Table 2** provides a summary of the crash history at the study intersections for the 2020-2024 period. Please note that data from 2020 was during the pandemic when traffic volumes were significantly reduced, and crash data from 2022 or later is not yet considered complete by MassDOT. The full crash data worksheets for each study intersection are found in **Appendix D**.

The following summarizes the key aspects:

- There were 55 reported crashes at the (4) study intersections, with Washington Street at River Street experiencing 62% of the total crashes within the study area.
- At the study intersection of Washington Street at River Street, 56% of the crashes were sideswipe crashes.
- There were no fatalities reported at the study intersections. However, there was one (1) minor injury crash at Washington Street at Mass General Driveway/Private Driveway.
- Washington Street at River Street had an annual crash rate of 6.80, and the intersection of Washington Street at Mass General Driveway/Private Driveway had an annual crash rate of 2.80.
- The intersection crash rate of 0.67 at the intersection of Washington Street at River Street is above the MassDOT District 6 average unsignalized intersection crash rate of 0.52.
- The majority of crashes at the study intersections occurred during clear daylight and clear weather conditions.
- Using the *MassDOT Top Crash Locations* interactive map, there were no HSIP clusters present within our study area.

Table 2. Crash Summary Data 2020-2024

	Washington Street at Glen Road/Washington Court	Washington Street at Ledyard Street	Washington Street at Mass General Driveway/Private Driveway	Washington Street at River Street
Total Number of Crashes	**4**	**3**	**14**	**34**
Property Damage	4	3	13	29
Injury	0	0	1	0
Fatality	0	0	0	0
Not Reported	0	0	0	5
Manner of Collision				
Rear End	2	1	0	7
Angle	1	1	9	7
Sideswipe	0	1	3	19
Head On	0	0	0	0
Single Vehicle	1	0	2	0
Collision with Ped	0	0	0	0
Collision with Bike	0	0	0	0
Unknown	0	0	0	1

	Washington Street at Glen Road/Washington Court	Washington Street at Ledyard Street	Washington Street at Mass General Driveway/Private Driveway	Washington Street at River Street
Time of Day				
6:01 AM – 10:00 AM	0	1	2	7
10:01 AM – 4:00 PM	1	1	9	19
4:01 PM – 7:00 PM	2	1	1	6
7:01 PM – 6:00 AM	1	0	1	2
Year				
2020	1	1	1	4
2021	2	2	1	3
2022	0	0	6	8
2023	0	0	5	7
2024	1	0	1	12
Weather Conditions				
Clear	4	3	9	29
Cloudy	0	0	4	4
Wet	0	0	2	1
Snow	0	0	0	0
Other/Unknown	0	0	0	0
Light Conditions				
Daylight	2	3	12	33
Dawn/Dusk	0	0	0	0
Dark (Unlit)	0	0	0	0
Dark (Lit)	2	0	2	1
Unknown	0	0	0	0
Annual Average Crashes	**0.80**	**0.60**	**2.80**	**6.80**
Intersection Crash Rate	**0.09**	**0.07**	**0.30**	**0.67**
MassDOT District 6 Average Crash Rate	**0.71**	**0.52**	**0.52**	**0.52**
Intersection Control	**Signalized**	**Unsignalized**	**Unsignalized**	**Unsignalized**

SITE VISIT

A site visit was conducted on Thursday, October 16, 2025, during the AM peak period to assess conditions at the study intersections and along the study corridor. The site visit team observed and photographed existing conditions, including roadway geometry, pedestrian and bicycle accommodations, sight distance, and driver behavior. The key items that were observed are listed below:

- Sidewalk facilities and pedestrian accommodations are in average condition throughout the study corridor. Within the study intersections, there is a lack of detectable warning surfaces.
- Along Washington Street, east of the Site Driveway, there is a pedestrian crossing with Rectangular Rapid Flashing Beacons (RRFBs) and curb bump outs on either side to increase pedestrian safety.
- The sidewalk facilities along Washington Street average between five (5) to seven (7) feet in width. The north sidewalk on River Street and the south side sidewalk on Ledyard Street are in poor condition due to the steep grade that exists there. There is also some deterioration within the Ledyard Street sidewalk facilities.
- Pedestrians were observed along Washington Street during the site visit, utilizing the current sidewalk and pedestrian facilities.
- Curb cuts exist throughout the study roadway near the on-street parking spaces and side streets.
- The parallel parking spaces along Washington Street are often utilized during our time of study between 8:00 AM and 10:00 AM.
- The intersection of Washington Street at Glen Road/Washington Court has heavy queueing on both the northbound approach and the eastbound approach on Glen Road. The dedicated northbound left approach lane is permissive.

West leg pedestrian crosswalk
at Washington Street at Glen Road.

Southwest corner of
Washington Street at Ledyard Street.

Sight distance looking south from the existing
Primary Site Driveway.

Usage of parallel parking spaces along
Washington Street.

Southeast corner of
Washington Street at River Street.

Pedestrian crosswalk with RRFB's located along
Washington Street, north of the Project site.

FUTURE NO-BUILD CONDITIONS

Future No-Build traffic conditions are defined as expected traffic conditions on the roadway network in the year 2032 without the construction of the walk-in bank. Future No-Build traffic volumes used in the analysis represent the existing traffic volumes grown to the year 2032.

BACKGROUND TRAFFIC GROWTH

Traffic growth on the transportation network was determined based upon historic growth trends at nearby MassDOT traffic count stations from the year 2020 to 2024.

The MassDOT count stations referenced in this analysis include the following locations. The historic growth rate analysis based on MassDOT count station is 2.6% over the five (5) year period.

- MassDOT count station no. 6726 is located on Washington Street, between Route I-95/128 and Grove Street
- MassDOT count station no. S-16-026-207-81 is located on Washington Street, East of I-95
- MassDOT count station no. 4015 is located on Park Road at Mass. Pike Underpass, north of Orchard Avenue
- MassDOT count station no. 6206 is located on Wellesley Avenue, east of August Way
- MassDOT count station no. 6725 is located on Washington Street, East of Forest Street

To provide a conservative analysis, an annual growth of two percent (2.0%) will be applied annually to the Existing (2025) traffic volumes for Future (2032) No-Build Conditions. The growth rate calculations are contained in **Appendix E**.

VICINITY DEVELOPMENTS AND PLANNED PROJECTS

The Town of Wellesley and City of Newton Planning Boards were reviewed to determine if there are any upcoming or planned development sites that should be included in the Future No-Build Conditions. There were several planned developments; however, none were in close proximity to the site, and the estimated trip generation from the developments can be included in the background growth rate.

At the time of this report, there are no other planned development of Transportation Improvement Program (TIP) projects in the surrounding area that would impact our study locations.

Figure 7 presents the Future 2032 No-Build condition volumes for the weekday AM and PM peak hours.

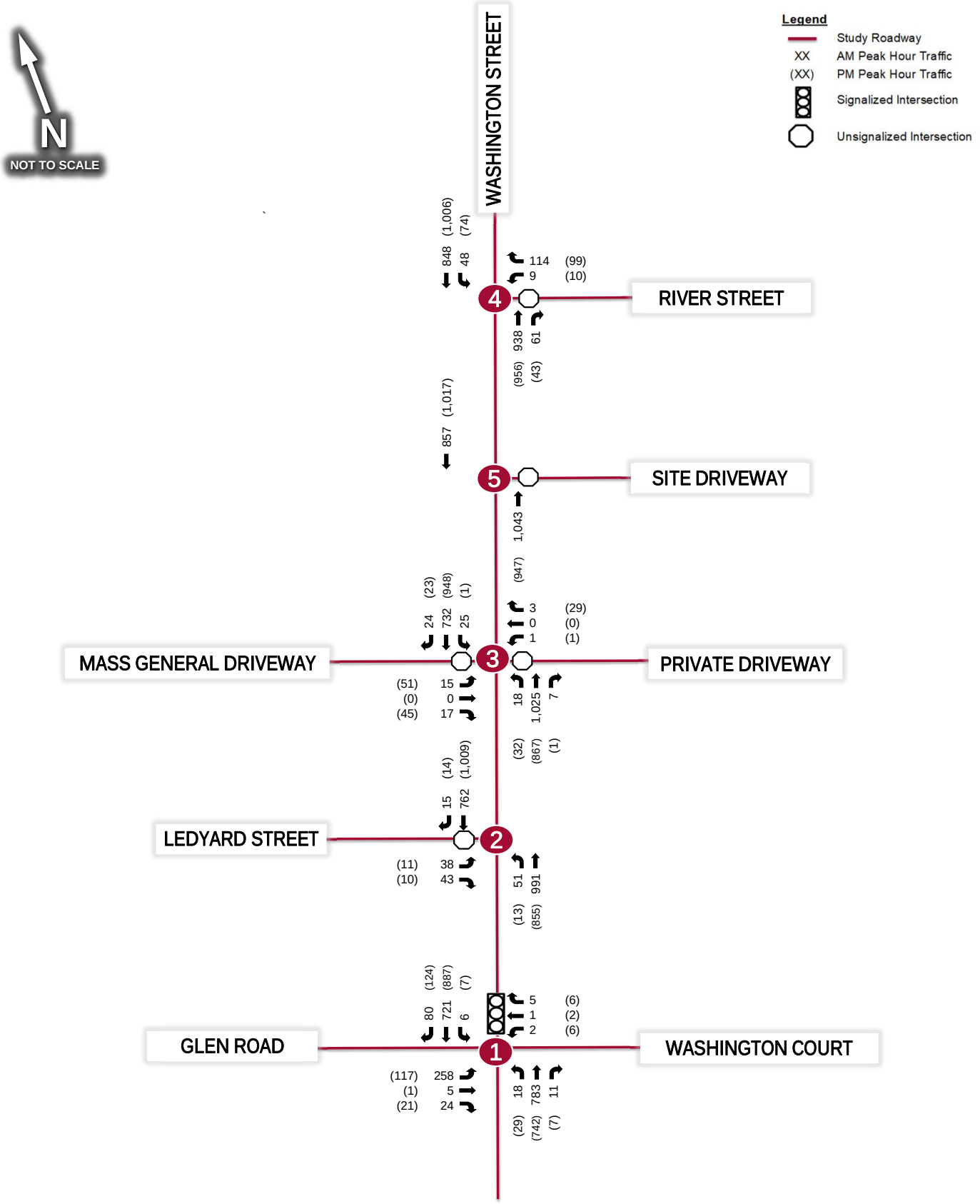


Figure 7
2032 No-Build Condition Volumes
First Citizens Bank TIAS
Wellesley, MA 02481

Kimley»Horn

PROJECT TRAFFIC

Project traffic used in this analysis is defined as the vehicle trips expected to be generated by the redevelopment and the distribution and assignment of that traffic over the study roadway network. The redevelopment of the walk-in bank, First Citizens Bank, is 14,374 SF, the first story is a walk-in bank of 7,349 SF, and the second story is a small office building that is 7,385 SF. A walk-in bank is described as a bank that does not have drive-in lanes but typically has a non-drive-through automatic teller machine (ATM). The small office building's land use is the same as a general office building, with the constraints that the gross floor area is less than or equal to 10,000 square feet.

TRIP GENERATION

Trip generation calculations for the redevelopment were performed using the Institute of Transportation Engineers' (ITE) *Trip Generation Manual,* 12th Edition. The trip generation for First Citizens Bank was determined using ITE Land Use Code (LUC) 911 (Walk-in Bank) and LUC 712 (Small Office Building). First Citizens Bank in Wellesley has a 24/7 on-site ATM. However, the AM peak hour trips were estimated using LUC 912 (Drive-in Bank), since ITE *Trip Generation Manual*, 12th Edition, does not provide weekday AM estimates for LUC 911 (Walk-in Bank). Project trips were estimated for the weekday AM and PM peak hours.

As shown in **Table 3,** during the weekday AM peak hour, the small office building is expected to generate 12 trips (10 entering and 2 exiting) and the Walk-in Bank is expected to generate 73 trips (42 entering and 31 exiting). The total trips generated for the AM peak hour are 85 trips (52 entering and 33 exiting). During the weekday PM peak hour, the small office building is expected to generate 16 trips (5 entering and 11 exiting) and the Walk-In Bank is expected to generate 89 trips (39 entering and 50 exiting). The total trips generated for the PM peak hour are 105 (44 entering and 61 exiting. The trip generation calculations and background information are included in **Appendix F**.

Pass-by trips are a subset of trips traveling along a roadway that stops by a nearby commercial development. They are motorists (or patrons) already on the roadway and are not new trips being generated. Pass-by capture rates were determined based on average rates provided in the ITE's *Trip Generation Handbook,* 3rd Edition. Pass-by rates are not provided for LUC 911 (Walk-in Bank); therefore, pass-by rates for LUC 912 (Drive-in Bank) were utilized. The average pass-by rate for LUC 912 (Drive-in Bank) is twenty-nine percent (29%) during the AM peak hour and thirty-five percent (35%) during the PM peak hour. Pass-by information and calculations are provided in **Appendix F**.

The proposed redevelopment, First Citizens Bank, is expected to generate 64 trips (40 entering and 24 exiting) during the AM peak hour and 73 trips (30 entering and 43 exiting) during the PM peak hour.

Table 3. Trip Generation

AM Peak Hour (PM Peak Hour)				
Future Land Use (ITE Code)	**Scale**	**Total Peak Hour Trips**	**Entering Trips**	**Exiting Trips**
Small Office Building (712)	7,385 SF	12 (16)	10 (5)	2 (11)
Walk-in Bank (911)[1]	7,349 SF	73 (89)	42 (39)	31 (50)
Gross New Trips		**85 (105)**	**52 (44)**	**33 (61)**
Pass-by Trips[2]		**21 (32)**	**12 (14)**	**9 (18)**
Total Net New Trips		**64 (73)**	**40 (30)**	**24 (43)**

[1] Trip Generation based on ITE's Trip Generation Manual, 12th Edition. AM Peak Hour Trips generated using ITE's Trip Generation Handbook for Drive-In Bank (Land Use Code 912).
[2] Pass-by trips based on ITE's Trip Generation Handbook, 3rd Edition. Pass-by trips estimated using ITE's Trip Generation Handbook for Drive-In Bank (Land Use Code 912).

TRIP DISTRIBUTION AND ASSIGNMENT

The anticipated distribution of project traffic was forecast for the trips expected to be generated by the redevelopment of the First Citizen Bank. The distribution was estimated for all vehicles that may access the site. For the redevelopment of the First Citizens Bank, the trip distribution estimate was based on existing traffic patterns.

- 50% to/from the North (Washington Street)
- 38% to/from the South (Washington Street)
- 10% to/from the West (Glen Road)
- 2% to/from the West (Ledyard Street)

Figure 8 and **Figure 9** presents the trip distribution and trip assignment for the weekday AM and weekday PM peak hours**. Figure 10** and **Figure 11** presents the pass-by distribution and pass-by assignment for the weekday AM and weekday PM peak hours. **Figure 12** presents the total trips in relation to the site.

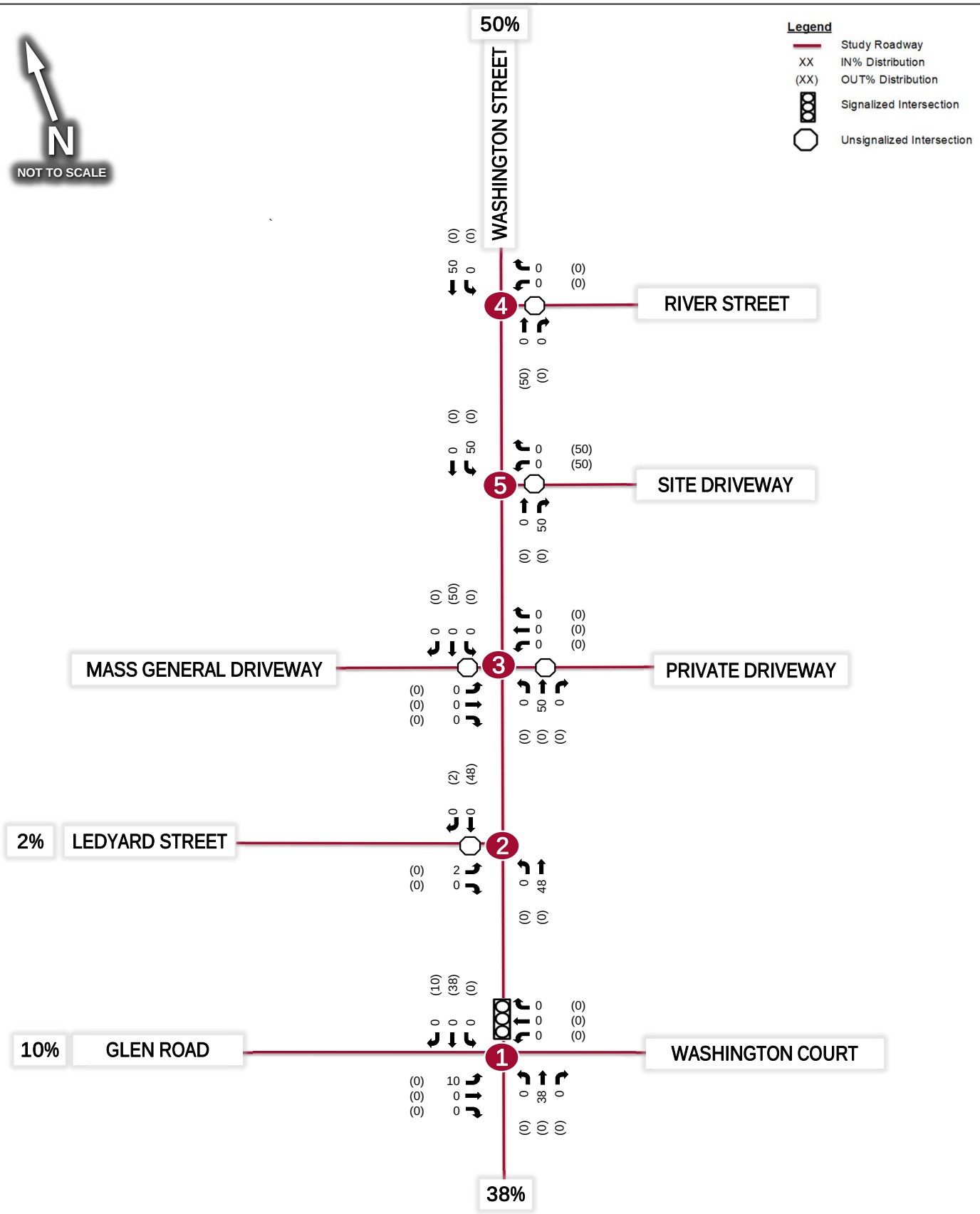


Figure 8
Trip Distribution
First Citizens Bank TIAS
Wellesley, MA 02481

Kimley»Horn

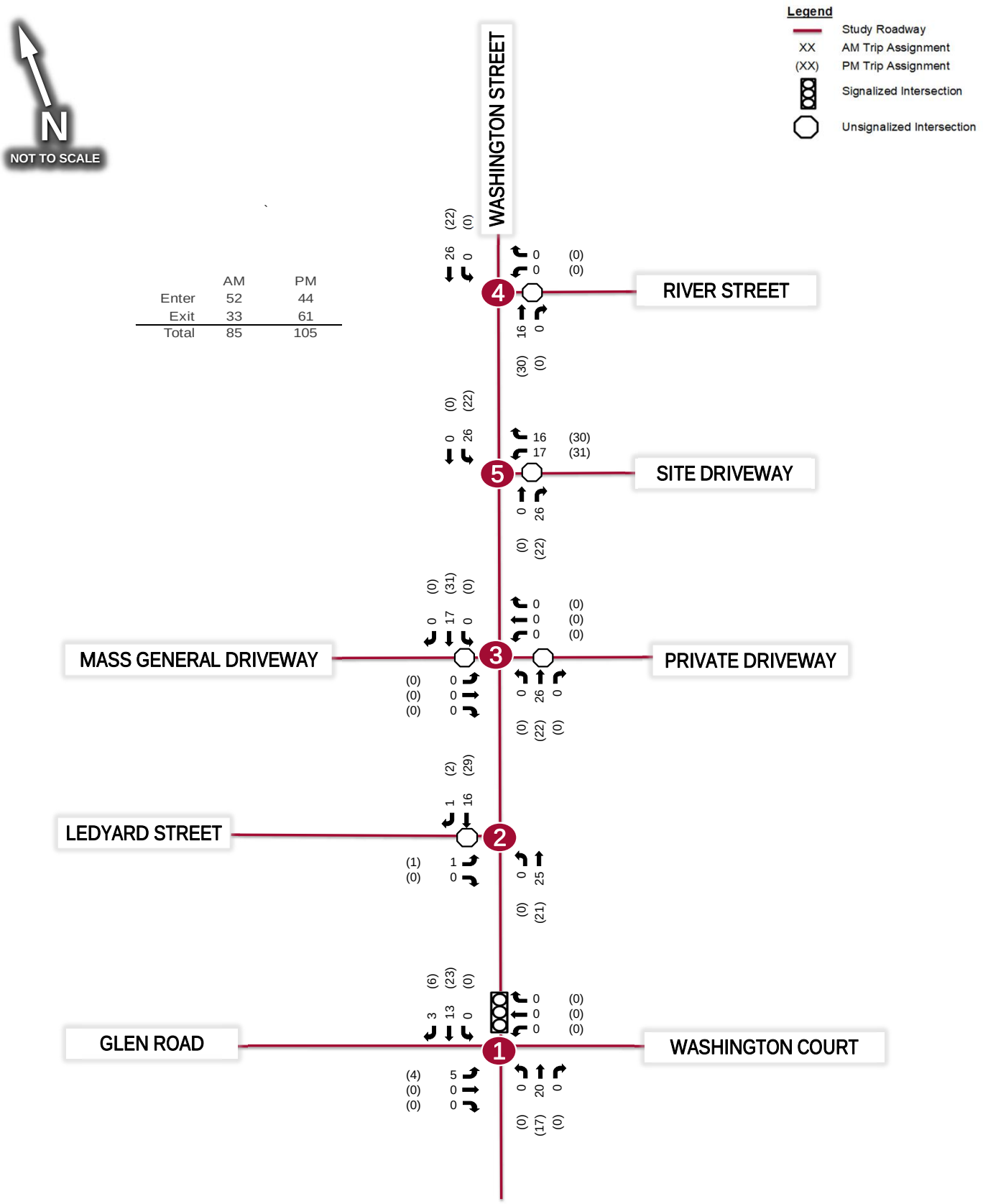


Figure 9
Trip Assignment
First Citizens Bank TIAS
Wellesley, MA 02481

Kimley»Horn

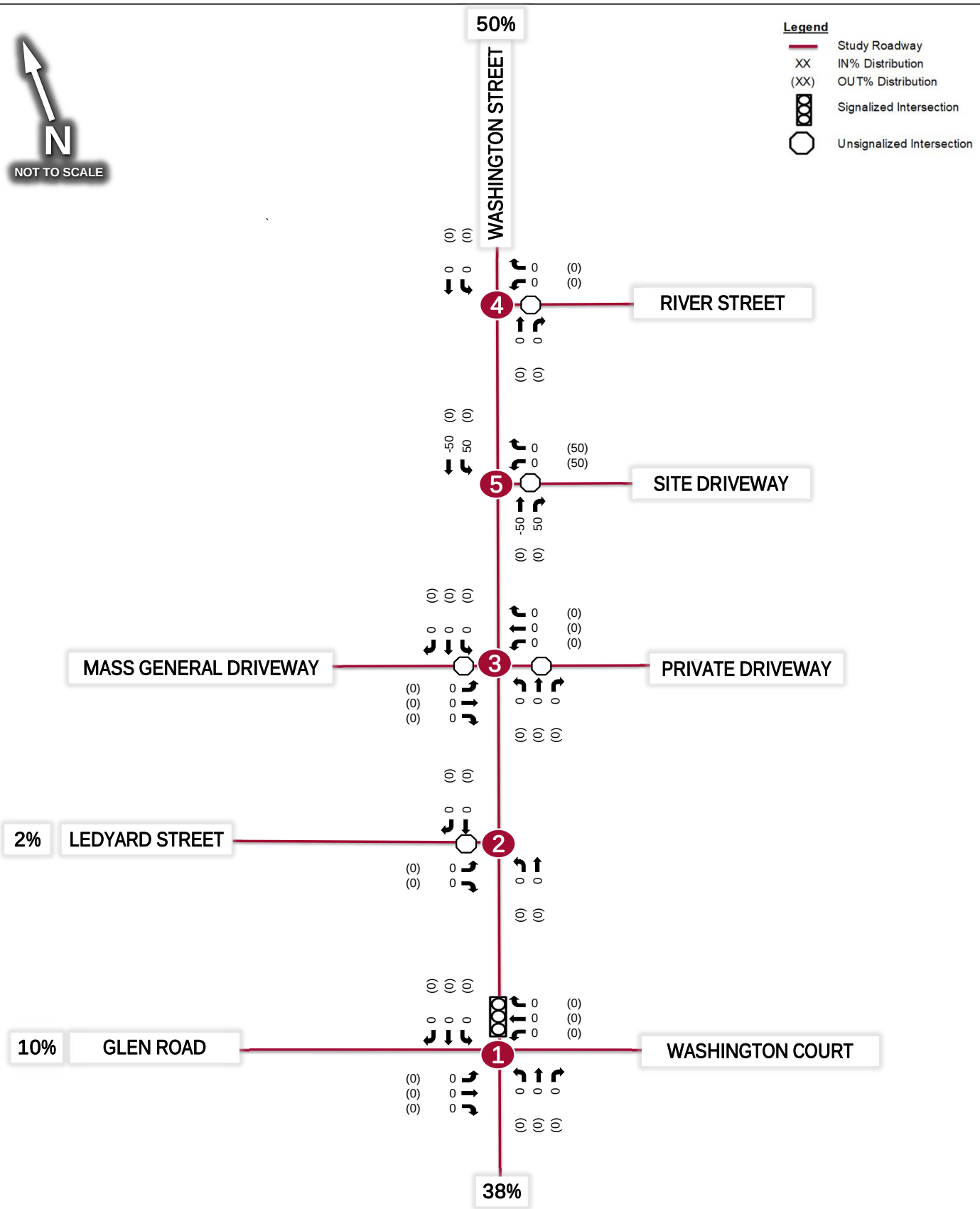


Figure 10
Pass-By Distribution
First Citizens Bank TIAS
Wellesley, MA 02481

Kimley»Horn

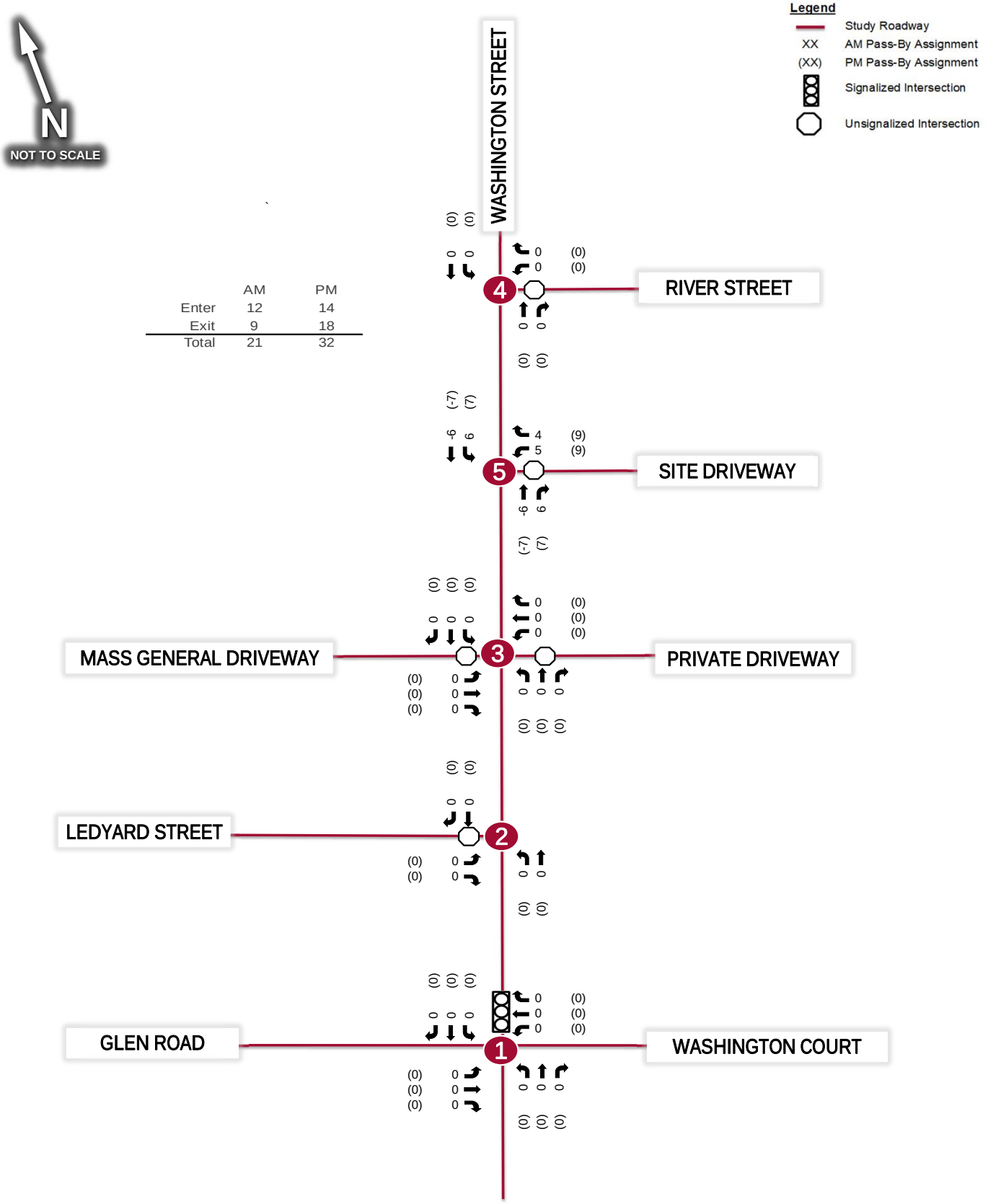


Figure 11
Pass-By Assignment
First Citizens Bank TIAS
Wellesley, MA 02481

Kimley»Horn

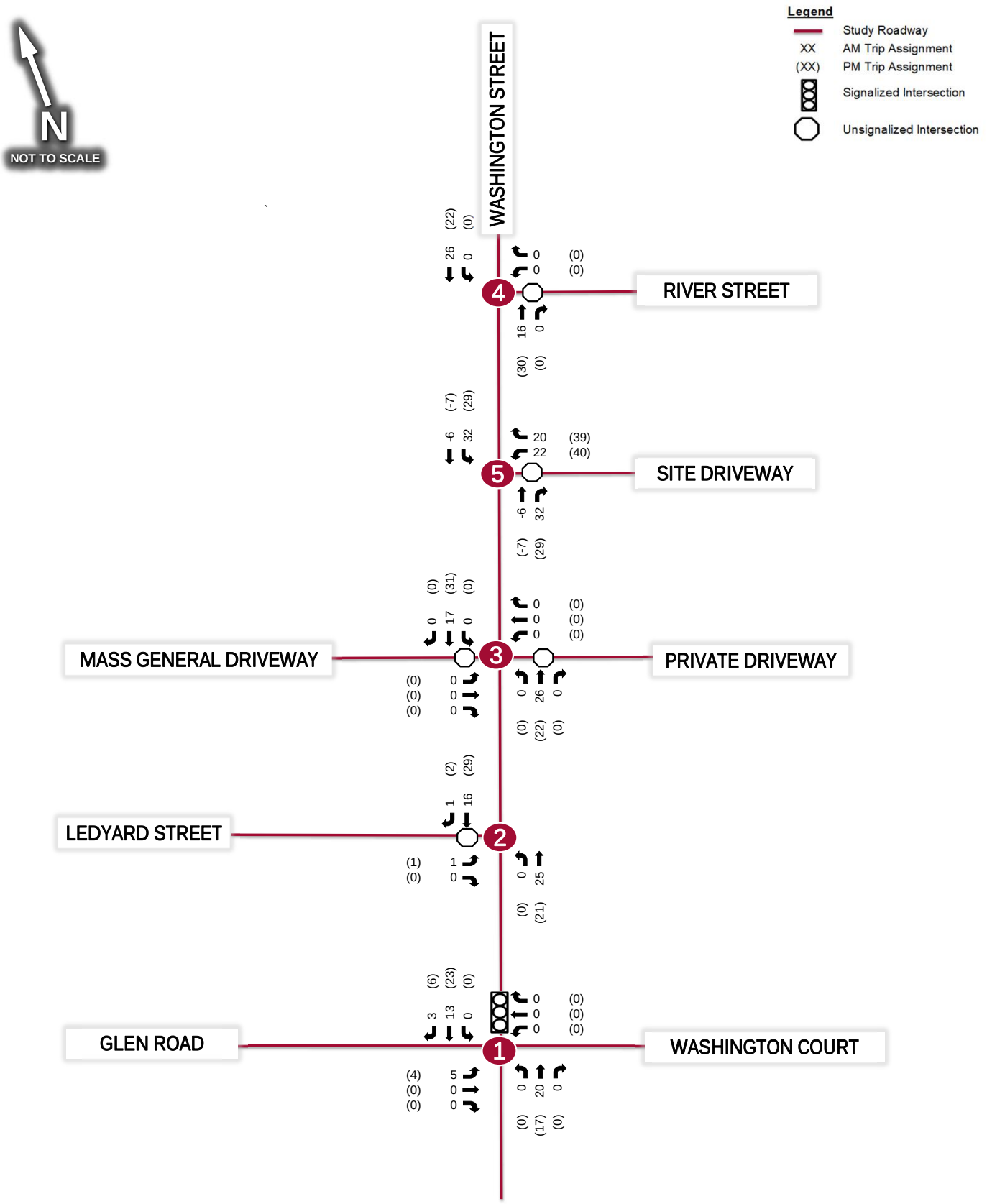


Figure 12
Total Trips
First Citizens Bank TIAS
Wellesley, MA 02481

Kimley»Horn

FUTURE BUILD CONDITIONS

Future Build Conditions are defined as the expected traffic conditions in the year 2032 after the opening of the project. The total traffic volumes considered in the analysis for this project are the sum of the grown traffic volumes and the expected project traffic volumes. **Figure 13** presents the future total turning movement volumes at the study intersections during the weekday AM and PM peak hours for 2032 Build Condition volumes. Volume development worksheets for the study intersections are included in **Appendix G**.

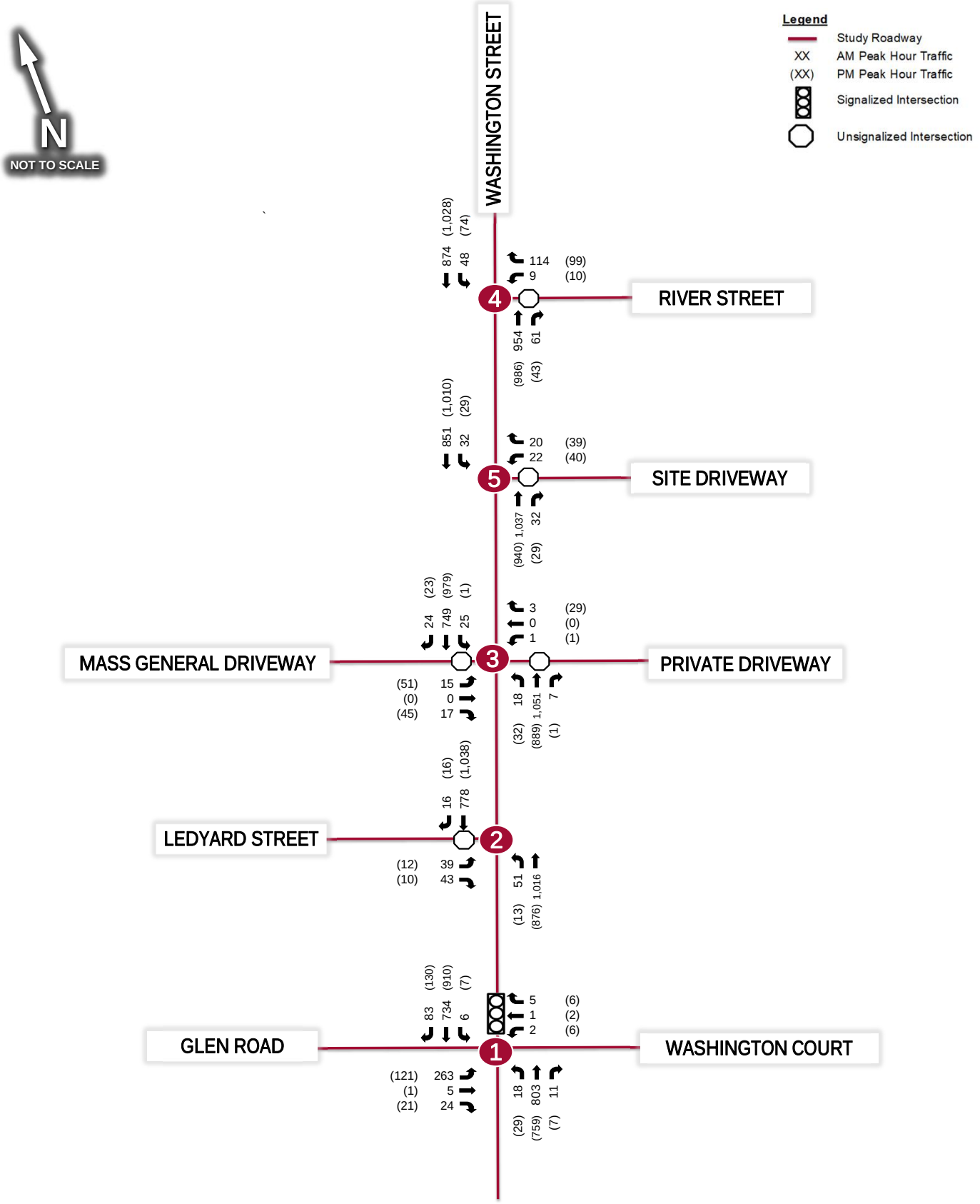


Figure 13
2032 Build Condition Volumes
First Citizens Bank TIAS
Wellesley, MA 02481

Kimley»Horn

ANALYSIS

INTERSECTION CAPACITY ANALYSIS

Methodology

Intersection capacity analyses were performed for Existing, 2032 Future No-Build, and 2032 Future Build traffic volumes for the study area intersections. The analyses were performed using the Synchro Software Package (Version 12), which utilizes methodologies contained in the *Highway Capacity Manual 7th Edition,* for signalized and unsignalized intersections. For the intersection of Washington Street at Glen Road, which is incompatible with *HCM 7th Edition*, HCM 2000 analysis methodology is used. According to the *HCM 7th Edition*, capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a fixed time duration. The grading condition is described by Level of Service (LOS) to indicate the operating characteristics of a road segment or intersection. LOS is defined as a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream and relates to the level of delay experienced. The *HCM 7th Edition* defines six levels of service, LOS A through LOS F, with A being the best and F being the worst. Typically, a LOS "D" or better at signalized and unsignalized intersections is preferred, although lower levels are tolerated during peak travel hours.

The ranges of delays for each level of service are shown in **Table 4.**

Table 4. Level of Service Range of Delay

Level of Service (LOS)	Delay per Vehicle (seconds per vehicle)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	10 -20	10 -15
C	20 – 35	15 – 25
D	35 – 55	25 – 35
E	55 – 80	35 – 50
F	≥ 80	≥ 50

Intersection Capacity Analysis Summary

A summary of the intersection capacity analysis for the weekday AM and PM peak hours for the 2025 Existing Conditions, 2032 Future No-Build Conditions, and 2032 Future Build Conditions can be found in **Table 5.** The signal timing plans and intersection analysis worksheets are contained in **Appendix H** and **Appendix I**, respectively.

The key findings of the intersection capacity analysis as it pertains to the proposed Project are as follows:

- Under 2025 Existing Conditions and 2032 No-Build Conditions, the signalized intersection of Washington Street at Glen Road/Washington Court will operate at an overall LOS C or better. In the 2032 Build Conditions, the overall LOS will remain at a LOS C. However, eastbound movements will operate at LOS E or worse in both peak hours under the 2025 Existing Conditions and 2032 No-Build Conditions. Under the 2032 Build Conditions, the delay increased by 5.3 seconds during the AM peak hour and by 13.8 seconds during the PM peak hour, resulting in a LOS F. The site trips generated from Glen Road (eastbound movements) to the Project are five (5) during the AM peak hour and four (4) during the PM peak hour. The 95th percentile queue length does not exceed the storage length in the northbound left-turn lane. The volume-to-capacity ratio (V/C) is greater than 1.00 for the eastbound movements for all three Conditions.
- Under 2025 Existing Conditions and 2032 No-Build Conditions, the one-way STOP control of Washington Street at Ledyard Street, in the eastbound movements of Ledyard Street, will operate at an LOS E or worse. Under the 2032 Build Conditions, the delay increased by 25.7 seconds during the AM peak hour and by 7.8 seconds during the PM peak hour. However, no anticipated site trips are expected from Ledyard Street (eastbound movements) to the Project.
- Under the three Conditions, there are minor movements at Washington Street at Mass General Driveway/Private Driveway that will be operating at LOS E or worse. However, no anticipated site trips are expected along the minor approaches to the Project.
- Under 2025 Existing Conditions and 2032 No-Build Conditions, the one-way STOP control of Washington Street at River Street in the westbound movements will operate at an LOS C or worse. Under the 2032 Build Conditions, the delay increased by 2.6 seconds during the AM peak hour and by 8.8 seconds during the PM peak hour, resulting in a LOS E and F during the AM and PM peak hours, respectively. However, no anticipated site trips are expected from River Street (westbound movements) to the Project. The V/C is less than 1.00 for the westbound movements for all three Conditions.
- The westbound (exiting) movements at the proposed Site Driveway are anticipated to operate at a LOS F during the 2032 Build Condition AM and PM peak hours.
- There are specific movements that are or will operate at LOS D or worse, regardless of the Project, but there are no minor approaches that will have 50 or more peak hour vehicle trips.
- The Project is not expected to result in significant changes to the overall operating conditions at the study area intersections.

Table 5. Intersection Capacity Analysis

			2025 Existing Conditions								2032 No-Build Conditions								2032 Build Conditions							
			Existing AM				Existing PM				No Build AM				No Build PM				Build AM				Build PM			
Intersection	Movement	Storage (ft)	LOS	Delay	V/C	95th% Queue Length (ft)	LOS	Delay	V/C	95th% Queue Length (ft)	LOS	Delay	V/C	95th% Queue Length (ft)	LOS	Delay	V/C	95th% Queue Length (ft)	LOS	Delay	V/C	95th% Queue Length (ft)	LOS	Delay	V/C	95th% Queue Length (ft)
Washington Street & Glen Road/Washington Court (signalized)	EBL/T/R	-	F	107.0	1.09	#244	E	67.0	0.88	#174	F	81.7	1.01	#298	F	165.0	1.15	#203	F	87	1.03	#305	F	178.8	1.19	#211
	WBL/T/R	-	C	34.0	0.22	25	D	49.7	0.55	25	C	33.1	0.13	25	D	45.1	0.45	25	C	33.1	0.13	25	D	47.1	0.50	25
	NBL	50	A	5.7	0.05	25	A	3.9	0.07	25	A	5.8	0.06	25	A	3.3	0.09	25	A	5.8	0.06	25	A	3.3	0.09	25
	NBT/R	-	B	11.3	0.69	351	A	7.2	0.62	260	B	14.5	0.79	#532	A	6.5	0.62	330	B	15.5	0.81	#554	A	6.6	0.64	345
	NB Approach	-	B	11.1	-	-	A	7.1	-	-	B	14.3	-	-	A	6.3	-	-	B	15.3	-	-	A	6.5	-	-
	SBL/T/R	-	B	12.1	0.73	358	A	9.1	0.73	393	B	13.6	0.78	#543	A	9.4	0.77	554	B	14.2	0.79	#560	A	10	0.79	#627
	Intersection		**C**	**28.4**	**0.83**	**-**	**B**	**13.1**	**0.77**	**-**	**C**	**24.3**	**0.86**	**-**	**B**	**19.6**	**0.82**	**-**	**C**	**25.7**	**0.88**	**-**	**C**	**21.1**	**0.84**	**-**
Washington Street & Ledyard Street (one-way STOP Controlled)	EBL/R	-	F	130.2	0.98	175	E	40.2	0.19	25	F	123.4	0.84	120	F	53.7	0.24	25	F	149.1	0.92	133	F	61.5	0.28	25
	NBL/T	-	A	9.5	0.05	25	B	10.2	0.02	25	A	9.8	0.07	25	B	11.0	0.02	25	A	9.9	0.07	25	B	11.1	0.02	25
Washington Street & Mass General Driveway/Private Driveway (two-way STOP Controlled)	EBL/T/R	-	F	959.1	0.40	40	F	297.7	1.33	210	F	90.3	0.47	48	F	832.1	2.46	333	F	101.3	0.50	53	F	959.1	2.72	345
	WBL/T/R	-	D	26.1	0.06	25	C	19.4	0.17	25	E	38.3	0.04	25	C	24.7	0.25	25	E	40.7	0.04	25	D	26.1	0.26	25
	NBL	45	A	11.0	0.02	25	B	10.1	0.04	25	A	9.8	0.02	25	B	10.8	0.05	25	A	9.9	0.03	25	B	11	0.06	25
	SBL/T/R	-	B	10.1	0.04	25	A	9.4	0.00	0	B	10.8	0.04	25	A	9.9	0.00	0	B	10.9	0.04	25	B	10	0.00	0
Washington Street & River Street (one-way STOP Controlled)	WBL/R	-	C	20.5	0.36	40	D	32.2	0.45	55	E	39.8	0.58	80	F	60.2	0.69	105	E	42.4	0.60	85	F	69	0.73	113
	NBR	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	SBL	55	B	10.2	0.07	25	B	10.3	0.09	25	B	10.9	0.08	25	B	11.2	0.12	25	B	11	0.08	25	B	11.4	0.12	25
Washington Street & Site Driveway[1] (one-way STOP Controlled)	WBL/R	1					1				1				1				F	102.4	0.59	65	F	243.1	1.14	160
	NBT/R																		-	-	-	-	-	-	-	-
	SBL/T																		B	11.3	0.06	25	B	10.6	0.05	25

[1] Intersection only exists under 2032 Build Conditions.

SIGHT DISTANCE ANALYSIS

Adequate sight distance is an important safety consideration at intersections and driveways. Stopping sight distance (SSD) is the distance a vehicle traveling at the design speed must travel to stop before reaching a stationary object in its path. The values are based on a perception and reaction time of 2.5 seconds and the braking distance required under wet, level pavements. As can be seen, the measured sight distances exceed the required distances in all directions, therefore adequate sight distance is provided at the Site Driveway on the east side of Washington Street as shown in **Table 6**. The Site Driveway on the east side of Washington Street is located approximately 365 feet from the nearest study intersection north of the site driveway, Washington Street at River Street, and is located approximately 245 feet from the nearest study intersection south of the site driveway, Washington Street at Mass General Driveway/Private Driveway.

The 85th percentile speed is the speed at or below which 85 percent of drivers travel on a road segment. The 85th percentile speed along Washington Street is 29 MPH in the northbound direction and 26 MPH in the southbound direction. To provide a conservative approach, the stopping sight distance analysis was evaluated using the criteria for a 30 MPH speed limit.

Table 6. Sight Distance Analysis at Site Driveway

View/Direction	Measured Distance (feet)	SSD Required for 30 MPH (feet)	Criteria Met (Y/N)
Approaching Site Driveway from North	200+	200	Y
Approaching Site Driveway from South	200+	200	Y

The sight distance exhibit is shown in **Appendix J.**

CONCLUSIONS AND MITIGATIONS

The analysis of traffic with respect to the redevelopment of a First Citizens Bank in the Town of Wellesley, located at 26 Washington Street, was completed following standard practice. The key findings of this traffic impact and access study are as follows:

- The redevelopment of the walk-in bank, First Citizens Bank, is expected to generate 64 net new trips (40 entering and 24 exiting) during the weekday AM peak hour and 73 net new trips (30 entering and 43 exiting) during the weekday PM peak hour.
- There were 55 reported crashes at the four (4) study intersections, with Washington Street at River Street experiencing 62% of the total crashes within the study area. The calculated intersection crash rate for Washington Street at River Street is 0.67, which is above the MassDOT District 6 average unsignalized intersection crash rate, 0.52. Additionally, left-turn movements on River Street are prohibited between 7:00 AM – 9:00 AM and 4:00 PM – 6:00 PM.
- The measured sight distances exceed the required distances at the proposed Site Driveway along Washington Street.
- There are specific movements that are or will operate at LOS D or worse, regardless of the Project, but there are no minor approaches that will have 50 or more peak hour vehicle trips.
- The Project is not expected to result in significant changes to the overall operating conditions at the study area intersections.
- The westbound (exiting) movements at the proposed Site Driveway are anticipated to operate at a LOS F during the 2032 Build Condition AM and PM peak hours.

MITIGATION

While the Project itself is not expected to result in significant changes, the importance of creating safe and efficient access for the Project is essential to maintain a safe multimodal traveling network for non-site related traffic. The following mitigation measure have been identified below and are intended to provide for safe site access:

- STOP control on Site Driveway with STOP sign (R1-1) installed compliant with the Manual on Uniform Traffic Control Devices (MUTCD).

APPENDIX

APPENDIX A

PUBLIC TRANSIT AND PUBLIC TRAILS

ROUTE 1 WEEKDAY

MetroWest Regional Transportation Authority

ROUTE 1 WEEKDAY

Fare Information

	Cash	CatchCard	Monthly Pass
Adult:	$1.50	$1.25	$20.00
Senior (65+) / Disabled*:	$0.75	$0.70	$10.00
Student with valid student ID:	$1.00	N/A	N/A
Children under 6 (with adult):	Free		
Active Duty men & women in uniform:	Free		

*To recieve Reduced Fare, please present:
- a photo ID with birth date listed, **OR**
- MBTA Access Card or Medicare Card

Children under 12 years old may not ride unaccompanied.
Catch Cards can be obtained from drivers on the bus, or at the MWRTA Blandin Hub.

Transfers / Connections

Transfer slips are available on all MWRTA buses and are good for one transfer going in the same direction within the MWRTA bus system only. One transfer per paid fare is issued upon request, and must be presented to the next driver within 90 minutes.

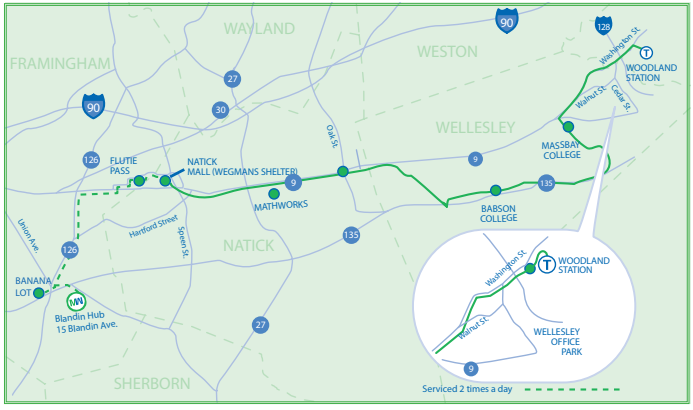
Holidays

No Service: New Year's Day, Patriots's Day, Memorial Day, Independence Day, Thanksgiving Day, Christmas Day

Reduced Service: MLK Day, Presidents Day, Juneteenth, Columbus Day, Veterans Day, Black Friday

Service will end around 7:30 PM on Christmas and New Years Eve.

See the full Holiday Policy at www.mwrta.com/holidays.



MWRTA Customer Service:
(508) 935-2222
Blandin Hub: 15 Blandin Ave.
Framingham, MA 01702

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Scan QR code with your phone to go to the MWRTA website.

ROUTE 1 Weekday Service

v 9.2024

		AM							PM									
Eastbound	Blandin Hub	5:22	6:02	~	~	~	~	~	~	12:30	~	2:45	~	~	~	~	~	~
	MathWorks Lakeside	~	~	~	~	~	~	~	~	~	~	3:00	~	~	~	~	~	~
	Natick Mall (Wegmans)	5:42	6:22	7:05	7:50	8:40	9:28	10:15	11:40	12:50	2:18	3:05	3:55	4:42	5:32	6:21	7:14	7:54
	MathWorks Apple Hill	5:47	6:28	7:11	7:56	8:46	9:34	10:21	11:46	12:56	2:24	3:11	4:01	4:48	5:38	6:27	7:20	8:00
	Oak St.	5:49	6:31	7:14	7:59	8:49	9:37	10:24	11:49	12:59	2:27	3:14	4:04	4:51	5:41	6:30	7:23	8:03
	Cross St.	5:58	6:40	7:21	8:07	9:00	9:44	10:30	11:55	1:05	2:34	3:21	4:11	4:58	5:49	6:37	7:29	8:09
	Babson College - Knight Lot	6:02	6:45	7:26	8:13	9:06	9:50	10:36	12:01	1:10	2:40	3:27	4:17	5:04	5:55	6:43	7:34	8:14
	MassBay Wellesley	6:07	6:51	7:35	8:22	9:12	9:56	10:42	12:07	1:21	2:51	3:38	4:28	5:15	6:06	6:54	7:45	8:20
	Wellesley Lower Falls	6:12	6:56	7:40	8:27	9:17	10:01	10:47	12:12	1:26	2:56	3:43	4:33	5:20	6:11	6:59	7:50	8:25
	Woodland T Station	6:17	7:01	7:45	8:32	9:23	10:06	10:52	12:17	1:31	3:01	3:48	4:38	5:25	6:17	7:04	7:54	8:30
Westbound	Woodland T Station	6:21	7:03	7:48	8:36	9:25	10:10	10:55	12:20	1:35	3:07	3:54	4:44	5:33	6:24	7:09	7:56	8:34
	Wellesley Lower Falls	6:26	7:08	7:53	8:41	9:30	10:15	11:00	12:25	1:40	3:12	3:59	4:49	5:38	6:29	7:14	8:01	8:39
	MassBay Wellesley	6:29	7:13	7:58	8:46	9:36	10:20	11:05	12:30	1:45	3:17	4:04	4:54	5:43	6:34	7:19	8:06	8:44
	Babson College - Knight Lot	6:35	7:20	8:05	8:53	9:42	10:26	11:11	12:36	1:51	3:23	4:10	5:00	5:49	6:40	7:25	8:12	8:50
	Cross St.	6:39	7:25	8:10	8:58	9:48	10:32	11:17	12:42	1:57	3:29	4:16	5:06	5:55	6:46	7:31	8:18	8:56
	Oak St.	6:46	7:32	8:18	9:07	9:57	10:42	11:25	12:50	2:04	3:38	4:25	5:14	6:03	6:55	7:38	8:25	9:02
	MathWorks Lakeside	6:52	7:38	8:24	9:13	10:03	10:48	11:31	12:56	2:09	3:45	4:32	5:21	6:10	7:01	7:44	8:30	9:08
	Natick Mall (Wegmans)	6:57	7:43	8:29	9:18	10:08	10:53	11:36	1:01	2:14	3:50	4:37	5:27	6:15	7:06	7:49	8:35	9:14
	Blandin Hub	~	~	~	~	~	11:05	~	1:14	~	~	~	~	~	~	~	8:49	9:24

Route 1 Connections:

- MassBay Shuttles: MassBay Wellesley Campus
- Routes 2, 3, 4N, 9, 10, 11: Natick Mall (Wegmans)

Riders can also connect to the Wellesley Catch Connect service at any stop in Wellesley, and the Framingham/Natick Night Catch Connect service at any stop in Framingham or Natick.

Additional Information:

- Please wait for the bus 10 minutes in advance of scheduled times to ensure not missing the bus.
- For Vehicle Tracking: www.mwrta.com, or download the MWRTA Catch App.
- MWRTA uses the Flag Down system, allowing busses to stop anywhere along the route where it is safe to do so. Riders can hail the bus by waving.
- Babson College Knight Lot Gate may occasionally be closed - during these instances, Route 1 will service Babson from Wellesley Ave.

ROUTE 1 WEEKEND

MetroWest Regional Transportation Authority

Fare Information

	Cash	CatchCard	Monthly Pass
Adult:	$1.50	$1.25	$20.00
Senior (65+) / Disabled*:	$0.75	$0.70	$10.00
Student with valid student ID:	$1.00	N/A	N/A
Children under 6 (with adult):	Free		
Active Duty men & women in uniform:	Free		

*To recieve Reduced Fare, please present:
- a photo ID with birth date listed, **OR**
- MBTA Access Card or Medicare Card

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Reduced Service: MLK Day, Presidents Day, Juneteenth, Columbus Day, Veterans Day, Black Friday

Service will end around 7:30 PM on Christmas and New Years Eve.

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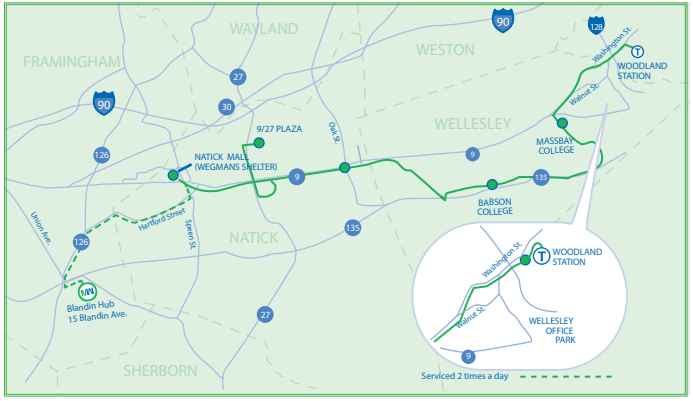

MWRTA Customer Service:
(508) 935-2222
Blandin Hub: 15 Blandin Ave.
Framingham, MA 01702

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ROUTE 1 Weekend Service

v 1.2025

		AM		PM		
Eastbound	Blandin Hub	8:15	~	~	~	~
	Natick Mall (Wegmans)	8:30	10:12	12:00	1:43	3:29
	9/27 Plaza	8:39	10:21	12:09	1:52	3:38
	Oak St.	8:44	10:26	12:14	1:57	3:43
	Cross St.	8:52	10:34	12:22	2:05	3:51
	Babson College	8:58	10:40	12:28	2:11	3:57
	MassBay Wellesley	9:04	10:50	12:34	2:21	4:03
	Wellesley Lower Falls	9:09	10:55	12:39	2:26	4:08
	Woodland T Station	9:14	11:00	12:44	2:31	4:13
Westbound	Woodland T Station	9:20	11:05	12:48	2:36	4:18
	Wellesley Lower Falls	9:25	11:10	12:53	2:41	4:23
	MassBay Wellesley	9:30	11:15	12:58	2:46	4:28
	Babson College	9:36	11:21	1:04	2:52	4:34
	Cross St.	9:42	11:27	1:10	2:58	4:40
	Oak St.	9:47	11:32	1:16	3:04	4:45
	9/27 Plaza	9:52	11:37	1:21	3:09	4:50
	Natick Mall (Wegmans)	10:02	11:47	1:31	3:19	5:00
	Blandin Hub	~	~	~	~	5:15

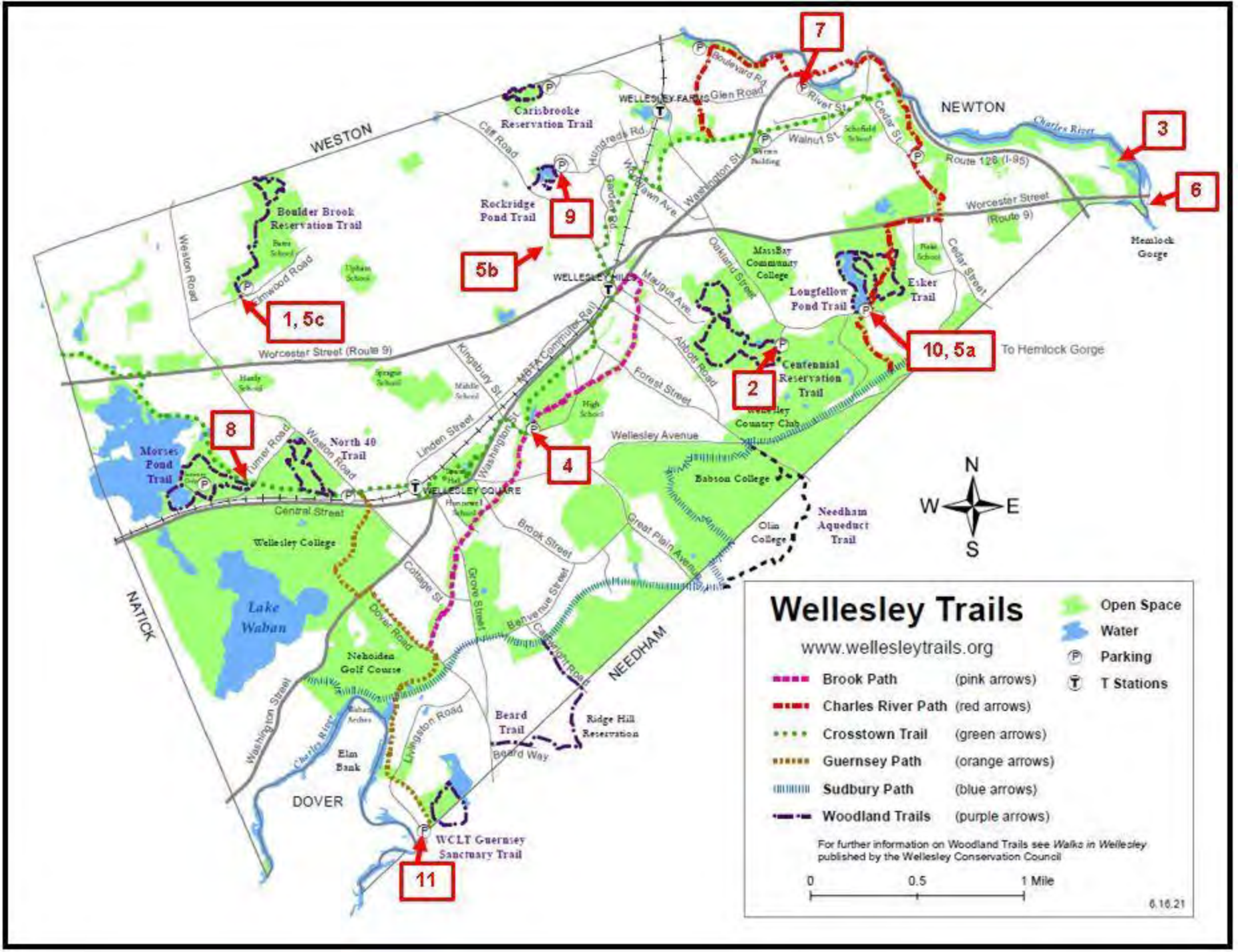
Route 1 Connections:

- Route 11: 9/27 Plaza
- Routes 2, 3, 4N, 9, 11: Natick Mall (Wegmans)

Riders can also connect to the Framingham / Natick Weekend Catch Connect service at the Natick Mall or 9/27 Plaza.

Additional Information:

- Please wait for the bus 10 minutes in advance of scheduled times to ensure not missing the bus.
- For Vehicle Tracking: www.mwrta.com, or download the MWRTA Catch App.
- MWRTA uses the Flag Down system, allowing busses to stop anywhere along the route where it is safe to do so. Riders can hail the bus by waving.
- Route 1 will service Babson from Wellesley Ave.


7
3
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5b
1, 5c
10, 5a
2
4
8
11
WESTON
NEWTON
NATICK
NEEDHAM
DOVER
Carisbrooke Reservation Trail
Rockridge Pond Trail
Boulder Brook Reservation Trail
Longfellow Pond Trail
Esker Trail
Centennial Reservation Trail
Morses Pond Trail
North 40 Trail
Lake Waban
Needham Aqueduct Trail
Beard Trail
Ridge Hill Reservation
WCLT Guernsey Sanctuary Trail
To Hemlock Gorge
Wellesley Trails
www.wellesleytrails.org
Brook Path (pink arrows)
Charles River Path (red arrows)
Crosstown Trail (green arrows)
Guernsey Path (orange arrows)
Sudbury Path (blue arrows)
Woodland Trails (purple arrows)
Open Space
Water
Parking
T Stations
For further information on Woodland Trails see Walks in Wellesley published by the Wellesley Conservation Council
0 0.5 1 Mile
6.16.21

APPENDIX B

TRAFFIC DATA

Type of report: Midblock Count - Speed Data

LOCATION: Washington St West of Columbia St
QC JOB #: 17218111
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Wellesley, MA
DATE: Oct 8 2025

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	1	19	50	26	12	1	0	0	0	0	0	0	0	109	26-35	76
01:00 AM	1	1	16	44	16	2	0	0	0	0	0	0	0	0	80	25-34	60
02:00 AM	0	3	6	9	12	1	**2**	0	0	0	0	0	0	0	33	26-35	21
03:00 AM	0	0	5	8	11	6	0	0	0	0	0	0	0	0	30	26-35	19
04:00 AM	1	1	9	39	47	15	2	**1**	0	0	0	0	0	0	115	26-35	86
05:00 AM	3	16	60	185	**132**	**32**	1	0	0	0	0	0	0	0	429	26-35	317
06:00 AM	29	95	233	**219**	82	5	0	0	0	0	0	0	0	0	663	21-30	452
07:00 AM	182	181	252	106	10	0	0	0	0	0	0	0	0	0	**731**	16-25	433
08:00 AM	183	**254**	210	35	4	0	0	0	0	0	0	0	0	0	686	16-25	464
09:00 AM	**204**	167	124	44	5	0	0	0	0	0	0	0	0	0	544	16-25	291
10:00 AM	89	178	**277**	119	25	1	0	0	0	0	0	0	0	0	689	16-25	455
11:00 AM	119	205	245	85	12	0	0	0	0	0	0	0	0	0	666	16-25	450
12:00 PM	140	222	179	47	2	0	0	0	0	0	0	0	0	0	590	16-25	401
01:00 PM	123	**259**	311	74	6	1	0	0	0	0	0	0	0	0	774	16-25	570
02:00 PM	**217**	204	230	40	3	0	0	0	0	0	0	0	0	0	694	16-25	434
03:00 PM	154	201	251	70	10	1	**1**	0	0	0	**1**	0	0	0	689	16-25	452
04:00 PM	186	213	195	56	11	0	0	0	0	0	0	0	0	0	661	16-25	408
05:00 PM	132	140	236	66	2	0	0	0	0	0	0	0	0	0	576	16-25	376
06:00 PM	120	226	277	71	12	0	0	0	0	0	0	0	0	0	706	16-25	503
07:00 PM	70	221	**391**	188	22	3	0	0	0	0	0	0	0	0	**895**	16-25	612
08:00 PM	26	127	329	**274**	51	4	0	0	0	0	0	0	0	0	811	21-30	603
09:00 PM	16	62	238	212	55	9	0	0	0	0	0	0	0	0	592	21-30	450
10:00 PM	0	15	121	189	**60**	**10**	1	0	0	0	0	0	0	0	396	21-30	310
11:00 PM	0	5	65	139	60	10	1	0	0	0	0	0	0	0	280	21-30	204
Day Total	1995	2997	4279	2369	676	112	9	1	0	0	1	0	0	0	12439	16-25	7276
Percent	16%	24.1%	34.4%	19%	5.4%	0.9%	0.1%	0%	0%	0%	0%	0%	0%	0%			
AM Peak	9:00 AM	8:00 AM	10:00 AM	6:00 AM	5:00 AM	5:00 AM	2:00 AM	4:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	7:00 AM		
Volume	204	254	277	219	132	32	2	1	0	0	0	0	0	0	731		
PM Peak	2:00 PM	1:00 PM	7:00 PM	8:00 PM	10:00 PM	10:00 PM	3:00 PM	12:00 PM	12:00 PM	12:00 PM	3:00 PM	12:00 PM	12:00 PM	12:00 PM	7:00 PM		
Volume	217	259	391	274	60	10	1	0	0	0	1	0	0	0	895		

Comments:

Report generated on 10/15/2025 5:04 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Midblock Count - Speed Data

LOCATION: Washington St West of Columbia St
QC JOB #: 17218111
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Wellesley, MA
DATE: Oct 9 2025

Start Time	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
12:00 AM	0	1	27	53	48	10	1	0	0	0	0	0	0	0	140	26-35	101
01:00 AM	1	5	9	30	11	0	0	0	0	0	0	0	0	0	56	26-35	41
02:00 AM	0	0	4	12	10	5	0	0	0	0	0	0	0	0	31	26-35	22
03:00 AM	1	1	8	13	13	7	1	0	0	0	0	0	0	0	44	26-35	26
04:00 AM	0	1	12	43	43	9	1	0	0	0	0	0	0	0	109	26-35	86
05:00 AM	0	9	66	190	**108**	**27**	**2**	0	0	0	0	0	0	0	402	26-35	298
06:00 AM	21	87	**387**	**329**	75	4	0	0	0	**1**	**1**	0	0	0	**905**	21-30	716
07:00 AM	**218**	158	117	27	2	0	0	0	0	0	0	0	0	0	522	16-25	275
08:00 AM	186	76	72	5	1	0	0	0	0	0	0	0	0	0	340	16-25	148
09:00 AM	137	92	66	22	3	0	0	0	0	0	0	0	0	0	320	16-25	158
10:00 AM	126	165	181	42	2	0	0	0	0	0	0	0	0	0	516	16-25	346
11:00 AM	170	**195**	221	65	12	2	0	0	0	0	0	0	0	0	665	16-25	416
12:00 PM	**164**	168	174	52	3	0	0	0	0	0	0	0	0	0	561	16-25	342
01:00 PM	96	170	303	120	25	1	0	0	0	0	0	0	0	0	715	16-25	473
02:00 PM	144	152	190	66	17	0	0	0	0	0	0	0	0	**1**	570	16-25	342
03:00 PM	149	150	148	36	5	0	0	0	0	0	0	0	0	0	488	16-25	298
04:00 PM	149	163	138	40	10	0	0	0	0	0	0	0	0	0	500	16-25	301
05:00 PM	126	180	211	54	2	1	0	0	0	0	0	0	0	0	574	16-25	391
06:00 PM	124	**208**	304	125	20	0	0	**1**	0	0	0	0	0	0	782	16-25	512
07:00 PM	92	204	**387**	140	17	2	0	0	0	0	0	0	0	0	842	16-25	591
08:00 PM	18	98	357	**306**	64	5	0	0	0	0	0	0	0	0	**848**	21-30	663
09:00 PM	8	65	209	266	114	15	0	0	0	0	0	0	0	0	677	21-30	475
10:00 PM	1	8	104	246	**128**	**18**	**1**	0	0	0	0	0	0	0	506	26-35	374
11:00 PM	2	15	58	129	84	15	0	0	0	0	0	0	0	0	303	26-35	213
Day Total	1933	2371	3753	2411	817	121	6	1	0	1	1	0	0	1	11416	21-30	6164
Percent	16.9%	20.8%	32.9%	21.1%	7.2%	1.1%	0.1%	0%	0%	0%	0%	0%	0%	0%			

AM Peak Volume	7:00 AM 218	11:00 AM 195	6:00 AM 387	6:00 AM 329	5:00 AM 108	5:00 AM 27	5:00 AM 2	12:00 AM 0	12:00 AM 0	6:00 AM 1	6:00 AM 1	12:00 AM 0	12:00 AM 0	12:00 AM 0	6:00 AM 905		
PM Peak Volume	12:00 PM 164	6:00 PM 208	7:00 PM 387	8:00 PM 306	10:00 PM 128	10:00 PM 18	10:00 PM 1	6:00 PM 1	12:00 PM 0	12:00 PM 0	12:00 PM 0	12:00 PM 0	12:00 PM 0	2:00 PM 1	8:00 PM 848		

Comments:

Report generated on 10/15/2025 5:04 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Midblock Count - Speed Data

SUMMARY - Midblock Count - Speed Data

LOCATION: Washington St West of Columbia St
QC JOB #: 17218111
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Wellesley, MA
DATE: Oct 8 2025 - Oct 9 2025

Speed Range	1 15	16 20	21 25	26 30	31 35	36 40	41 45	46 50	51 55	56 60	61 65	66 70	71 75	76 999	Total	Pace Speed	Number in Pace
Grand Total	3928	5368	8032	4780	1493	233	15	2	0	1	2	0	0	1	23855	16-25	13400
Percent	16.5%	22.5%	33.7%	20%	6.3%	1%	0.1%	0%	0%	0%	0%	0%	0%	0%			
Cumulative Percent	16.5%	39%	72.6%	92.7%	98.9%	99.9%	100%	100%	100%	100%	100%	100%	100%	100%			

ADT 11927

85th Percentile: 28 MPH
Mean Speed(Average): 21 MPH
Median: 21 MPH
Mode: 23 MPH

Comments:

Report generated on 10/15/2025 5:04 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Midblock Count - Vehicle Classification Data

LOCATION: Washington St West of Columbia St
QC JOB #: 17218111
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Wellesley, MA
DATE: Oct 8 2025

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	100	8	0	1	0	0	0	0	0	0	0	0	3	112
01:00 AM	0	73	5	0	2	0	0	0	0	0	0	0	0	2	82
02:00 AM	0	30	1	0	2	0	0	0	0	0	0	0	0	1	34
03:00 AM	0	24	6	0	0	0	0	0	0	0	0	0	0	1	31
04:00 AM	0	88	19	1	5	2	0	0	0	0	0	0	0	9	124
05:00 AM	2	335	75	0	16	0	0	1	0	0	0	0	0	16	445
06:00 AM	2	529	**102**	**4**	20	**4**	0	1	0	0	0	0	0	108	770
07:00 AM	14	**602**	82	4	11	4	0	3	**2**	0	0	0	0	**197**	**919**
08:00 AM	12	567	75	2	15	4	0	**5**	0	0	0	0	0	196	876
09:00 AM	9	450	57	4	13	3	**1**	2	0	0	0	0	0	190	729
10:00 AM	5	575	78	3	19	3	0	2	0	0	0	0	0	152	837
11:00 AM	**15**	536	81	0	**21**	4	0	5	0	0	0	0	0	159	821
12:00 PM	11	481	**67**	2	**12**	**8**	0	0	0	0	0	0	**1**	148	730
01:00 PM	6	683	67	3	10	2	0	0	0	0	0	0	0	115	886
02:00 PM	**16**	601	57	3	9	1	0	2	0	0	0	0	0	180	869
03:00 PM	9	581	63	**6**	12	3	0	2	0	0	0	0	0	141	817
04:00 PM	15	583	47	1	8	0	0	1	0	0	0	0	0	182	837
05:00 PM	14	518	28	1	4	1	0	**3**	0	0	0	0	0	**198**	767
06:00 PM	13	641	32	3	5	4	0	2	0	0	0	0	0	151	851
07:00 PM	6	**840**	33	4	4	2	0	1	0	0	0	0	0	113	**1003**
08:00 PM	1	773	30	0	7	0	0	0	0	0	0	0	0	55	866
09:00 PM	2	548	35	1	4	0	0	1	**1**	0	0	0	0	29	621
10:00 PM	0	366	26	0	3	0	0	0	1	0	0	0	0	19	415
11:00 PM	0	267	10	0	2	0	0	1	0	0	0	0	0	5	285
Day Total	152	10791	1084	42	205	45	1	32	4	0	0	0	1	2370	14727
Percent	1%	73.3%	7.4%	0.3%	1.4%	0.3%	0%	0.2%	0%	0%	0%	0%	0%	16.1%	
ADT 14727															
AM Peak	11:00 AM	7:00 AM	6:00 AM	6:00 AM	11:00 AM	6:00 AM	9:00 AM	8:00 AM	7:00 AM	12:00 AM	12:00 AM	12:00 AM	12:00 AM	7:00 AM	7:00 AM
Volume	15	602	102	4	21	4	1	5	2	0	0	0	0	197	919
PM Peak	2:00 PM	7:00 PM	12:00 PM	3:00 PM	12:00 PM	12:00 PM	12:00 PM	5:00 PM	9:00 PM	12:00 PM	12:00 PM	12:00 PM	12:00 PM	5:00 PM	7:00 PM
Volume	16	840	67	6	12	8	0	3	1	0	0	0	1	198	1003

Comments:

Report generated on 10/15/2025 5:04 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Midblock Count - Vehicle Classification Data

LOCATION: Washington St West of Columbia St
QC JOB #: 17218111
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Wellesley, MA
DATE: Oct 9 2025

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
12:00 AM	0	133	7	0	0	0	0	0	0	0	0	0	0	4	144
01:00 AM	0	51	2	0	3	0	0	0	0	0	0	0	0	0	56
02:00 AM	0	27	3	0	1	0	0	0	0	0	0	0	0	3	34
03:00 AM	1	34	7	0	2	0	0	0	0	0	0	0	0	3	47
04:00 AM	0	89	17	2	1	0	0	0	0	0	0	0	0	8	117
05:00 AM	0	335	56	0	8	1	0	2	0	0	0	0	0	19	421
06:00 AM	5	**729**	**136**	**4**	**27**	0	0	3	0	**1**	0	0	0	111	**1016**
07:00 AM	**11**	436	49	2	9	2	0	**5**	0	0	0	0	0	**216**	730
08:00 AM	8	283	28	2	4	**4**	**1**	1	0	0	0	0	**1**	178	510
09:00 AM	7	265	29	3	6	2	1	2	**1**	0	0	0	1	153	470
10:00 AM	9	426	57	3	13	0	1	2	0	1	0	0	0	161	673
11:00 AM	10	553	60	4	25	4	0	2	1	0	0	0	0	148	807
12:00 PM	**13**	437	74	**7**	19	**6**	0	1	0	0	0	0	0	175	732
01:00 PM	4	586	**84**	5	**28**	3	**1**	1	0	0	0	0	0	158	870
02:00 PM	11	463	74	4	9	2	1	1	0	0	**1**	0	0	160	726
03:00 PM	10	421	41	0	7	3	0	1	0	0	0	0	0	187	670
04:00 PM	10	430	38	1	5	6	0	3	0	0	0	0	0	184	677
05:00 PM	11	500	39	4	11	2	0	2	**1**	0	0	0	0	**193**	763
06:00 PM	8	694	58	4	10	2	0	2	0	0	0	0	0	172	950
07:00 PM	6	759	60	0	6	1	0	**4**	0	**1**	0	0	0	151	**988**
08:00 PM	3	**792**	44	0	8	0	0	0	0	0	0	0	0	66	913
09:00 PM	2	636	32	1	4	0	0	0	0	0	0	0	0	42	717
10:00 PM	0	477	27	1	0	0	0	1	0	0	0	0	0	12	518
11:00 PM	0	289	10	1	3	0	0	0	0	0	0	0	0	16	319
Day Total	129	9845	1032	48	209	38	5	33	3	3	1	0	2	2520	13868
Percent	0.9%	71%	7.4%	0.3%	1.5%	0.3%	0%	0.2%	0%	0%	0%	0%	0%	18.2%	
ADT 13868															
AM Peak	7:00 AM	6:00 AM	6:00 AM	6:00 AM	6:00 AM	8:00 AM	8:00 AM	7:00 AM	9:00 AM	6:00 AM	12:00 AM	12:00 AM	8:00 AM	7:00 AM	6:00 AM
Volume	11	729	136	4	27	4	1	5	1	1	0	0	1	216	1016
PM Peak	12:00 PM	8:00 PM	1:00 PM	12:00 PM	1:00 PM	12:00 PM	1:00 PM	7:00 PM	5:00 PM	7:00 PM	2:00 PM	12:00 PM	12:00 PM	5:00 PM	7:00 PM
Volume	13	792	84	7	28	6	1	4	1	1	1	0	0	193	988

Comments:

Report generated on 10/15/2025 5:04 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Midblock Count - Vehicle Classification Data

SUMMARY - Midblock Count - Vehicle Classification Data

LOCATION: Washington St West of Columbia St
SPECIFIC LOCATION:
CITY/STATE: Wellesley, MA

QC JOB #: 17218111
DIRECTION: EB, WB
DATE: Oct 8 2025 - Oct 9 2025

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
Grand Total	281	20636	2116	90	414	83	6	65	7	3	1	0	3	4890	28595
Percent	1%	72.2%	7.4%	0.3%	1.4%	0.3%	0%	0.2%	0%	0%	0%	0%	0%	17.1%	
ADT 14297															

Comments:

Report generated on 10/15/2025 5:04 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Midblock Count - Volume Data

LOCATION: Washington St West of Columbia St | **QC JOB #:** 17218111

SPECIFIC LOCATION: | **DIRECTION:** EB, WB

CITY/STATE: Wellesley, MA | **DATE:** Oct 8 2025 - Oct 9 2025

Start Time	Mon	Tue	Wed 8 Oct 25	Thu 9 Oct 25	Fri	Average Weekday Hourly Traffic	Sat	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM			112	144		128			128	
01:00 AM			82	56		69			69	
02:00 AM			34	34		34			34	
03:00 AM			31	47		39			39	
04:00 AM			124	117		121			121	
05:00 AM			445	421		433			433	
06:00 AM			770	**1016**		**893**			**893**	
07:00 AM			**919**	730		825			825	
08:00 AM			876	510		693			693	
09:00 AM			729	470		600			600	
10:00 AM			837	673		755			755	
11:00 AM			821	807		814			814	
12:00 PM			730	732		731			731	
01:00 PM			886	870		878			878	
02:00 PM			869	726		798			798	
03:00 PM			817	670		744			744	
04:00 PM			837	677		757			757	
05:00 PM			767	763		765			765	
06:00 PM			851	950		901			901	
07:00 PM			**1003**	**988**		**996**			**996**	
08:00 PM			866	913		890			890	
09:00 PM			621	717		669			669	
10:00 PM			415	518		467			467	
11:00 PM			285	319		302			302	
Day Total			14727	13868		14302			14302	
% Weekday Average			103%	97%						
% Week Average			103%	97%		100%				
AM Peak Volume			7:00 AM 919	6:00 AM 1016		6:00 AM 893			6:00 AM 893	
PM Peak Volume			7:00 PM 1003	7:00 PM 988		7:00 PM 996			7:00 PM 996	

Comments:

Report generated on 10/15/2025 5:04 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

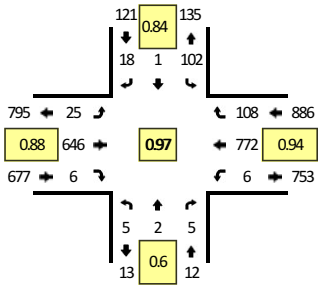
Type of peak hour being reported: Intersection Peak

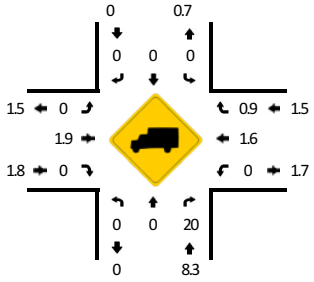
Method for determining peak hour: Total Entering Volume

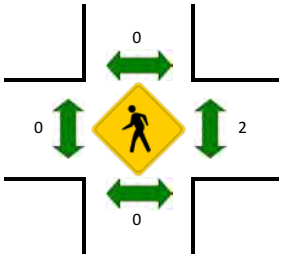
LOCATION: Glen Rd -- Washington St
CITY/STATE: Wellesley, MA

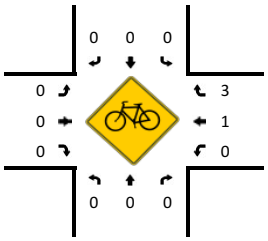
QC JOB #: 17218102
DATE: Wed, Oct 8 2025

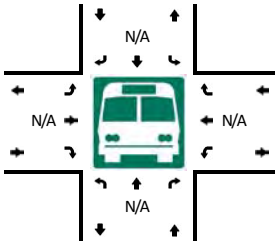
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

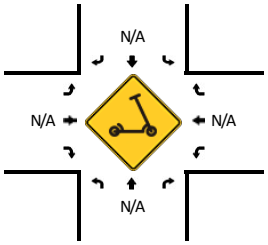












15-Min Count Period Beginning At	Glen Rd (Northbound)				Glen Rd (Southbound)				Washington St (Eastbound)				Washington St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	5	0	1	0	19	0	4	0	7	146	4	0	1	156	20	0	363	
3:15 PM	1	0	8	0	18	0	7	0	2	134	2	0	0	154	25	0	351	
3:30 PM	2	0	0	0	21	0	6	0	6	150	1	0	0	175	23	0	384	
3:45 PM	0	0	6	0	19	0	7	0	5	129	2	0	0	173	17	0	358	1456
4:00 PM	1	1	2	0	21	0	2	0	5	147	2	0	0	174	24	0	379	1472
4:15 PM	1	0	0	0	20	1	3	0	7	161	3	0	2	174	27	0	399	1520
4:30 PM	0	0	1	0	18	0	5	0	12	147	3	0	1	203	17	0	407	1543
4:45 PM	1	0	2	0	27	0	4	0	6	143	2	0	3	201	28	0	417	1602
5:00 PM	2	1	1	0	15	1	6	0	1	159	1	0	2	200	34	0	423	1646
5:15 PM	2	1	2	0	32	0	4	0	5	186	1	0	1	180	22	0	436	1683
5:30 PM	0	0	0	0	28	0	4	0	13	158	2	0	0	191	24	0	420	1696
5:45 PM	2	0	1	0	18	1	5	0	7	134	1	0	0	164	18	0	351	1630

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	4	8	0	128	0	16	0	20	744	4	0	4	720	88	0	1744
Heavy Trucks	0	0	4		0	0	0		0	20	0		0	16	0		40
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	8		8
Scooters																	

Comments:

Report generated on 10/20/2025 2:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

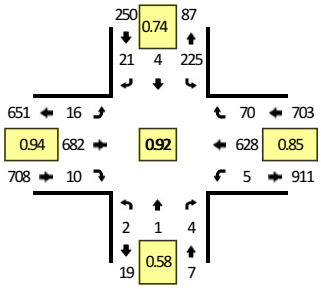
Type of peak hour being reported: Intersection Peak

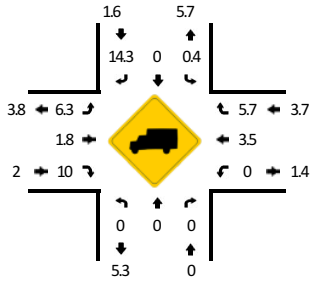
Method for determining peak hour: Total Entering Volume

LOCATION: Glen Rd -- Washington St
CITY/STATE: Wellesley, MA

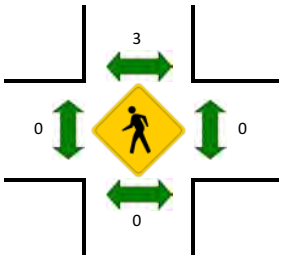
QC JOB #: 17218101
DATE: Wed, Oct 8 2025

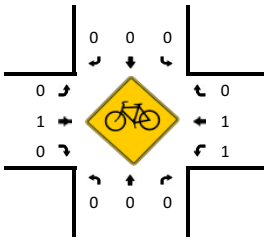
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

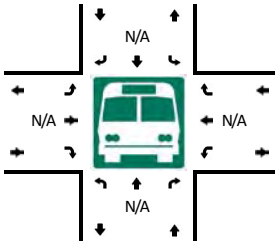


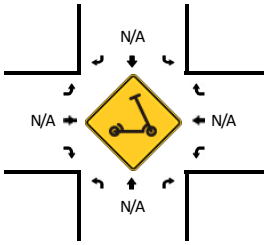


TRUE DATA TO IMPROVE MOBILITY









15-Min Count Period Beginning At	Glen Rd (Northbound)				Glen Rd (Southbound)				Washington St (Eastbound)				Washington St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	3	1	1	0	1	107	1	0	1	60	3	0	178	
6:15 AM	0	0	1	0	9	0	6	0	0	192	4	0	2	79	3	0	296	
6:30 AM	0	0	2	0	6	0	2	0	3	185	2	0	0	109	9	0	318	
6:45 AM	1	0	0	0	31	0	3	0	3	186	1	0	2	143	7	0	377	1169
7:00 AM	1	0	0	0	31	0	3	0	2	194	0	0	0	150	10	0	391	1382
7:15 AM	1	0	1	0	36	2	5	0	3	178	2	0	0	158	8	0	394	1480
7:30 AM	1	1	0	0	61	0	4	0	9	164	4	0	0	181	26	0	451	1613
7:45 AM	0	0	0	0	77	0	7	0	3	154	2	0	4	138	14	0	399	1635
8:00 AM	0	0	3	0	51	2	5	0	1	186	2	0	1	151	22	0	424	1668
8:15 AM	0	0	2	0	65	2	11	0	6	162	4	0	0	119	9	0	380	1654
8:30 AM	0	0	2	0	71	0	3	0	9	159	5	0	2	174	18	0	443	1646
8:45 AM	0	0	3	0	65	1	1	0	2	161	5	0	0	137	14	0	389	1636

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	4	0	0	244	0	16	0	36	656	16	0	0	724	104	0	1804
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	12	4		24
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 10/20/2025 2:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

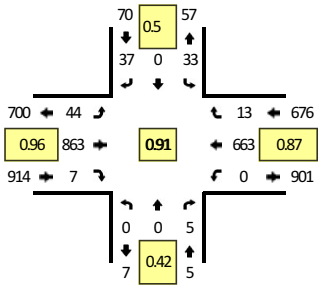
Type of peak hour being reported: Intersection Peak

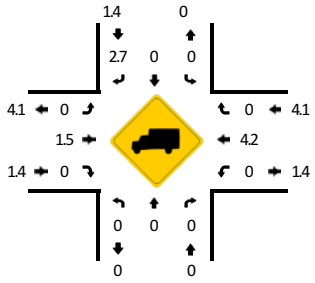
Method for determining peak hour: Total Entering Volume

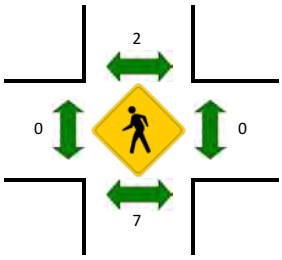
LOCATION: Ledyard St -- Washington St
CITY/STATE: Wellesley, MA

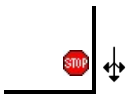
QC JOB #: 17218103
DATE: Wed, Oct 8 2025

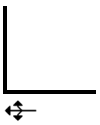
Peak-Hour: 7:15 AM -- 8:15 AM
Peak 15-Min: 7:30 AM -- 7:45 AM

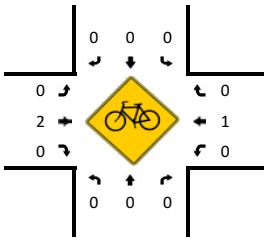


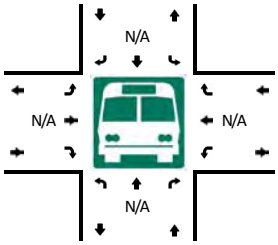


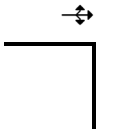


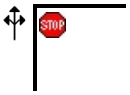


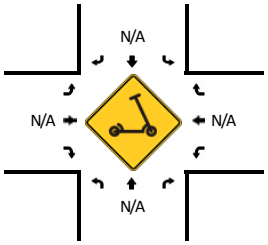












15-Min Count Period Beginning At	Ledyard St (Northbound)				Ledyard St (Southbound)				Washington St (Eastbound)				Washington St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	0	0	1	0	0	114	0	0	0	62	1	0	178	
6:15 AM	0	0	1	0	0	0	0	0	1	200	0	0	0	79	0	0	281	
6:30 AM	0	0	0	0	2	0	1	0	2	185	1	0	0	116	2	0	309	
6:45 AM	0	0	0	0	4	0	0	0	5	214	2	0	0	151	3	0	379	1147
7:00 AM	0	0	0	0	3	0	0	0	2	221	0	0	0	161	3	0	390	1359
7:15 AM	0	0	0	0	5	0	3	0	11	204	3	0	0	163	2	0	391	1469
7:30 AM	0	0	2	0	13	0	22	0	27	201	0	0	0	185	9	0	459	1619
7:45 AM	0	0	0	0	10	0	9	0	2	225	2	0	0	147	1	0	396	1636
8:00 AM	0	0	3	0	5	0	3	0	4	233	2	0	0	168	1	0	419	1665
8:15 AM	0	0	0	0	7	0	3	0	2	229	0	0	0	127	3	0	371	1645
8:30 AM	0	0	1	0	3	0	3	0	2	224	5	0	0	188	3	0	429	1615
8:45 AM	0	0	0	0	0	0	2	0	2	226	4	0	0	150	1	0	385	1604

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	8	0	52	0	88	0	108	804	0	0	0	740	36	0	1836
Heavy Trucks	0	0	0		0	0	4		0	8	0		0	12	0		24
Buses																	
Pedestrians		12				0				0				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 10/20/2025 2:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

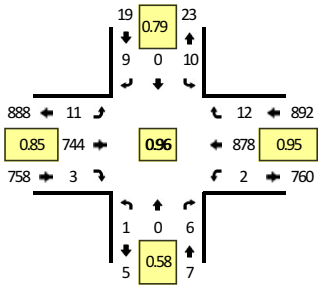
Type of peak hour being reported: Intersection Peak

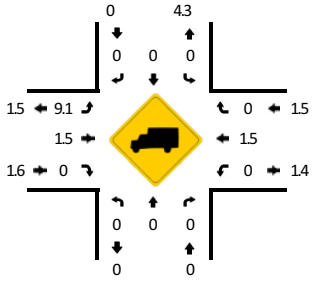
Method for determining peak hour: Total Entering Volume

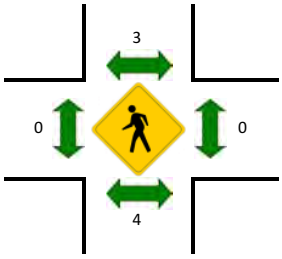
LOCATION: Ledyard St -- Washington St
CITY/STATE: Wellesley, MA

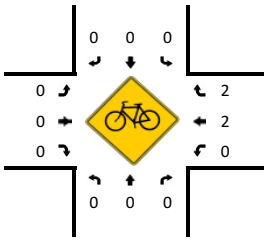
QC JOB #: 17218104
DATE: Wed, Oct 8 2025

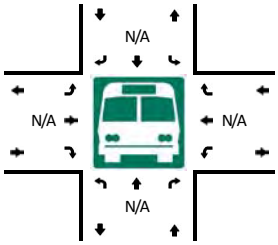
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 5:15 PM -- 5:30 PM

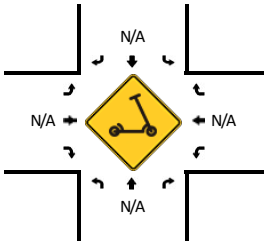












15-Min Count Period Beginning At	Ledyard St (Northbound)				Ledyard St (Southbound)				Washington St (Eastbound)				Washington St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	1	0	1	0	5	0	8	0	1	167	1	0	1	167	2	0	354	
3:15 PM	0	0	0	0	3	0	2	0	4	158	0	0	1	179	4	0	351	
3:30 PM	0	0	0	0	5	0	1	0	2	168	1	0	1	196	2	0	376	
3:45 PM	0	0	0	0	0	0	1	0	6	149	3	0	0	188	2	0	349	1430
4:00 PM	0	0	0	0	6	0	2	0	0	166	1	0	0	196	2	0	373	1449
4:15 PM	0	0	0	0	1	0	1	0	1	183	0	0	0	199	4	0	389	1487
4:30 PM	0	0	0	0	6	0	0	0	3	169	0	0	0	222	4	0	404	1515
4:45 PM	0	0	2	0	3	0	3	0	1	171	2	0	1	230	2	0	415	1581
5:00 PM	0	0	3	0	3	0	3	0	1	171	0	0	0	232	2	0	415	1623
5:15 PM	1	0	1	0	1	0	3	0	4	218	1	0	1	201	4	0	435	1669
5:30 PM	0	0	0	0	3	0	0	0	5	184	0	0	0	215	4	0	411	1676
5:45 PM	0	0	1	0	1	0	2	0	4	147	2	0	1	180	4	0	342	1603

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	4	0	4	0	12	0	16	872	4	0	4	804	16	0	1740
Heavy Trucks	0	0	0		0	0	0		0	20	0		0	16	0		36
Buses																	
Pedestrians		0				4				0				0			4
Bicycles	0	0	0		0	0	0		0	0	0		0	0	8		8
Scooters																	

Comments:

Report generated on 10/20/2025 2:00 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

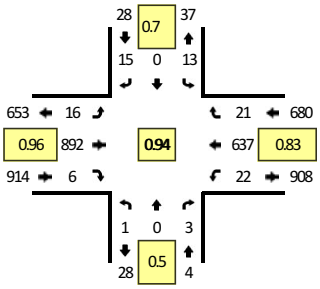
Type of peak hour being reported: Intersection Peak

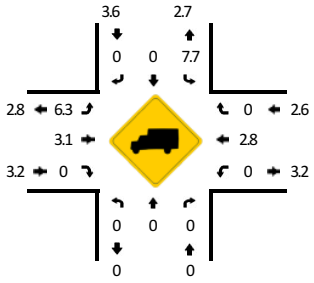
Method for determining peak hour: Total Entering Volume

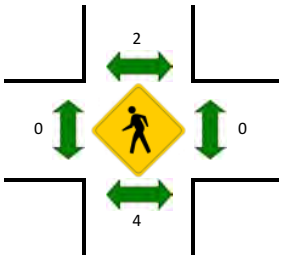
LOCATION: CVS West Dwy/Mass General -- Washington St
CITY/STATE: Wellesley, MA

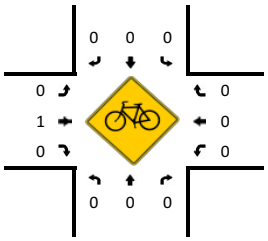
QC JOB #: 17218105
DATE: Wed, Oct 8 2025

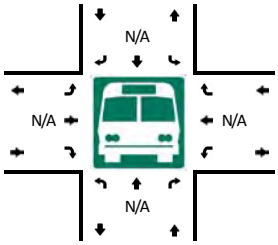
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

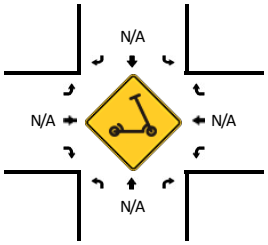












15-Min Count Period Beginning At	CVS West Dwy/Mass General (Northbound)				CVS West Dwy/Mass General (Southbound)				Washington St (Eastbound)				Washington St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	0	0	0	0	1	0	0	0	2	116	2	0	1	63	4	0	189	
6:15 AM	0	0	0	0	1	0	0	0	1	203	3	0	2	83	4	0	297	
6:30 AM	0	0	0	0	5	0	1	0	3	181	0	0	1	111	9	0	311	
6:45 AM	0	0	0	0	3	0	0	0	5	212	2	0	2	162	6	0	392	1189
7:00 AM	1	0	0	0	4	0	3	0	3	215	5	0	2	166	8	0	407	1407
7:15 AM	0	0	2	0	3	0	1	0	3	206	1	0	3	166	3	0	388	1498
7:30 AM	0	0	2	0	4	0	1	0	2	220	0	0	1	163	2	0	395	1582
7:45 AM	0	0	0	0	2	0	1	0	5	223	0	0	6	143	7	0	387	1577
8:00 AM	0	0	1	0	5	0	5	0	3	232	3	0	3	164	5	0	421	1591
8:15 AM	1	0	1	0	2	0	3	0	4	228	0	0	7	135	6	0	387	1590
8:30 AM	0	0	1	0	4	0	6	0	4	209	3	0	6	195	3	0	431	1626
8:45 AM	0	0	2	0	4	1	0	0	5	200	5	0	8	152	6	0	383	1622

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	4	0	16	0	24	0	16	836	12	0	24	780	12	0	1724
Heavy Trucks	0	0	0		0	0	0		0	44	0		0	12	0		56
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

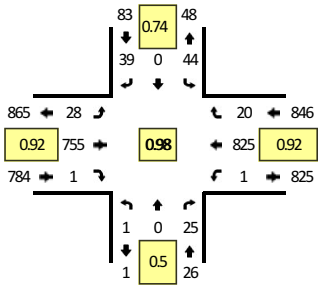
Report generated on 10/20/2025 2:00 PM

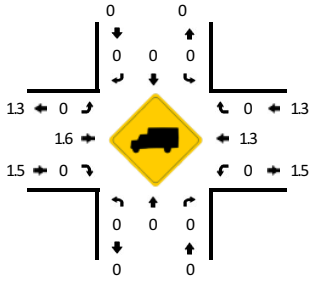
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

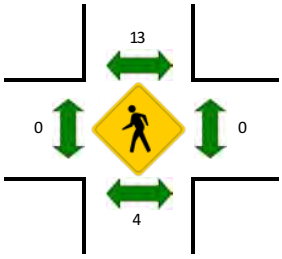
Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

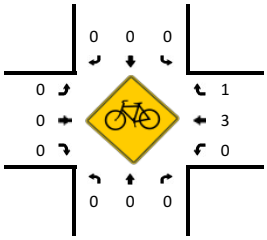
LOCATION: CVS West Dwy/Mass General -- Washington St | **QC JOB #:** 17218106
CITY/STATE: Wellesley, MA | **DATE:** Wed, Oct 8 2025

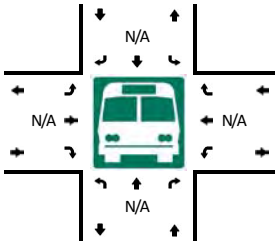
Peak-Hour: 4:45 PM -- 5:45 PM
Peak 15-Min: 4:45 PM -- 5:00 PM

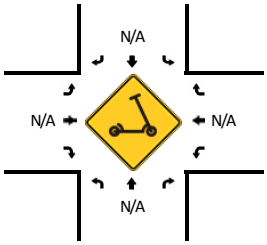












15-Min Count Period Beginning At	CVS West Dwy/Mass General (Northbound)				CVS West Dwy/Mass General (Southbound)				Washington St (Eastbound)				Washington St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	2	0	4	0	20	0	4	0	11	169	1	0	2	152	7	0	372	
3:15 PM	0	1	6	0	15	0	10	0	5	162	0	0	2	174	6	0	381	
3:30 PM	2	0	6	0	6	0	3	0	6	163	2	0	3	195	10	0	396	
3:45 PM	1	0	4	0	15	0	13	0	8	145	3	0	1	173	7	0	370	1519
4:00 PM	3	0	5	0	6	0	17	0	12	179	0	0	0	174	7	0	403	1550
4:15 PM	1	0	12	0	13	0	13	0	14	175	1	0	0	183	3	0	415	1584
4:30 PM	1	0	8	0	16	0	22	0	3	184	0	0	0	199	2	0	435	1623
4:45 PM	0	0	5	0	14	0	12	0	5	175	0	0	0	224	7	0	442	1695
5:00 PM	0	0	13	0	10	0	5	0	5	182	0	0	0	214	5	1	435	1727
5:15 PM	1	0	4	0	7	0	7	0	8	205	0	0	0	186	3	0	421	1733
5:30 PM	0	0	3	0	13	0	15	0	10	193	1	0	0	201	5	0	441	1739
5:45 PM	0	0	3	0	9	0	12	0	1	151	1	0	0	168	6	0	351	1648

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	20	0	56	0	48	0	20	700	0	0	0	896	28	0	1768
Heavy Trucks	0	0	0		0	0	0		0	12	0		0	16	0		28
Buses																	
Pedestrians		0				24				0				0			24
Bicycles	0	0	0		0	0	0		0	0	0		0	4	0		4
Scooters																	

Comments:

Report generated on 10/20/2025 2:00 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

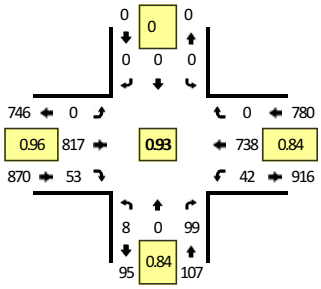
Type of peak hour being reported: Intersection Peak

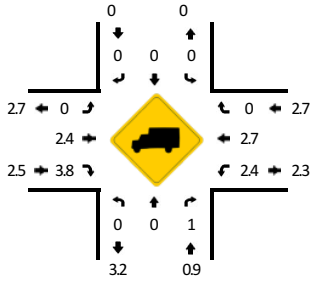
Method for determining peak hour: Total Entering Volume

LOCATION: River St -- Washington St
CITY/STATE: Wellesley, MA

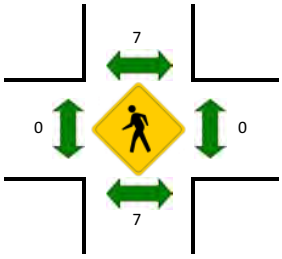
QC JOB #: 17218107
DATE: Wed, Oct 8 2025

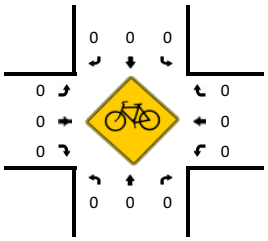
Peak-Hour: 7:45 AM -- 8:45 AM
Peak 15-Min: 8:30 AM -- 8:45 AM

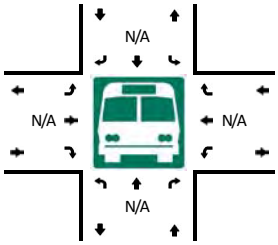


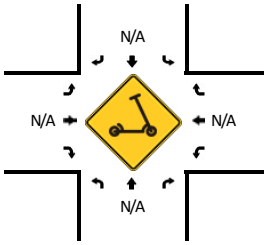


TRUE DATA TO IMPROVE MOBILITY









15-Min Count Period Beginning At	River St (Northbound)				River St (Southbound)				Washington St (Eastbound)				Washington St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:00 AM	1	0	11	0	0	0	0	0	0	101	0	0	2	78	0	0	193	
6:15 AM	3	0	5	0	0	0	0	0	0	196	2	0	4	88	0	0	298	
6:30 AM	1	0	29	0	0	0	0	0	0	166	4	0	7	145	0	0	352	
6:45 AM	6	0	16	0	0	0	0	0	0	206	4	0	6	189	0	0	427	1270
7:00 AM	5	0	12	0	0	0	0	0	0	207	5	0	4	201	0	0	434	1511
7:15 AM	4	0	27	0	0	0	0	0	0	201	3	0	4	186	0	0	425	1638
7:30 AM	1	0	14	0	0	0	0	0	0	214	10	0	14	178	0	0	431	1717
7:45 AM	2	0	30	0	0	0	0	0	0	196	14	0	8	186	0	0	436	1726
8:00 AM	4	0	21	0	0	0	0	0	0	211	15	0	9	184	0	0	444	1736
8:15 AM	1	0	24	0	0	0	0	0	0	210	10	0	11	151	0	0	407	1718
8:30 AM	1	0	24	0	0	0	0	0	0	200	14	0	14	217	0	0	470	1757
8:45 AM	10	0	28	0	0	0	0	0	0	187	11	0	7	191	0	0	434	1755

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	0	96	0	0	0	0	0	0	800	56	0	56	868	0	0	1880
Heavy Trucks	0	0	0		0	0	0		0	32	4		4	16	0		56
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

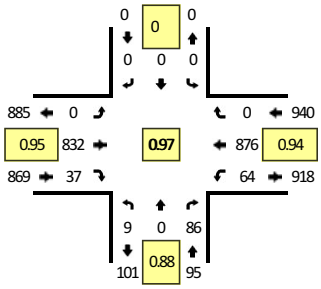
Report generated on 10/20/2025 2:00 PM

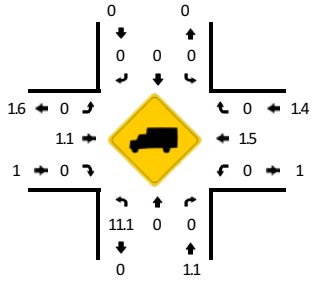
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of peak hour being reported: Intersection Peak | Method for determining peak hour: Total Entering Volume

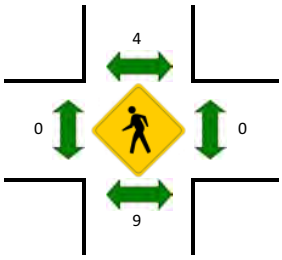
LOCATION: River St -- Washington St | **QC JOB #:** 17218108
CITY/STATE: Wellesley, MA | **DATE:** Wed, Oct 8 2025

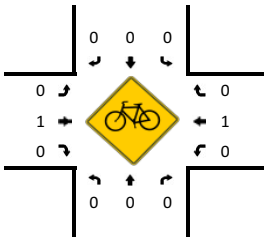
Peak-Hour: 4:30 PM -- 5:30 PM
Peak 15-Min: 5:00 PM -- 5:15 PM

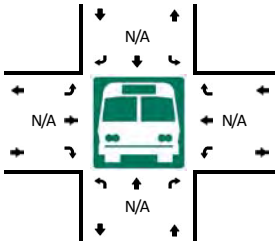


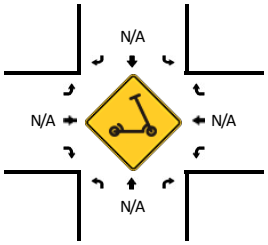


TRUE DATA TO IMPROVE MOBILITY









15-Min Count Period Beginning At	River St (Northbound)				River St (Southbound)				Washington St (Eastbound)				Washington St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	6	0	18	0	0	0	0	0	0	173	19	0	11	173	0	0	400	
3:15 PM	15	0	30	0	0	0	0	0	0	177	8	0	15	180	0	0	425	
3:30 PM	14	0	24	0	0	0	0	0	0	160	10	0	17	218	0	0	443	
3:45 PM	6	0	16	0	0	0	0	0	0	162	14	0	17	187	0	0	402	1670
4:00 PM	7	0	23	0	0	0	0	0	0	183	15	0	8	176	0	0	412	1682
4:15 PM	2	0	25	0	0	0	0	0	0	193	11	0	9	187	0	0	427	1684
4:30 PM	2	0	25	0	0	0	0	0	0	196	10	0	12	222	0	0	467	1708
4:45 PM	3	0	23	0	0	0	0	0	0	202	10	0	21	229	0	0	488	1794
5:00 PM	0	0	21	0	0	0	0	0	0	212	10	0	20	229	0	0	492	1874
5:15 PM	4	0	17	0	0	0	0	0	0	222	7	0	11	196	0	0	457	1904
5:30 PM	5	0	17	0	0	0	0	0	0	201	12	0	13	199	0	0	447	1884
5:45 PM	5	0	31	0	0	0	0	0	0	158	11	0	11	195	0	0	411	1807

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	84	0	0	0	0	0	0	848	40	0	80	916	0	0	1968
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	8	0		12
Buses																	
Pedestrians		12				0				0				0			12
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/20/2025 2:00 PM | SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

APPENDIX C

2024 MASSDOT SEASONAL ADJUSTMENT FACTOR

Massachusetts Highway Department
Statewide Traffic Data Collection
2024 Weekday Seasonal Factors

Factor Group	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Axle Factor
R1	1.17	1.12	1.11	1.06	1.00	0.96	0.94	0.92	1.00	0.98	1.06	1.07	0.78
R3	1.10	1.04	1.04	1.02	0.91	0.88	0.88	0.87	0.92	0.92	0.99	1.01	0.98
R4-R7	1.16	1.12	1.08	1.03	0.92	0.89	0.88	0.89	0.92	0.94	1.04	1.10	0.98
U1-Boston	1.07	1.03	0.98	0.97	0.94	0.91	0.94	0.91	0.94	0.94	0.98	1.02	0.94
U1-Essex	1.13	1.09	1.06	1.04	0.95	0.89	0.88	0.87	0.95	0.95	1.03	1.05	0.96
U1-Southeast	1.14	1.10	1.04	0.99	0.93	0.86	0.87	0.85	0.91	0.93	0.99	1.02	0.96
U1-West	1.10	1.02	0.98	0.96	0.95	0.92	0.94	0.91	0.91	0.91	0.96	1.00	0.83
U1-Worcester	1.08	1.03	0.99	0.98	0.94	0.91	0.93	0.91	0.92	0.91	0.95	1.00	0.93
U3	1.06	1.02	0.98	0.96	0.93	0.91	0.95	0.94	0.93	0.93	0.96	1.00	0.98
U4-U7	1.04	1.02	0.96	0.95	0.91	0.90	0.94	0.94	0.93	0.94	0.98	1.02	0.99
UR2	1.08	1.02	0.98	0.97	0.93	0.90	0.93	0.90	0.92	0.92	0.97	1.01	0.98
Rec - East	1.21	1.20	1.09	1.01	0.91	0.81	0.77	0.79	0.91	0.95	1.05	1.13	0.99
Rec - West	1.46	1.38	1.32	1.06	0.94	0.79	0.59	0.69	0.97	0.99	1.18	1.28	0.99

Round off:
0-999 = 10
>1000 = 100

U = Urban
R = Rural

1 - Interstate
2 - Freeway and Expressway
3 - Other Principal Arterial
4 - Minor Arterial
5 - Major Collector
6 - Minor Collector
7 - Local Road and Street

UR2 Group - Combination of Urban Freeways and Expressways and Rural Freeways and Expressways.

Recreational - East Group - Cape Cod (all towns) including the town of Plymouth south of Route 3A (stations 7014,7079,7080,7090,7091,7092,7093,7094,7095,7096,7097,7108 and 7178), Martha's Vineyard and Nantucket.

Recreational - West Group - Continuous Stations 2 and 189 including stations 1066,1067,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,1093,1094,1095,1096,1097,1098,1099,1100,1101,1102,1103,1104,1105,1106,1107,1108,1113, 1114,1116,2196,2197 and 2198.

5/2/2025

APPENDIX D

CRASH DATA

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Wellesley | COUNT DATE : October 8, 2025

DISTRICT : 6 | UNSIGNALIZED : | SIGNALIZED : X

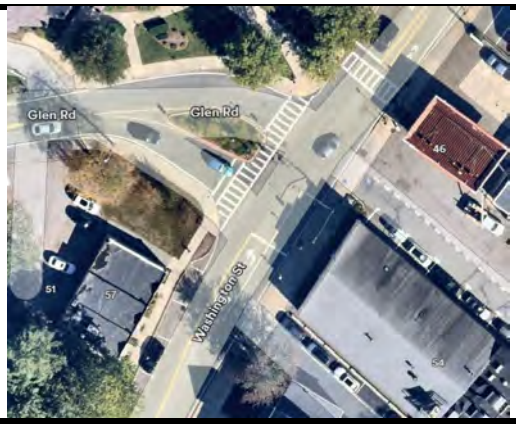
~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Glen Road

Washington Court

INTERSECTION DIAGRAM (Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (AM/PM) :	677	886	121	12		1696

" K " FACTOR : 0.069 | INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : 24612

TOTAL # OF CRASHES : 4 | # OF YEARS : 5 | AVERAGE # OF CRASHES PER YEAR (**A**) : 0.8

CRASH RATE CALCULATION : 0.09 RATE = $\frac{(A * 1{,}000{,}000)}{(V * 365)}$

Comments : MassDOT District 6 Signalized Crash Rate = 0.71 | Statewide = 0.78

Project Title & Date: FCB Wellesley TIAS | December 2025

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Wellesley

COUNT DATE : October 8, 2025

DISTRICT : 6

UNSIGNALIZED : X

SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Ledyard Street

INTERSECTION DIAGRAM (Label Approaches)

PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (AM/PM) :	758	892	19	7		1676

" K " FACTOR : 0.069

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : 24322

TOTAL # OF CRASHES : 3

OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR (**A**) : 0.6

CRASH RATE CALCULATION : 0.07

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

Comments : MassDOT District 6 unsignalized Crash Rate = 0.52 | Statewide = 0.57

Project Title & Date: FCB Wellesley TIAS | December 2025

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Wellesley | COUNT DATE : October 8, 2025

DISTRICT : 6 | UNSIGNALIZED : X | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : Mass General Driveway

Private Driveway

INTERSECTION DIAGRAM (Label Approaches)

PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (AM/PM) :	784	846	83	26		1739

" K " FACTOR : 0.069

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : 25236

TOTAL # OF CRASHES : 14

OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR (**A**) : 2.80

CRASH RATE CALCULATION : 0.30

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

Comments : MassDOT District 6 unsignalized Crash Rate = 0.52 | Statewide = 0.57

Project Title & Date: FCB Wellesley TIAS | December 2025

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Wellesley | COUNT DATE : October 8, 2025

DISTRICT : 6 | UNSIGNALIZED : X | SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street

MINOR STREET(S) : River Street

INTERSECTION DIAGRAM (Label Approaches)

N
North

PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	WB			
PEAK HOURLY VOLUMES (AM/PM) :	869	940	95			1904

" K " FACTOR : 0.069

INTERSECTION ADT (**V**) = TOTAL DAILY APPROACH VOLUME : 27630

TOTAL # OF CRASHES : 34

OF YEARS : 5

AVERAGE # OF CRASHES PER YEAR (**A**) : 6.80

CRASH RATE CALCULATION : 0.67

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

Comments : MassDOT District 6 unsignalized Crash Rate = 0.52 | Statewide = 0.57

Project Title & Date: FCB Wellesley TIAS | December 2025

APPENDIX E

GROWTH RATE

Project Name:	FCB Wellesley TIAS	**Data Source:**	MassDOT (TCDS)
Project Number:	011737473	**Local District:**	6

The table below summarizes traffic count data from MassDOT (TCDS) traffic count maps. The locations chosen are in the general vicinity of the project site. Five years worth of data was evaluated and the growth averaged over the five year period.

MassDOT (TCDS) Historical Daily Traffic Volumes

Location	Count Station	2020	2021	2022	2023	2024	Average Annual Growth
WASHINGTON STREET BETWEEN RTE. I-95/128 AND GROVE STREET	6726	17,772	15,509	15,742	16,104	19,963	3.8%
WASHINGTON STREET EAST OF I-95	S16-026-207-81	32,059	36,098	36,639	37,482	37,707	4.2%
PARK ROAD AT MASS. PIKE UNDERPASS (north of Orchard Ave.) (Weston)	4015	6,717	7,523	7,515	7,680	6,753	0.5%
WELLESLEY AVENUE EAST OF August Way (Needham)	6206	1,658	1,857	1,855	1,659	1,669	0.5%
WASHINGTON STREET EAST OF FOREST ST.	6725	18,872	21,149	21,466	21,960	22,092	4.1%
						Average Annual Growth Rate	**2.6%**
						Proposed Annual Growth Rate	**2.00%**

Current Year	**2025**
Project Year	**2032**
Synchro Growth Factor	**1.15**
Growth Years	7

A growth rate of 2% is proposed for the site.

APPENDIX F

TRIP GENERATION

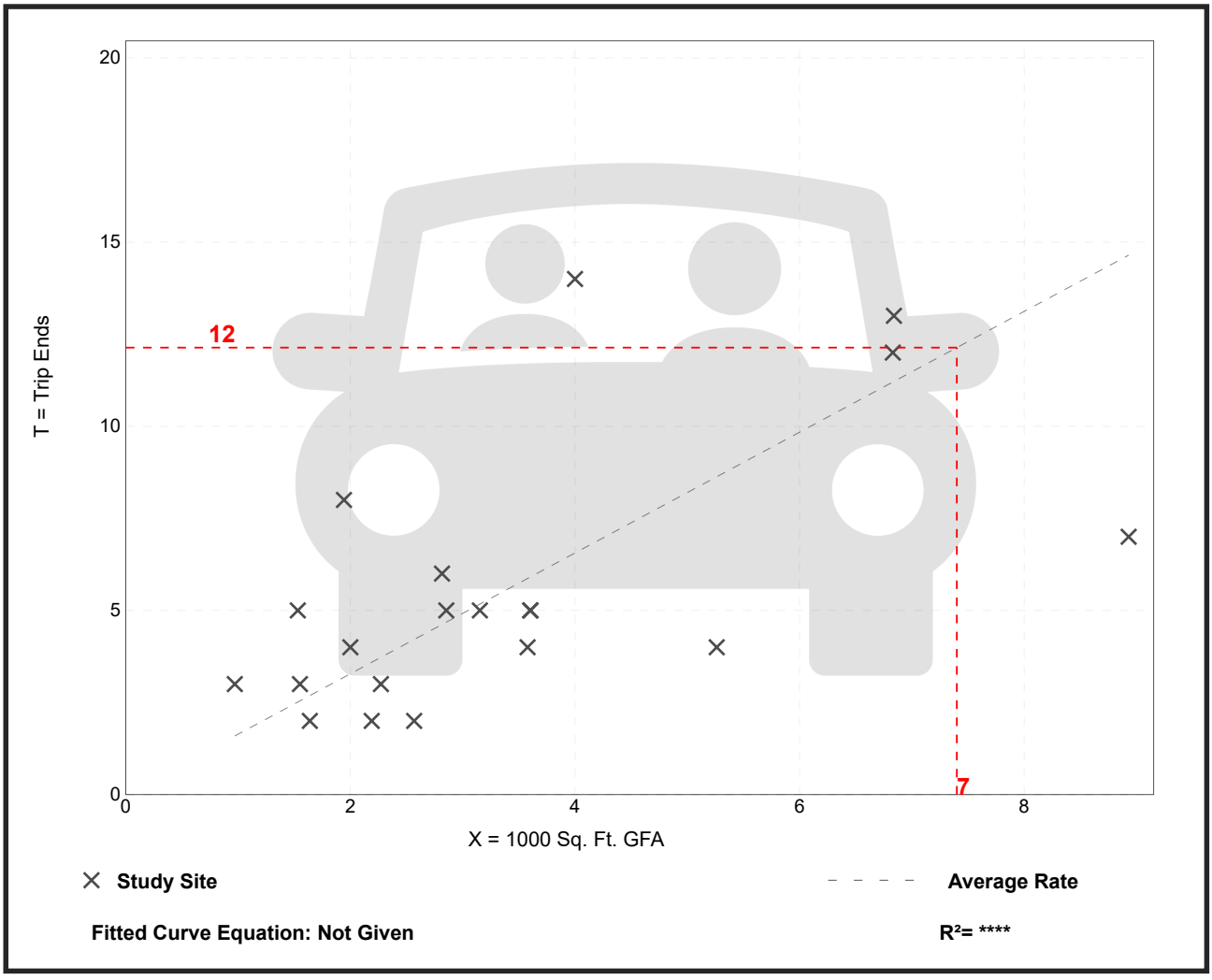
Small Office Building
(712)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 20
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 83% entering, 17% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
1.64	0.76 - 4.12	0.87

Data Plot and Equation



Trip Gen Manual, 12th Edition ● Institute of Transportation Engineers

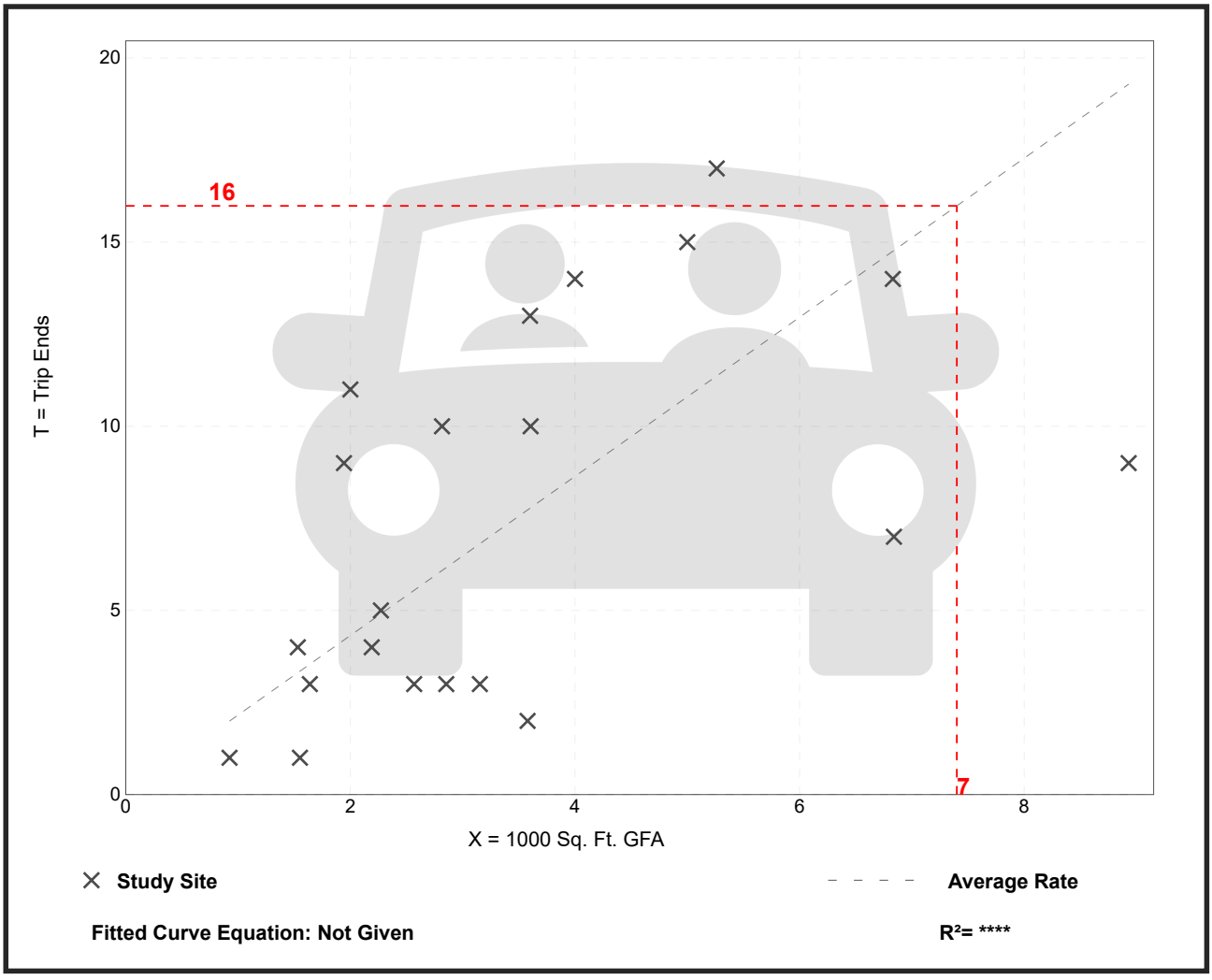
Small Office Building
(712)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 21
Avg. 1000 Sq. Ft. GFA: 3
Directional Distribution: 34% entering, 66% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
2.16	0.56 - 5.50	1.26

Data Plot and Equation



Trip Gen Manual, 12th Edition ● Institute of Transportation Engineers

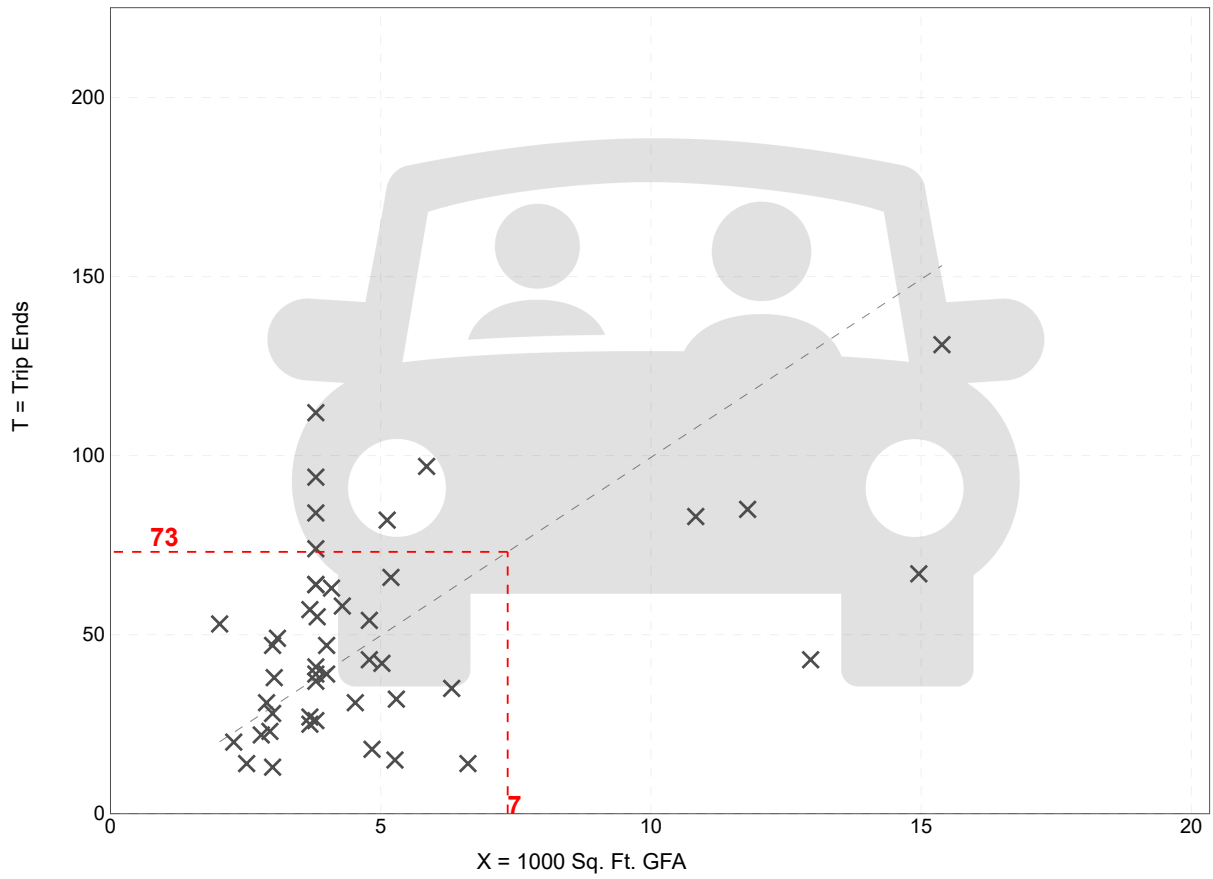
Drive-in Bank
(912)

Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 46
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 58% entering, 42% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
9.95	2.12 - 29.47	5.89

Data Plot and Equation



Trip Gen Manual, 12th Edition ● Institute of Transportation Engineers

Walk-in Bank
(911)

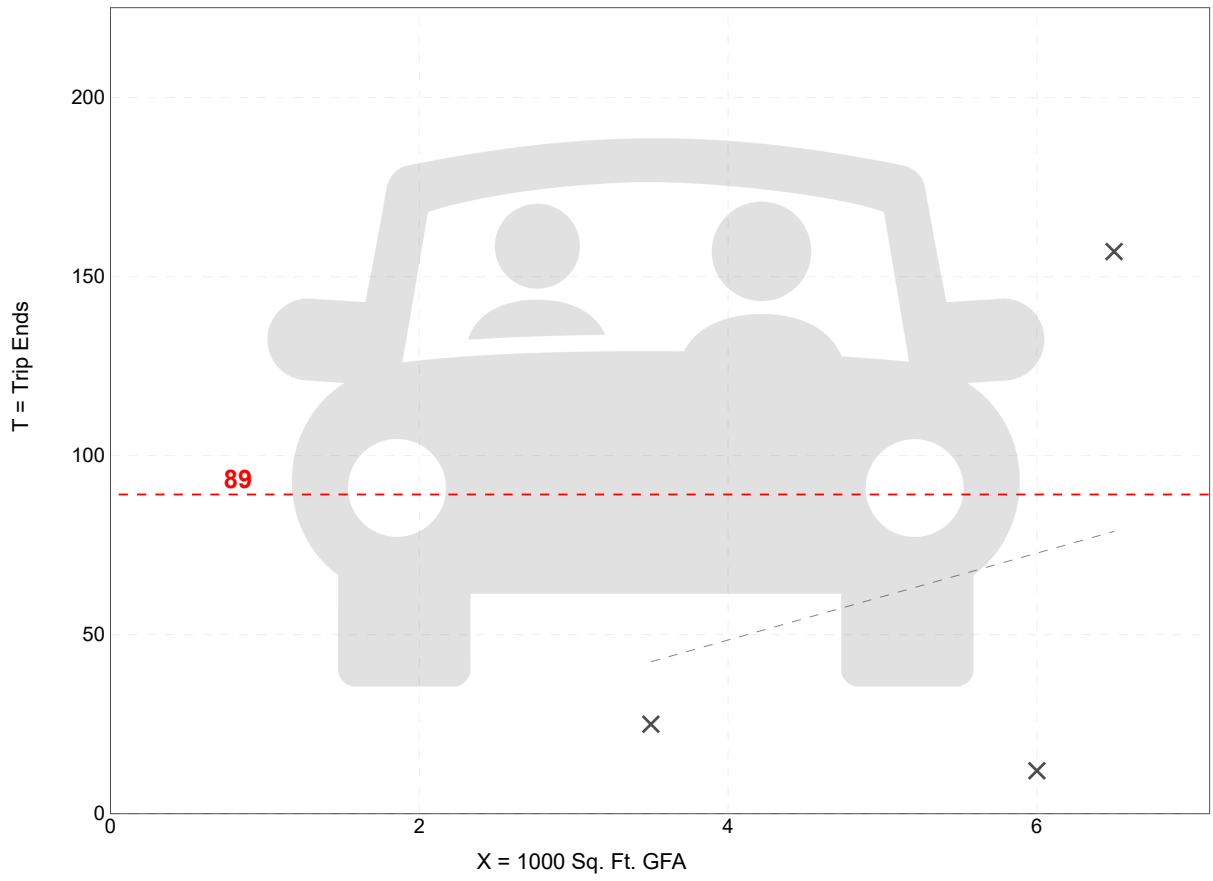
Vehicle Trip Ends vs: **1000 Sq. Ft. GFA**
On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m.
Setting/Location: **General Urban/Suburban**
Number of Studies: 3
Avg. 1000 Sq. Ft. GFA: 5
Directional Distribution: 44% entering, 56% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
12.13	2.00 - 24.15	12.41

Data Plot and Equation

Caution – Small Sample Size



Trip Gen Manual, 12th Edition ● Institute of Transportation Engineers

Vehicle Pass-By Rates by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	912
Land Use	Drive-In Bank
Setting	General Urban/Suburban
Time Period	Weekday AM Peak Period
# Data Sites	8
Average Pass-By Rate	29%

Pass-By Characteristics for Individual Sites

GFA (000)	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
					Primary (%)	Diverted (%)	Total (%)		
3.8	Pennsylvania	2005	11	27	—	—	73	—	19
3.8	Pennsylvania	2005	9	24	—	—	76	—	19
3.8	Pennsylvania	2005	22	34	—	—	66	—	19
3.8	Pennsylvania	2005	30	27	—	—	73	—	19
3.8	Pennsylvania	2005	34	40	—	—	60	—	19
3.8	Pennsylvania	2005	7	27	—	—	73	—	19
3.8	Pennsylvania	2005	15	16	—	—	84	—	19
3.8	Pennsylvania	2005	27	36	—	—	64	—	19

Vehicle Pass-By Rates by Land Use

Source: ITE *Trip Generation Manual* , 11th Edition

Land Use Code	912
Land Use	Drive-In Bank
Setting	General Urban/Suburban
Time Period	Weekday PM Peak Period
# Data Sites	19
Average Pass-By Rate	35%

Pass-By Characteristics for Individual Sites

GFA (000)	State or Province	Survey Year	# Interviews	Pass-By Trip (%)	Non-Pass-By Trips			Adj Street Peak Hour Volume	Source
					Primary (%)	Diverted (%)	Total (%)		
2.7	Washington	2007	—	26	66	8	74	—	11
2.8	Washington	2007	—	21	55	24	79	—	11
3.3	Kentucky	1993	—	48	22	30	52	2570	34
3.4	Kentucky	1993	—	64	22	14	36	2266	34
3.4	Kentucky	1993	75	57	11	32	43	1955	34
3.5	Kentucky	1993	53	47	32	21	53	2785	2
3.6	Washington	2007	—	42	50	8	58	—	11
3.6	Washington	2007	—	29	—	—	71	—	11
3.8	Pennsylvania	2005	56	43	—	—	57	—	19
3.8	Pennsylvania	2005	38	41	—	—	59	—	19
3.8	Pennsylvania	2005	14	24	—	—	76	—	19
3.8	Pennsylvania	2005	63	29	—	—	71	—	19
3.8	Pennsylvania	2005	70	29	—	—	71	—	19
3.8	Pennsylvania	2005	29	27	—	—	73	—	19
3.8	Pennsylvania	2005	41	25	—	—	75	—	19
3.8	Pennsylvania	2005	37	31	—	—	69	—	19
3.8	Pennsylvania	2005	19	29	—	—	71	—	19
3.8	Pennsylvania	2005	34	21	—	—	79	—	19
3.8	Pennsylvania	2005	36	29	—	—	71	—	19

Project Name: FCB Wellesley TIAS
Project Number: 011737473

Peak Perio AM
Peak Perio PM

Trip Generation									
Land Use	**Amount**	**Units**	**ITE Code**	**AM Peak Hour One-Way Trips**			**PM Peak Hour One-Way Trips**		
				IN	**OUT**	**TOTAL**	**IN**	**OUT**	**TOTAL**
Small Office Building	7,385	SF	712	10	2	12	5	11	16
Walk-in Bank	7,349	SF	911	42	31	73	39	50	89
Total Passenger Vehicles				**52**	**33**	**85**	**44**	**61**	**105**
Walk-in Bank Pass-By Trips (29% AM, 35% PM):				*12*	*9*	*21*	*14*	*18*	*32*
Subtotal Pass-By Trips:				***12***	***9***	***21***	***14***	***18***	***32***
Net New External Trips:				**40**	**24**	**64**	**30**	**43**	**73**

Trip generation based on ITE's Trip Generation Manual, 12th Edition. AM Peak Hour Trips generated using ITE's Trip Generation Handbook for Drive-In Bank (Land Use Code 912)
Pass-by trips based on ITE's Trip Generation Handbook, 3rd Edition. Pass-by trips estimated using ITE's Trip Generation Handbook for Drive-In Bank (Land Use Code 912)

APPENDIX G

VOLUME DEVELOPMENT

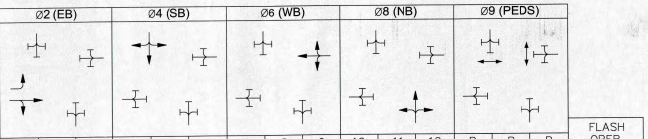
	Intersection (North/South and East/West)	Direction	Movement SYNCHRO	Existing 2025 AM	Existing 2025 PM	Existing PHF 2025 AM	Existing PHF 2025 PM	Existing HV Percentage 2025 AM	Existing HV Percentage 2025 PM	No Build 2032 AM	No Build 2032 PM	No Build 2032 0	Trip Distribution %IN	Trip Distribution %OUT	Trip Assignment AM	Trip Assignment PM	Pass-By Distribution %IN	Pass-By Distribution %OUT	Pass-By Trips AM	Pass-By Trips PM	Total Trips AM	Total Trips PM	Build Out 2032 AM	Build Out 2032 PM
1	Washington Street	SB	SBL	5	6	0.85	0.94	0	0	6	7	0			0	0			0	0	0	0	6	7
	and	(Washington Street)	SBT	628	772	0.85	0.94	4	2	721	887	0		38	13	23			0	0	13	23	734	910
	Glen Road/Washington Court		SBR	70	108	0.85	0.94	6	1	80	124	0		10	3	6			0	0	3	6	83	130
		WB	WBL	2	5	0.58	0.60	0	0	2	6	0			0	0			0	0	0	0	2	6
	AM (7:15-8:15)	Glen Road/Washington Cour	WBT	1	2	0.58	0.60	0	0	1	2	0			0	0			0	0	0	0	1	2
	PM (4:45- 5:45)		WBR	4	5	0.58	0.60	0	20	5	6	0			0	0			0	0	0	0	5	6
		NB	NBL	16	25	0.94	0.88	6	0	18	29	0			0	0			0	0	0	0	18	29
		(Washington Street)	NBT	682	646	0.94	0.88	2	2	783	742	0	38		20	17			0	0	20	17	803	759
			NBR	10	6	0.94	0.88	10	0	11	7	0			0	0			0	0	0	0	11	7
		EB	EBL	225	102	0.74	0.84	0	0	258	117	0	10		5	4			0	0	5	4	263	121
		(Glen Road/Washington Cour	EBT	4	1	0.74	0.84	0	0	5	1	0			0	0			0	0	0	0	5	1
			EBR	21	18	0.74	0.84	14	0	24	21	0			0	0			0	0	0	0	24	21
2	Washington Street	SB	SBL		2	0.87	0.95	0	0	0	2	0			0	0			0	0	0	0	0	2
	and	(Washington Street)	SBT	663	878	0.87	0.95	4	2	762	1,009	0		48	16	29			0	0	16	29	778	1,038
	Ledyard Street		SBR	13	12	0.87	0.95	0	0	15	14	0		2	1	2			0	0	1	2	16	16
		WB	WBL					0	0	0	0	0			0	0			0	0	0	0	0	0
		(Ledyard Street)	WBT					0	0	0	0	0			0	0			0	0	0	0	0	0
	AM (7:15 - 8:15)		WBR					0	0	0	0	0			0	0			0	0	0	0	0	0
	PM (4:45- 5:45)	NB	NBL	44	11	0.96	0.85	0	9	51	13	0			0	0			0	0	0	0	51	13
		(Washington Street)	NBT	863	744	0.96	0.85	2	2	991	855	0	48		25	21			0	0	25	21	1,016	876
			NBR	7	3	0.96	0.85	0	0	8	3	0			0	0			0	0	0	0	8	3
		EB	EBL	33	10	0.50	0.79	0	0	38	11	0	2		1	1			0	0	1	1	39	12
		(Ledyard Street)	EBT			0.50	0.79	0	0	0	0	0			0	0			0	0	0	0	0	0
			EBR	37	9	0.50	0.79	3	0	43	10	0			0	0			0	0	0	0	43	10
3	Washington Street	SB	SBL	22	1	0.83	0.92	0	0	25	1	0			0	0			0	0	0	0	25	1
	and	(Washington Street)	SBT	637	825	0.83	0.92	3	1	732	948	0		50	17	31			0	0	17	31	749	979
	Mass General/Private Driveway		SBR	21	20	0.83	0.92	0	0	24	23	0			0	0			0	0	0	0	24	23
		WB	WBL	1	1	0.50	0.50	0	0	1	1	0			0	0			0	0	0	0	1	1
	AM (7:45 - 8:45)	Mass General/Private Drivewa	WBT			0.50	0.50	0	0	0	0	0			0	0			0	0	0	0	0	0
	PM (4:45- 5:45)		WBR	3	25	0.50	0.50	0	0	3	29	0			0	0			0	0	0	0	3	29
		NB	NBL	16	28	0.96	0.92	6	0	18	32	0			0	0			0	0	0	0	18	32
		(Washington Street)	NBT	892	755	0.96	0.92	3	2	1,025	867	0	50		26	22			0	0	26	22	1,051	889
			NBR	6	1	0.96	0.92	0	0	7	1	0			0	0			0	0	0	0	7	1
		EB	EBL	13	44	0.70	0.74	8	0	15	51	0			0	0			0	0	0	0	15	51
		(Mass General/Private Drivewa	EBT			0.70	0.74	0	0	0	0	0			0	0			0	0	0	0	0	0
			EBR	15	39	0.70	0.74	0	0	17	45	0			0	0			0	0	0	0	17	45
4	Washington Street	SB	SBL	42	64	0.84	0.94	2	0	48	74	0			0	0			0	0	0	0	48	74
	and	(Washington Street)	SBT	738	876	0.84	0.94	3	2	848	1,006	0	50		26	22			0	0	26	22	874	1,028
	River Street		SBR			0.84	0.94	0	0	0	0	0			0	0			0	0	0	0	0	0
		WB	WBL	8	9	0.84	0.88	0	11	9	10	0			0	0			0	0	0	0	9	10
	AM (7:45 - 8:45)	(River Street)	WBT			0.84	0.88	0	0	0	0	0			0	0			0	0	0	0	0	0
	PM (4:30 - 5:30)		WBR	99	86	0.84	0.88	1	0	114	99	0			0	0			0	0	0	0	114	99
		NB	NBL			0.96	0.95	0	0	0	0	0			0	0			0	0	0	0	0	0
		(Washington Street)	NBT	817	832	0.96	0.95	2	1	938	956	0		50	16	30			0	0	16	30	954	986
			NBR	53	37	0.96	0.95	4	0	61	43	0			0	0			0	0	0	0	61	43
		EB	EBL					0	0	0	0	0			0	0			0	0	0	0	0	0
		(River Street)	EBT					0	0	0	0	0			0	0			0	0	0	0	0	0
			EBR					0	0	0	0	0			0	0			0	0	0	0	0	0
5	Washington Street	SB	SBL					0	0	0	0	0	50		26	22	50		6	7	32	29	32	29
	and	(Washington Street)	SBT	746	885			0	0	857	1,017	0			0	0	-50		-6	-7	-6	-7	851	1,010
	Site Driveway		SBR					0	0	0	0	0			0	0			0	0	0	0	0	0
		WB	WBL					0	0	0	0	0		50	17	31		50	5	9	22	40	22	40
		(Site Driveway)	WBT					0	0	0	0	0			0	0			0	0	0	0	0	0
			WBR					0	0	0	0	0		50	16	30		50	4	9	20	39	20	39
		NB	NBL					0	0	0	0	0			0	0			0	0	0	0	0	0
		(Washington Street)	NBT	908	824			0	0	1,043	947	0			0	0	-50		-6	-7	-6	-7	1,037	940
			NBR					0	0	0	0	0	50		26	22	50		6	7	32	29	32	29
		EB	EBL					0	0	0	0	0			0	0			0	0	0	0	0	0
		(Site Driveway)	EBT					0	0	0	0	0			0	0			0	0	0	0	0	0
			EBR					0	0	0	0	0			0	0			0	0	0	0	0	0

APPENDIX H

SIGNAL TIMINGS

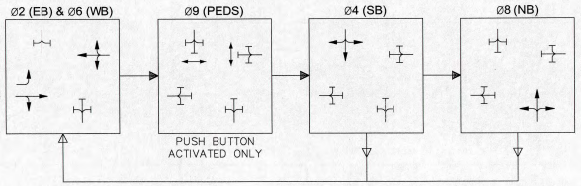
SIGNAL TIMING AND PHASING DIAGRAM
WASHINGTON STREET AT GLEN ROAD

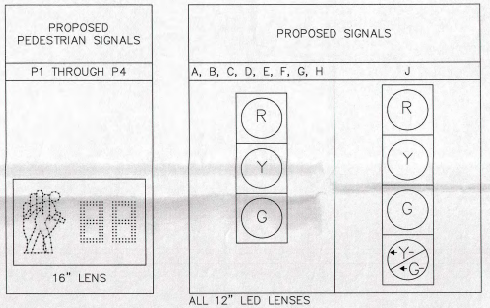
FULLY–ACTUATED ☒ COORDINATED ☐
SEMI–ACTUATED ☐ ISOLATED ☒
PRE–TIMED ☐ WIRE CONNECTED ☐



STREET	DIRECTION	HEAD	1	2	3	4	5	6	7	8	9	10	11	12	R	R	R	FLASH OPER.
WASHINGTON STREET	EB	H, K	G	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	FY
WASHINGTON STREET	EB	J																
WASHINGTON STREET	WB	A, B	R	R	R	R	R	R	G	Y	R	R	R	R	R	R	R	FY
GLEN ROAD	SB	D, F, G	R	R	R	G	Y	R	R	R	R	R	R	R	R	R	R	FR
WASHINGTON COURT	NB	C, E	R	R	R	R	R	R	R	R	R	G	Y	R	R	R	R	FR
PEDESTRIANS		P1 THRU P4	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	DW	W	FW	DW	DW
MINIMAL GREEN			8			8			8			8						EMERGENCY
EXTENSION			3			2			3			2						
MAX 1	6:00 AM – 10:00 AM		45			15			45			10						
MAX 2	3:00 PM – 7:00 PM		60			10			60			10						
MAX 3	(NOT ACTIVATED AT THIS TIME)																	
MAX 4	(ALL OTHER TIMES)		55			15			55			10						
PEDESTRIAN															7			
CHANGE				4	2		3	2		4	2		3	2		19	1	
RECALL			SOFT			NONE			SOFT			NONE			NONE			
MEMORY			NONLOCKING			NONLOCKING			NONLOCKING			NONLOCKING			LOCK			

PREFERENTIAL PHASE SEQUENCE





MAJOR ITEMS

QUANTITY	DESCRIPTION
1	TRAFFIC SIGNAL CONTROLLER TYPE EPAC 3608M52 (TS2 – TYPE 1), LOCATED IN BASE MOUNTED CABINET (TYPE P) FOUNDATION AND CONCRETE PAD
1	ORNAMENTAL 25' MAST ARM (STEEL) – TYPE II MONOLEVER WITH FOUNDATION
1	ORNAMENTAL 20' & 25' MAST ARM (STEEL) – TYPE II DUAL LEVER WITH FOUNDATION
2	ORNAMENTAL 10' TRAFFIC SIGNAL PEDESTAL AND BASE STANDARD (ALUMINUM)
3	ORNAMENTAL 8' PEDESTRIAN SIGNAL PEDESTAL AND BASE STANDARD (ALUMINUM)
1	SIGNAL HEAD – 1–WAY, 4–SECTON, 12" LENS WITH BACKPLATES (LOUVERED)
5	SIGNAL HEAD – 1–WAY, 3–SECTON, 12" LENS WITH BACKPLATES (LOUVERED)
4	PEDESTRIAN SIGNAL HEAD WITH COUNTDOWN TIMER, SINGLE SECTION, 16" LED
4	PEDESTRIAN PUSH BUTTON WITH SIGN AND SADDLE
8	PULL BOX – 12" x 12" (MINIMUM)
1	SERVICE CONNECTION (ELECTRIC)
1	SERVICE CONNECTION (TELEPHONE)
1	PRE–EMPTION INDICATOR LIGHT
3	OPTICOM – OPTICAL DETECTOR, UNIDIRECTIONAL, SINGLE CHANNEL
1	OPTICOM – 4 CHANNEL PHASE SELECTOR, RACK MOUNT
1	OPTICOM – CARD RACK
4	VIDEO DETECTION CAMERA
1	MULTI–CAMERA VIDEO DETECTION PROCESSOR
1	VIDEO SERVERS (AXIS 241S)––NON ACTIVATED
1	MASTER DISTRIBUTOR AMPLIFIER
2	FIBER OPTIC PATCH PANEL –– 12 POSITION
2	FIBER OPTIC SPLICING AT PATCH PANEL
1	CLOSED LOOP SYSTEM GRAPHIC AND PROGRAMMING (MARC NX INTEGRATION)
1	FIBER/ETHENET SWITCH
1	POLICE MANUAL OVERRIDE DEVICE
1	7" PORTABLE LCD COLOR MONITOR
PLUS ALL MISCELLANEOUS EQUIPMENT, MATERIAL, AND LABOR NECESSARY TO PROVIDE A COMPLETE OPERATING TRAFFIC CONTROL SIGNAL.**	

** THE QUANTITIES LISTED ABOVE ARE APPROXIMATE AND ARE FURNISHED FOR INFORMATION ONLY. MISCELLANEOUS (UNLISTED) WIRE, CABLE, HARDWARE, ETC. ARE REQUIRED TO PROVIDE FOR A FUNCTIONING TRAFFIC SIGNAL SYSTEM. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF THE NUMBER OF ITEMS AND THE TYPES OF EQUIPMENT REQUIRED.

SEQUENCE AND TIMING NOTES:
1. EXCLUSIVE PEDESTRIAN PHASE TO BE ACTIVATED ONLY BY PEDESTRIAN ACTUATED PUSH BUTTON.
2. IF THE ASSIGNED RIGHT–OF–WAY FOR ANY TRAFFIC MOVEMENT IS TO REMAIN IN EFFECT DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATIONS FOR THAT TRAFFIC MOVEMENT WILL NOT CHANGE DURING THE CLEARANCE INTERVAL.
3. IF THE ASSIGNED RIGHT–OF–WAY FOR ANY TRAFFIC MOVEMENT IS TO CHANGE DURING THE NEXT CALLED PHASE, THE SIGNAL INDICATION FOR THAT TRAFFIC MOVEMENT WILL DISPLAY THE APPROPRIATE CLEARANCE INTERVALS.
4. FLASHING OPERATION IS FOR EMERGENCY ONLY. THE SIGNAL SHALL PROVIDE STOP AND GO OPERATION 24 HOURS DAILY.
5. THE CONTROLLER SHALL OPERATE IN THE STANDARD NEMA DUAL RING CONFIGURATION.
6. EACH CHANNEL OF A DUAL CHANNEL AMPLIFIER SHALL BE CONNECTED TO A SINGLE VIDEO DETECTION ZONE.
7. ALL VIDEO DETECTION OUTPUT SETTINGS TO BE PROGRAMMED USING MENUS THAT APPEAR AS A GRAPHIC OVERLAY OF THE INTERSECTION ON THE VIDEO IMAGE.
8. OPTICOM EMERGENCY PREEMPTION SHALL BE ON A FIRST COME, FIRST SERVE BASIS.
9. UPON TERMINATION OF FIRE PREEMPTION MODE, THE SIGNALS SHALL RETURN TO NORMAL OPERATION AND SERVICE PREFERENTIAL PHASING IN SUCCESSIVE ORDER BASED ON DEMAND.
10. UPON ACTUATION OF THE FIRE PREEMPTON MODE, THE PREEMPTON INDICATOR LIGHT SHALL BE ILLUMINATED.
11. VIDEO DETECTOR CALL DELAYS SHALL BE SET IN THE CONTROLLER, NOT THE VIDEO DETECTOR PROCESSOR.
12. MAX 3 IS PROVIDED AS A POTENTIAL FUTURE TIME PERIOD TO ACCOMMODATE THE SAINT JOSEPH SCHOOL DISMISSAL.

NEW EQUIPMENT NOTES:
1. ALL PROPOSED SIGNAL HEADS HAVE LOUVERED BACKPLATES.
2. ALL PROPOSED SIGNAL HEADS ARE 12" DIAMETER.
3. ALL PROPOSED SIGNAL HEADS ARE FIXED MOUNTED.
4. ALL NEW SIGNAL BULBS SHALL BE LED.
5. SIGNAL HEAD 'J' BI–MODAL SECTION ONLY (LEFT ARROW) SHALL BE TURNED OFF.
6. MINIMUM JUNCTION BOX SIZE SHALL BE 12" X 12", OR LARGER AS REQUIRED BY THE ELECTRICAL CODE.

GENERAL NOTES:
1. CONDUIT FOR THE FIBER OPTICS TO BE INSTALLED BY THE PROPONENT. FIBER OPTIC CABLE TO BE PULLED BY THE TOWN OF WELLESLEY.
2. ALL SYSTEM DETECTOR ZONES 52" X 72", OR LARGER AS REQUIRED BY THE ELECTRICAL CODE.

TRAFFIC SIGNAL CONDUIT:
1. ALL TRAFFIC SIGNAL CONDUIT SHALL BE PVC.
2. MINIMUM CONDUIT SIZES SHALL BE 2", OR AS SHOWN ON THE PLANS.

PRE–EMPTION PHASING & PRIORITY			
RECEIVER AND PRIORITY	PRE–EMPT PHASE ASSIGNMENT	MOVEMENT	CALL PHASE
R1	1	WB	ø6
R2	2	EB	ø2
R3	3	SB	ø4

VIDEO DETECTOR DATA						
DETECTOR GROUP NO.	VIDEO CAMERA NO.	NO. SECTION/ SIZE	OPERATIONS	EXTENSION (SECONDS)	CALL DELAY (SECONDS)	CALL PHASE
1	1	2 – 6' x 35'	PRESENCE	0	0	ø6
2	2	2 – 6' x 60'	PRESENCE	0	5	ø2
3	3	3 – 15' x 6'	PRESENCE	0	5	ø4
4	4	1 – 6' x 30'	PRESENCE	0	0	ø8
S5	1	2 – 6' x 6'	PRESENCE	––	––	––
S6	2	2 – 6' x 6'	PRESENCE	––	––	––
S7	3	2 – 6' x 6'	PRESENCE	––	––	––

ORGINAL SHEET – ARCH D

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Consultants

Legend

Notes

Revision	By	Appd.	YY.MM.DD
ADDITIONAL MAX. TIMING PERIOD			11.06.17
DPW SUBMISSION			11.06.03
REVISED DRAFT FOR DPW REVIEW			11.03.25
DRAFT FOR DPW REVIEW			13.04.19
Issued	By	Appd.	YY.MM.DD

File Name: 1324.02 signal2011–05–2000.dwg | Dwn. CA | Chkd. | Dsgn. | YY.MM.DD

Permit-Seal

Client/Project
NDNE LOWER FALLS LLC

WASHINGTON STREET IMPROVEMENTS
Wellesley, MA

Title
SIGNAL PLAN
DETAIL SHEET 1

Project No.	Scale	
210800554	NA	
Drawing No.	Sheet	Revision
32		0

APPENDIX I

CAPACITY ANALYSIS

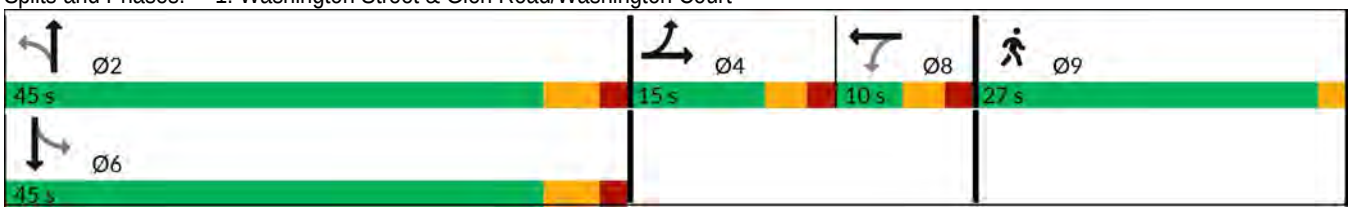
2025 EXISTING CONDITIONS

AM PEAK HOUR

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations								
Traffic Volume (vph)	4	2	1	16	682	5	628	
Future Volume (vph)	4	2	1	16	682	5	628	
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2		6	9
Permitted Phases		8		2		6		
Detector Phase	4	8	8	2	2	6	6	
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0
Minimum Split (s)	13.0	13.0	13.0	14.0	14.0	14.0	14.0	28.0
Total Split (s)	15.0	10.0	10.0	45.0	45.0	45.0	45.0	27.0
Total Split (%)	15.5%	10.3%	10.3%	46.4%	46.4%	46.4%	46.4%	28%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0		5.0	6.0	6.0		6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	10.0		5.0	39.1	39.1		39.1	
Actuated g/C Ratio	0.16		0.08	0.63	0.63		0.63	
v/c Ratio	1.02		0.08	0.05	0.65		0.69	
Control Delay (s/veh)	86.1		22.4	6.1	11.4		12.2	
Queue Delay	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)	86.1		22.4	6.1	11.4		12.2	
LOS	F		C	A	B		B	
Approach Delay (s/veh)	86.1		22.4		11.3		12.2	
Approach LOS	F		C		B		B	

Intersection Summary	
Cycle Length: 97	
Actuated Cycle Length: 62	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay (s/veh): 24.8	Intersection LOS: C
Intersection Capacity Utilization 71.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: Washington Street & Glen Road/Washington Court



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	4	21	2	1	4	16	682	10	5	628	70
Future Volume (vph)	225	4	21	2	1	4	16	682	10	5	628	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	12	12	12	11	11	11	14	14	14
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.99			0.92		1.00	1.00			0.99	
Flt Protected		0.96			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		2014			1729		1646	1795			1919	
Flt Permitted		0.96			1.00		0.32	1.00			1.00	
Satd. Flow (perm)		2014			1750		560	1795			1910	
Peak-hour factor, PHF	0.74	0.74	0.74	0.58	0.58	0.58	0.94	0.94	0.94	0.85	0.85	0.85
Adj. Flow (vph)	304	5	28	3	2	7	17	726	11	6	739	82
RTOR Reduction (vph)	0	3	0	0	7	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	334	0	0	5	0	17	737	0	0	827	0
Heavy Vehicles (%)	0%	0%	14%	0%	0%	0%	6%	2%	10%	0%	4%	6%
Turn Type	Split	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)		10.0			0.9		39.1	39.1			39.1	
Effective Green, g (s)		10.0			0.9		39.1	39.1			39.1	
Actuated g/C Ratio		0.15			0.01		0.59	0.59			0.59	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		2.0			2.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		305			23		331	1063			1131	
v/s Ratio Prot		c0.17						0.41				
v/s Ratio Perm					c0.00		0.03				c0.43	
v/c Ratio		1.09			0.22		0.05	0.69			0.73	
Uniform Delay, d1		28.0			32.2		5.7	9.3			9.7	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		79.0			1.8		0.1	2.0			2.5	
Delay (s)		107.0			34.0		5.7	11.3			12.1	
Level of Service		F			C		A	B			B	
Approach Delay (s/veh)		107.0			34.0			11.1			12.1	
Approach LOS		F			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	28.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	71.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	10

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	37	44	863	663	13
Future Vol, veh/h	33	37	44	863	663	13
Conflicting Peds, #/hr	0	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	50	50	96	96	87	87
Heavy Vehicles, %	0	3	0	2	4	0
Mvmt Flow	66	74	46	899	762	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1762	772	779	0	-	0
Stage 1	772	-	-	-	-	-
Stage 2	991	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.2	-	-	-
Pot Cap-1 Maneuver	94	398	847	-	-	-
Stage 1	460	-	-	-	-	-
Stage 2	363	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	83	398	846	-	-	-
Mov Cap-2 Maneuver	83	-	-	-	-	-
Stage 1	409	-	-	-	-	-
Stage 2	363	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	130.19	0.46	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	87	-	143	-	-
HCM Lane V/C Ratio	0.054	-	0.977	-	-
HCM Ctrl Dly (s/v)	9.5	0	130.2	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	7	-	-

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	0	15	1	0	3	16	892	6	22	637	21
Future Vol, veh/h	13	0	15	1	0	3	16	892	6	22	637	21
Conflicting Peds, #/hr	0	0	0	0	0	0	2	0	4	4	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	45	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	70	70	70	50	50	50	96	96	96	83	83	83
Heavy Vehicles, %	8	0	0	0	0	0	6	3	0	0	3	0
Mvmt Flow	19	0	21	2	0	6	17	929	6	27	767	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1798	1808	782	1790	1817	936	795	0	0	939	0	0
Stage 1	835	835	-	970	970	-	-	-	-	-	-	-
Stage 2	963	973	-	820	848	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.5	6.2	7.1	6.5	6.2	4.16	-	-	4.1	-	-
Critical Hdwy Stg 1	6.18	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4	3.3	3.5	4	3.3	2.254	-	-	2.2	-	-
Pot Cap-1 Maneuver	60	80	397	64	79	324	809	-	-	738	-	-
Stage 1	353	386	-	307	334	-	-	-	-	-	-	-
Stage 2	300	333	-	372	380	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	54	73	397	55	72	323	808	-	-	735	-	-
Mov Cap-2 Maneuver	54	73	-	55	72	-	-	-	-	-	-	-
Stage 1	330	360	-	300	326	-	-	-	-	-	-	-
Stage 2	288	325	-	329	355	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	63.04	31.18	0.17	0.33
HCM LOS	F	D		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	808	-	-	100	145	58	-	-
HCM Lane V/C Ratio	0.021	-	-	0.399	0.055	0.036	-	-
HCM Ctrl Dly (s/v)	9.5	-	-	63	31.2	10.1	0	-
HCM Lane LOS	A	-	-	F	D	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.6	0.2	0.1	-	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	99	817	53	42	738
Future Vol, veh/h	8	99	817	53	42	738
Conflicting Peds, #/hr	0	0	0	7	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	-	55	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	96	96	84	84
Heavy Vehicles, %	0	1	2	4	2	3
Mvmt Flow	10	118	851	55	50	879

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1864	460	0	0	913	0
Stage 1	886	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Critical Hdwy	6.6	6.915	-	-	4.13	-
Critical Hdwy Stg 1	5.8	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3095	-	-	2.219	-
Pot Cap-1 Maneuver	73	551	-	-	744	-
Stage 1	368	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	68	548	-	-	740	-
Mov Cap-2 Maneuver	68	-	-	-	-	-
Stage 1	366	-	-	-	-	-
Stage 2	343	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	20.5	0	0.55
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	358	740	-
HCM Lane V/C Ratio	-	-	0.356	0.068	-
HCM Ctrl Dly (s/v)	-	-	20.5	10.2	-
HCM Lane LOS	-	-	C	B	-
HCM 95th %tile Q(veh)	-	-	1.6	0.2	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	908	0	0	746
Future Vol, veh/h	0	0	908	0	0	746
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	25	25	25	25	25	25
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	3632	0	0	2984

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	6616	3632	0	-	-	-
Stage 1	3632	-	-	-	-	-
Stage 2	2984	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	-	-
Pot Cap-1 Maneuver	0	7	-	0	0	-
Stage 1	16	-	-	0	0	-
Stage 2	36	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	0	7	-	-	-	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	16	-	-	-	-	-
Stage 2	36	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	WBLn1	SBT
Capacity (veh/h)	-	-	-
HCM Lane V/C Ratio	-	-	-
HCM Ctrl Dly (s/v)	-	0	-
HCM Lane LOS	-	A	-
HCM 95th %tile Q(veh)	-	-	-

2025 EXISTING CONDITIONS

PM PEAK HOUR

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations								
Traffic Volume (vph)	1	5	2	25	646	6	772	
Future Volume (vph)	1	5	2	25	646	6	772	
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2		6	9
Permitted Phases		8		2		6		
Detector Phase	4	8	8	2	2	6	6	
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0
Minimum Split (s)	13.0	13.0	13.0	14.0	14.0	14.0	14.0	28.0
Total Split (s)	10.0	10.0	10.0	60.0	60.0	60.0	60.0	27.0
Total Split (%)	9.3%	9.3%	9.3%	56.1%	56.1%	56.1%	56.1%	25%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0		5.0	6.0	6.0		6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	5.1		5.1	43.6	43.6		43.6	
Actuated g/C Ratio	0.08		0.08	0.71	0.71		0.71	
v/c Ratio	0.82		0.13	0.07	0.58		0.68	
Control Delay (s/veh)	67.6		26.6	3.8	7.1		8.7	
Queue Delay	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)	67.6		26.6	3.8	7.1		8.7	
LOS	E		C	A	A		A	
Approach Delay (s/veh)	67.6		26.6		7.0		8.7	
Approach LOS	E		C		A		A	

Intersection Summary	
Cycle Length: 107	
Actuated Cycle Length: 61.5	
Natural Cycle: 110	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.82	
Intersection Signal Delay (s/veh): 12.7	Intersection LOS: B
Intersection Capacity Utilization 73.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Washington Street & Glen Road/Washington Court

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	1	18	5	2	5	25	646	6	6	772	108
Future Volume (vph)	102	1	18	5	2	5	25	646	6	6	772	108
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	12	12	12	11	11	12	12	14	12
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.98			0.94		1.00	1.00			0.98	
Flt Protected		0.96			0.98		0.95	1.00			1.00	
Satd. Flow (prot)		2025			1619		1745	1798			1956	
Flt Permitted		0.96			1.00		0.31	1.00			1.00	
Satd. Flow (perm)		2025			1653		569	1798			1949	
Peak-hour factor, PHF	0.84	0.84	0.84	0.60	0.60	0.60	0.88	0.88	0.88	0.94	0.94	0.94
Adj. Flow (vph)	121	1	21	8	3	8	28	734	7	6	821	115
RTOR Reduction (vph)	0	6	0	0	8	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	137	0	0	11	0	28	741	0	0	942	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	20%	0%	2%	0%	0%	2%	1%
Turn Type	Split	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)		5.1			0.8		43.6	43.6			43.6	
Effective Green, g (s)		5.1			0.8		43.6	43.6			43.6	
Actuated g/C Ratio		0.08			0.01		0.67	0.67			0.67	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		2.0			2.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		157			20		378	1196			1297	
v/s Ratio Prot		c0.07						0.41				
v/s Ratio Perm					c0.01		0.05				c0.48	
v/c Ratio		0.88			0.55		0.07	0.62			0.73	
Uniform Delay, d1		29.9			32.2		3.9	6.2			7.1	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		37.2			17.5		0.1	1.0			2.1	
Delay (s)		67.0			49.7		3.9	7.2			9.1	
Level of Service		E			D		A	A			A	
Approach Delay (s/veh)		67.0			49.7			7.1			9.1	
Approach LOS		E			D			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	13.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	65.5	Sum of lost time (s)	18.0
Intersection Capacity Utilization	73.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	9	11	744	878	12
Future Vol, veh/h	10	9	11	744	878	12
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	85	85	95	95
Heavy Vehicles, %	0	0	9	2	2	0
Mvmt Flow	13	11	13	875	924	13

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1835	934	940	0	-	0
Stage 1	934	-	-	-	-	-
Stage 2	901	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.19	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.281	-	-	-
Pot Cap-1 Maneuver	85	325	701	-	-	-
Stage 1	386	-	-	-	-	-
Stage 2	400	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	81	324	700	-	-	-
Mov Cap-2 Maneuver	81	-	-	-	-	-
Stage 1	371	-	-	-	-	-
Stage 2	400	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	40.18	0.15	0
HCM LOS	E		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	26	-	126	-	-
HCM Lane V/C Ratio	0.018	-	0.191	-	-
HCM Ctrl Dly (s/v)	10.2	0	40.2	-	-
HCM Lane LOS	B	A	E	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-

Intersection	
Int Delay, s/veh	17.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	44	0	39	1	0	25	28	755	1	1	825	20
Future Vol, veh/h	44	0	39	1	0	25	28	755	1	1	825	20
Conflicting Peds, #/hr	0	0	0	0	0	0	13	0	4	4	0	13
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	45	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	50	50	50	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	1	0
Mvmt Flow	59	0	53	2	0	50	30	821	1	1	897	22

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1804	1809	921	1785	1820	825	931	0	0	826	0	0
Stage 1	923	923	-	886	886	-	-	-	-	-	-	-
Stage 2	882	887	-	899	934	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	62	80	331	64	78	375	743	-	-	814	-	-
Stage 1	326	351	-	342	365	-	-	-	-	-	-	-
Stage 2	344	365	-	336	347	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 51	75	327	51	74	374	735	-	-	811	-	-
Mov Cap-2 Maneuver	~ 51	75	-	51	74	-	-	-	-	-	-	-
Stage 1	322	347	-	327	349	-	-	-	-	-	-	-
Stage 2	286	349	-	281	343	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	297.7	19.43	0.36	0.01
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	735	-	-	84	301	2	-	-
HCM Lane V/C Ratio	0.041	-	-	1.329	0.173	0.001	-	-
HCM Ctrl Dly (s/v)	10.1	-	-	297.7	19.4	9.4	0	-
HCM Lane LOS	B	-	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	8.4	0.6	0	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	86	832	37	64	876
Future Vol, veh/h	9	86	832	37	64	876
Conflicting Peds, #/hr	0	0	0	9	9	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	90	55	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	95	95	94	94
Heavy Vehicles, %	11	0	1	0	0	2
Mvmt Flow	10	98	876	39	68	932

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1953	885	0	0	924	0
Stage 1	885	-	-	-	-	-
Stage 2	1068	-	-	-	-	-
Critical Hdwy	6.51	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.51	-	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-	-
Follow-up Hdwy	3.599	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	67	347	-	-	748	-
Stage 1	389	-	-	-	-	-
Stage 2	317	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	60	344	-	-	742	-
Mov Cap-2 Maneuver	60	-	-	-	-	-
Stage 1	386	-	-	-	-	-
Stage 2	288	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	32.16	0	0.7
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	238	742	-
HCM Lane V/C Ratio	-	-	0.454	0.092	-
HCM Ctrl Dly (s/v)	-	-	32.2	10.3	-
HCM Lane LOS	-	-	D	B	-
HCM 95th %tile Q(veh)	-	-	2.2	0.3	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	824	0	0	885
Future Vol, veh/h	0	0	824	0	0	885
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	25	25	25	25	25	25
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	3296	0	0	3540

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	6836	3296	0	0	3296	0
Stage 1	3296	-	-	-	-	-
Stage 2	3540	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	12	-	-	89	-
Stage 1	24	-	-	-	-	-
Stage 2	18	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	12	-	-	89	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	24	-	-	-	-	-
Stage 2	18	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	89	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

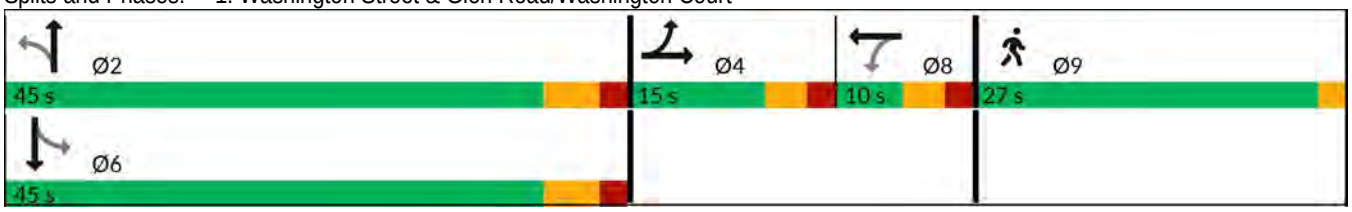
2032 NO-BUILD CONDITIONS

AM PEAK HOUR

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations								
Traffic Volume (vph)	5	2	1	18	783	6	721	
Future Volume (vph)	5	2	1	18	783	6	721	
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2		6	9
Permitted Phases		8		2		6		
Detector Phase	4	8	8	2	2	6	6	
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0
Minimum Split (s)	13.0	13.0	13.0	14.0	14.0	14.0	14.0	28.0
Total Split (s)	15.0	10.0	10.0	45.0	45.0	45.0	45.0	27.0
Total Split (%)	15.5%	10.3%	10.3%	46.4%	46.4%	46.4%	46.4%	28%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0		5.0	6.0	6.0		6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	10.0		5.0	39.1	39.1		39.1	
Actuated g/C Ratio	0.16		0.08	0.63	0.63		0.63	
v/c Ratio	0.95		0.06	0.06	0.75		0.73	
Control Delay (s/veh)	67.4		22.4	6.2	14.7		13.7	
Queue Delay	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)	67.4		22.4	6.2	14.7		13.7	
LOS	E		C	A	B		B	
Approach Delay (s/veh)	67.4		22.4		14.5		13.7	
Approach LOS	E		C		B		B	

Intersection Summary	
Cycle Length: 97	
Actuated Cycle Length: 62	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay (s/veh): 22.2	Intersection LOS: C
Intersection Capacity Utilization 79.5%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Washington Street & Glen Road/Washington Court



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	258	5	24	2	1	5	18	783	11	6	721	80
Future Volume (vph)	258	5	24	2	1	5	18	783	11	6	721	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	12	12	12	11	11	12	12	14	12
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.99			0.92		1.00	1.00			0.99	
Flt Protected		0.96			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		2014			1718		1646	1795			1919	
Flt Permitted		0.96			1.00		0.30	1.00			0.99	
Satd. Flow (perm)		2014			1740		528	1795			1907	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	280	5	26	2	1	5	19	833	12	7	784	87
RTOR Reduction (vph)	0	3	0	0	5	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	308	0	0	3	0	19	845	0	0	878	0
Heavy Vehicles (%)	0%	0%	14%	0%	0%	0%	6%	2%	10%	0%	4%	6%
Turn Type	Split	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)		10.0			0.9		39.1	39.1			39.1	
Effective Green, g (s)		10.0			0.9		39.1	39.1			39.1	
Actuated g/C Ratio		0.15			0.01		0.59	0.59			0.59	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		2.0			2.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		305			23		312	1063			1129	
v/s Ratio Prot		c0.15						c0.47				
v/s Ratio Perm					c0.00		0.04				0.46	
v/c Ratio		1.01			0.13		0.06	0.79			0.78	
Uniform Delay, d1		28.0			32.2		5.7	10.4			10.2	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		53.7			1.0		0.1	4.2			3.4	
Delay (s)		81.7			33.1		5.8	14.5			13.6	
Level of Service		F			C		A	B			B	
Approach Delay (s/veh)		81.7			33.1			14.3			13.6	
Approach LOS		F			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	79.5%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	5.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	38	43	51	991	762	15
Future Vol, veh/h	38	43	51	991	762	15
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	96	96	92	92
Heavy Vehicles, %	0	3	0	2	4	0
Mvmt Flow	41	47	53	1032	828	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	1978	839	848	0	-	0
Stage 1	839	-	-	-	-	-
Stage 2	1139	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.2	-	-	-
Pot Cap-1 Maneuver	69	364	799	-	-	-
Stage 1	427	-	-	-	-	-
Stage 2	308	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	58	363	797	-	-	-
Mov Cap-2 Maneuver	58	-	-	-	-	-
Stage 1	360	-	-	-	-	-
Stage 2	308	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	123.43	0.48	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	88	-	105	-	-
HCM Lane V/C Ratio	0.067	-	0.842	-	-
HCM Ctrl Dly (s/v)	9.8	0	123.4	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	4.8	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	17	1	0	3	18	1025	7	25	732	24
Future Vol, veh/h	15	0	17	1	0	3	18	1025	7	25	732	24
Conflicting Peds, #/hr	0	0	0	0	0	0	13	0	4	4	0	13
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	45	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	96	96	96	92	92	92
Heavy Vehicles, %	8	0	0	0	0	0	6	3	0	0	3	0
Mvmt Flow	16	0	18	1	0	3	19	1068	7	27	796	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1981	1993	822	1963	2002	1075	835	0	0	1079	0	0
Stage 1	876	876	-	1113	1113	-	-	-	-	-	-	-
Stage 2	1105	1117	-	850	889	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.5	6.2	7.1	6.5	6.2	4.16	-	-	4.1	-	-
Critical Hdwy Stg 1	6.18	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4	3.3	3.5	4	3.3	2.254	-	-	2.2	-	-
Pot Cap-1 Maneuver	44	61	377	48	60	269	782	-	-	654	-	-
Stage 1	335	369	-	255	286	-	-	-	-	-	-	-
Stage 2	249	285	-	358	364	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	39	54	373	41	54	268	773	-	-	652	-	-
Mov Cap-2 Maneuver	39	54	-	41	54	-	-	-	-	-	-	-
Stage 1	306	337	-	248	279	-	-	-	-	-	-	-
Stage 2	240	277	-	314	332	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	90.31	38.32	0.17	0.34
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	773	-	-	74	112	57	-	-
HCM Lane V/C Ratio	0.024	-	-	0.468	0.039	0.042	-	-
HCM Ctrl Dly (s/v)	9.8	-	-	90.3	38.3	10.8	0	-
HCM Lane LOS	A	-	-	F	E	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	1.9	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	114	938	61	48	848
Future Vol, veh/h	9	114	938	61	48	848
Conflicting Peds, #/hr	0	0	0	9	9	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	90	55	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	96	96	92	92
Heavy Vehicles, %	0	1	2	4	2	3
Mvmt Flow	10	124	977	64	52	922

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2012	986	0	0	1050	0
Stage 1	986	-	-	-	-	-
Stage 2	1026	-	-	-	-	-
Critical Hdwy	6.4	6.21	-	-	4.12	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.218	-
Pot Cap-1 Maneuver	66	302	-	-	663	-
Stage 1	364	-	-	-	-	-
Stage 2	349	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	60	300	-	-	658	-
Mov Cap-2 Maneuver	60	-	-	-	-	-
Stage 1	362	-	-	-	-	-
Stage 2	321	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	39.77	0	0.59
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	232	658	-
HCM Lane V/C Ratio	-	-	0.577	0.079	-
HCM Ctrl Dly (s/v)	-	-	39.8	10.9	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	3.2	0.3	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	1043	0	0	857
Future Vol, veh/h	0	0	1043	0	0	857
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	1134	0	0	932

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2065	1134	0	0	1134	0
Stage 1	1134	-	-	-	-	-
Stage 2	932	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	61	249	-	-	624	-
Stage 1	310	-	-	-	-	-
Stage 2	387	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	61	249	-	-	624	-
Mov Cap-2 Maneuver	61	-	-	-	-	-
Stage 1	310	-	-	-	-	-
Stage 2	387	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	624	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

2032 NO-BUILD CONDITIONS

PM PEAK HOUR

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations								
Traffic Volume (vph)	1	6	2	29	742	7	887	
Future Volume (vph)	1	6	2	29	742	7	887	
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2		6	9
Permitted Phases		8		2		6		
Detector Phase	4	8	8	2	2	6	6	
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0
Minimum Split (s)	13.0	13.0	13.0	14.0	14.0	14.0	14.0	28.0
Total Split (s)	10.0	10.0	10.0	60.0	60.0	60.0	60.0	27.0
Total Split (%)	9.3%	9.3%	9.3%	56.1%	56.1%	56.1%	56.1%	25%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0		5.0	6.0	6.0		6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	5.0		5.0	58.1	58.1		58.1	
Actuated g/C Ratio	0.07		0.07	0.76	0.76		0.76	
v/c Ratio	1.09		0.14	0.08	0.59		0.73	
Control Delay (s/veh)	137.1		28.7	3.8	6.9		9.7	
Queue Delay	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)	137.1		28.7	3.8	6.9		9.7	
LOS	F		C	A	A		A	
Approach Delay (s/veh)	137.1		28.7		6.8		9.7	
Approach LOS	F		C		A		A	

Intersection Summary	
Cycle Length: 107	
Actuated Cycle Length: 76.1	
Natural Cycle: 130	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.09	
Intersection Signal Delay (s/veh): 17.9	Intersection LOS: B
Intersection Capacity Utilization 83.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Washington Street & Glen Road/Washington Court

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	117	1	21	6	2	6	29	742	7	7	887	124
Future Volume (vph)	117	1	21	6	2	6	29	742	7	7	887	124
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	12	12	12	11	11	12	12	14	12
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.98			0.94		1.00	1.00			0.98	
Flt Protected		0.96			0.98		0.95	1.00			1.00	
Satd. Flow (prot)		2024			1609		1745	1798			1956	
Flt Permitted		0.96			1.00		0.27	1.00			1.00	
Satd. Flow (perm)		2024			1644		503	1798			1948	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	127	1	23	7	2	7	32	807	8	7	944	132
RTOR Reduction (vph)	0	6	0	0	7	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	145	0	0	9	0	32	815	0	0	1083	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	20%	0%	2%	0%	0%	2%	1%
Turn Type	Split	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)		5.0			1.0		58.1	58.1			58.1	
Effective Green, g (s)		5.0			1.0		58.1	58.1			58.1	
Actuated g/C Ratio		0.06			0.01		0.73	0.73			0.73	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		2.0			2.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		126			20		364	1304			1412	
v/s Ratio Prot		c0.07						0.45				
v/s Ratio Perm					c0.01		0.06				c0.56	
v/c Ratio		1.15			0.45		0.09	0.62			0.77	
Uniform Delay, d1		37.6			39.3		3.2	5.5			6.8	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		127.4			5.9		0.1	0.9			2.6	
Delay (s)		165.0			45.1		3.3	6.5			9.4	
Level of Service		F			D		A	A			A	
Approach Delay (s/veh)		165.0			45.1			6.3			9.4	
Approach LOS		F			D			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.82		
Actuated Cycle Length (s)	80.1	Sum of lost time (s)	18.0
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	10	13	855	1009	14
Future Vol, veh/h	11	10	13	855	1009	14
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	95	95
Heavy Vehicles, %	0	0	9	2	2	0
Mvmt Flow	12	11	14	929	1062	15

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2030	1072	1080	0	-	0
Stage 1	1072	-	-	-	-	-
Stage 2	958	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.19	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.281	-	-	-
Pot Cap-1 Maneuver	64	270	620	-	-	-
Stage 1	332	-	-	-	-	-
Stage 2	376	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	61	270	619	-	-	-
Mov Cap-2 Maneuver	61	-	-	-	-	-
Stage 1	315	-	-	-	-	-
Stage 2	376	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	53.71	0.16	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	27	-	96	-	-
HCM Lane V/C Ratio	0.023	-	0.237	-	-
HCM Ctrl Dly (s/v)	11	0	53.7	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.1	-	0.9	-	-

Intersection	
Int Delay, s/veh	49.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	51	0	45	1	0	29	32	867	1	1	948	23
Future Vol, veh/h	51	0	45	1	0	29	32	867	1	1	948	23
Conflicting Peds, #/hr	0	0	0	0	0	0	13	0	4	4	0	13
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	45	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	74	74	74	50	50	50	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	1	0
Mvmt Flow	69	0	61	2	0	58	35	942	1	1	1030	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2070	2075	1056	2049	2087	947	1068	0	0	947	0	0
Stage 1	1058	1058	-	1017	1017	-	-	-	-	-	-	-
Stage 2	1012	1017	-	1033	1071	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 40	54	276	42	53	319	660	-	-	733	-	-
Stage 1	274	304	-	289	318	-	-	-	-	-	-	-
Stage 2	291	318	-	283	300	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 31	51	273	30	50	318	653	-	-	730	-	-
Mov Cap-2 Maneuver	~ 31	51	-	30	50	-	-	-	-	-	-	-
Stage 1	270	300	-	273	300	-	-	-	-	-	-	-
Stage 2	225	300	-	219	296	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	$ 832.06	24.69	0.38	0.01
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	653	-	-	53	242	2	-	-
HCM Lane V/C Ratio	0.053	-	-	2.464	0.248	0.001	-	-
HCM Ctrl Dly (s/v)	10.8	-	-	$ 832.1	24.7	9.9	0	-
HCM Lane LOS	B	-	-	F	C	A	A	-
HCM 95th %tile Q(veh)	0.2	-	-	13.3	0.9	0	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	99	956	43	74	1006
Future Vol, veh/h	10	99	956	43	74	1006
Conflicting Peds, #/hr	0	0	0	9	9	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	90	55	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	95	95	94	94
Heavy Vehicles, %	11	0	1	0	0	2
Mvmt Flow	11	113	1006	45	79	1070

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2243	1015	0	0	1061	0
Stage 1	1015	-	-	-	-	-
Stage 2	1228	-	-	-	-	-
Critical Hdwy	6.51	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.51	-	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-	-
Follow-up Hdwy	3.599	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	43	292	-	-	664	-
Stage 1	337	-	-	-	-	-
Stage 2	265	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	38	290	-	-	659	-
Mov Cap-2 Maneuver	38	-	-	-	-	-
Stage 1	334	-	-	-	-	-
Stage 2	234	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	60.2	0	0.77
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	180	659	-
HCM Lane V/C Ratio	-	-	0.688	0.119	-
HCM Ctrl Dly (s/v)	-	-	60.2	11.2	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	4.2	0.4	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	0	947	0	0	1017
Future Vol, veh/h	0	0	947	0	0	1017
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	25	25	25	25	25	25
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	0	0	3788	0	0	4068

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	7856	3788	0	0	3788	0
Stage 1	3788	-	-	-	-	-
Stage 2	4068	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	0	6	-	-	56	-
Stage 1	13	-	-	-	-	-
Stage 2	9	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	0	6	-	-	56	-
Mov Cap-2 Maneuver	0	-	-	-	-	-
Stage 1	13	-	-	-	-	-
Stage 2	9	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	0	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	-	56	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Ctrl Dly (s/v)	-	-	0	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

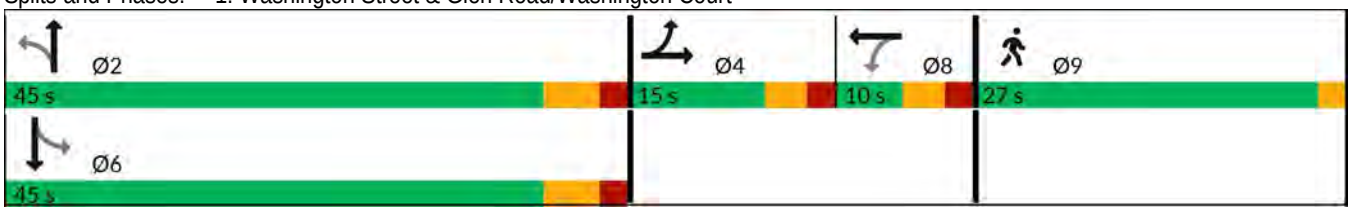
2032 BUILD CONDITIONS

AM PEAK HOUR

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations								
Traffic Volume (vph)	5	2	1	18	803	6	734	
Future Volume (vph)	5	2	1	18	803	6	734	
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2		6	9
Permitted Phases		8		2		6		
Detector Phase	4	8	8	2	2	6	6	
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0
Minimum Split (s)	13.0	13.0	13.0	14.0	14.0	14.0	14.0	28.0
Total Split (s)	15.0	10.0	10.0	45.0	45.0	45.0	45.0	27.0
Total Split (%)	15.5%	10.3%	10.3%	46.4%	46.4%	46.4%	46.4%	28%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0		5.0	6.0	6.0		6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	10.0		5.0	39.1	39.1		39.1	
Actuated g/C Ratio	0.16		0.08	0.63	0.63		0.63	
v/c Ratio	0.96		0.06	0.06	0.76		0.74	
Control Delay (s/veh)	71.3		22.4	6.2	15.5		14.3	
Queue Delay	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)	71.3		22.4	6.2	15.5		14.3	
LOS	E		C	A	B		B	
Approach Delay (s/veh)	71.3		22.4		15.3		14.3	
Approach LOS	E		C		B		B	

Intersection Summary	
Cycle Length: 97	
Actuated Cycle Length: 62	
Natural Cycle: 150	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay (s/veh): 23.3	Intersection LOS: C
Intersection Capacity Utilization 80.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 1: Washington Street & Glen Road/Washington Court



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	263	5	24	2	1	5	18	803	11	6	734	83
Future Volume (vph)	263	5	24	2	1	5	18	803	11	6	734	83
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	12	12	12	11	11	12	12	14	12
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.99			0.92		1.00	1.00			0.99	
Flt Protected		0.96			0.99		0.95	1.00			1.00	
Satd. Flow (prot)		2014			1718		1646	1795			1918	
Flt Permitted		0.96			1.00		0.30	1.00			0.99	
Satd. Flow (perm)		2014			1740		518	1795			1907	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94	0.92	0.92	0.92
Adj. Flow (vph)	286	5	26	2	1	5	19	854	12	7	798	90
RTOR Reduction (vph)	0	3	0	0	5	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	314	0	0	3	0	19	866	0	0	895	0
Heavy Vehicles (%)	0%	0%	14%	0%	0%	0%	6%	2%	10%	0%	4%	6%
Turn Type	Split	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)		10.0			0.9		39.1	39.1			39.1	
Effective Green, g (s)		10.0			0.9		39.1	39.1			39.1	
Actuated g/C Ratio		0.15			0.01		0.59	0.59			0.59	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		2.0			2.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		305			23		306	1063			1129	
v/s Ratio Prot		c0.16						c0.48				
v/s Ratio Perm					c0.00		0.04				0.47	
v/c Ratio		1.03			0.13		0.06	0.81			0.79	
Uniform Delay, d1		28.0			32.2		5.7	10.6			10.3	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		59.0			1.0		0.1	4.9			3.9	
Delay (s)		87.0			33.1		5.8	15.5			14.2	
Level of Service		F			C		A	B			B	
Approach Delay (s/veh)		87.0			33.1			15.3			14.2	
Approach LOS		F			C			B			B	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	25.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.88		
Actuated Cycle Length (s)	66.0	Sum of lost time (s)	18.0
Intersection Capacity Utilization	80.6%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	6.7

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	39	43	51	1016	778	16
Future Vol, veh/h	39	43	51	1016	778	16
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	96	96	92	92
Heavy Vehicles, %	0	3	0	2	4	0
Mvmt Flow	42	47	53	1058	846	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2022	857	866	0	-	0
Stage 1	857	-	-	-	-	-
Stage 2	1165	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.2	-	-	-
Pot Cap-1 Maneuver	65	355	786	-	-	-
Stage 1	419	-	-	-	-	-
Stage 2	300	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	54	355	784	-	-	-
Mov Cap-2 Maneuver	54	-	-	-	-	-
Stage 1	349	-	-	-	-	-
Stage 2	300	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	149.14	0.47	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	86	-	97	-	-
HCM Lane V/C Ratio	0.068	-	0.919	-	-
HCM Ctrl Dly (s/v)	9.9	0	149.1	-	-
HCM Lane LOS	A	A	F	-	-
HCM 95th %tile Q(veh)	0.2	-	5.3	-	-

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	15	0	17	1	0	3	18	1051	7	25	749	24
Future Vol, veh/h	15	0	17	1	0	3	18	1051	7	25	749	24
Conflicting Peds, #/hr	0	0	0	0	0	0	13	0	4	4	0	13
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	45	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	96	96	96	92	92	92
Heavy Vehicles, %	8	0	0	0	0	0	6	3	0	0	3	0
Mvmt Flow	16	0	18	1	0	3	19	1095	7	27	814	26

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2027	2038	840	2008	2048	1102	853	0	0	1106	0	0
Stage 1	895	895	-	1140	1140	-	-	-	-	-	-	-
Stage 2	1132	1144	-	868	908	-	-	-	-	-	-	-
Critical Hdwy	7.18	6.5	6.2	7.1	6.5	6.2	4.16	-	-	4.1	-	-
Critical Hdwy Stg 1	6.18	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.18	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.572	4	3.3	3.5	4	3.3	2.254	-	-	2.2	-	-
Pot Cap-1 Maneuver	41	57	368	45	57	260	769	-	-	639	-	-
Stage 1	327	362	-	247	278	-	-	-	-	-	-	-
Stage 2	240	277	-	350	357	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	36	51	364	38	50	259	761	-	-	637	-	-
Mov Cap-2 Maneuver	36	51	-	38	50	-	-	-	-	-	-	-
Stage 1	298	329	-	240	270	-	-	-	-	-	-	-
Stage 2	231	269	-	305	325	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	101.35	40.7	0.16	0.34
HCM LOS	F	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	761	-	-	69	105	56	-	-
HCM Lane V/C Ratio	0.025	-	-	0.504	0.041	0.043	-	-
HCM Ctrl Dly (s/v)	9.9	-	-	101.3	40.7	10.9	0	-
HCM Lane LOS	A	-	-	F	E	B	A	-
HCM 95th %tile Q(veh)	0.1	-	-	2.1	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	2.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	114	954	61	48	874
Future Vol, veh/h	9	114	954	61	48	874
Conflicting Peds, #/hr	0	0	0	9	9	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	90	55	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	96	96	92	92
Heavy Vehicles, %	0	1	2	4	2	3
Mvmt Flow	10	124	994	64	52	950

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2057	1003	0	0	1066	0
Stage 1	1003	-	-	-	-	-
Stage 2	1054	-	-	-	-	-
Critical Hdwy	6.4	6.21	-	-	4.12	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.218	-
Pot Cap-1 Maneuver	61	295	-	-	653	-
Stage 1	358	-	-	-	-	-
Stage 2	338	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	56	293	-	-	649	-
Mov Cap-2 Maneuver	56	-	-	-	-	-
Stage 1	355	-	-	-	-	-
Stage 2	311	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	42.43	0	0.57
HCM LOS	E		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	224	649	-
HCM Lane V/C Ratio	-	-	0.597	0.08	-
HCM Ctrl Dly (s/v)	-	-	42.4	11	-
HCM Lane LOS	-	-	E	B	-
HCM 95th %tile Q(veh)	-	-	3.4	0.3	-

Intersection	
Int Delay, s/veh	2.3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	22	20	1037	32	32	851
Future Vol, veh/h	22	20	1037	32	32	851
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	24	22	1127	35	35	925

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2139	1145	0	0	1162	0
Stage 1	1145	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	55	245	-	-	609	-
Stage 1	306	-	-	-	-	-
Stage 2	361	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	48	245	-	-	609	-
Mov Cap-2 Maneuver	48	-	-	-	-	-
Stage 1	306	-	-	-	-	-
Stage 2	319	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	102.37	0	0.41
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	78	65	-
HCM Lane V/C Ratio	-	-	0.586	0.057	-
HCM Ctrl Dly (s/v)	-	-	102.4	11.3	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	2.6	0.2	-

2032 BUILD CONDITIONS

PM PEAK HOUR

Lane Group	EBT	WBL	WBT	NBL	NBT	SBL	SBT	Ø9
Lane Configurations								
Traffic Volume (vph)	1	6	2	29	759	7	910	
Future Volume (vph)	1	6	2	29	759	7	910	
Turn Type	NA	Perm	NA	Perm	NA	Perm	NA	
Protected Phases	4		8		2		6	9
Permitted Phases		8		2		6		
Detector Phase	4	8	8	2	2	6	6	
Switch Phase								
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0	8.0	8.0	7.0
Minimum Split (s)	13.0	13.0	13.0	14.0	14.0	14.0	14.0	28.0
Total Split (s)	10.0	10.0	10.0	60.0	60.0	60.0	60.0	27.0
Total Split (%)	9.3%	9.3%	9.3%	56.1%	56.1%	56.1%	56.1%	25%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	4.0	4.0	2.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
Lost Time Adjust (s)	0.0		0.0	0.0	0.0		0.0	
Total Lost Time (s)	5.0		5.0	6.0	6.0		6.0	
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	Min	Min	Min	Min	None
Act Effct Green (s)	5.0		5.0	58.0	58.0		58.0	
Actuated g/C Ratio	0.07		0.07	0.76	0.76		0.76	
v/c Ratio	1.12		0.14	0.09	0.61		0.75	
Control Delay (s/veh)	147.4		28.7	3.8	7.1		10.5	
Queue Delay	0.0		0.0	0.0	0.0		0.0	
Total Delay (s/veh)	147.4		28.7	3.8	7.1		10.5	
LOS	F		C	A	A		B	
Approach Delay (s/veh)	147.4		28.7		7.0		10.5	
Approach LOS	F		C		A		B	

Intersection Summary	
Cycle Length: 107	
Actuated Cycle Length: 76	
Natural Cycle: 140	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 1.12	
Intersection Signal Delay (s/veh): 19.1	Intersection LOS: B
Intersection Capacity Utilization 85.2%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 1: Washington Street & Glen Road/Washington Court

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	1	21	6	2	6	29	759	7	7	910	130
Future Volume (vph)	121	1	21	6	2	6	29	759	7	7	910	130
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	16	16	16	12	12	12	11	11	12	12	14	12
Total Lost time (s)		5.0			5.0		6.0	6.0			6.0	
Lane Util. Factor		1.00			1.00		1.00	1.00			1.00	
Frt		0.98			0.94		1.00	1.00			0.98	
Flt Protected		0.96			0.98		0.95	1.00			1.00	
Satd. Flow (prot)		2025			1609		1745	1798			1956	
Flt Permitted		0.96			1.00		0.27	1.00			1.00	
Satd. Flow (perm)		2025			1644		489	1798			1947	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	132	1	23	7	2	7	32	825	8	7	968	138
RTOR Reduction (vph)	0	6	0	0	7	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	150	0	0	9	0	32	833	0	0	1113	0
Heavy Vehicles (%)	0%	0%	0%	0%	0%	20%	0%	2%	0%	0%	2%	1%
Turn Type	Split	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases	4	4			8			2			6	
Permitted Phases				8			2			6		
Actuated Green, G (s)		5.0			0.9		58.0	58.0			58.0	
Effective Green, g (s)		5.0			0.9		58.0	58.0			58.0	
Actuated g/C Ratio		0.06			0.01		0.73	0.73			0.73	
Clearance Time (s)		5.0			5.0		6.0	6.0			6.0	
Vehicle Extension (s)		2.0			2.0		3.0	3.0			3.0	
Lane Grp Cap (vph)		126			18		354	1305			1413	
v/s Ratio Prot		c0.07						0.46				
v/s Ratio Perm					c0.01		0.07				c0.57	
v/c Ratio		1.19			0.50		0.09	0.64			0.79	
Uniform Delay, d1		37.5			39.3		3.2	5.6			7.0	
Progression Factor		1.00			1.00		1.00	1.00			1.00	
Incremental Delay, d2		141.3			7.9		0.1	1.0			3.0	
Delay (s)		178.8			47.1		3.3	6.6			10.0	
Level of Service		F			D		A	A			A	
Approach Delay (s/veh)		178.8			47.1			6.5			10.0	
Approach LOS		F			D			A			A	

Intersection Summary			
HCM 2000 Control Delay (s/veh)	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.84		
Actuated Cycle Length (s)	79.9	Sum of lost time (s)	18.0
Intersection Capacity Utilization	85.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.8

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	12	10	13	876	1038	16
Future Vol, veh/h	12	10	13	876	1038	16
Conflicting Peds, #/hr	0	0	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	95	95
Heavy Vehicles, %	0	0	9	2	2	0
Mvmt Flow	13	11	14	952	1093	17

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	2084	1104	1112	0	-	0
Stage 1	1104	-	-	-	-	-
Stage 2	980	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.19	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.281	-	-	-
Pot Cap-1 Maneuver	59	259	603	-	-	-
Stage 1	320	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	56	258	601	-	-	-
Mov Cap-2 Maneuver	56	-	-	-	-	-
Stage 1	304	-	-	-	-	-
Stage 2	367	-	-	-	-	-

Approach	EB	NB	SB
HCM Ctrl Dly, s/v	61.47	0.16	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	26	-	87	-	-
HCM Lane V/C Ratio	0.024	-	0.275	-	-
HCM Ctrl Dly (s/v)	11.1	0	61.5	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.1	-	1	-	-

Intersection	
Int Delay, s/veh	30.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	51	0	45	1	0	29	32	889	1	1	979	23
Future Vol, veh/h	51	0	45	1	0	29	32	889	1	1	979	23
Conflicting Peds, #/hr	0	0	0	0	0	0	13	0	4	4	0	13
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	45	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0	0	2	0	0	1	0
Mvmt Flow	55	0	49	1	0	32	35	966	1	1	1064	25

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	2128	2133	1090	2107	2145	971	1102	0	0	971	0	0
Stage 1	1092	1092	-	1040	1040	-	-	-	-	-	-	-
Stage 2	1036	1041	-	1066	1104	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-	-	4.1	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.1	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	-	-	2.2	-	-
Pot Cap-1 Maneuver	~ 37	50	264	38	49	309	641	-	-	718	-	-
Stage 1	262	293	-	280	310	-	-	-	-	-	-	-
Stage 2	282	310	-	271	289	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	~ 31	46	261	29	46	308	634	-	-	715	-	-
Mov Cap-2 Maneuver	~ 31	46	-	29	46	-	-	-	-	-	-	-
Stage 1	259	289	-	264	292	-	-	-	-	-	-	-
Stage 2	239	292	-	220	285	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Ctrl Dly, s/v	$ 632.66	22.92	0.38	0.01
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	634	-	-	52	233	2	-	-
HCM Lane V/C Ratio	0.055	-	-	1.996	0.14	0.002	-	-
HCM Ctrl Dly (s/v)	11	-	-	$ 632.7	22.9	10	0	-
HCM Lane LOS	B	-	-	F	C	B	A	-
HCM 95th %tile Q(veh)	0.2	-	-	10.3	0.5	0	-	-

Notes	
~: Volume exceeds capacity	$: Delay exceeds 300s
+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	3.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	99	986	43	74	1028
Future Vol, veh/h	10	99	986	43	74	1028
Conflicting Peds, #/hr	0	0	0	9	9	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	Free
Storage Length	0	-	-	90	55	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	95	95	94	94
Heavy Vehicles, %	11	0	1	0	0	2
Mvmt Flow	11	108	1038	45	79	1094

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2298	1047	0	0	1092	0
Stage 1	1047	-	-	-	-	-
Stage 2	1251	-	-	-	-	-
Critical Hdwy	6.51	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.51	-	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-	-
Follow-up Hdwy	3.599	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	40	280	-	-	647	-
Stage 1	325	-	-	-	-	-
Stage 2	258	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	35	278	-	-	642	-
Mov Cap-2 Maneuver	35	-	-	-	-	-
Stage 1	323	-	-	-	-	-
Stage 2	227	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	64.74	0	0.77
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	169	642	-
HCM Lane V/C Ratio	-	-	0.699	0.123	-
HCM Ctrl Dly (s/v)	-	-	64.7	11.4	-
HCM Lane LOS	-	-	F	B	-
HCM 95th %tile Q(veh)	-	-	4.2	0.4	-

Intersection	
Int Delay, s/veh	9.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	40	39	940	29	29	1010
Future Vol, veh/h	40	39	940	29	29	1010
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	43	42	1022	32	32	1098

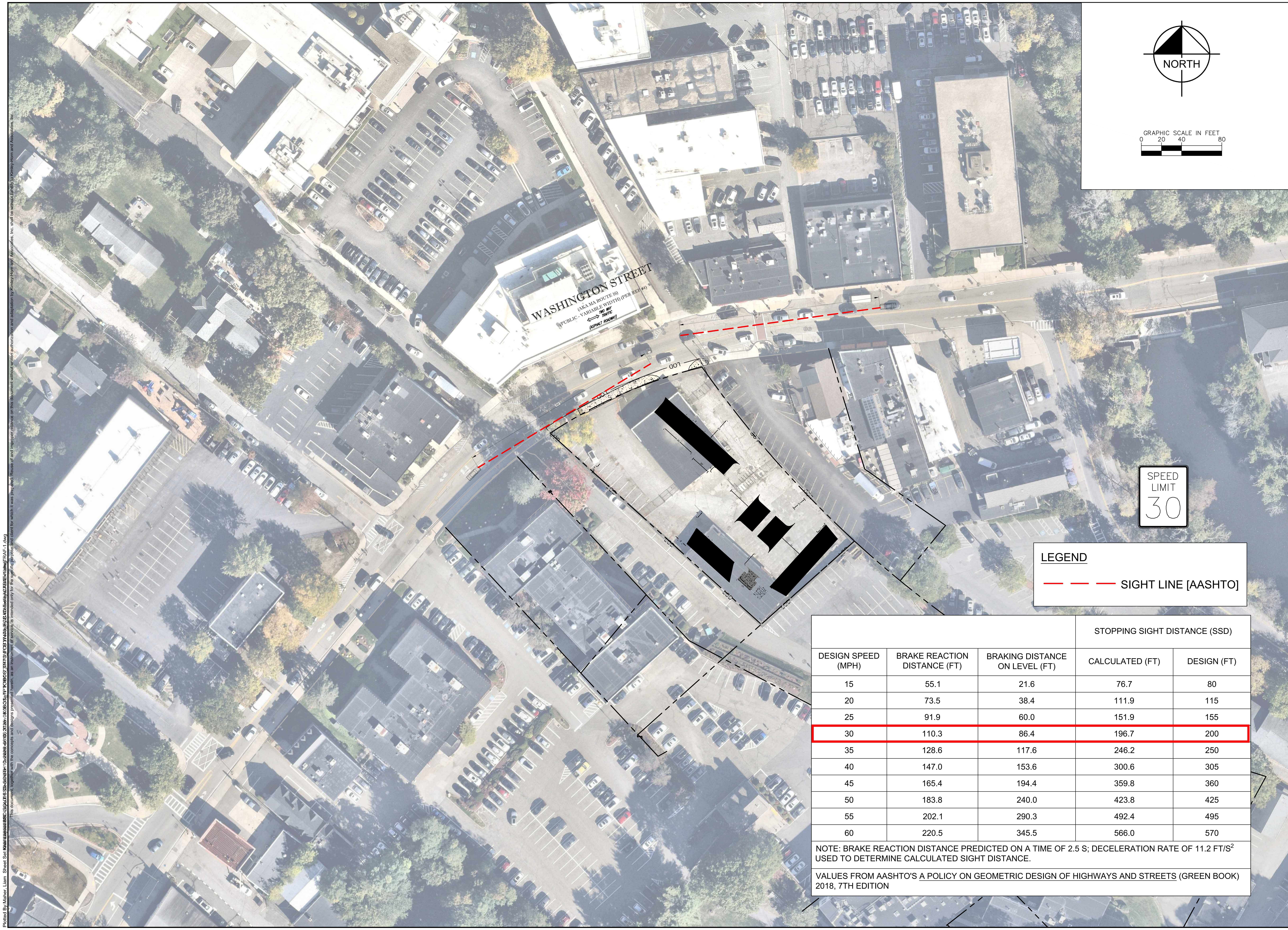
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	2198	1038	0	0	1053	0
Stage 1	1038	-	-	-	-	-
Stage 2	1161	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	50	283	-	-	669	-
Stage 1	344	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	44	283	-	-	669	-
Mov Cap-2 Maneuver	44	-	-	-	-	-
Stage 1	344	-	-	-	-	-
Stage 2	264	-	-	-	-	-

Approach	WB	NB	SB
HCM Ctrl Dly, s/v	243.13	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	75	50	-
HCM Lane V/C Ratio	-	-	1.138	0.047	-
HCM Ctrl Dly (s/v)	-	-	243.1	10.6	0
HCM Lane LOS	-	-	F	B	A
HCM 95th %tile Q(veh)	-	-	6.4	0.1	-

APPENDIX J

SIGHT DISTANCE ANALYSIS



LEGEND

— — — SIGHT LINE [AASHTO]

			STOPPING SIGHT DISTANCE (SSD)	
DESIGN SPEED (MPH)	BRAKE REACTION DISTANCE (FT)	BRAKING DISTANCE ON LEVEL (FT)	CALCULATED (FT)	DESIGN (FT)
15	55.1	21.6	76.7	80
20	73.5	38.4	111.9	115
25	91.9	60.0	151.9	155
30	110.3	86.4	196.7	200
35	128.6	117.6	246.2	250
40	147.0	153.6	300.6	305
45	165.4	194.4	359.8	360
50	183.8	240.0	423.8	425
55	202.1	290.3	492.4	495
60	220.5	345.5	566.0	570

NOTE: BRAKE REACTION DISTANCE PREDICTED ON A TIME OF 2.5 S; DECELERATION RATE OF 11.2 FT/S^2 USED TO DETERMINE CALCULATED SIGHT DISTANCE.

VALUES FROM AASHTO'S A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS (GREEN BOOK) 2018, 7TH EDITION

No.	REVISIONS	DATE	BY
#		###	###
#		###	###
#		###	###
#		###	###
#		###	###
#		###	###
#		###	###

Kimley»Horn

271 WAVERLEY OAKS ROAD, SUITE 302, WALTHAM, MA 02452
PHONE: 781-328-0676
WWW.KIMLEY-HORN.COM

KHA PROJECT 011737473
DATE 12/10/2025
SCALE AS SHOWN
DESIGNED BY —
DRAWN BY —
CHECKED BY —

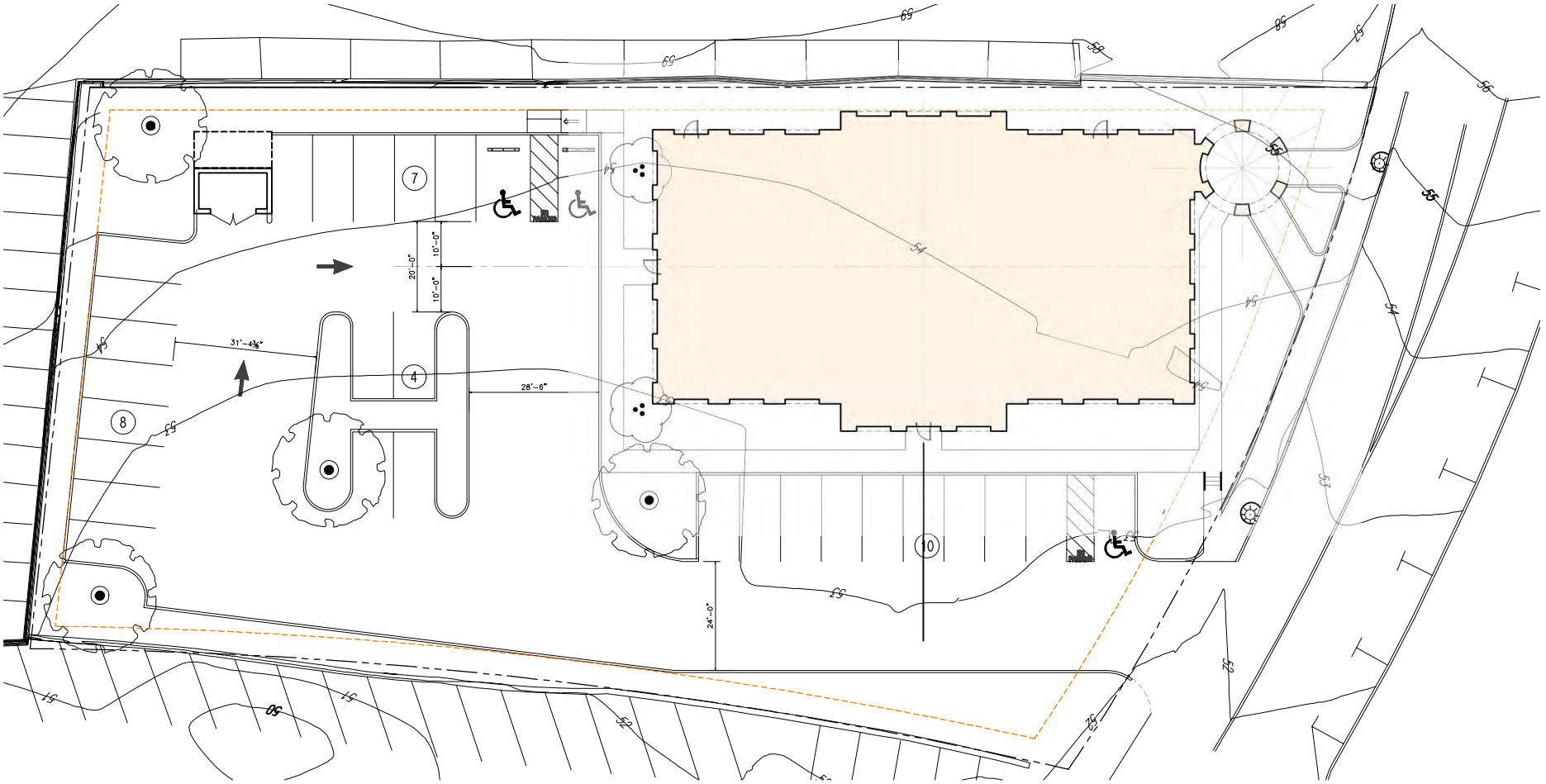
SITE DRIVEWAY SSD

FCB WELLESLEY
PREPARED FOR
FIRST CITIZENS BANK
WELLESLEY MASSACHUSETTS

SHEET NUMBER
1

APPENDIX K

SITE PLAN



1 A1.1 **SITE PLAN - OPTION 11**

SCALE: 3/32" = 1'-0"

0 4' 8' 16' 32'

NOT FOR CONSTRUCTION, PERMITTING OR REGULATORY APPROVAL

ADLER ARCHITECTURE
PHONE: (512) 263-1999
WWW.ADLERARCH.COM

MAILING ADDRESS
PO BOX 161417
Austin, TX 78716

PROJECT: FIRST CITIZENS BANK
WELLESLEY NEW BRANCH
LOCATION:

Adler ARCHITECTURE

CONSULTANTS

Civil:	xxxx xxxx
Struct:	xxxx xxxx
MEP:	xxxx xxxx
Client #:	xxxx
File #:	xxxx
Designed:	A. ADLER
Drawn:	R. CARNEY
Checked:	A. ADLER
Date:	OCTOBER 30, 2025

SEAL

NOT FOR CONSTRUCTION, PERMITTING, OR REGULATORY APPROVAL

CURRENT REVISION

Rev.	Date	Description:

*NOTE: SEE COVER SHEET FOR REVISION NUMBERS & DESCRIPTIONS

KEY PLAN:

SHEET CONTENTS:
SITE PLAN - OPTION 12

SHEET NO.
A1.1