



CITY OF CAMBRIDGE

TRAFFIC, PARKING, + TRANSPORTATION

Joseph E. Barr, Director
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Cambridge, MA 02139

August 20, 2021

Jennifer Conners
Vanasse & Associates
35 New England Business Center Drive, Suite 140
Andover, MA 01810

Matt D'Amico
Cabot, Cabot & Forbes
185 Dartmouth Street
Boston, MA 02116

RE: 180 Fawcett Street Transportation Impact Study (TIS)

Dear Jennifer and Matt,

The Cambridge Traffic, Parking, and Transportation Department (TP+T) received a Transportation Impact Study (TIS) for the 180 Fawcett Street Project by Cabot, Cabot & Forbes on July 30, 2021. Based on staff review and discussions with VAI for some clarifications, we certify the TIS as accurate and complete.

Thank you for working with us on the TIS and we look forward to continuing to work with you on this Project as it moves through the Development Review process, including a final site plan (we believe there are a few site plan items we will want to continue working with you on) and a final transportation mitigation program.

Please call Adam Shulman of my staff at 617-349-4745 to set up a meeting or if you have any questions.

Very truly yours,

Joseph E. Barr, Director

cc: Adam Shulman, Patrick Baxter, TP+T

Transportation Impact Study

180 Fawcett Street
Cambridge, Massachusetts

Prepared for:

CCF Fawcett Street Property Company, LLC
Cambridge, Massachusetts

July 2021

Prepared by:



35 New England Business Center Drive
Suite 140
Andover, MA 01810

CITY OF CAMBRIDGE
Special Permit Transportation Impact Study (TIS)

Summary Sheet

Planning Board Permit Number: _____

Project Name: 180 Fawcett Street

Address: 180 Fawcett Street, Cambridge, MA

Owner/Developer Name: CCF Fawcett Street Property Company, LLC

Contact Person: Matt D'Amico

Contact Address: 185 Dartmouth Street

Boston, MA 02110

Contact Phone: (617) 603-4000

ITE sq. ft.: 57,434 sf R&D building.

Zoning sq. ft.: 68,993 gross square feet

Land Use Type: R&D building

Existing Parking Spaces: 14 Use: Commercial Building

New Parking Spaces: 55 Use: R&D building

Date of Parking Registration Approval: _____

Trip Generation:	Daily	AM Peak Hour	PM Peak Hour
Total Trips	556	71	61
Vehicle	356	45	39
Transit	93	11	10
Pedestrian	23	3	3
Bicycle	59	8	6
Other	35	5	4

	R&D building		
Mode Split (person trips):	Vehicle:	<u>64</u> %	—
	Transit:	<u>16</u> %	—
	Pedestrian:	<u>4</u> %	—
	Bicycle:	<u>10</u> %	—
	Other:	<u>6</u> %	—

Transportation Consultant: Vanasse and Associates, Inc.

Contact Name: Scott W. Thornton, P.E.

Phone: 978-474-8800

Date of Building Permit Approval: _____



Planning Board Permit Number: _____

Project Name: 180 Fawcett Street

Total Data Entries = 87

Total Number of Criteria Exceedances = 13

1. Project Vehicle Trip Generation

Weekday = 356 AM Peak Hour = 45 PM Peak Hour = 39 Exceeds Criteria? [Y/N] N/N/N

2. Level of Service (LOS)

Intersection	Weekday Morning Peak Hour				Weekday Evening Peak Hour			
	Existing	With Project	Traffic increase	Exceeds Criteria?	Existing	With Project	Traffic increase	Exceeds Criteria?
Concord Avenue at Blanchard Road	F	F	1.0%	No	E	E	1.0%	No
Concord Avenue at Moulton Street	A	A	--	No	A	A	--	No
Concord Avenue at Smith Place	D	E	--	Yes	D	D	0.2%	No
Concord Avenue at Fawcett Street	F	F	1.9%	No	E	E	1.3%	No
Smith Place at Fawcett Street and Private Drive	A	A	--	No	B	B	--	No



3. Traffic on Residential Streets

Roadway	Reviewed Segment	Amount of Residential	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
			Existing Two-Way Traffic	Increase due to Project	Exceeds Criteria?	Existing Two-Way Traffic	Increase due to Project	Exceeds Criteria?
Blanchard Road	Colby St/S Normandy Av to Concord Av. Mannix Circle to Concord Av.	1/2 or more	1,093	8	No	994	7	No
		>1/3 but <1/2	900	6	No	899	5	No
Concord Avenue	Blanchard road to Smith Place	1/3 or less	1,580	23	No	1203	20	No
	Smith Place to Moulton Street	1/3 or less	1,541	1	No	1142	3	No
	Moulton Street to Fawcett Street	1/3 or less	1,601	1	No	1204	3	No
	Fawcett Street to Wheeler Street	1/3 or less	1,800	22	No	1320	19	No
Smith Place	Concord Avenue to Fawcett Street	1/3 or less	188	24	No	255	23	No
Fawcett Street	Concord Avenue to Connection Road	>1/3 but 1/2	275	21	No	263	16	No
	Connection Road to Smith Place	1/3 or less	110	24	No	95	23	No

4. Lane Queue (for Signalized Intersections Critical Lane)

Intersection/Lane	Weekday Morning Peak Hour				Weekday Evening Peak Hour			
	Existing	With Project	Difference in Queue	Exceeds Criteria?	Existing	With Project	Difference in Queue	Exceeds Criteria?
Concord Avenue at Blanchard Road:								
Concord Avenue EB LT/TH	6	6	0	No	5	5	0	No
Concord Avenue EB TH/RT	4	4	0	No	3	3	0	No
Concord Avenue WB L	5	5	0	No	5	5	0	No
Concord Avenue WB T	5	5	0	No	5	5	0	No
Concord Avenue WB R	2	2	0	No	2	2	0	No
Blanchard Road NB LT/TH	6	6	0	No	13	13	0	No
Blanchard Road NB RT	2	2	0	No	2	2	0	No
Blanchard Road SB LT/TH/RT	8	8	0	No	7	7	0	No
Concord Avenue at Moulton Street:								
Concord Avenue EB LT/TH	4	4	0	No	3	3	0	No
Concord Avenue EB TH/RT	4	4	0	No	3	4	1	No
Concord Avenue WB LT/TH/RT	3	4	1	No	4	4	0	No
Private Driveway NB LT/TH/RT	0	0	0	No	1	1	0	No
Moulton Street SB LT/TH/RT	1	1	0	No	2	2	0	No



5. Pedestrian and Bicycle Facilities (for Critical Pedestrian Crossing)

Pedestrian Level of Service – Signalized Intersection

Intersection	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	Existing	With Project	Exceeds Criteria?	Existing	With Project	Exceeds Criteria?
Concord Avenue at Blanchard Road:						
Concord Avenue (West)	D	D	No	E	E	Yes
Concord Avenue (East)	D	D	No	E	E	Yes
Blanchard Road (North)	E	E	Yes	E	E	Yes
Blanchard Road (South)	E	E	Yes	E	E	Yes
Concord Avenue at Moulton Street and Private Drive:						
Concord Avenue (East)	C	C	No	C	C	No
Private Drive (North)	C	C	No	C	C	No
Moulton Street (South)	C	C	No	C	C	No

Pedestrian Level of Service – Unsignalized Intersection

Intersection	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	Existing	With Project	Exceeds Criteria?	Existing	With Project	Exceeds Criteria?
Concord Avenue at Smith Place:						
Concord Avenue (West)	F	F	Yes	F	F	Yes
Smith Place (North)	A	A	No	B	B	No
Concord Avenue at Fawcett Street:						
Concord Avenue (West)	F	F	Yes	F	F	Yes
Fawcett Street (North)	B	B	No	B	B	No
Smith Place at Fawcett Street and Private Drive:						
Fawcett Street (East)	A	A	No	A	A	No
Smith Place (North)	A	A	No	A	A	No



Safe Pedestrian and Bicycle Facilities

Adjacent Street or Public Right-of-Way	Sidewalks or Walkways Present?	Exceeds Criteria?	Bicycle Facilities or Right-of-Ways Present?	Exceeds Criteria?
Smith Place	Yes	No	No ^{a,b}	Yes
Fawcett Street	Yes	No	No ^b	Yes

^aA new bicycle pathway will be proposed as part of the 101 Smith place project.

^bA new bicycle pathway on-site will be proposed as part of this Project.



TRANSPORTATION IMPACT STUDY

180 FAWCETT STREET
CAMBRIDGE, MASSACHUSETTS

Prepared for:

CCF Fawcett Street Property Company, LLC
Cambridge, Massachusetts

July 2021

Prepared by:

VANASSE & ASSOCIATES, INC.
Transportation Engineers & Planners
35 New England Business Center Drive
Suite 140
Andover, MA 01810

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EXECUTIVE SUMMARY

INTRODUCTION

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Study (TIS) for a proposed research and development (R&D)/laboratory building (the “Project”) to be located at 180 Fawcett Street (Property ID: 267.4-284) within an area of Cambridge known as the “Alewife Quadrangle” neighborhood. The property owner (the “Proponent”) is proposing to construct approximately 57,434 square feet (sf) of gross floor area (gfa) of Research and Development (R&D) use. This study reviews the potential transportation impacts, defines site access requirements, and identifies strategies to reduce traffic impacts associated with the Project. This TIS also reviews the Project with respect to the City of Cambridge Article 19 Special Permit Criteria regarding traffic impacts, is in accordance with the City’s guidelines for TISs, and follows the scoping determination dated May 5, 2021. The following summarizes the study findings.

PROJECT DESCRIPTION

The Project site consists of 19,014 sf of a low-rise building that lies at the northeast corner of the intersection of Fawcett Street and Smith Place. The existing building is sitting on an ±0.767-acre parcel of land in Cambridge, Massachusetts. Currently, the Project site has 14 registered parking spaces for vehicles. Bicycle parking is not provided on the property. Access is provided via one curb cut to Fawcett Street and one curb cut to Smith Place. As part of this development, the existing building will be demolished.

The Project entails construction of a new four-story building (68,993 gross square feet (gsf)) with approximately 57,434 square feet (sf) of gross floor area (GFA) of R&D/laboratory space. The site redevelopment proposes to construct approximately 55 parking spaces contained in a below-grade parking garage. In addition, approximately 14 long-term bicycle parking spaces (0.22 per ksf of lab space) and 8 short-term bicycle parking spaces (0.06 per ksf of lab space) are proposed, in accordance with the City’s Bicycle Parking Guidelines. Access and egress to the below-grade parking garage will be provided via one (1) full-access driveway onto Fawcett Street. An additional driveway to access the loading area will be also provided onto Fawcett Street. The existing driveway to Smith Place will be closed and not retained.

EXISTING CONDITIONS

A field inventory of existing study area roadways was conducted to document traffic conditions in the current analysis year. Items collected regarding the study area roadways and intersections include roadway geometrics, traffic control devices, traffic signal timing plans, traffic volumes, vehicle queues, pedestrian crossing volumes, bicycle volumes, and safety data for the roadways in the vicinity of the site. Transportation information and data used in this study were collected during April/May 2019. In order to establish existing traffic conditions within the study area, automatic traffic recorder counts (ATR), manual turning movement counts (TMCs), and vehicle classification conducted in October 2018 and April 2019 were used. The counts were conducted when colleges and public schools were in regular session and when there was no street cleaning. Twelve-hour pedestrian and bicycle counts performed in April 2019, between 7:00 AM and 7:00 PM along Smith Place north of Concord Avenue and Concord Avenue west of Smith Place were also used. All traffic count information was collected prior to the COVID-19 outbreak.

Due to the effects of the COVID-19 pandemic, regional traffic volumes have not increased between 2019 and 2021. Therefore, in order to provide an adequate baseline condition for this TIS, the obtained 2019 traffic volume without annual growth added was used as the 2021 baseline condition.

CONSISTENCY WITH PLANNING STUDIES

The study area for the Project is located in four distinct neighborhoods or subdistricts: Triangle, Quadrangle (where this Project is located), Cambridge Highlands, and a shopping center. In 2003, the City initiated a multidisciplinary planning study of this area and developed what is now known as the 2005 Concord-Alewife Planning Study (CAP). The Study created a plan for the Concord-Alewife area and addressed issues such as an appropriate mix of uses, including housing, commercial, possible City uses, and open space; the character of future development; access and traffic; and zoning changes needed to accomplish City goals.

More recently, the City of Cambridge embarked on creating a City-wide plan called Envision Cambridge “to create a more sustainable, equitable, and inclusive community.” Envision Cambridge sets a framework for the Quadrangle, which is designated as an evolving mixed-use district, as a district that “should continue to accommodate the bulk of the city’s growth and change, taking advantage of transit proximity, and positively transforming areas characterized by surface parking lots, automobile-oriented uses, and obsolete commercial buildings.” The draft plan recommends that Cambridge should seek to enhance its multimodal network locally and expand connections to regional sustainable transportation¹. The Project proponent has and will continue to work with the City (including the departments of Community Development, Public Works, and Traffic, Parking, and Transportation) to ensure that the proposed Project is consistent with the design guidelines and conforms with the Envision Cambridge goals and planning principles.

PROJECT-GENERATED TRAFFIC

The Project involves the construction of a 57,434 sf R&D building. In order to estimate the trip-generation characteristics of the proposed development, empirical trip rates from existing R&D buildings in the vicinity of the proposed site were used. Trip-generation calculations were performed for a typical weekday as well as the weekday morning and weekday evening peak hours,

¹Envision Cambridge (envision.cambridgema.gov).

the critical time periods for project-related traffic activity. This follows the approach determined in discussion with the Cambridge Traffic, Parking, & Transportation Department. It should be noted that this TIS analyzed a higher area of 62,050 sf; therefore, the TIS is a conservative treatment of Project impacts.

The Project is expected to generate 356 new vehicle trips on an average weekday (two-way, 24-hour volume), with 45 new vehicle trips (35 entering and 10 exiting) expected during the weekday morning peak hour. During the weekday evening peak hour, the Project is expected to generate 39 new vehicle trips (9 entering and 30 exiting). The directional distribution of generated trips to and from the Project site was determined based on a review of the *Alewife Critical Sums Assumptions Report*,² for both the residential and commercial components.

ARTICLE 19 PROJECT REVIEW SPECIAL PERMIT CRITERIA ANALYSIS

As required by Section 19.20 of the Cambridge Zoning Ordinance, the Project has been evaluated against the five Project Review Special Permit Criteria indicators as measurements of the Project's expected impact on City traffic. Of the 87 measurements analyzed in connection with the five indicators, 13 measurements do not satisfy the City standards, resulting in a 15 percent exceedance rate. However, 12 of the 13 indicators are exceeded under Existing conditions, without the Project. As detailed in this TIS, the Project will not exacerbate any of the pre-existing exceedances. The Applicant is also committed to the implementation of the Project mitigation strategies described in this TIS in order to lessen any potential impact of the Project on City traffic. Accordingly, the Project is not expected to have a substantial adverse impact on City traffic and issuance of a Project Review Special Permit is appropriate with respect to potential traffic impacts.

TRAFFIC OPERATIONS ANALYSIS

To assess the impact of the Project on the roadway network, traffic operations and vehicle queue analyses were performed at the study intersections under 2021 Baseline condition, 2021 Build, and 2026 Build conditions. The analysis indicates that the Project will not have a significant effect on operating conditions at the study area intersections.

TRANSPORTATION DEMAND MANAGEMENT (TDM) PROGRAM

Generally, the location of the Project with the addition of the future access bridge to Alewife Station will significantly encourage the use of traffic by employees and visitors of the proposed Project. Mitigation efforts are therefore geared towards measures to encourage Project employees towards alternative transportation that would result in a low single occupant vehicle (SOV) rate for the Project. Consistent with Section 10.18.050 (g) of the Parking and Transportation Demand Management (PTDM) ordinance, the Proponent has developed a PTDM Plan and will work with the Community Development Department to implement the measures identified in the PTDM Plan.

²Alewife Critical Sums Analysis; McMahon Associated; Cambridge, MA; 2019

Reducing the amount of traffic generated by the Project is an important component of the transportation mitigation plan. The goal of the proposed traffic reduction strategy is to reduce the number of SOVs by encouraging the use of public transportation, car/vanpooling, bicycle commuting, and pedestrian travel. The following measures will be implemented as a part of the proposed Project and by the property management team in an effort to reduce the number of vehicle trips generated by the Project:

- Charge for parking at market rates and offer discounted parking for dedicated HOV vehicles.
- Commit to reserving 10 percent of parking spaces in the garage as carpool/HOV vehicles.
- Establish membership in the Alewife TMA including free access for employees to use shuttle buses operated by the TMA. Provide emergency ride home and ride-matching benefits to all employees through the Alewife TMA or other provider acceptable to TP&T.
- R&D tenants will be encouraged to provide 100 percent transit subsidies to employees.
- The pedestrian nature of the site will also be emphasized, as will the proximity of the Alewife Station.
- In order to encourage the use of public transportation, the property management team will make available public transportation schedules which will be posted in a centralized location for the residents.
- Designate a Transportation Coordinator for the site who will also be responsible for:
 - Aggressively promoting and marketing non-SOV modes of transportation to employees.
 - Overseeing the marketing and promotion of transportation options such as posting information on the Project’s web site, social media, and property newsletters.
 - Responding to individual requests for information.
 - Ensuring that annual transportation surveys are conducted.
 - Coordinating with Alewife TMA.
- Provide Bluebikes_{sm} corporate membership (minimum Gold level) paid by employer for employees that choose to become Bluebikes_{sm} members.
- Require corporate membership paid by the employer to allow employees to use carshare vehicles for work related trips during the day instead of needing to drive private vehicles to work.
- Provide electric vehicle level plug-in stations in the garage for at least 5 vehicles.
- Provide a bicycle repair station to include air pumps and other bike tools.

The Applicant will investigate the implementation of these traffic-reducing strategies and will work with the City, the TMA, and area businesses to implement these programs.

PROJECT MITIGATION

The Project proposes implementation of a TDM Plan as described in Section 16 to outweigh any potential adverse impacts of the Project on the surrounding street network. As required by *Cambridge Article 19 -Section 19.20*, the Project has been evaluated against the five indicators as measurements of the Project's expected impact on City traffic. In order to improve measures not satisfied, the Project proponent will implement pedestrian and bicycle safety improvements in the area. The proposed mitigation is further described in Section 15 of this report.

Bicycle Parking

The Proponent is adding long-term and short-term bike parking spaces to meet requirements for the Project under zoning. To encourage the use of bicycling to and from the site, the Proponent is also reviewing the installation of a Bluebikes_{sm} station. This station would further the City's goals of additional Bluebikes_{sm} stations throughout the City but especially along multi-use paths and residential neighborhoods in highly congested areas.

CONCLUSION

As required by Section 19.20, the Project has been evaluated against the five indicators as measurements of the Project's expected impact on City traffic. Of the 87 measurements analyzed in connection with the five indicators, only 13 measurements do not satisfy the City standards, resulting in 15 percent exceedance rate. The Applicant is committed to the implementation of the above Project mitigation strategies to lessen any potential impact of the Project on City traffic. Accordingly, the Project is not expected to have a substantial adverse impact on City traffic such that issuance of a Project Review Special Permit is appropriate with respect to potential traffic impacts.

This TIS finds that the Project can be accommodated within the existing area infrastructure and on the roadway network with minimal effects, resulting in the ability to modify the site associated with the Project as planned. The Project proponent is committed to a project which is sensitive to the area and minimizes the impact to the neighborhood.

PROJECT DESCRIPTION

VAI has conducted a TIS for a proposed R&D development to be located at 180 Fawcett Street (Property ID: 267.4-284) within an area of Cambridge known as the “Alewife Quadrangle” neighborhood. This study reviews the potential transportation impacts, defines site access requirements, and identifies strategies to reduce traffic impacts associated with the Project. In addition, the study reviews the Project with respect to the City of Cambridge Article 19 Special Permit Criteria regarding traffic impacts, is in accordance with the City’s guidelines for TIS, and follows the scoping determination dated May 5, 2021.

The Project location is depicted on Figure A. Survey plans are shown in Figures B including property lines, abutting parcels, and property ownership.

The proposed site plan including proposed building size, land use, vehicle and bicycle parking spaces, widths of proposed driveways, curb cuts, sidewalks, street trees, landscape details and utilities are depicted in Figures C.1 and C.5, as requested in the Scoping Letter. Table A outlines the existing and proposed characteristics of the Project.

Table A
PROJECT CHARACTERISTICS

Characteristics	Existing Site	Project
Leasable Retail (Health Club)	19,014 sf	--
Leasable Office Space/R&D Space (GFA)	--	57,434 sf
Parking Spaces	14 registered	55
Bicycle Spaces		
Long Term	0	14
Short Term	0	8

Source: Site survey.

PEDESTRIAN/BIKE ACCESS TO THE ALEWIFE MBTA STATION

Separate from this application, a proposed multi-use pathway bridge is planned to connect the Quadrangle neighborhood to Cambridge Park Drive and the Alewife MBTA Station. As proposed in the preliminary design, the 150-foot long bridge will cross the MBTA railroad and land in an open space north of the proposed Project site and at the cul-de-sac located in the end of the Cambridge Park Drive. Figure C.6 shows current distances for pedestrians and bicycles from the site to the MBTA station.

SITE ACCESS

Access and egress to the project site is currently provided by two full-access driveways: one full-access driveway onto Smith Place and one full-access driveway onto Fawcett Street. As part of this project the Smith Place driveway will be closed and vehicle access to the proposed new building will be provided by two driveways onto Fawcett Street: One \pm 22-foot wide full-access main driveway serving the below-grade parking garage and one 14-foot wide driveway onto Fawcett Street to access the loading area. According to the Cambridge Zoning Ordinance 6.43.3, in Industrial districts (site located at district Industry B-2), the maximum width of a curb cut shall be 30 feet. The ordinance also states that a maximum of one curb cut for every 100 feet of street frontage or portion thereof shall be allowed for lots having frontage in excess of one hundred feet. The project site provides a total of approximately 147 feet of frontage. The proposed loading area curb cut (14 feet) is proposed within 100 feet of frontage of the site and second site curb-cut (22 feet) is provided in the remaining frontage area. The Applicant believes the proposed site curb-cut complies with the Cambridge Zoning Ordinance for this district but will confirm with the Cambridge Inspectional Services Department (ISD). Figure C.7 graphically depicts proposed driveway dimensions.

SIGHTLINE TRIANGLES FOR VEHICLES EXITING PARKING GARAGE

Sight distance at the site main driveway intersection with Fawcett Street were evaluated in order to determine sightline triangles for vehicles exiting the parking garage, as requested in the Scoping Letter. According to the Cambridge Traffic, Parking & Transportation curb cut guidelines, the curb cut must have safe sightlines (minimum 20-foot visibility in both directions) for motorists entering the roadway or crossing a public sidewalk. As can be seen on Figure C.8, the parking garage driveway provides approximately 105 feet visibility for pedestrian coming from the west and approximately 21-foot visibility for pedestrian coming from the east. The loading dock driveway provides approximately 85 feet visibility for pedestrian coming from the west and approximately 40-foot visibility for pedestrian coming from the east. Therefore, sufficient sightlines are available for drivers to see pedestrians on Fawcett Street when exiting the loading dock and parking garage.

LOADING DOCK AUTOTURN

The loading dock driveway is designed to accommodate a SU-40 and a WB-40 truck. AutoTURN analysis was conducted for a SU-40 and a WB-40 truck entering and exiting the loading area. The analysis was conducted for a truck traveling westbound on Fawcett Street. Figures C.9 through C.12 depict the AutoTURN analyses.

ENVISION CAMBRIDGE

The study area for the Project is located in four distinct neighborhoods or subdistricts: Triangle, Quadrangle (where this Project is located), Cambridge Highlands, and a shopping center. In 2003, the City initiated a multidisciplinary planning study of this area and developed what is now known as the 2005 Concord-Alewife Planning Study (CAP). The Study created a plan for the Concord-Alewife area and addressed issues such as an appropriate mix of uses, including housing, commercial, possible public City uses, and open space; the character of future development; access and traffic; and zoning changes needed to accomplish City goals.

More recently, the City of Cambridge embarked on creating a City-wide plan called Envision Cambridge “to create a more sustainable, equitable, and inclusive community.” Envision Cambridge sets a framework for the Quadrangle, which is designated as an evolving mixed-use district, as a district that “should continue to accommodate the bulk of the city’s growth and change, taking advantage of transit proximity, and positively transforming areas characterized by surface parking lots, automobile-oriented uses, and obsolete commercial buildings.” The draft plan recommends that Cambridge should seek to enhance its multimodal network locally and expand connections to regional sustainable transportation.³ The Project proponent has and will continue to work with the City (including the departments of Community Development, Public Works, and Traffic, Parking, and Transportation) to ensure that the proposed Project is consistent with the design guidelines and conforms with the Envision Cambridge goals and planning principles.

The proposed cross section for Smith Place and Fawcett Street complies with the Envision Cambridge-plan preferred section. The proposed site is located in a corner lot on two different Envision street conditions. The Smith Place Envision plan includes a grade-separated bicycle lane and the Fawcett Street Envision plan include an elevated walkway with a grade-separated bicycle lane. As part of this project a proposed grade-separated bicycle lane with an additional elevated walkway will be provided on both Fawcett Street and Smith Place. Figure C.13 through C.15 graphically depicts the proposed cross section plan and compares the Envision plans with Site Day One plans.

FLAMMABLE GAS DELIVERY AND STORAGE

A dedicated hazardous materials storage area is proposed for the building and will be accessed from the proposed loading area. Flammable gas cylinders will be delivered to the loading area within the building and transferred to the storage room manually. No large storage tank requiring refilling using hoses or piping will be required. The storage room is specially made to withstand two hours of intense flame, giving it a “Two-Hour Enclosure” rating. The storage area will also have dedicated sprinkler and fire protection, and a dedicated emergency exhaust system. The storage room will meet all required safety and code requirements as dictated by the city of Cambridge. The Project storage room location is depicted on Figure C.16.

CONSTRUCTION PHASING PLAN

It is anticipated that the Project Construction Period will be between 18-24 months with typical construction activities occurring between the hours of 7:00 AM and 6:00 PM Monday through Saturday, presuming approval by the City of Cambridge.

³Envision Cambridge (envision.cambridgema.gov).

Construction will begin with the mobilization of a perimeter site fence on Fawcett Street and Smith Street and Utility Cut & Cap followed by the various construction phases identified below:

Phase 1: Demolition

Phase 2: Excavation & Sitework

Phase 3: Structural Steel

Phase 4: Façade and Roofing Installation

Phase 5: MEP Rough and

Phase 6A: Interior Finishes

Phase 6B: Exterior Sitework and Landscaping

Phase 7: Demobilization

1.0 EXISTING CONDITIONS

1.a - EXISTING TRAFFIC CONDITIONS

A field inventory of existing study area roadways was conducted to document baseline traffic conditions. Items collected regarding the study area roadways and intersections include roadway geometrics, traffic control devices, traffic signal timing plans, traffic volumes, vehicle queues, pedestrian crossing volumes, bicycle volumes, and safety data for the roadways in the vicinity of the site. Traffic volumes were measured by means of ATRs and substantiated by manual TMCs and vehicle-classification counts. Other transportation-related data inventoried include area parking supply and regulations, transit stop and services, and provision of bicycle and pedestrian facilities.

Transportation Network

The Project site lies at the northeast corner of the intersection of Fawcett Street and Smith Place, north of Concord Avenue in the “Quadrangle” neighborhood of Cambridge. Concord Avenue is an east-west roadway just south of the Project site that extends between Belmont and Harvard Square in Cambridge. Smith Place (and for a portion of its alignment, Fawcett Street) is a north-south direction roadway just west of the Project Site which connects the heart of the “Quadrangle” area to Concord Avenue. Regional access to the area is provided via Concord Avenue to the west and east. In the immediate vicinity of the site, local access is provided from Smith Place and Fawcett Street.

Geometric and Traffic Control

Intersection geometry and lane usage was obtained from the most recent approved (September 2019) traffic study conducted in this area, Cambridge Community Development Neighborhood Map and field inventory conducted by VAI in April 2019. A graphical depiction of intersection inventories for the study area intersections are provided in Figures 1.a.1 through 1.a.5. It is important to note that during the VAI field inventory in 2019, all sidewalks and wheelchair ramps along Concord Avenue were in fair to good condition.

1.b - DESCRIPTION OF PROJECT STUDY AREA

The Project study area was determined in consultation with City transportation officials. The study area was confirmed in the May 5, 2021 Scoping Determination from the City to VAI. The study area is listed below:

1. Concord Avenue at Blanchard Road and Griswold Street
2. Concord Avenue at Smith Place
3. Concord Avenue at Moulton Street
4. Concord Avenue at Fawcett Street
5. Smith Place at Fawcett Street
6. Fawcett Street at the site drive
7. Smith Place at the site drive (To be closed)

The location of the counts and the date the counts were conducted are shown on Figure 1.b.1.

1.c - PARKING AND LOADING FACILITIES

On-Site Vehicle Parking

According to the City's records, the Project site has 14 registered parking spaces. As part of this development, all existing buildings including all parking spaces will be demolished.

Off-Site Vehicle Parking

Most of the existing off-site parking in the area is accommodated by private off-street lots. Approximately 7 unregulated on-street parking spaces are available within the immediate vicinity of the proposed site. They are located along the project site frontage in the east side of Smith Place between Fawcett Street and Mooney Street. Figure 1.c.1 provides a summary of the existing on-street parking regulations along the streets in the Quadrangle area. Due to the COVID-19 impacts on-street parking utilization survey was not conducted.

On-Site Bicycle Parking

Currently, bicycle parking spaces are not provided within the Project site.

1.d - TRANSIT SERVICES

Existing transit have been researched and inventoried within study area.

Existing Public Transit System

The Site is located 1.5 miles from the Alewife Station via Concord Avenue and Alewife Brook Parkway. Alewife Station is a terminating stop on the MBTA Red Line subway system. From the Alewife Station, the Red Line continues to Park Street, where connections to the Green Line can be made; to Downtown Crossing, where connections to the Orange Line are possible; and to South Station, where connections to commuter rail services are available. A combined Braintree/Ashmont Red Line services is provided every 4.5 minutes during the peak rush hours and every 8 to 9 minutes during off-peak hours. Bus routes connect to each of these stations as well as to Alewife Station,

which is also the terminus for MBTA Bus Route 62, 67, 76, 79, 84, 350, and 351.

The site is served by two MBTA bus routes, routes 74 and 78. Both routes stop on Concord Avenue near the Project Site. The eastbound stop is to the west of the signalized pedestrian crossing across Concord Avenue and provides a convenient protected crossing for bus users. Travel time from the Project site to Harvard Square via bus routes 74 and 78 is approximately 20 minutes (based on MBTA travel times) but varies based on traffic and time of day. Route 74 and 78 operate on approximately 18- to 20-minute headways during peak times and varies during off-peak periods.

It is important to note that due to COVID-19 some of the above-mentioned routes were suspended or combined. In order to provide a typical non-COVID-19 scenario, the transit analysis was conducted for all the existing lines including the suspended lines. Figures 1.d.1 provides a graphical depiction of the regional public services available in the study area.

Existing Private Transit System

The Alewife Transportation Management Association (TMA) is a non-profit organization that provides alternative transportation to various areas from Alewife Station. Employers and property owners or developers can become a member by filling out an application and paying a membership fee corresponding to the size of the development. The Alewife TMA provides emergency ride home, carpool, vanpool, and shuttle services. The Alewife Shuttle connects the Quadrangle neighborhood along Concord Avenue to Alewife Station with the use of 18-passenger, Americans with Disabilities Act (ADA)-equipped vehicles. Figures 1.d.2 provides a graphical depiction of the Alewife Shuttle Bus service (private transportation services) route and stops in the study area.

Shared Mobility Services

Currently, there are no carsharing stations in the Quadrangle neighborhood. One Bluebikes_{sm} station with 19 docks was identified at Smith Place. Three additional Bluebikes_{sm} stations are located within the study area (two at Alewife Station and one off of Cambridge Park Drive). Figure 1.d.3 provides a carsharing and ridesharing service map highlighting nearby locations of carsharing services such as Zipcar and Bike Share service.

Bicycle Parking and Route Access

Figure 1.d.4 shows the bicycle parking and multi-use path map for bicycle in the study area. Note that the bicycle route access map depicts the routes to the site from streets and the public right-of-way.

1.e - LAND USE

The neighborhood surrounding the Project site is largely characterized by business, office and industrial uses, as shown in Figure 1.e.1.

2.0 DATA COLLECTION

2.a - AUTOMATIC TRAFFIC RECORDER COUNTS (ATR)

In order to establish existing traffic conditions within the study area, ATR counts conducted in 2019 were used. Due to the effects of the COVID-19 pandemic, regional traffic volumes have generally not increased from 2019 to 2021. Therefore, in order to provide an adequate baseline condition for this TIS, the 2019 traffic volumes were used without annual growth added as the 2021 baseline condition.

The ATRs were conducted during 48 hours on Tuesday and Wednesday, April 2 and 3, 2019, when colleges and public schools were in regular session and when there was no street cleaning. The traffic count data sheets are provided in the Appendix. A summary of the ATR data is provided in Table 2.a.1, while the average hourly directional volumes recorded at the ATR locations are summarized in Table 2.a.2. Figure 2.a.1 provides a summary of the existing volume along Concord Avenue. Figure 2.a.2 provides a summary of the existing volume along Smith Place.

Table 2.a.1
BASELINE TRAFFIC VOLUMES

Location	Daily Volume (vpd) ^a	Weekday Morning Peak Hour (8:00 – 9:00 AM)			Weekday Afternoon Peak Hour (4:45 – 5:45 PM)		
		Volume (vph)	Percent of Daily Traffic ^b	Predominant Flow ^c	Volume (vph)	Percent of Daily Traffic	Predominant Flow
Concord Avenue, west of Smith Place	14,590	1,594	10.9	59%, EB	1,186	8.1	54%, WB
Smith Place, north of Concord Avenue	2,490	188	7.6	55%, NB	255	10.2	71%, SB

^aAverage daily traffic in vehicles per day (vpd) based on ATR counts collected by VAI in April 2019. (Represents the 2021 Baseline Condition)

^bPercent of daily volume in peak hour.

^cPercent traveling in the peak direction.

Table 2.a.2
AVERAGE HOURLY TRAFFIC VOLUMES AT ATR LOCATIONS^a

Time	Concord Avenue, west of Smith Place			Smith Place, north of Concord Avenue		
	Weekday			Weekday		
	EB	WB	Total	NB	SB	Total
12:00 AM	35	34	69	2	0	2
1:00	20	18	38	5	2	7
2:00	15	13	28	2	4	6
3:00	6	9	15	1	4	5
4:00	18	32	50	10	3	13
5:00	73	116	189	28	10	38
6:00	197	348	545	103	10	113
7:00	391	622	1013	110	35	145
8:00	535	731	1266	80	42	122
9:00	418	564	982	74	60	134
10:00	384	414	798	84	76	160
11:00	422	452	874	88	91	179
12:00 PM	479	411	890	106	81	187
1:00	462	394	856	93	99	192
2:00	548	416	964	86	104	190
3:00	520	414	934	92	117	209
4:00	528	440	968	76	137	213
5:00	482	414	896	76	97	173
6:00	532	452	984	65	72	137
7:00	490	326	816	46	54	100
8:00	370	235	605	24	46	70
9:00	260	166	426	16	44	60
10:00	146	102	248	7	17	24
<u>11:00</u>	<u>72</u>	<u>65</u>	<u>137</u>	<u>4</u>	<u>6</u>	<u>10</u>
Total ^b	7403	7188	14591	1278	1211	2489

^aVolumes based on ATR counts conducted by VAI in April 2019 expressed in vph;
(Represents the 2021 Baseline Condition)

^bDaily volumes expressed in vpd.

2.b - PEDESTRIAN AND BICYCLE COUNTS

Twelve-hour pedestrian and bicycle counts were performed on Tuesday, April 2, 2019, between 7:00 AM and 7:00 PM along Smith Place north of Concord Avenue, and Concord Avenue west of Smith Place. Pedestrian and bicycle counts for the study area intersections were collected during the vehicle count periods of 2019 described above. Pedestrian count data are summarized in Table 2.b.1 and bicycle count data are presented in Table 2.b.2. The pedestrian and bicycle counts are separated by direction of travel and if they are riding in the street or riding in the cycle track or sidewalk.

Table 2.b.1
12-HOUR PEDESTRIAN VOLUMES^a

Time of day	Concord Avenue, West of Smith Place						Smith Place, North of Concord Avenue					
	North Sidewalk		South Sidewalk		Walking in the Street		East Sidewalk		West Sidewalk		Walking in the Street	
	EB	WB	WB	EB	From North	From South	SB	NB	NB	SB	WB	EB
7:00 AM	1	4	2	4	1	0	0	1	2	1	0	1
7:30 AM	1	6	3	4	0	0	0	4	0	2	4	0
8:00 AM	1	4	5	2	0	0	0	0	1	0	1	3
8:30 AM	6	5	1	5	0	0	0	1	1	0	0	1
9:00 AM	6	8	1	2	0	0	4	7	0	0	0	1
9:30 AM	4	6	4	1	0	0	4	0	0	0	0	0
10:00 AM	2	4	7	6	0	0	0	5	0	0	1	1
10:30 AM	0	6	3	1	0	0	1	2	0	0	1	0
11:00 AM	10	2	2	4	0	0	0	0	2	3	1	1
11:30 AM	5	4	2	1	1	0	2	0	1	0	0	1
12:00 PM	12	9	0	5	0	0	2	5	0	0	0	0
12:30 PM	13	17	2	4	0	0	5	3	0	2	1	1
1:00 PM	10	11	4	2	0	0	0	2	0	3	1	1
1:30 PM	7	6	1	4	0	0	1	1	1	0	1	0
2:00 PM	9	8	2	4	0	0	1	2	0	0	2	0
2:30 PM	2	7	2	3	0	0	0	1	0	0	2	1
3:00 PM	2	5	0	7	0	0	1	3	1	2	0	0
3:30 PM	7	3	2	2	0	0	1	0	1	5	1	2
4:00 PM	8	4	4	2	0	0	1	0	5	1	0	0
4:30 PM	12	7	5	2	0	0	3	1	1	1	2	1
5:00 PM	5	8	4	3	1	1	2	2	1	2	0	0
5:30 PM	8	6	3	2	1	0	4	2	2	2	0	0
6:00 PM	8	7	4	1	0	1	1	5	4	1	2	0
<u>6:30 PM</u>	<u>4</u>	<u>3</u>	<u>1</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>3</u>	<u>2</u>	<u>0</u>	<u>1</u>	<u>1</u>
Total	143	150	64	73	4	2	34	50	25	25	21	16

^aBased on counts conducted by VAI in April 2019.

Table 2.b.2
12-HOUR BICYCLE VOLUMES^a

Time of day	Concord Avenue, West of Smith Place								Smith Place, North of Concord Avenue			
	Bikes in the Sidewalk				Bikes in the Bike Lane				East Sidewalk		West Sidewalk	
	North Sidewalk		South Sidewalk		North Bike Lane		South Bike Lane					
	EB	WB	WB	EB	EB	WB	WB	EB	SB	NB	NB	SB
7:00 AM	0	0	0	1	0	0	0	5	0	2	0	0
7:30 AM	0	0	1	1	1	2	2	13	0	0	0	0
8:00 AM	0	0	2	0	0	5	1	16	0	0	0	0
8:30 AM	2	0	0	0	1	4	0	14	0	0	0	0
9:00 AM	0	0	0	3	0	3	0	10	0	0	0	0
9:30 AM	0	0	0	0	0	2	1	6	0	0	0	1
10:00 AM	0	0	0	0	1	0	1	5	0	0	0	0
10:30 AM	0	0	0	0	0	1	0	4	0	0	0	0
11:00 AM	0	0	0	0	0	1	1	1	0	0	0	0
11:30 AM	0	0	0	0	1	1	0	1	0	1	0	0
12:00 PM	0	0	0	0	0	3	0	6	0	1	0	1
12:30 PM	0	0	0	0	0	4	0	2	0	0	0	0
1:00 PM	0	0	0	0	0	0	0	0	0	1	0	0
1:30 PM	1	0	0	0	0	1	0	0	0	0	0	1
2:00 PM	0	0	0	0	0	3	1	3	0	1	0	0
2:30 PM	0	0	0	0	0	5	0	2	0	0	0	0
3:00 PM	0	0	0	0	0	5	0	2	0	0	0	1
3:30 PM	0	0	0	0	0	2	0	2	0	0	2	0
4:00 PM	0	0	0	0	0	8	0	6	0	0	1	0
4:30 PM	0	0	0	0	0	5	1	5	0	0	0	0
5:00 PM	0	2	0	2	0	8	0	5	0	1	0	1
5:30 PM	1	0	2	0	0	22	1	8	0	0	0	2
6:00 PM	0	0	2	0	0	14	0	7	0	0	0	0
<u>6:30 PM</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>7</u>	<u>1</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	4	2	8	7	4	106	10	125	0	7	3	7

^aBased on counts conducted by VAI in April 2019.

2.c - INTERSECTION TURNING MOVEMENT COUNTS AND QUEUES

Intersection manual TMCs were conducted at the study area intersections in April and May 2019 for the weekday morning (7:30 to 9:30 AM) and weekday evening (4:30 to 6:30 PM) time periods. Total cars, trucks, buses, pedestrians by movement, bicycles, and vehicle queues were recorded. Based on a review of seasonal adjustment factors collected by the Massachusetts Department of Transportation (MassDOT), traffic volumes collected in April and May are approximately 3 percent, above-average-month conditions. Therefore, the traffic counts that form the basis of this assessment were not adjusted downward to provide a conservative (above-average) analysis condition.

It is important to note that due to the effects of the COVID-19 pandemic, regional traffic volumes have not increased between 2019 and 2021. Therefore, in order to provide an adequate baseline condition for this TIS, the obtained 2019 traffic volume was used with no annual growth as the 2021 baseline condition. The 2021 Existing weekday morning and weekday evening peak-hour traffic-volume networks are depicted on Figures 2.c.1 and 2.c.2. The pedestrian volumes are depicted on Figures 2.c.3 and 2.c.4 for the weekday morning and weekday evening peak-hour periods. Bicycle volumes are provided on Figures 2.c.5 and 2.c.6 for the weekday morning and evening peak-hour periods. The raw count data are included in the Appendix.

Existing Vehicle Queues

Vehicle queues observations were conducted during the morning and evening peak hours at signalized intersections within study area. It is important to note that queues were observed at the same time as the TMCs were being captured. These queue observations were used for the Synchro model calibration for the queue analysis and are presented below. (A detailed queue analysis is provided in Section 7 of this report.) Table 2.c.1 summarizes the vehicle queue observations by intersection approach and lane.

**Table 2.c.1
EXISTING QUEUE OBSERVATIONS^a**

Intersection/Lane ^b	Weekday Morning Peak Hour		Weekday Evening Peak Hour	
	Average Queue	Maximum Queue	Average Queue	Maximum Queue
<i>Concord Avenue at Blanchard Road:</i>				
Concord Avenue EB LT/TH	4	9	5	9
Concord Avenue EB TH/RT	6	10	3	7
Concord Avenue WB L	5	9	5	8
Concord Avenue WB T	4	8	6	11
Concord Avenue WB R	2	6	4	8
Blanchard Road NB LT/TH	8	15	12	18
Blanchard Road NB RT	1	3	0	3
Blanchard Road SB LT/TH/RT	8	11	8	12
<i>Concord Avenue at Moulton Street:</i>				
Concord Avenue EB LT/TH	7	13	5	9
Concord Avenue EB TH/RT	4	10	4	10
Concord Avenue WB LT/TH/RT	2	6	5	12
Private Driveway NB LT/TH/RT	0	1	1	3
Moulton Street SB LT/TH/RT	1	6	2	4

^aBased upon observations conducted by VAI in April 2019.

^bEB = eastbound; WB = westbound; NB = northbound; SB = southbound; LT = left-turning movements; TH = through movements; RT = right-turning movements.

2.d - MOTOR VEHICLE CRASH DATA

Motor vehicle crash data was obtained from the MassDOT crash data portal and Cambridge Police Department (CPD) for the most recent three-year period (2016 through 2018) in order to examine motor vehicle crash trends occurring within the study area. The CPD crash data was obtained from the Cambridge open data website. In order to evaluate crash trends at local intersections within study area, data from MassDOT and CPD were compared. The comparison shows that all crashes on the CPD list were included in the MassDOT report; however, some of the crashes in the MassDOT list were not included in the CPD list. Therefore, in order to provide a consistent and conservative analysis, all data from the MassDOT crash data portal was included in the crash analysis. This data is summarized in Table 2.d.1. Table 2.d.2 identifies crashes between vehicles and pedestrians and vehicles and bicyclists.

MassDOT has six districts within Massachusetts, with Cambridge falling under the jurisdiction of District 6. The average crash rate per million entering vehicles for District 6 is 0.71 for signalized intersections and 0.52 for unsignalized intersections. Ten of the twelve study area intersections fall under the District 6 average crash rate for signalized and unsignalized intersections.

The crash summary indicates the intersection of Concord Ave. at Blanchard Road and Griswold Street has the highest crash reported in the study area with an average of 4 crashes per year over the three-year study period. The majority of these crashes were either angle collisions or sideswipe-same direction. Seven out of the 12 crashes resulted in property damage only, 9 crashes occurred on a weekday during off-peak hours, 9 crashes occurred with dry pavement conditions, and 1 crash experienced wet roadway conditions. The involvement of one cyclist was noted in the crash data at this location.

In addition, the Highway Safety Improvement Program (HSIP) database was reviewed. None of the study intersections were included in the most recent (2015 through 2017) HSIP listing. The detailed MassDOT Crash Rate Worksheets and High Crash Location maps are provided in the Appendix.

Table 2.d.1
VEHICLE CRASH DATA SUMMARY^a

	Concord Ave. at Blanchard Rd. and Griswold St. (Signalized)	Concord Ave. at Smith Pl. (Unsignalized)	Concord Ave. at Moulton St. (Signalized)	Concord Ave. at Fawcett St. (Unsignalized)	Smith Pl. at Fawcett St. (Unsignalized)
<i>Year:</i>					
2016	4	2	2	2	1
2017	4	3	1	2	0
2018	<u>4</u>	<u>2</u>	<u>2</u>	<u>5</u>	<u>1</u>
Total	12	7	5	9	2
Average ^a	4.00	2.33	1.67	3.00	0.67
Crash Rate ^b	0.52	0.40	0.29	0.48	0.59
Significant ^c	No/No	No/No	No/No	No/No	No/No
<i>Type:</i>					
Angle	5	2	0	3	0
Rear-End	1	2	1	1	2
Head-On	2	0	1	1	0
Sideswipe	3	2	1	3	0
Fixed Object	0	0	1	0	0
Other/Unknown	<u>1</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>0</u>
Total	12	7	5	9	2
<i>Time:</i>					
Weekday 7:00 to 9:00 AM	3	0	0	1	0
Weekday 4:00 to 6:00 PM	0	1	1	0	0
Remainder of Day	<u>9</u>	<u>0</u>	<u>4</u>	<u>8</u>	<u>2</u>
Total	12	7	5	9	2
<i>Pavement Conditions:</i>					
Dry	9	4	4	6	1
Wet	1	2	0	1	1
Snow	0	0	0	0	0
Ice	1	1	0	0	0
Other	0	0	0	1	0
Unknown	<u>1</u>	<u>0</u>	<u>1</u>	<u>1</u>	<u>0</u>
Total	12	7	5	9	2
<i>Day of Week:</i>					
Monday through Friday	10	7	4	7	0
Saturday and Sunday	<u>2</u>	<u>0</u>	<u>1</u>	<u>2</u>	<u>2</u>
Total	12	7	5	9	2
<i>Severity:</i>					
Property Damage Only	7	2	1	3	1
Personal Injury	3	1	2	5	0
Fatal Crashes	0	0	0	0	0
Other/Unknown	<u>2</u>	<u>4</u>	<u>2</u>	<u>1</u>	<u>1</u>
Total	12	7	5	9	2

^aSource: MassDOT Crash Data.

^bAverage crashes over three-year period. Includes crashes with pedestrians and/or bicyclist involvement shown in Table 2.d.2

^cCrash rate in crashes per million entering vehicles (mev). Includes crashes with pedestrian and/or bicyclist involvement shown in Table 2.d.2

^dCrash rate noted as significant if rate exceeds MassDOT District 6/statewide averages of 0.71/0.78 and 0.52/0.57 for signalized and unsignalized intersections, respectively.

Table 2.d.2
CRASH DATA SUMMARY:
VEHICLE TO PEDESTRIAN AND VEHICLE TO BICYCLIST^a

	Vehicle to Pedestrian	Vehicle to Bicyclist		
	Concord Ave. at Blanchard Rd./ Griswold St. (Signalized)	Concord Ave. at Blanchard Rd. and Griswold St. (Signalized)	Concord Ave. at Smith Pl. (Unsignalized)	Concord Ave. at Fawcett St. (Unsignalized)
<i>Year:</i>				
2016	1	1	1	1
2017	0	0	0	1
<u>2018</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>2</u>
Total	1	1	1	4
Average ^a	0.33	0.33	0.33	1.33
<i>Time:</i>				
Weekday 7:00 to 9:00 AM	0	0	0	0
Weekday 4:00 to 6:00 PM	0	0	0	0
<u>Remainder of Day</u>	<u>1</u>	<u>1</u>	<u>1</u>	<u>4</u>
Total	1	1	1	4
<i>Pavement Conditions:</i>				
Dry	1	1	0	4
Wet	0	0	1	0
Snow	0	0	0	0
Icy	0	0	0	0
Other	0	0	0	0
<u>Unknown</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	1	1	1	4
<i>Day of Week:</i>				
Monday through Friday	1	1	1	3
<u>Saturday and Sunday</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>
Total	1	1	1	4
<i>Severity:</i>				
Property Damage Only	0	1	0	0
Personal Injury	0	0	1	4
Fatal Crashes	0	0	0	0
<u>Other/Unknown</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	1	1	1	4

^aSource: MassDOT Crash Data.

^bAverage crashes over three-year period.

2.e - EXISTING TRANSIT SERVICE

Daily weekday transit ridership, as well as the most recent operating hours and peak-hour headway data, are provided in Table 2.e.1 for existing transit services in the area. (A more detailed transit analysis is provided in Section 10 of this report.)

**Table 2.e.1
TRANSIT SERVICE SUMMARY**

Route No.	Route	Hours of Operation ^a	Peak-Hour Headway (minutes) ^b	Daily Ridership ^b	Peak-Hour Transit Frequency ^b	Peak-Hour Direction Planning Capacity ^d	Total Daily Trips per direction ^b	Estimated Daily Capacity
MBTA Subway								
Alewife Station	Red Line	Northbound 5:08 AM-1:10 AM Southbound 5:16 AM-1:09 AM	~4-9	23,972	13 ^c	2,171	77	167,167
TMA Shuttle								
Alewife TMA shuttle ^e	Alewife TMA shuttle	Morning 7:00 – 11:00 AM Afternoon 3:00 – 7:00 PM	~30	75 ^e	2 ^e	36	16 ^e	576
MBTA Bus Line								
62 ^f	Bedford VA Hospital – Alewife Station	(Line Suspended)	~35-40	1,326	2	106	25	2,650
67	Turkey Hill – Alewife Station	Inbound 6:25 AM-7:37 PM outbound 6:00 AM-7:23 PM	~24-50	672	2	106	23	2,438
74	Belmont Center/Harvard Station via Concord Ave.	Inbound 5:10 AM-1:08 AM Outbound 5:30 AM-1:22 AM	~18-95	730	2	106	24	2,544
76 ^g	Hanscom/Lincoln Lab – Alewife Station	Inbound 6:00 AM-10:38 PM Outbound 5:00 AM-9:37 PM	~15-70	1,016	2	106	23	2,438
78 ^g	Arlmont Village/Harvard Station via Park Circle	Inbound 5:35 AM-12:26 AM Outbound 5:45 AM-12:54 AM	~20-60	1,292	3	159	33	5,247
79 ^f	Arlington Heights – Alewife Station	(Line Suspended)	~10-55	1,154	3	159	31	4,929
84 ^f	Arlmont Village – Alewife Station	(Line Suspended)	~20-50	388	2	106	11	1,166
350 ^g	North Burlington – Alewife Station	Inbound 6:00 AM-11:08 PM Outbound 6:16 AM-11:05 PM	~15-65	1,566	3	159	29	4,611
351 ^f	EMD Serono/Bedford Woods – Alewife Station	(Line Suspended)	~45-60	184	1	53	4	212

^aSource: MBTA schedule 2019.

^bMBTA bus ridership data from fall 2019 and MBTA composite of station passenger entry and ridership data, FY 2019.

^cAssumed 4.5 minutes headway during peak hour.

^dNumber of policy level capacity per MBTA Blue Book 14th Edition - 53 passengers per MBTA fix bus/167 passengers per train car/18 passengers per shuttle.

^eAlewife TMA ridership data from Jan 2020.

^fLine Suspended.

^gRoute Combined with a suspended route.

2.f - EXISTING PARKING UTILIZATION

According to the City's records, the Project site location has 14 registered parking spaces. As part of this development, the existing site buildings including all parking spaces will be demolished. The location of the existing vehicle parking supply was previously shown on Figures B.1. Due to COVID-19 impacts and expected minimal use of the site, existing parking utilization survey was not conducted.

2.g - BICYCLE PARKING

Currently, bicycle parking spaces are not provided at the Project site. Locations of bike parking in the area are shown on Figure 1.d.4.

3.0 PROJECT TRAFFIC

3.a - MODE SHARE

In coordination with the City of Cambridge, Traffic, Parking and Transportation Department (TP&T), mode shares for the Project were developed from data from PTDM monitoring reports from 10 Wilson Road (2017) PTDM report, 767 Concord Avenue (2019) PTDM report, and 75 Moulton Street (2019) PTDM report. Table 3.a.1 presents the TP&T approved mode share rates for this analysis.

**Table 3.a.1
MODE SPLIT SUMMARY^a**

<u>Mode Split</u>	<u>R&D Building</u>
Single Occupancy Vehicle (SOV)	54.0
High Occupancy Vehicle (HOV)	10.0
Transit	16.0
Bicycle	10.0
Pedestrian	4.0
<u>Other</u>	<u>6.0</u>
TOTAL	100

^aTDM monitoring reports from 10 Wilson Road (2017), 767 Concord Avenue (2019), and 75 Moulton Street (2019) PTDM report.

3.b - TRIP GENERATION

The Project involves the construction of a 57,434 sf R&D building. In order to provide the most accurate trip-generation estimates and as requested in the City's scoping letter, instead of using the Institute of Transportation Engineers (ITE)⁴ *Trip Generation manual* (10th edition) rates for R&D (Land Use Code (LUC) 760), empirical trip rates from existing R&D buildings in the vicinity of the proposed site were used. Trip-generation calculations were performed for a typical weekday as

⁴*Trip Generation*, 10th Edition; Institute of Transportation Engineers; Washington, DC; 2017.

well as the weekday morning and weekday evening peak hours, the critical time periods for Project-related traffic activity.

Summary of Empirical Trip Rate Analysis for Office/Lab Space

The City provided recent PTDM Annual Report Summaries for 10 Wilson Road (2017) PTDM report, 767 Concord Avenue (2019) PTDM report, and 75 Moulton Street (2019) PTDM report which contain information on building occupancies, driveway counts, and mode shares (from survey data). The average data of the driveway counts divided by the building occupancies from each facility has been used to reach an empirical trip-generation rate.

When compared to the ITE trip rates, the empirical trip-generation rate shows to be significantly higher than the trips rates provided by ITE. Based on this finding and in order to provide a conservative analysis, the empirical trip-generation rates were used.

Vehicle Occupancy

National census data from the American Community Survey⁵ (ACS) - census tract *3546-Middlesex County, Massachusetts* where the site is located, was used to identify vehicle occupancy ratio (VOR) (1.05) to convert vehicle trips to person trips.

R&D Center Trip Generation

It should be noted that the initial building size of 62,050 sf has been reduced through increasing design detail to 57,434 sf. However, the larger building size has been retained in order to provide a conservative analysis of Project impacts. The proposed R&D vehicle trips (SOV and HOV) were calculated using the empirical trip-generation rates for each peak period and the independent variable of 62.050 ksf. The obtained vehicle trips were converted to person trips using VOR from census data from the ACS (1.05). According to the mode split data, the SOV and HOV represented 64 percent of the trips generated by the project. The remaining 36 percent of the trips represent trips made by way of public transportation, walking, bicycle, and other, and were adjusted to the specific person trips using mode split percentage as documented in Table 3.a.1. A spreadsheet documenting these calculations is attached in the Appendix of this TIS. Table 3.b.2 summarizes the proposed R&D trip generation by mode.

Existing Use Trips

Per standard practice, an investigation of vehicle-trip activity at the existing site was conducted to determine if vehicle-trip-generation credit will be applied for this development. Based upon field observation, existing vehicle trips associated with the site buildings/uses was minimal. It is important to note that the Project site was not vacant during the data collection period. However, due to the COVID-19 pandemic, peak-hour vehicle trips from the existing project site would likely be minimal. In order to be conservative, the existing site trips were neglected and were not subtracted from the roadway network.

As can be seen in Table 3.b.2, the Project is expected to generate 45 new vehicle trips (35 vehicles entering and 10 exiting) during the weekday morning peak-hour. During the weekday evening peak hour, the Project is expected to generate 39 new vehicle trips (9 vehicles entering and 30 exiting).

⁵2015-2019 American Community Survey, five-year estimates.

**Table 3.b.2
PROJECT R&D TRIP GENERATION BY MODE**

Time Period/ Directional Distribution	R&D Vehicle Trips Rates ^a	Proposed R&D (SOV+HOV) Vehicle Trips (62,050 GFA)	Person Trips		Mode Share - Person Trips					
			(SOV+HOV) Person Trips (64%)	Total Person Trips (100%) ^b	SOV Trips (54%)	HOV Trips (10%)	Transit Trips (16%)	Bicycle Trips (10%)	Pedestrian Trips (4%)	Other Trips (6%)
<i>Average Weekday Daily:</i>										
Entering	2.83	176	185	289	156	29	46	29	12	17
Exiting	2.90	180	189	295	159	30	47	30	11	18
Total	5.73	356	374	584	315	59	93	59	23	35
<i>Weekday Morning Peak Hour:</i>										
Entering	0.57	35	37	58	31	6	9	6	2	4
Exiting	0.16	10	11	17	9	2	2	2	1	1
Total	0.73	45	48	75	40	8	11	8	3	5
<i>Weekday Evening Peak Hour:</i>										
Entering	0.14	9	9	14	8	1	2	1	1	1
Exiting	0.48	30	32	50	27	5	8	5	2	3
Total	0.62	39	41	64	35	6	10	6	3	4

^aBased on average trip rates from 10 Wilson Av 2017 PTDM report, West Cambridge Science Park 2019 PDTM and 75 Moulton Street 2019 PTDM report.

^b Total Person trips = (SOV+HOV) Person Trips/0.64

Note: Since completion of the traffic study, development size was decreased to 57,434 sf

3.c - TRIP DISTRIBUTION

The directional distribution of generated trips to and from the Project site was determined based on a review of the *Alewife Critical Sums Assumptions Report*⁶, for commercial (R&D offices) components. The general trip distribution for the Project is summarized in Table 3.c.1.

Table 3.c.1
TRIP-DISTRIBUTION SUMMARY

Roadway	Direction (To/From)	Commercial Percent (%)
Blanchard Road	North	15
Blanchard Road	South	15
Concord Avenue	West	20
Concord Avenue	East	<u>50</u>
TOTAL		100

Trip distribution is also shown on Figure 3.c.1. Research and Development Center trips for the weekday morning and weekday evening peak hours are shown on Figures 3.c.2 and 3.c.3, respectively.

3.d - PROJECT SERVICE AND LOADING

The Project is expected to generate truck and delivery trips over the course of a day other than the typical roadway peak hour. Typical deliveries may include trash removal and courier package delivery services. Those services will be directed to use the loading areas that will be located off Fawcett Street, next to the garage driveway. Trash and recycling will be contained in trash areas in separate rooms.

⁶*Ibid* 3

4.0 BACKGROUND TRAFFIC

Traffic volumes in the study area were projected to the year 2026, which reflects a five-year planning horizon consistent with City traffic study guidelines and the traffic study scope issued by the City TP&T Department. Traffic-volume conditions would include increases due to development projects approved or under construction and increases to general background traffic levels, assumed to increase at 0.5 percent per year.

As indicated in the Scoping Letter, the following projects were identified for inclusion in the Future 2026 condition:

- 671-675 Concord Avenue (HRI Concord Highlands).
- 87-95 Fawcett Street
- 55 Wheeler Street
- 605 Concord Avenue
- 35 Cambridge Park Drive renovation project
- 50 Cambridge Park Drive
- 188R Cambridge Park Drive
- 130 Cambridge Park Drive
- The Residences at Alewife Station (195 & 211 Concord Turnpike)
- Discovery Park mixed-use development
- 75 New Street
- 101 Cambridge Park Drive
- 75/109 Smith Place
- 402 Rindge Avenue
- 40 Wilson Road

Traffic volumes associated with the aforementioned development projects by others were obtained from the respective traffic studies and were assigned onto the study area roadway network based on existing traffic patterns where no other information was available (see distribution in Appendix).

No other developments were identified that are expected to result in an increase in traffic within the study area beyond the general background traffic growth rate.

5.0 TRAFFIC ANALYSIS

As requested in the traffic study scope issued by the City TP&T Department, traffic analysis was developed for the 2021 Baseline condition, 2021 Build, and 2026 Future conditions scenarios for both weekday morning and weekday evening peak-hour periods.

5.a – 2021 BASELINE CONDITIONS ANALYSIS

Existing analysis was conducted based on existing vehicle, bicycle, and pedestrian volumes as detailed in Section 2 of this report.

5.b – 2021 BUILD CONDITION ANALYSIS

The 2021 Baseline condition traffic volumes were combined with the net new site-generated traffic levels to derive the 2021 Build condition networks, shown on Figures 5.b.1 and 5.b.2 for the weekday morning and weekday evening peak hours, respectively. Figures 5.b.3 and 5.b.4 represent the projected 2021 Build weekday morning and weekday evening peak-hour pedestrian volumes, respectively.

5.c – 2026 FUTURE CONDITION ANALYSIS

The Future 2026 traffic-volume condition includes the traffic volumes from the identified background developments, the increases resulting from the 0.5 percent per year annual growth rate that were applied to the 2021 Baseline conditions traffic volumes, and the net new traffic associated with the Project. These traffic-volume networks are shown on Figures 5.c.1 and 5.c.2 for the weekday morning and weekday evening peak-hour traffic volumes, respectively.

5.d – 2026 FUTURE CONDITION CUMULATIVE IMPACT

As requested by the City TP&T Department, this traffic study shows a map depicting the future cumulative traffic impact during a typical weekday morning and evening peak hour at the study area intersections. This map includes this Project and all other projects currently permitted, under construction or not fully occupied. This map is shown in Figures 5.d.1 and 5d.2.

6.0 VEHICLE CAPACITY ANALYSIS

6.a CAPACITY ANALYSIS

Measuring existing and future traffic volumes quantifies traffic flow within the study area. To assess quality of flow, roadway capacity and vehicle queue analyses were conducted under 2021 Baseline, 2021 Build, and 2026 Future conditions. Capacity analyses provide an indication of how well the roadway facilities serve the traffic demands placed upon them, with vehicle queue analyses providing a secondary measure of the operational characteristics of an intersection or section of roadway under study. These analyses were conducted using Synchro™ 10 analysis software. The analysis worksheets are contained in the Appendix.

Levels of service for signalized intersections were calculated using the Percentile Delay Method assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on “percentile” delay. Levels of service for unsignalized intersections were calculated using procedure described in the 2010 *Highway Capacity Manual*⁷. Levels of service were conducted for the 2021 Baseline, 2021 Build, and 2026 Future conditions for the intersections within the study area. The results of the intersection capacity analyses are summarized for signalized intersections in Table 6.a.1 and for unsignalized intersections in Table 6.a.2.

Figures 6.a.1 and 6.a.2 depicts the vehicle level-of-service summaries in a graphical map format for the weekday morning and weekday evening peak hours, respectively. Figures 6.a.3 and 6.a.4 provide a graphical map of vehicle delay changes at the study area intersections for the weekday morning and weekday evening peak hours, respectively. These delay change maps depict the change in delay from Existing to Build and from Existing to Future conditions.

⁷*Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2010.

Table 6.a.1
VEHICLE LEVEL-OF-SERVICE SUMMARY – SIGNALIZED INTERSECTIONS

Intersection/Peak Hour/Movement	2021 Baseline Condition		2021 Build		Difference in Delay	2026 Future	
	Delay ^a	LOS ^b	Delay	LOS		Delay	LOS
Concord Avenue at Blanchard Road:							
<i>Weekday Morning:</i>							
Concord Avenue EB LT TH RT	70.8	E	71.4	E	0.6	82.5	F
Concord Avenue WB LT	105	F	106.2	F	1.2	138.1	F
Concord Avenue WB TH	43.9	D	44	D	0.1	48.3	D
Concord Avenue WB RT	5.7	A	5.7	A	0.0	5.5	A
Blanchard Road NB LT TH	43.1	D	43.2	D	0.1	43.8	D
Blanchard Road NB RT	12.8	B	12.8	B	0.0	13.4	B
Blanchard Road SB LT TH RT	228.4	F	234.1	F	5.7	266	F
Overall	104.7	F	106.6	F	1.9	118.6	F
<i>Weekday Evening:</i>							
Concord Avenue EB LT TH RT	70.6	E	70.9	E	0.3	73.3	E
Concord Avenue WB LT	152.1	F	159.3	F	7.2	209.9	F
Concord Avenue WB TH	52.4	D	52.9	D	0.5	56.4	E
Concord Avenue WB RT	6.9	A	6.9	A	0.0	6.7	A
Blanchard Road NB LT TH	47.1	D	47.4	D	0.3	52	D
Blanchard Road NB RT	20.8	C	21	C	0.2	24.4	C
Blanchard Road SB LT TH RT	68.7	E	68.9	E	0.2	72.8	E
Overall	61.0	E	62.0	E	1.0	70.3	E
Concord Avenue at Moulton Street:							
<i>Weekday Morning:</i>							
Concord Avenue EB LT TH RT	4	A	4	A	0	4.3	A
Concord Avenue WB LT TH RT	6.1	A	6.1	A	0	8.2	A
Private Driveway NB LT TH RT	0.3	A	0.3	A	0	0.3	A
Moulton Street SB LT TH RT	30	C	30	C	0	30.4	C
Overall	5.8	A	5.8	A	0	6.9	A
<i>Weekday Evening:</i>							
Concord Avenue EB LT TH RT	4.9	A	4.9	A	0	5.3	A
Concord Avenue WB LT TH RT	8.1	A	8.1	A	0	8.8	A
Private Driveway NB LT TH RT	13.9	B	13.9	B	0	13.8	B
Moulton Street SB LT TH RT	26.1	C	26.1	C	0	26.4	C
Overall	9.1	A	9.1	A	0	9.2	A
Concord Avenue at Fawcett Street:							
<i>Weekday Morning:</i>							
Concord Avenue EB LT TH					--	12	B
Concord Avenue WB LT TH					--	21.3	C
Fawcett Street SB LT RT					--	45.3	D
Overall						18.9	B
<i>Weekday Evening:</i>							
	See Table 6.a.2		See Table 6.a.2				
Concord Avenue EB LT TH					--	8.8	A
Concord Avenue WB LT TH					--	13.9	B
Fawcett Street SB LT RT					--	46.6	D
Overall						15.4	B

^aDelay per vehicle (in seconds) as calculated by Synchro for the movements shown.

^bLevel of service.

NB = northbound; SB = southbound; WB = westbound; SB = southbound; LT = left-turn movement; TH = through movement; RT = right-turn movement.

Table 6.a.2
VEHICLE LEVEL-OF-SERVICE SUMMARY – UNSIGNALIZED INTERSECTIONS

Unsignalized Intersection/Peak Hour Critical Movement	2021 Baseline Condition			2021 Build			Difference in Delay	2026 Future		
	Demand ^a	Delay ^b	LOS ^c	Demand	Delay	LOS		Demand	Delay	LOS
Concord Avenue at Smith Place:										
<i>Weekday Morning:</i>										
Concord Avenue EB LT	65	9.4	A	83	9.5	A	0.1	131	10.7	B
Concord Avenue EB TH	877	0.7	A	877	0.9	A	0.2	934	1.9	A
Smith Place SB LT RT	85	34.6	D	91	40.2	E	5.6	123	291.7	F
Overall										
<i>Weekday Evening:</i>										
Concord Avenue EB LT	57	8.9	A	62	8.9	A	0	74	9.0	A
Concord Avenue EB TH	493	0.3	A	493	0.3	A	0	562	0.4	A
Smith Place SB LT RT	180	28.6	D	198	31.5	D	2.9	315	139.5	F
Overall										
Concord Avenue at Fawcett Street:										
<i>Weekday Morning:</i>										
Concord Avenue EB LT	22	9.8	A	22	9.8	A	0			
Concord Avenue EB TH	899	0.3	A	900	0.3	A	0			
Fawcett Place SB LT RT	104	65.7	F	108	74.6	F	8.9			
Overall										
See Table 6.a.1										
<i>Weekday Evening:</i>										
Concord Avenue EB LT	22	9.1	A	22	9.1	A	0			
Concord Avenue EB TH	618	0.2	A	621	0.2	A	0			
Fawcett Place SB LT RT	142	36.8	E	154	41.5	E	4.7			
Overall										
Smith Place at Fawcett Street and Private Drive:										
<i>Weekday Morning:</i>										
Private Drive EB LT TH RT	8	9.0	A	8	9	A	0	8	9.0	A
Fawcett Street WB LT TH RT	64	9.4	A	70	9.6	A	0.2	72	9.6	A
Smith Place NB LT TH RT	59	8.2	A	77	8.2	A	0	79	8.2	A
Smith Place SB LT TH RT	44	7.5	A	44	7.5	A	0	45	7.6	A
Overall										
<i>Weekday Evening:</i>										
Private Drive EB LT TH RT	16	9.1	A	16	9.2	A	0.1	16	9.2	A
Fawcett Street WB LT TH RT	59	10.4	B	77	11.0	B	0.6	79	11.0	B
Smith Place NB LT TH RT	84	7.5	A	89	7.5	A	0	91	7.5	A
Smith Place SB LT TH RT	87	7.4	A	87	7.4	A	0	89	7.4	A
Overall										
Fawcett Street at Site Drive A:										
<i>Weekday Morning:</i>										
Fawcett Street EB LT	Neg.	--	A	18	7.4	A	7.4	18	7.4	A
Fawcett Street EB TH	46	--	A	46	0	A	0	47	0	A
Site Drive SB LT RT	Neg.	--	A	10	9	A	9	10	9	A
Overall										
<i>Weekday Evening:</i>										
Fawcett Street EB TH LT	Neg.	--	A	5	7.4	A	7.4	5	7.4	A
Fawcett Street WB TH RT	36	--	A	36	0	A	0	37	0	A
Site Drive SB LT RT	Neg.	--	A	30	8.9	A	8.9	30	9	A
Overall										
Smith Place at Site Drive B:										
<i>Weekday Morning:</i>										
Site Drive WB LT RT	Neg.	--	A				--			
Smith Place SB LT	Neg.	--	A				--			
Smith Place SB TH	44	--	A				--			
Overall										
(Site Driveway B will be closed under future conditions)										
<i>Weekday Evening:</i>										
Site Drive WB LT RT	Neg.	--	A				--			
Smith Place SB LT	Neg.	--	A				--			
Smith Place SB TH	87	--	A				--			
Overall										
(Site Driveway B will be closed under future conditions)										

^aDemand (in vehicles per hour) for the critical movements.

^bDelay per vehicle (in seconds) for the critical movements as calculated by Synchro

^cLevel of service.

NB = northbound; SB = southbound; WB = westbound; SB = southbound; LT = left-turn movement; TH = through movement; RT = right-turn movement.

Neg.= Neglected

7.0 QUEUE ANALYSIS

Vehicle queues were calculated for each approach of the signalized study area intersections using SimTraffic analysis software. Table 7.a.1 shows the results for the observed and modeled average queues (expressed as the number of vehicles) for each scenario for the morning and evening peak hour, respectively.

As requested in the traffic scope letter, SimTraffic was used to approximate the queue conditions. The traffic model required calibration by adjusting the traffic volumes in all approaches of the signalized intersections to accurately reflect observed queuing conditions. These adjustments were carried forward in the 2021 Build and 2026 Future conditions analyses.

**Table 7.a.1
QUEUE ANALYSIS RESULTS^a**

Intersection/Lane	Weekday Morning Peak Hour				Weekday Evening Peak Hour				
	2019 Observed	2021 Existing Calculated	2021 Build Calculated	Difference in Queue	2019 Observed	2021 Existing Calculated	2021 Build Calculated	Difference in Queue	2026 Future Calculated
<i>Concord Avenue at Blanchard Road:</i>									
Concord Avenue EB LT/TH	4	6	6	0	5	5	5	0	7
Concord Avenue EB TH/RT	6	4	4	0	3	3	3	0	5
Concord Avenue WB L	5	5	5	0	5	5	5	0	5
Concord Avenue WB T	4	5	5	0	6	5	5	0	5
Concord Avenue WB R	2	2	2	0	4	2	2	0	3
Blanchard Road NB LT/TH	8	6	6	0	12	13	13	0	26
Blanchard Road NB RT	1	2	2	0	0	2	2	0	3
Blanchard Road SB LT/TH/RT	8	8	8	0	8	7	7	0	9
<i>Concord Avenue at Moulton Street:</i>									
Concord Avenue EB LT/TH	7	4	4	0	5	3	3	0	4
Concord Avenue EB TH/RT	4	4	4	0	4	3	4	1	4
Concord Avenue WB LT/TH/RT	2	3	4	1	5	4	4	0	6
Private Driveway NB LT/TH/RT	0	0	0	0	1	1	1	0	1
Moulton Street SB LT/TH/RT	1	1	1	0	2	2	2	0	3

^aAll queues calculated using SimTraffic methodology. Queue in vehicles per lane.

8.0 RESIDENTIAL STREET VOLUME ANALYSIS

8.a RESIDENTIAL STREET VOLUME ANALYSIS

The Project is located in an area of both residential and commercial uses. Residential streets will be subject to some measure of traffic traveling to and from the Project. Of all the roadway segments in the study area, some of the identified segments are streets that have more than one-third of residential frontage, as determined by the existing first floor use. Roadway segments within the study area with residential street frontage are evaluated for increased volume on residential streets which is a Planning Board criterion.

The peak-hour traffic volumes (both directions) on the analyzed roadway segments are presented in Table 8.a.1. For analyzed segments that are between study area intersections, the highest volumes at the intersections were taken as the volume traveling along the segment. The analysis shows the percent increase in traffic along the residential roadway segments between Existing and Build volumes.

**Table 8.a.1
TRAFFIC ON RESIDENTIAL STREETS**

Roadway	Reviewed Segment	Amount of Residential	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Increase due to Project	Increase due to Project
			Existing Two-Way Traffic	Build Two-Way Traffic	Increase due to Project	Existing Two-Way Traffic	Build Two-Way Traffic	Increase due to Project		
Blanchard Road	Colby St/S. Normandy Av. to Concord Av. Mannix Circle to Concord Av.	1/2 or more	1,093	1,101	8	994	951	7		
		>1/3 but <1/2	900	906	6	899	904	5		
Concord Avenue	Blanchard Road to Smith Place Smith Place to Moulton Street Moulton Street to Fawcett Street Fawcett Street to Wheeler Street	1/3 or less	1,580	1,603	23	1203	1223	20		
		1/3 or less	1,541	1,542	1	1142	1145	3		
		1/3 or less	1,601	1,602	1	1204	1207	3		
		1/3 or less	1,800	1,822	22	1320	1339	19		
Smith Place	Concord Avenue to Fawcett Street	1/3 or less	188	212	24	255	278	23		
Fawcett Street	Concord Avenue to Connection Road Connection Road to Smith Place	>1/3 but 1/2	275	296	21	263	279	16		
		1/3 or less	110	134	24	95	118	23		

9.0 PARKING ANALYSIS

According to the City's records, the Project site has 14 registered parking spaces. As part of this development all existing site buildings including all parking spaces will be demolished.

9.a PROJECTED PARKING DEMAND

A parking analysis was conducted to determine future parking demands. The demand analysis is based upon the City of Cambridge Zoning Ordinance *Article 6 – Off Street Parking and Loading Requirements and Nighttime Curfew on Large Commercial through Trucks*. Table 9.a.1 summarizes the zoning parking requirements for the Project, as well as the estimated parking demand. The demand analysis is based upon research into residential parking use rates in the Cambridge Quadrangle neighborhood along with expected employee population and mode split assumptions from the trip-generation analysis.

As required in the Scoping Determination, the potential number of parking spaces needed for the Project was calculated based on the estimated number of employees multiplied by the automobile mode split (SOV plus half HOV). Table 9.b.1 summarizes the parking analysis for the Project, including parking requirements consistent with the Envision Cambridge study.

A general site plan depicting the proposed parking and services loading access was previously shown as Figure C.1

**Table 9.a.1
VEHICLE PARKING ANALYSIS**

Envision Cambridge Requirement						
Analysis Type	Use	Size	Zoning Rate		Required Spaces	
			Maximum ^a	Minimum	Maximum	Minimum
Zoning	R&D	62,050 sf	0.8/1000 sf	--	50	50
Parking Demand						
Analysis Type	Use	Size	Rate	Demand		
Demand	R&D	124 emp ^b	0.59 ^c	73		
Detailed Proposed Parking						
Total Provided for Project						55

^aBased on Envision Cambridge - Alewife District Plan – Parking Requirement – Fall 2019

^bBased on expected number of employees ranging between 1.5 and 2.5 employees per 1,000 sf for R&D Use, which yields a total of 93 to 155 employees. Estimate based on density of 2.0 employees/1,000 sf.

^cCalculated as SOV rate (54 percent) plus ½ of HOV rate (5 percent) for R&D category

Note: Since completion of the traffic study, development size was decreased to 57,434 sf

9.b PARKING MANAGEMENT PLAN

It should be noted that the Applicant is committed to implementing typical TDM measures to further reduce the demand for parking, including encouragement of public transit and bicycles for the office employees and residents. The parking provided by the Project will be restricted to use by the tenant employees and visitors. Spaces will not be available for commercial (public parking) use.

9.c BICYCLE PARKING

A bicycle parking analysis was conducted to determine future long-term and short-term bicycle parking demands. The Project complies with City Zoning requirements for bicycle parking. Tables 9.c.1 and 9.c.2 document the Project bicycle parking demand based upon the City of Cambridge Zoning Ordinance.

**Table 9.c.1
BICYCLE PARKING REQUIREMENTS**

Land Use	Parking Ratio Per Sf	Size (ksf or units)	Total Parking Spaces Required
R&D Long-Term (0.22 per 1000) ^a	0.22	62.05	14
R&D Short-Term (0.06 per 1000)	0.06	62.05	4
Total			18

^aWhere 20 or more bicycle parking spaces are required, at least 5 percent of the long-term spaces are required to be tandem.

Table 9.c.2
BICYCLE PARKING ANALYSIS

Use	Size (ksf or units)	Proposed Bike Spaces		Total Spaces
		Long Term Spaces	Short Term Spaces	
R&D	62,050	14	8	22
TOTAL		14	8	22

Note: Since completion of the traffic study, development size was decreased to 57,434 sf

It is important to note that all long-term bicycle parking spaces will be provided in a ground-level bike room with direct access to the building exterior and sidewalk. The Project’s short-term spaces for visitors will be located close to the building entrance. Detailed plans (1 inch = 10 feet) for long-term and short-term bicycle parking as well as the proposed bicycle rack details are shown on Figures 9.c.1 and 9.c.2.

10.0 TRANSIT ANALYSIS

The transit analysis included a review of existing Red Line, public and private bus operations and an assessment of the impacts of project-generated transit trips and future transit trips. The following section summarizes existing transit services availability in the study area and provide an assessment of transit utilization and capacity for transit lines that may be used by travelers for the proposed Project. These services include the Red Line (accessed at Alewife Station) and MBTA Bus Lines 62, 67, 74, 76, 78, 79, 84, 350, and 351. Only Route 74 and 78 buses have stops along Concord Avenue, whereas all other bus lines are accessed at Alewife Station. It is important to note that due to the COVID-19 and effective August 30, 2020, some of the mentioned lines were suspended. However, in order to provide a typical non COVID-19 scenario, the transit analysis was also conducted for the suspended line. Consistent with the TIS guidelines, transit analysis was based on the following five-step method:

1. Assessment of the existing transit system capacity and utilization – Existing conditions
2. Project transit distribution
3. Assessment of the future transit system capacity and utilization – 2021 Build conditions
4. Assignment of transit trips by area background project to the transit system network
5. Assessment of the future transit system utilization (impacts from project as well as other background projects and general system growth) – 2026 Build Future conditions

The volume-to-capacity (V/C) ratio is the resulting metric that, for the purposes of this study, is used to reflect the level of utilization for each transit service line. The V/C ratios were assessed under the Existing, 2021 Build, and 2026 Future Conditions.

10.a EXISTING TRANSIT SYSTEM CAPACITY AND UTILIZATION

The capacity for the subway line, fixed bus route, and private routes were obtained from numbers of train/bus operation during a time period (frequency), number of people that can be accommodated on a train/bus car and for subway the number of cars on each train. The transit capacity was evaluated for a typical weekday, as well as the weekday morning (8:00 to 9:00 AM) and weekday evening (5:00 to 6:00 PM) peak hours, the critical time periods for Project-related traffic activity. Consistent with the TP&T direction, train frequencies were compiled from the latest published MBTA schedules and MBTA Bus Ridership data from FY 2019. The existing transit capacity was then adjusted based on MBTA's on-time performance data (reliability).

The Commuter Rail Reliability is measured as the percent of trains that arrives at their final stop no more than 5 minutes later than scheduled. The Bus reliability is measured at each end of the route and key stops in between. For services that come every 15 minutes or less, it is the percentage of buses that are no more than 3 minutes later than the schedule interval since the last bus. For other services, it is the percentage that arrive within 6 minutes of the scheduled time. Applying the reliability percentage adjustment reduces the number of available trains during the peak hour and accounts for schedule irregularities which would result in wait times experienced by the passengers. The average Red Line on-time performance was adjusted to 93 percent based on the average of the past 30-day average (May 1 through May 31, 2019) data provided by the MBTA Open Data Portal. The MBTA Bus service capacity for each line was adjusted for on-time performance based on average of the past 30-day average (data from April 2 through April 30, 2019 and May 1 through May 31, 2019 provided by the MBTA Performance Dashboard. For the purposes of this study, the vehicle load standards (i.e., number of people safely and comfortably riding on a train car of bus) are based on the MBTA’s Service Delivery Policy and the MBTA Blue Book 14th Edition data (Red Line policy capacity of 167 passengers per car, with a standard operation of six-car trains; MBTA Bus policy capacity of 53 passengers per vehicle).

MBTA Ridership data from FY 2019 was used to obtain peak-hour passenger loads for bus routes that are expected to be utilized by the future Project employees. The Red Line ridership for this analysis was based on data for Alewife Station. Inbound trains start their trip from Alewife Station and continue to Ashmont or Braintree, and Outbound trains end at Alewife Station from either Ashmont or Braintree. Passengers board the train serving the inbound Red Line and exit the out-bound Red Line. Specific boarding and alighting volumes during the morning and evening peak hours are presented in the Appendix. The resulting transit system capacities and system’s utilization rates for daily and peak hour are presented in Tables 10.a.1 and 10.a.2, respectively.

Table 10.a.1
EXISTING TRANSIT DAILY CAPACITY

Route No.	Estimated Daily Capacity ^a	Existing Daily Ridership ^b	On-Time Performance Adjustment ^c	Adjusted Existing Daily Ridership	V/C ^d
MBTA Subway					
Red Line at Alewife	167,167	23,972	0.93	22,294	0.13
MBTA Bus Line					
62 ^e	2,650	1,326	0.62	822	0.31
67	2,438	672	0.61	410	0.17
74	2,544	732	0.55	403	0.16
76 ^f	2,438	1,016	0.54	549	0.23
78 ^f	5,247	1,292	0.43	556	0.11
79 ^e	4,929	1,156	0.69	798	0.16
84 ^e	1,166	388	0.63	244	0.21
350 ^f	4,611	1,566	0.50	783	0.17
351 ^e	212	184	0.57	105	0.50

^aFrom Table 2e.1.

^bMBTA bus ridership data from Fall 2019 and MBTA composite of station passenger entry and ridership data, FY 2019.

^cOn-Time Performance Factor from MBTA Dashboard and MBTA open data portal.

^dVolume-to-capacity ratio.

^eLine Suspended.

^fRoute Combined with a Suspended Route.

**Table 10.a.2
EXISTING TRANSIT PEAK-HOUR CAPACITY^a**

Route No.	Direction	Frequency Peak Hour ^a	Passengers per Vehicle ^c	No. of Cars in a Train	Estimated Peak Hour Capacity without ad- justment	On-Time Per- formance Ad- justment ^d	Estimated Peak Hour Capacity	Morning		Evening		
								Peak Hour Ridership	V/C	Peak Hour Ridership	Peak V/C	
MBTA Subway												
Red Line	Inbound	13 ^b	167	6	13,026	0.93	12,114	2,624	0.22	1,006	0.08	
	Outbound	13 ^b	167	6	13,026	0.93	12,114	684	0.06	2,082	0.17	
MBTA Bus Lines												
62 ^e	Inbound	2.1	53	--	111	0.62	69	194	2.81	34	0.49	
	Outbound	2.0	53	--	106	0.62	66	34	0.52	160	2.43	
67	Inbound	1.9	53	--	101	0.61	62	103	1.68	15	0.24	
	Outbound	1.9	53	--	101	0.61	62	10	0.16	58	0.94	
74	Inbound	1.1	53	--	58	0.55	32	0	0.00	6	0.19	
	Outbound	1.6	53	--	85	0.55	47	3	0.06	1	0.02	
76 ^f	Inbound	1.6	53	--	85	0.54	46	90	1.97	30	0.66	
	Outbound	1.7	53	--	90	0.54	49	37	0.76	95	1.95	
78 ^f	Inbound	2.3	53	--	122	0.43	52	0	0.00	8	0.15	
	Outbound	2.1	53	--	111	0.43	48	10	0.21	3	0.06	
79 ^e	Inbound	2.3	53	--	122	0.69	84	75	0.89	21	0.25	
	Outbound	2.3	53	--	122	0.69	84	9	0.11	85	1.01	
84 ^e	Inbound	1.8	53	--	95	0.63	60	70	1.16	8	0.13	
	Outbound	1.8	53	--	95	0.63	60	4	0.07	89	1.48	
350 ^f	Inbound	2.3	53	--	122	0.50	61	112	1.84	34	0.56	
	Outbound	2.2	53	--	117	0.50	59	59	1.01	65	1.11	
351 ^f	Inbound	1.0	53	--	53	0.57	30	0	0.00	33	1.09	
	Outbound	1.0	53	--	53	0.57	30	51	1.69	0	0.00	

^aNumber of vehicle trips per hour, obtained from MBTA Ridership data - Fall 2019.

^bBased on average headway of 4.5 minutes over one hour.

^cNumber of policy level capacity per MBTA Blue Book 14th Edition (Red Line and Buses).

^dOn-Time Performance Factor from MBTA Dashboard and MBTA open data portal.

^eLine Suspended

^fRoute combined with a Suspended Route.

10.b PROJECT TRANSIT DISTRIBUTION

As presented in Section 3 of this report, the Project is expected to generate approximately 11 transit trips (9 entering and 2 exiting) during the morning peak hour and 10 transit trips (2 entering and 8 exiting) during the evening peak hour. For a conservative analysis, no transit trip credits were taken from the existing building on site. Project transit trip distribution was divided between the Red Line and Bus Lines.

The distribution was developed based on MBTA existing peak-hour ridership levels data (Fall 2019). The MBTA data indicated that approximately 74 percent of transit riders use the subway (Red Line) and 26 percent use buses. Separate from this application, a proposed multi-use pathway bridge is planned to connect the Quadrangle neighborhood to Cambridge Park Drive and the Alewife Station. The bridge will shorten the access to the Alewife station from 1.5 miles to 0.5 miles (less than a 10-minute walk) north of the site. In order to provide a conservative analysis, 60 percent of transit riders use were assumed to use the subway (Redline) and 40 percent of the users were assumed to use buses. The distribution on the transit routes is shown in Tables 10.b.1 and 10.b.2.

**Table 10.b.1
TRANSIT SYSTEM TRIP DISTRIBUTION**

<u>Time Period/Directional Distribution</u>	<u>Project Transit Trips^b</u>	<u>Red Line Distribution (60%)^b</u>	<u>Bus Distribution (40%)^b</u>
<i>Weekday Daily:</i>			
Entering	46	28	18
<u>Exiting</u>	<u>47</u>	<u>28</u>	<u>19</u>
Total	93	56	37
<i>Weekday Morning:</i>			
Entering	9	5	4
<u>Exiting</u>	<u>2</u>	<u>1</u>	<u>1</u>
Total	11	6	5
<i>Weekday Evening:</i>			
Entering	2	1	1
<u>Exiting</u>	<u>8</u>	<u>5</u>	<u>3</u>
Total	10	6	4

^aFrom Table 3.b.2.

^bBased on MBTA daily bus ridership data from Table 10.a.1

**Table 10.b.2
PROJECT-GENERATED PEAK-HOUR TRANSIT TRIPS BY LINE**

Route No.	Direction	Weekday Morning			Weekday Evening		
		Trips OUT (Boardings)	Trips IN (Alightings)	Trips Total	Trips OUT (Boardings)	Trips IN (Alightings)	Trips Total
MBTA Subway – Red Line							
Red Line at Alewife	Inbound	5	0	5	1	0	1
	Outbound	0	1	1	0	5	5
MBTA Bus Lines at Concord Avenue							
74	Inbound	1	0	1	0	0	0
	Outbound	0	0	0	0	1	1
78	Inbound	1	0	1	1	0	1
	Outbound	0	1	1	0	1	1
MBTA Bus Lines at Alewife Station							
62	Inbound	1	0	1	0	0	0
	Outbound	0	0	0	0	1	1
67	Inbound	0	0	0	0	0	0
	Outbound	0	0	0	0	0	0
76	Inbound	0	0	0	0	0	0
	Outbound	0	0	0	0	0	0
79	Inbound	0	0	0	0	0	0
	Outbound	0	0	0	0	0	0
84	Inbound	0	0	0	0	0	0
	Outbound	0	0	0	0	0	0
350	Inbound	1	0	1	0	0	0
	Outbound	0	0	0	0	0	0
351	Inbound	0	0	0	0	0	0
	Outbound	0	0	0	0	0	0
Total		9	2	11	2	8	10

10.c 2021 BUILD TRANSIT SYSTEM CAPACITY AND UTILIZATION

The Project-generated transit trips by both Red line and Bus lines (Table 10.b.2) were added to the existing route volume to develop the Build condition utilization scenario. The resulting system capacities and system’s utilization rates for both Red Line and Bus Lines under the 2021 Build condition are summarized on the analysis results table in Section 10.e.

10.d. ASSIGNMENT OF AREA BACKGROUND PROJECT TRANSIT TRIPS

In addition to growing the transit trips to 2026 Future conditions, it is necessary to add transit trips from area projects that are not yet built and/or under construction. The same projects listed in the Section 4 of this report were also used in the transit analysis. Transit trips for each background project, as presented in Table 10.d.1 were included in the Future analysis.

Table 10.d.1
BACKGROUND PROJECT TRANSIT TRIPS

Project	Daily Trips	Weekday Morning			Weekday Evening		
		In	Out	Trips Total	In	Out	Trips Total
Triangle Area							
35 Cambridge Park Drive	168	13	2	15	5	13	18
50 Cambridge Park Drive	926	25	76	101	72	32	104
188R Cambridge Park Drive	1,567	20	89	109	109	59	168
130 Cambridge Park Drive	582	9	36	45	35	19	54
Subtotal	3,243	67	203	270	221	123	344
Quadrangle Area / Shopping Center							
671-675 Concord Avenue	224	3	14	17	14	7	21
87-95 Fawcett Street	124	2	7	9	7	4	11
55-Wheeler Street	1,942	30	119	149	118	63	181
605 Concord Avenue	208	2	7	9	14	7	21
The Residences at Alewife Station	304	67	28	95	38	38	76
75 New Street	192	3	12	15	12	6	18
101 Cambridge Park Drive	440	36	18	54	10	30	40
75/109 Smith Place	98	5	2	7	1	5	6
402 Rindge Avenue	550	30	18	48	17	27	44
40 Wilson Road	294	3	8	11	11	2	13
Subtotal	4,376	181	233	414	242	189	431
Total	7,619	248	436	684	463	312	775

Consistent with the overall distributions of the project expected transit trips, 60 percent of the background transit trips were assigned to the Red Line and 40 percent were assigned to bus routes. It was assumed that developments located in the Triangle area will only use bus lines that are available at the Alewife Station. Developments located at the Quadrangle and a shopping center area will use both bus lines that are available at the Alewife Station and the two bus lines (Routes 74 and 78) with bus stops at Concord Avenue.

10.e FUTURE TRANSIT SYSTEM CAPACITY AND UTILIZATION

To analyze the 2026 Future condition for transit, the MBTA existing ridership was grown to year 2026 based on a 1.0 percent per year growth rate for the Red Line. An estimated average annual growth rate of 0.01 percent per year was applied for buses. Both annual growth percentages are presented in the Boston Metropolitan Planning Organization/Central Transportation Planning Staff (CTPS) study of the August 2019 Long-Range transportation plan. The 2026 Future ridership is presented on the summary of analysis results table section 10.e.

10.f SUMMARY OF ANALYSIS RESULTS

Tables 10.f.1, 10.f.2, and 10.f.3 demonstrate and compare the daily and peak-hour ridership impacts during Existing, Build, and Future conditions in the bus routes and subway lines.

Table 10.f.1
DAILY RIDERSHIP IMPACTS

Route No.	Estimated Daily Capacity ^a	Existing ^b		2021 Build		2026 Build	
		Ridership	V/C	Ridership	V/C	Ridership	V/C
MBTA Subway – Red Line							
Red Line at Alewife	167,167	22,294	0.13	22,350	0.13	28,058	0.17
MBTA Bus Lines							
62	2,650	822	0.31	826	0.31	1,513	0.57
67	2,438	410	0.17	412	0.17	716	0.29
74	2,544	403	0.16	409	0.16	579	0.23
76	2,438	549	0.23	553	0.23	960	0.39
78	5,247	556	0.11	569	0.11	930	0.18
79	4,929	798	0.16	800	0.16	1,106	0.22
84	1,166	244	0.21	246	0.21	523	0.45
350	4,611	783	0.17	787	0.17	1,220	0.26
351	212	105	0.50	105	0.50	232	1.09

^aTable 2.e.1.

^bTable 10.a.1

Table 10.f.2
PEAK-HOUR RIDERSHIP IMPACTS - WEEKDAY MORNING

Route No.	Direction	Estimated Peak-Hour Capacity ^a	Existing ^a		2021 Build		2026 Build	
			Ridership	V/C	Ridership	V/C	Ridership	V/C
MBTA Subway – Red Line								
Red Line at Alewife	Inbound	12,114	2,624	0.22	2,629	0.22	2,912	0.24
	Outbound	12,114	684	0.06	685	0.06	982	0.08
MBTA Bus Lines								
62	Inbound	69	194	2.81	195	2.83	218	3.16
	Outbound	66	34	0.52	34	0.52	73	1.11
67	Inbound	62	103	1.68	103	1.66	113	1.82
	Outbound	62	10	0.16	10	0.16	28	0.45
74	Inbound	32	0	0.00	1	0.03	8	0.25
	Outbound	47	3	0.06	3	0.06	12	0.26
76	Inbound	46	90	1.97	90	1.96	102	2.22
	Outbound	49	37	0.76	37	0.76	60	1.22
78	Inbound	52	0	0.00	1	0.02	16	0.31
	Outbound	48	10	0.21	11	0.23	30	0.63
79	Inbound	84	75	0.89	75	0.89	83	0.99
	Outbound	84	9	0.11	9	0.11	27	0.32
84	Inbound	60	70	1.16	70	1.17	78	1.30
	Outbound	60	4	0.07	4	0.07	20	0.33
350	Inbound	61	112	1.84	113	1.85	128	2.10
	Outbound	59	59	1.01	59	1.00	84	1.42
351	Inbound	30	0	0.00	0	0.00	4	0.13
	Outbound	30	51	1.69	51	1.70	58	1.93

^aTable 10.a.1.

**Table 10.f.3
PEAK HOUR RIDERSHIP IMPACTS - WEEKDAY EVENING**

Route No.	Direction	Estimated Peak-Hour Capacity ^a	Existing ^a		2021 Build		2026 Build	
			Ridership	V/C	Ridership	V/C	Ridership	V/C
MBTA Subway – Red Line								
Red Line at Alewife	Inbound	12,114	1,006	0.08	1,007	0.08	1,335	0.11
	Outbound	12,114	2,082	0.17	2,087	0.17	2,380	0.20
MBTA Bus Lines								
62	Inbound	69	34	0.49	34	0.49	76	1.10
	Outbound	66	160	2.43	161	2.44	191	2.89
67	Inbound	62	15	0.24	15	0.24	34	0.55
	Outbound	62	58	0.94	58	0.94	70	1.13
74	Inbound	32	6	0.19	6	0.19	15	0.47
	Outbound	47	1	0.02	2	0.04	9	0.19
76	Inbound	46	30	0.66	30	0.65	55	1.20
	Outbound	49	95	1.95	95	1.94	111	2.27
78	Inbound	52	8	0.15	9	0.17	29	0.56
	Outbound	48	3	0.06	4	0.08	20	0.42
79	Inbound	84	21	0.25	21	0.25	40	0.48
	Outbound	84	85	1.01	85	1.01	97	1.15
84	Inbound	60	8	0.13	8	0.13	26	0.43
	Outbound	60	89	1.48	89	1.48	100	1.67
350	Inbound	61	34	0.56	34	0.56	61	1.00
	Outbound	59	65	1.11	65	1.10	82	1.39
351	Inbound	30	33	1.09	33	1.10	40	1.33
	Outbound	30	0	0.00	0	0.00	5	0.17

^aTable 10.a.1

10.g PRIVATE TRANSIT ANALYSIS

A utilization of the private transit services has also been conducted to support this Project. An analysis of the existing Alewife TMA shuttle was conducted. The analysis includes evaluation of 22 days of the month ridership data from January 2020 (included in the Appendix). Currently, the site is served by the Alewife TMA shuttle at the 110 Fawcett Street and 10 Wilson Road stops (see Figure 1.d.2). The shuttle operates as drop-off only in the morning and pick-up only in the evening at this location as it serves office buildings. Inbound shuttles are destined from Alewife Station to the developments along Concord Avenue in the Quadrangle area, and outbound shuttles are destined to Alewife Station from Concord Avenue.

Table 10.g.1 shows the existing shuttle system’s daily passenger capacity and Table 10.g.2 shows the existing shuttle system’s peak-hour passenger capacity

**Table 10.g.1
EXISTING ALEWIFE TMA SHUTTLE DAILY CAPACITY**

Route No.	Estimated Daily Capacity ^a	Existing Daily Ridership	On-Time Performance Adjustment ^c	Adjusted 2020 Existing Daily Ridership	V/C ^d
MBTA Subway					
Alewife TMA Shuttle	576	75	NA	75	0.13

^aTable 2.e.1.

^bTMA bus ridership data from January 2020.

^cNo reliability time Rate is applied to Private transit

^dVolume-to-capacity ratio.

**Table 10.g.2
EXISTING ALEWIFE TMA SHUTTLE PEAK HOUR CAPACITY^a**

Route No.	Direction	Frequency Peak Hour ^a	Passengers per Vehicle	Estimated Peak-Hour Capacity	Morning Peak-Hour Ridership	Evening Peak-Hour Ridership	Morning Peak V/C ^b	Evening Peak V/C ^b
Alewife TMA Shuttle	Inbound	2	18	32	24	0	0.75	0.00
	Outbound	2	18	32	0	8	0.00	0.25

^aNumber of vehicle trips per hour, obtained from TMA Ridership data – Jan 2020.

^bVolume-to-capacity ratio.

11.0 PEDESTRIAN ANALYSIS

A pedestrian impact analysis was conducted at the study area intersections under 2021 Baseline conditions, 2021 Build, and 2026 Future conditions, as required in the scoping letter. For signalized intersections, the pedestrian level-of-service calculations measure the adequacy of the pedestrian phases (exclusive or concurrent) for sufficient time to cross major or minor streets. The analysis methodology was based on procedures outlined in the 2000 *Highway Capacity Manual (HCM)*⁸ for signalized intersections and is provided in the Appendix. Table 11.a.1 summarizes the results of the pedestrian analysis at the signalized intersections and Table 11.a.2 summarizes the results of the pedestrian analysis at the unsignalized intersections. The pedestrian level-of-service ratings for the intersections are also graphically shown on Figures 11.a.1 and 11.a.2 for the weekday morning and weekday evening peak hours.

⁸*Highway Capacity Manual*, Special Report 209; Transportation Research Board; Washington, D.C.; 2000.

Table 11.a.1
PEDESTRIAN LEVEL-OF-SERVICE SUMMARY – SIGNALIZED INTERSECTIONS

Intersection/Time Period/Crossing Path	2021 Baseline Condition			2021 Build			2026 Future	
	Demand ^a	Delay ^b	PLOS ^c	Demand	Delay	PLOS	Delay	PLOS
Concord Avenue at Blanchard Road:								
<i>Weekday Morning:</i>								
Concord Avenue (West)	7	35.5	D	7	35.5	D	35.5	D
Concord Avenue (East)	4	35.5	D	6	35.5	D	35.5	D
Blanchard Road (North)	7	47.7	E	13	47.7	E	47.7	E
Blanchard Road (South)	19	47.7	E	21	47.7	E	47.7	E
<i>Weekday Evening:</i>								
Concord Avenue (West)	2	49.5	E	13	49.5	E	49.5	E
Concord Avenue (East)	9	49.5	E	9	49.5	E	49.5	E
Blanchard Road (North)	17	50.6	E	21	50.6	E	50.6	E
Blanchard Road (South)	11	50.3	E	12	50.3	E	50.3	E
Concord Avenue at Moulton Street and Private Drive:								
<i>Weekday Morning:</i>								
Concord Avenue (East)	2	27.2	C	2	27.2	C	27.2	C
Moulton Street (North)	9	27.2	C	11	27.2	C	27.2	C
Private Drive (South)	3	27.2	C	3	27.2	C	27.2	C
<i>Weekday Evening:</i>								
Concord Avenue (East)	7	27.2	C	7	27.2	C	27.2	C
Moulton Street (North)	33	27.2	C	35	27.2	C	27.2	C
Private Drive (South)	12	27.2	C	12	27.2	C	27.2	C
Concord Avenue at Fawcett Street:								
<i>Weekday Morning:</i>								
Concord Avenue (East)							26.5	C
Fawcett Street (North)							26.5	C
<i>Weekday Evening:</i>								
Concord Avenue (East)							26.5	C
Fawcett Street (North)							26.5	C

^aDemand in pedestrians per hour.

^bAverage delay per pedestrian (in seconds).

^cPedestrian level of service.

Table 11.a.2
PEDESTRIAN LEVEL-OF-SERVICE SUMMARY – UNSIGNALIZED INTERSECTIONS

Intersection/Time Period/Crossing Path	2021 Baseline Condition			2021 Build			2026 Future		
	Demand ^a	Delay ^b	LOS ^c	Demand	Delay	LOS	Demand	Delay	LOS
Concord Avenue at Smith Place:									
<i>Weekday Morning:</i>									
Concord Avenue (West)	2	>45.1	F	4	>45.1	F	4	>45.1	F
Smith Place (North)	15	3.9	A	17	4.5	A	17	8.3	B
<i>Weekday Evening:</i>									
Concord Avenue (West)	19	>45.1	F	22	>45.1	F	22	>45.1	F
Smith Place (North)	20	5.7	B	22	6.3	B	22	11.2	C
Concord Avenue at Fawcett Street:									
<i>Weekday Morning:</i>									
Concord Avenue (West)	16	>45.1	F	16	>45.1	F	See Table 11.a.1		
Fawcett Street (North)	15	8.3	B	17	9.2	B			
<i>Weekday Evening:</i>									
Concord Avenue (West)	17	>45.1	F	17	>45.1	F			
Fawcett Street (North)	39	7.8	B	39	8.5	B			
Smith Place at Fawcett Street and Private Drive:									
<i>Weekday Morning:</i>									
Private Drive ^d (West)	2	0.1	A	4	0.1	A	4	0.1	A
Fawcett Street (East)	1	2.3	A	4	2.9	A	4	3.0	A
Smith Place (North)	1	2.2	A	3	2.2	A	3	2.2	A
Smith Place ^d (South)	2	2.0	A	3	2.5	A	3	2.6	A
<i>Weekday Evening:</i>									
Private Drive ^d (West)	5	1.0	A	7	1.1	A	7	1.0	A
Fawcett Street (East)	9	2.0	A	15	1.9	A	15	2.6	A
Smith Place (North)	13	2.8	A	15	2.8	A	15	2.9	A
Smith Place ^d (South)	2	3.4	A	1	3.9	A	1	4.0	A

^aDemand in pedestrians per hour.

^bAverage delay per pedestrian (in seconds).

^cPedestrian level of service.

^dCrossing is analyzed but no crosswalk exists.

12.0 BICYCLE ANALYSIS

A review of bicycle conditions was conducted at the affected intersections and street segments. Concord Avenue provides on-street bike lanes and separate bike lanes. Other city streets in the study area such as Smith Place and Fawcett Street are wide enough to permit bicycle travel but do not provide exclusive bicycle lanes. It is important to note that as part of the 101 Smith place project an exclusive bike line will be provided along Smith Place. State roadways such as Alewife Brook Parkway do provide a multiuse pathway exclusive lane.

12.a VEHICLE TURNING VOLUME CONFLICTS

Conflicting vehicle turning movements at the study area intersections are presented and summarized in Table 12.a.1 for 2021 Baseline Condition, 2021 Build, and 2026 Future conditions.

Table 12.a.1
BICYCLE-VEHICLE VOLUME CONFLICTS

Roadway/Intersecting Street/Time Period	Bicycle Volume Existing Peak Hour	Conflicting Vehicles Turning Volume					
		2021 Baseline condition		2021 Build		2026 Build	
		Advancing Volumes	Opposing Volumes	Advancing Volumes	Opposing Volumes	Advancing Volumes	Opposing Volumes
Concord Avenue at Blanchard Street:							
<i>Weekday Morning:</i>							
Concord Avenue EB	14	602	25	607	25	713	25
Concord Avenue WB	4	428	225	435	230	493	247
Blanchard Street NB	4	439	376	444	382	466	407
Blanchard Street SB	13	711	220	717	220	750	225
<i>Weekday Evening:</i>							
Concord Avenue EB	6	698	232	713	237	793	253
Concord Avenue WB	33	276	325	278	330	332	360
Blanchard Street NB	6	427	159	428	161	448	176
Blanchard Street SB	6	432	303	434	303	456	310

See notes in the end of the Table

Table 12.a.1(Continued)
BICYCLE-VEHICLE VOLUME CONFLICTS

Roadway/Time Period/Intersecting Street	Bicycle Volume Existing Peak Hour	Conflicting Vehicles Turning Volume					
		2021 Baseline condition		2021 Build		2026 Build	
		Advancing Volumes	Opposing Volumes	Advancing Volumes	Opposing Volumes	Advancing Volumes	Opposing Volumes
Concord Avenue at Smith Place and Bike Path:							
<i>Weekday Morning:</i>							
Concord Avenue EB	37	--	--	--	--	--	--
Concord Avenue WB	10	--	188	--	212	--	339
Bike Pathway NB	6	--	1,529	--	1,534	--	1,698
Smith Place SB	0	85	--	91	--	123	--
<i>Weekday Evening:</i>							
Concord Avenue EB	11	--	--	--	--	--	--
Concord Avenue WB	34	--	255	--	278	--	416
Bike Pathway NB	5	--	1,206	--	1,224	--	1,428
Smith Place SB	3	180	1,160	198	1,168	315	1,324
Concord Avenue at Moulton Street and Private Drive:							
<i>Weekday Morning:</i>							
Concord Avenue EB	31	--	31	--	31	--	31
Concord Avenue WB	13	--	731	--	731	--	865
Private Drive NB	2	6	41	6	41	6	42
Moulton Street SB	0	52	--	52	--	53	--
<i>Weekday Evening:</i>							
Concord Avenue EB	17	--	15	--	15	--	15
Concord Avenue WB	36	--	10	--	10	--	10
Private Drive NB	0	32	32	32	32	32	32
Moulton Street SB	1	136	--	136	--	139	--
Concord Avenue at Fawcett Street:							
<i>Weekday Morning:</i>							
Concord Avenue EB	33	--	--	--	--	--	--
Concord Avenue WB	26	--	275	--	296	--	362
Fawcett Street SB	4	104	1,673	108	1,678	158	1,936
<i>Weekday Evening:</i>							
Concord Avenue EB	22	--	--	--	--	--	--
Concord Avenue WB	44	--	263	--	279	--	359
Fawcett Street SB	11	142	1,243	154	1,258	186	1,450
Smith Place at Fawcett Street and Private Drive:							
<i>Weekday Morning:</i>							
Private Drive WB	0	8	--	8	--	8	--
Fawcett Street EB	2	64	27	70	27	72	28
Smith Place NB	2	59	--	77	--	79	--
Smith Place SB	0	44	14	44	14	45	14
<i>Weekday Evening:</i>							
Private Drive WB	0	16	--	16	--	16	--
Fawcett Street EB	1	59	224	77	242	79	247
Smith Place NB	4	84	245	89	268	91	274
Smith Place SB	1	87	75	87	98	89	100

NB = Northbound; SB = Southbound; EB = Eastbound; WB = Westbound;

12.b FUTURE BICYCLE CONNECTIONS – BRIDGE

Separate from this application, a proposed multi-use pathway bridge is planned to connect the quadrangle neighborhood to Cambridge Park Drive and the Alewife Station. The proposed connection will facilitate the pedestrian and bicycle access to the Alewife Station. With the proposed bridge the distance from the Project site to the Alewife Station will be approximately 0.5 miles or 10 minutes or less walking and 5 minutes or less by bike. An exclusive on-street bike lane is provided along Cambridge Park Drive along both sides of the street.

13.0 ARTICLE 19 SPECIAL PERMIT CRITERIA ANALYSIS

Under Section 19.25.1, the Planning Board shall only grant a Section 19.20 Project Review Special Permit upon finding that the Project will have no substantial adverse impact on City traffic within the study area analyzed in the TIS. Substantial adverse impact is measured by reference to the Special Permit Criteria, which consist of five traffic impact indicators used to evaluate Project impacts. The indicators are: (1) project vehicle-trip generation weekdays for a twenty-four hour period and morning and evening peak-vehicle trips generated; (2) change in level of service at identified intersections; (3) increased volume of trips on residential streets; (4) increase of length of vehicle queues at identified signalized intersections; and (5) lack of sufficient pedestrian and bicycle facilities. The methodology for the analysis of the traffic impact indicators is from the Cambridge “Guidelines for Presenting Information to the Planning Board”, approved November 27, 2001, and revised in 2004. Referenced in the guidelines are capacity analysis procedures presented in the HCM and summarized in the Appendix. Exceedance of one or more indicators suggests a potentially substantial adverse impact on City traffic; however, the Planning Board should also consider proposed Project mitigation in making its finding. The following section summarizes the 87 measurements analyzed in applying the five indicators to the proposed Project and the proposed Project mitigation.

13.a INDICATOR 1: PROJECT VEHICLE – TRIP GENERATION

As shown on Table 13.a.1, the Project is expected to exceed the Planning Board Criteria for daily, morning peak hour, and evening peak-hour Project vehicle-trip generation under the Build program.

**Table 13.a.1
INDICATOR 1 - PROJECT VEHICLE-TRIP GENERATION**

<u>Time Period</u>	<u>Proposed Project Vehicle New Trips</u>	<u>Criteria Threshold</u>	<u>Exceeds Criteria?</u>
Weekday Daily	356	2,000	No
Weekday Morning Peak Hour	45	240	No
Weekday Evening Peak Hour	39	240	No

13.b INDICATOR 2: PROJECT VEHICLE – LEVEL OF SERVICE

The Project satisfies 9 of 10 City standards for Indicator 2 regarding vehicle level of service as demonstrated by the measurements detailed in Table 13.b.1.

**Table 13.b.1
INDICATOR 2 - PROJECT VEHICLE-LEVEL-OF-SERVICE**

Intersection	Weekday Morning Peak Hour				Weekday Evening Peak Hour			
	Existing	With Project	Traffic increase	Exceeds Criteria?	Existing	With Project	Traffic increase	Exceeds Criteria?
Concord Avenue at Blanchard Road	F	F	1.0%	No	E	E	1.0%	No
Concord Avenue at Moulton Street	A	A	--	No	A	A	--	No
Concord Avenue at Smith Place	D	E	--	Yes	D	D	0.2%	No
Concord Avenue at Fawcett Street	F	F	1.9%	No	E	E	1.3%	No
Smith Place at Fawcett Street and Private Drive	A	A	--	No	B	B	--	No

13.c INDICATOR 3: TRAFFIC ON RESIDENTIAL STREETS

The Project satisfies 18 of 18 City standards for Indicator 3 regarding traffic on residential streets as demonstrated by the measurements detailed in Table 13.c.1.

**Table 13.c.1
INDICATOR 3: TRAFFIC ON RESIDENTIAL STREETS**

Roadway	Reviewed Segment	Amount of Residential	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
			Existing Two-Way Traffic	Increase due to Project	Exceeds Criteria?	Existing Two-Way Traffic	Increase due to Project	Exceeds Criteria?
Blanchard Road	Colby St/S Normandy Av to Concord Av.	1/2 or more	1,093	8	No	994	7	No
	Mannix Circle to Concord Av.	>1/3 but <1/2	900	6	No	899	5	No
Concord Avenue	Blanchard road to Smith Place	1/3 or less	1,580	23	No	1203	20	No
	Smith Place to Moulton Street	1/3 or less	1,541	1	No	1142	3	No
	Moulton Street to Fawcett Street	1/3 or less	1,601	1	No	1204	3	No
	Fawcett Street to Wheeler Street	1/3 or less	1,800	22	No	1320	19	No
Smith Place	Concord Avenue to Fawcett Street	1/3 or less	188	24	No	255	23	No
Fawcett Street	Concord Avenue to Connection Road	>1/3 but 1/2	275	21	No	263	16	No
	Connection Road to Smith Place	1/3 or less	110	24	No	95	23	No

13.d INDICATOR 4: LANE QUEUE

The Project satisfies 26 of 26 City standards for Indicator 4 regarding lane queues as demonstrated by the measurements detailed in Table 13.d.1.

**Table 13.d.1
INDICATOR 4: LANE QUEUE**

Intersection/Lane	Weekday Morning Peak Hour				Weekday Evening Peak Hour			
	Existing	With Project	Difference in Queue	Exceeds Criteria?	Existing	With Project	Difference in Queue	Exceeds Criteria?
<i>Concord Avenue at Blanchard Road:</i>								
Concord Avenue EB LT/TH	6	6	0	No	5	5	0	No
Concord Avenue EB TH/RT	4	4	0	No	3	3	0	No
Concord Avenue WB L	5	5	0	No	5	5	0	No
Concord Avenue WB T	5	5	0	No	5	5	0	No
Concord Avenue WB R	2	2	0	No	2	2	0	No
Blanchard Road NB LT/TH	6	6	0	No	13	13	0	No
Blanchard Road NB RT	2	2	0	No	2	2	0	No
Blanchard Road SB LT/TH/RT	8	8	0	No	7	7	0	No
<i>Concord Avenue at Moulton Street:</i>								
Concord Avenue EB LT/TH	4	4	0	No	3	3	0	No
Concord Avenue EB TH/RT	4	4	0	No	3	4	1	No
Concord Avenue WB LT/TH/RT	3	4	1	No	4	4	0	No
Private Driveway NB LT/TH/RT	0	0	0	No	1	1	0	No
Moulton Street SB LT/TH/RT	1	1	0	No	2	2	0	No

13.e INDICATOR 5: LACK OF SUFFICIENT PEDESTRIAN AND BICYCLE FACILITIES

The Project satisfies 18 of 30 City standards for Indicator 5A, 5B, and 5C regarding pedestrian and bicycle facilities as demonstrated by the measurements detailed in Table 13.e.1, Table 13.e.2 and Table 13.e.3.

Table 13.e.1
INDICATOR 5A – PEDESTRIAN LEVEL OF SERVICE –
SIGNALIZED INTERSECTION

Intersection	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	Existing	With Project	Exceeds Criteria?	Existing	With Project	Exceeds Criteria?
<i>Concord Avenue at Blanchard Road:</i>						
Concord Avenue (West)	D	D	No	E	E	Yes
Concord Avenue (East)	D	D	No	E	E	Yes
Blanchard Road (North)	E	E	Yes	E	E	Yes
Blanchard Road (South)	E	E	Yes	E	E	Yes
<i>Concord Avenue at Moulton Street and Private Drive:</i>						
Concord Avenue (East)	C	C	No	C	C	No
Private Drive (North)	C	C	No	C	C	No
Moulton Street (South)	C	C	No	C	C	No

Table 13.e.2
INDICATOR 5A – PEDESTRIAN LEVEL OF SERVICE –
UNSIGNALIZED INTERSECTION

Intersection	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
	Existing	With Project	Exceeds Criteria?	Existing	With Project	Exceeds Criteria?
<i>Concord Avenue at Smith Place:</i>						
Concord Avenue (West)	F	F	Yes	F	F	Yes
Smith Place (North)	A	A	No	B	B	No
<i>Concord Avenue at Fawcett Street:</i>						
Concord Avenue (West)	F	F	Yes	F	F	Yes
Fawcett Street (North)	B	B	No	B	B	No
<i>Smith Place at Fawcett Street and Private Drive:</i>						
Fawcett Street (East)	A	A	No	A	A	No
Smith Place (North)	A	A	No	A	A	No

Table 13.e.3
INDICATOR 5B AND 5C – PEDESTRIAN AND BICYCLE FACILITIES

Adjacent Street or Public Right-of-Way	Sidewalks or Walkways Present?	Exceeds Criteria?	Bicycle Facilities or Right-of-Ways Present?	Exceeds Criteria?
Smith Place	Yes	No	No ^a	Yes
Fawcett Street	Yes	No	No	Yes

^aA new bicycle pathway will be proposed as part of the 101 Smith place project

14.0 PROJECT MITIGATION

Generally, the Project's is located near transit facilities such as Alewife Station as well as area shuttle services which significantly encourages transit use by employees of the proposed Project. Mitigation measures as set forth in this section and Section 16 are therefore geared towards measures to encourage Project employees to use alternative transportation that would result in a low SOV rate for the Project. The Project proposes implementation of a TDM Plan as described in Section 16 that outweighs potential adverse impacts of the Project on the surrounding street network. As required by *Cambridge Article 19 -Section 19.20*, the Project has been evaluated against the five indicators as measurements of the Project's expected impact on City traffic. Of the 87 measurements analyzed in connection with the five indicators, only 13 measurements do not satisfy the City standards, resulting in a 15 percent exceedance rate. The Applicant is committed to the implementation of the below Project mitigation strategies in order to lessen any potential impact of the Project on City traffic. Table 14.a.1 lists the 13 measurements that exceed the *Section 19.20* criteria.

**Table 14.a.1
ARTICLE 19 SUMMARY OF NON-SATISFIED CRITERIA**

Indicator	Location	Exceedance	Mitigation
Indicator 2	Concord Avenue at Smith Place	Build LOS E from Existing LOS D (AM)	Applicant will coordinate with TP&T and City on mitigation at this location.
Indicator 5a	Concord Avenue at Blanchard Road: Concord Avenue (West) Concord Avenue (East) Blanchard Road (North) Blanchard Road (South)	Existing and Build LOS E (PM) Existing and Build LOS E (PM) Existing and Build LOS E (AM/PM) Existing and Build LOS E (AM/PM)	Existing PLOS conditions are maintained at this location with the construction of the Project and do not deteriorate in the Build Condition. No mitigation is proposed as part of this project.
	Concord Avenue at Smith Place: Concord Avenue (West)	Existing and Build LOS F (AM/PM)	Applicant will coordinate with TP&T and City on mitigation at this location.
	Concord Avenue at Fawcett Street: Concord Avenue (West)	Existing and Build LOS F (AM/PM)	Applicant will coordinate with TP&T and City on mitigation at this location.
Indicator 5b/5c	Fawcett Street	Bicycle Facilities	Proposed Bicycle lanes (5' wide) are proposed at Fawcett Street along site frontage.
Indicator 5b/5c	Smith Place	Bicycle Facilities	Proposed Bicycle lanes (5' wide) are proposed at Smith Place along site frontage.

15.0 TRANSPORTATION DEMAND MANAGEMENT PROGRAM

Generally, the location of the Project with the addition of the future access bridge to the Alewife Station will significantly encourage the use of traffic by residents, employees, and visitors of the proposed Project. Mitigation efforts are therefore geared towards measures to improve traffic congestion on these adjacent streets as well as efforts to encourage Project employees and residents towards alternative transportation that would result in a low single occupant vehicle (SOV) rate for the Project. According to Section 10.18.050 (g) of the PTDM ordinance, the Project triggers the requirement to prepare and operate under the elements of a PTDM Plan, which will require approval of the Cambridge PTDM Planning Officer.

Reducing the amount of traffic generated by the Project is an important component of the transportation mitigation plan. The goal of the proposed traffic reduction strategy is to reduce the use of SOVs by encouraging the use of public transportation, car/vanpooling, bicycle commuting, and pedestrian travel. The following measures will be implemented as a part of the proposed Project and by the property management team in an effort to reduce the number of vehicle trips generated by the Project:

- Charge for parking at market rates and offer discounted parking for dedicated HOV vehicles.
- Commit to reserving 10 percent of parking spaces in the garage as carpool/HOV vehicles.
- Establish membership in the Alewife TMA including free access for employees to use shuttle buses operated by the TMA. Provide emergency ride home and ride-matching benefits to all employees through the Alewife TMA or other provider acceptable to TP&T.
- R&D tenants will be encouraged to provide 100 percent transit subsidies to employees.
- The pedestrian nature of the site will also be emphasized, as will the proximity of the Alewife Station.
- In order to encourage the use of public transportation, the property management team will make available public transportation schedules which will be posted in a centralized location for the residents.

- Designate a Transportation Coordinator for the site who will also be responsible for:
 - Aggressively promoting and marketing non-SOV modes of transportation to employees.
 - Overseeing the marketing and promotion of transportation options such as posting information on the Project’s web site, social media, and property newsletters.
 - Responding to individual requests for information.
 - Ensuring that annual transportation surveys are conducted.
 - Coordinating with Alewife TMA.
- Provide Bluebikes_{sm} corporate membership (minimum Gold level) paid by employer for employees that choose to become Bluebikes_{sm} members.
- Require corporate membership paid by the employer to allow employees to use carshare vehicles for work related trips during the day instead of needing to drive private vehicles to work.
- Provide electric vehicle level plug-in stations in the garage for at least 5 vehicles.
- Provide a bicycle repair station to include air pumps and other bike tools.

The Applicant will investigate the implementation of these traffic reduction strategies and will work with the City, the TMA, and area businesses to implement these programs.

16.0 CONCLUSION

As described throughout this TIS, The Project entails construction of a new four-story building (68,993 gross square feet (gsf)) with approximately 57,434 square feet (sf) of gross floor area (GFA) of R&D/laboratory space.

The Project is located in an area close to extensive public transit networks where it is expected that reliance on personal vehicles will become less necessary and through the provision of minimal parking ratios, expanded bicycle parking and storage, aggressive TDM measures, and proximity to expanded transit services and transit connectivity, the overall traffic impact of the Project will be minimized. Additionally, separate from this application, a proposed multi-use pathway bridge is planned to connect the quadrangle neighborhood from the proposed site property to Cambridge Park Drive and the Alewife Station. This improvement will significantly improve pedestrian and bicycle connectivity and existing improved conditions (e.g., lighting), encouraging increased usage of these alternative modes of transportation.

The proposed Project will not result in a public hazard due to substantially increased vehicular traffic or parking in this area. Specifically, the Project is not anticipated to have a significant adverse impact on motorist delays in the area and adequate parking supply will exist at the site to support the Project. Accordingly, this TIS finds that the Project can be accommodated within the existing area infrastructure and on the roadway network with minimal effects, resulting in the ability to implement the Project's planned with the appropriate mitigation measures. The Project proponent is committed to a project which is sensitive to the area and minimizes the impact to the neighborhood.

TRANSPORTATION IMPACT STUDY
SUPPORTING GRAPHICS VOLUME I OF II
Project Description and Section 1.0

180 Fawcett Street
Cambridge, Massachusetts

Prepared for:
CCF Fawcett Street Property Company, LLC
Cambridge, Massachusetts

July 2021

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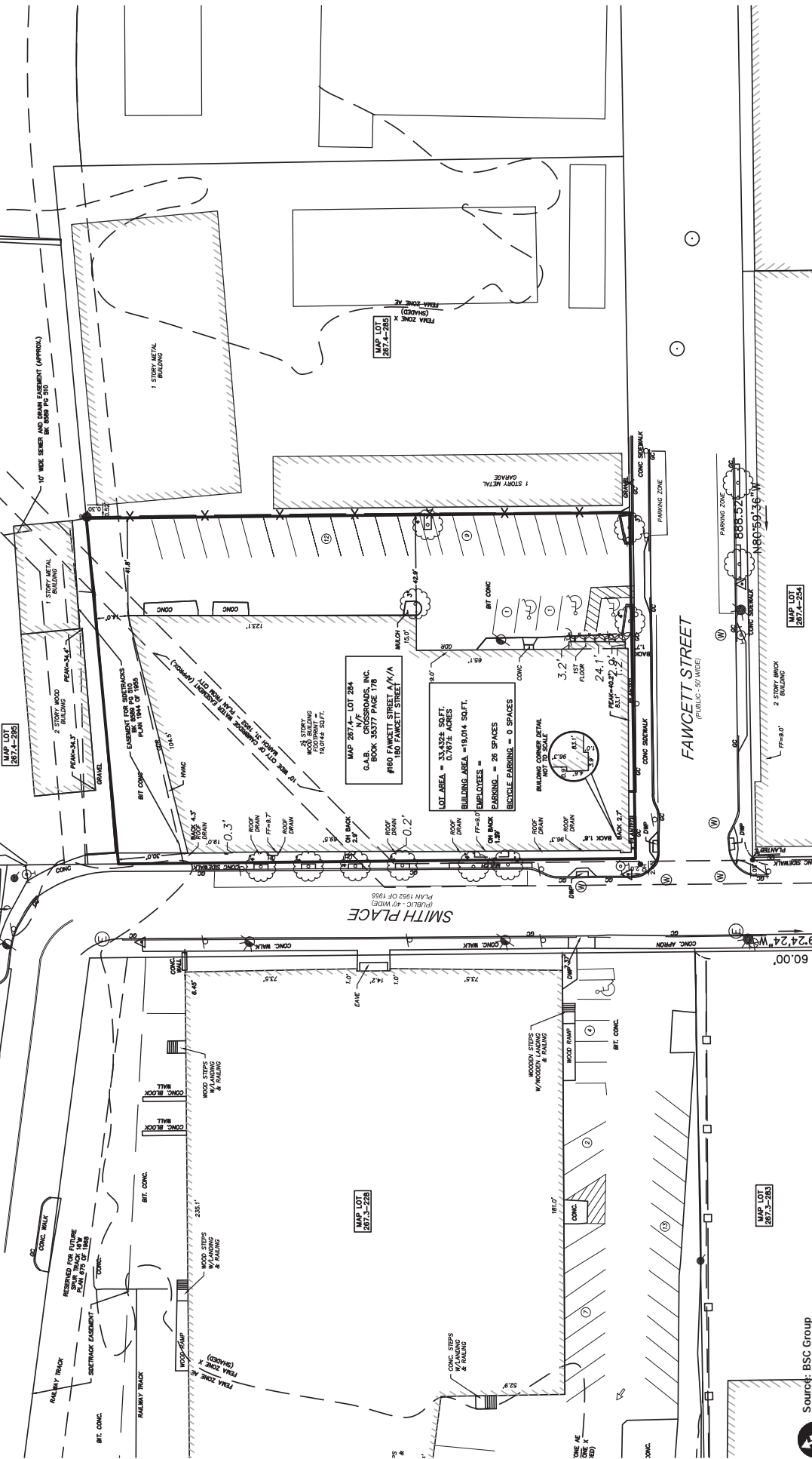


Source: Google Earth
0 300 600 Scale in Feet



Vanasse &
Associates inc

Figure A
Site Location Map

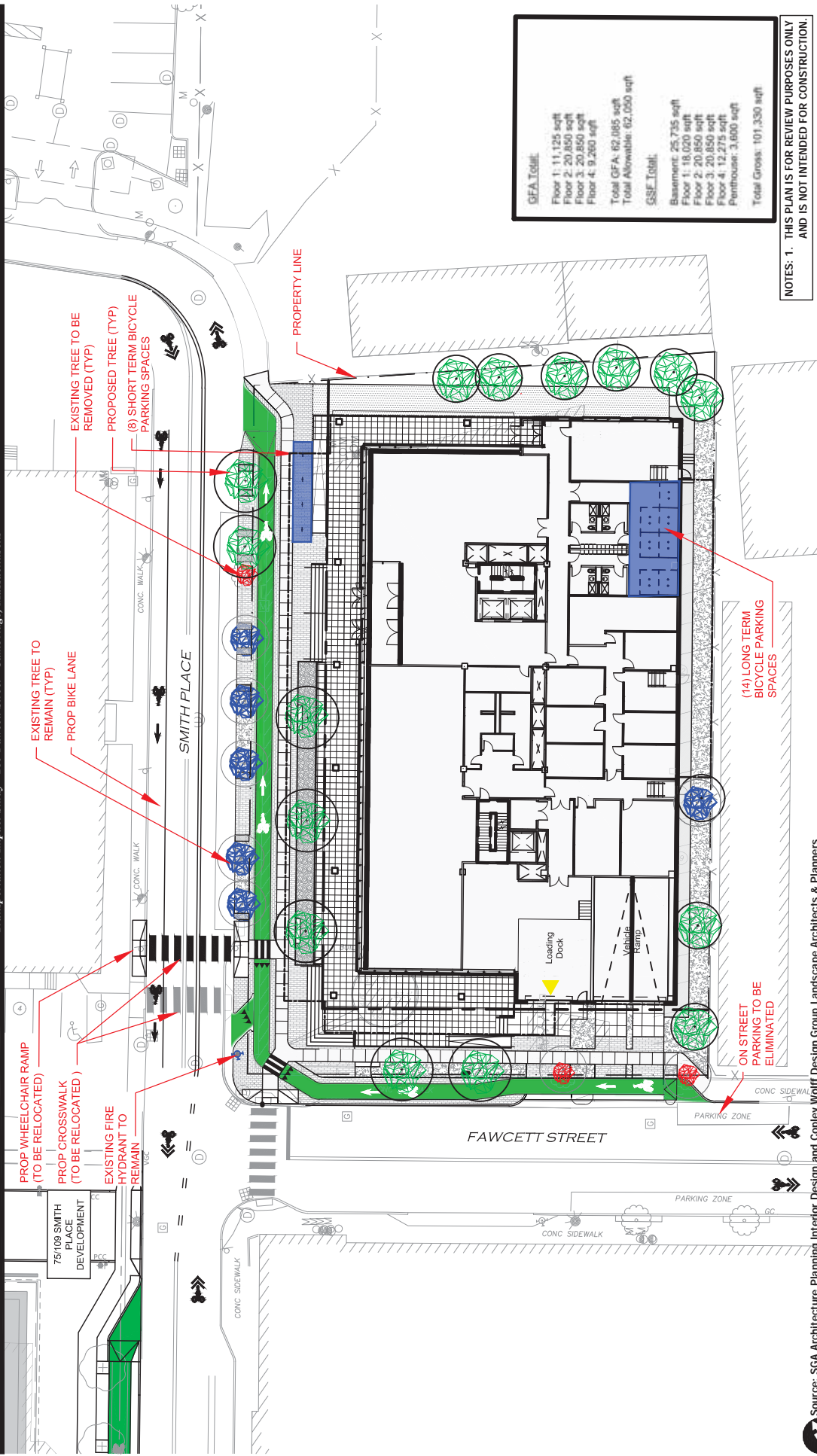


Scale in Feet



Source: BSC Group
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Figure B
Existing Conditions Survey



GFA Total:	
Floor 1:	11,125 sqft
Floor 2:	20,850 sqft
Floor 3:	20,850 sqft
Floor 4:	9,260 sqft
Total GFA:	62,085 sqft
Total Allowable:	62,050 sqft
GSE Total:	
Basement:	25,735 sqft
Floor 1:	18,020 sqft
Floor 2:	20,850 sqft
Floor 3:	20,850 sqft
Floor 4:	12,275 sqft
Penthouse:	3,600 sqft
Total Gross:	101,330 sqft

NOTES: 1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.

Figure C-1

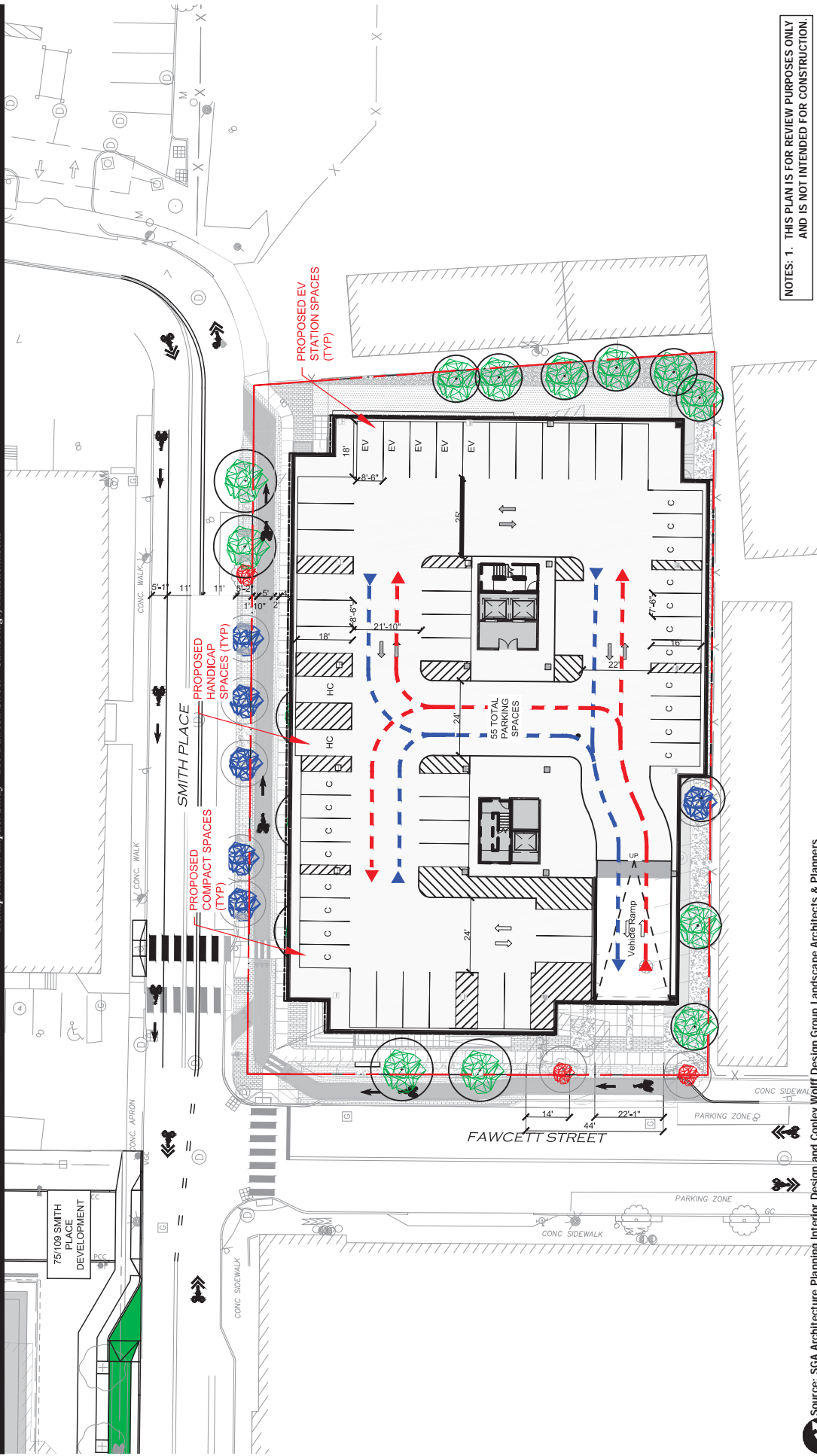
Proposed Site - Day one Ground Floor Plan

Source: SGA Architecture Planning, Interior Design and Copley Wolff Design Group Landscape Architects & Planners

0 15 30 Scale in Feet



Vanasse & Associates inc



NOTES: 1. THIS PLAN IS FOR REVIEW PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION.

Figure C-2

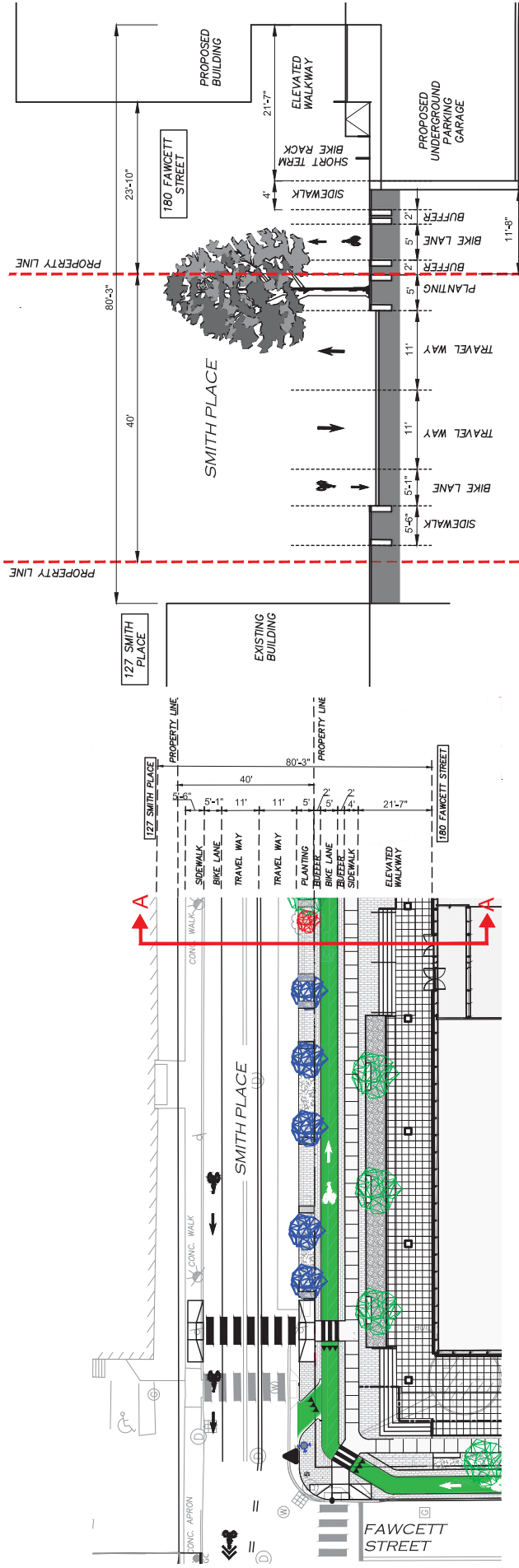
Proposed Site - Day One
Parking Level Plan

Source: SGA Architecture Planning, Interior Design and Copley Wolff Design Group Landscape Architects & Planners

0 15 30 Scale in Feet



Vanasse &
Associates inc



SECTION A-A
Not to scale

Source: SGA Architecture Planning Interior Design and
Copley Wolff Design Group Landscape Architects & Planners

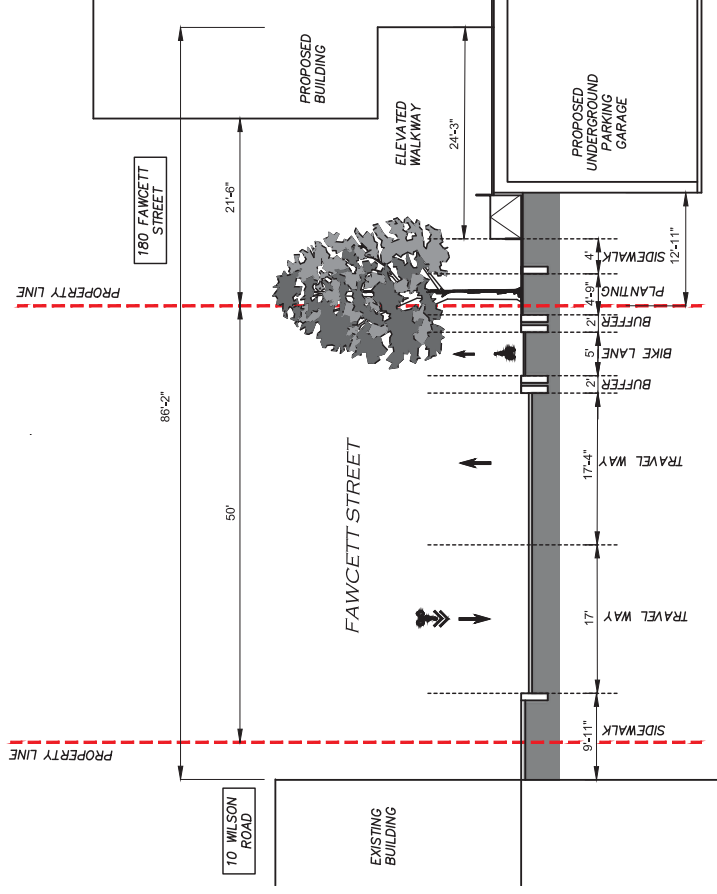
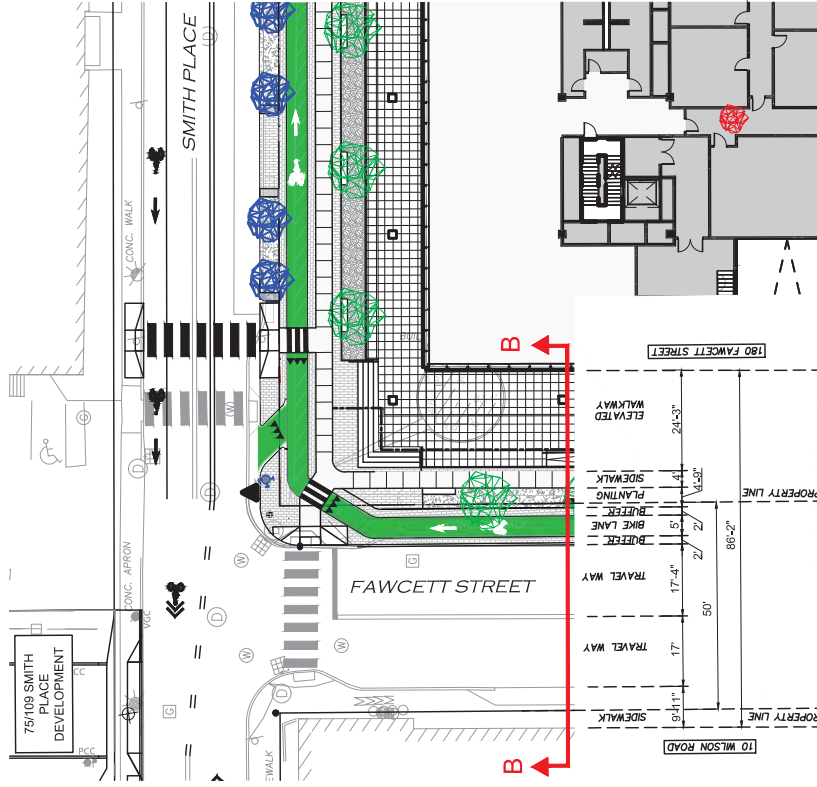
0 10 20 Scale in Feet



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Associates inc

Figure C-3

Proposed Site - Day one
Smith Place Dimensions
Cross section



SECTION B-B
Not to scale

Source: SGA Architecture Planning Interior Design and
Copley Wolff Design Group Landscape Architects & Planners

0 10 20 Scale in Feet



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Figure C.4

Proposed Site - Day one
Fawcett Street Dimensions
Cross section

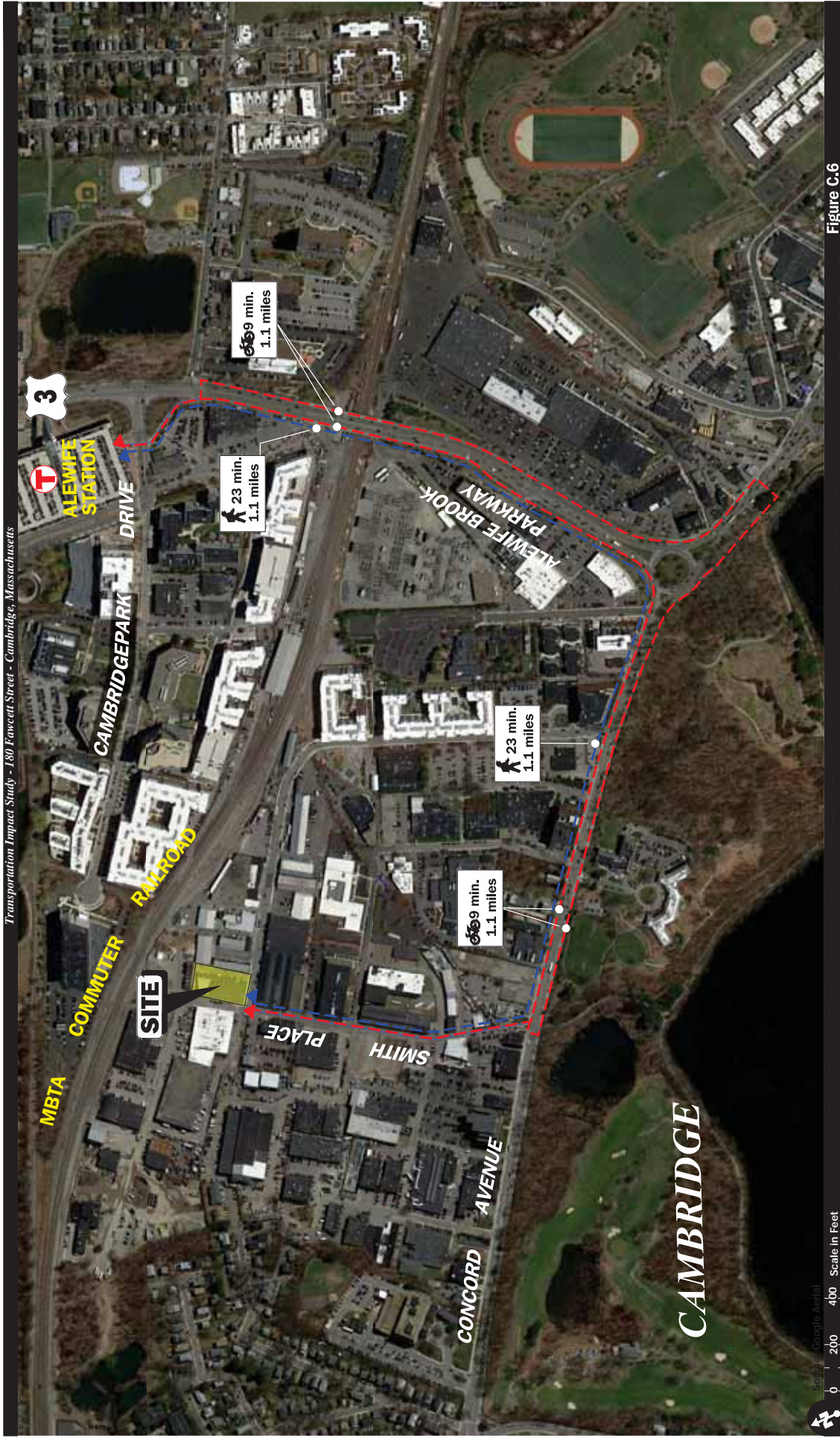
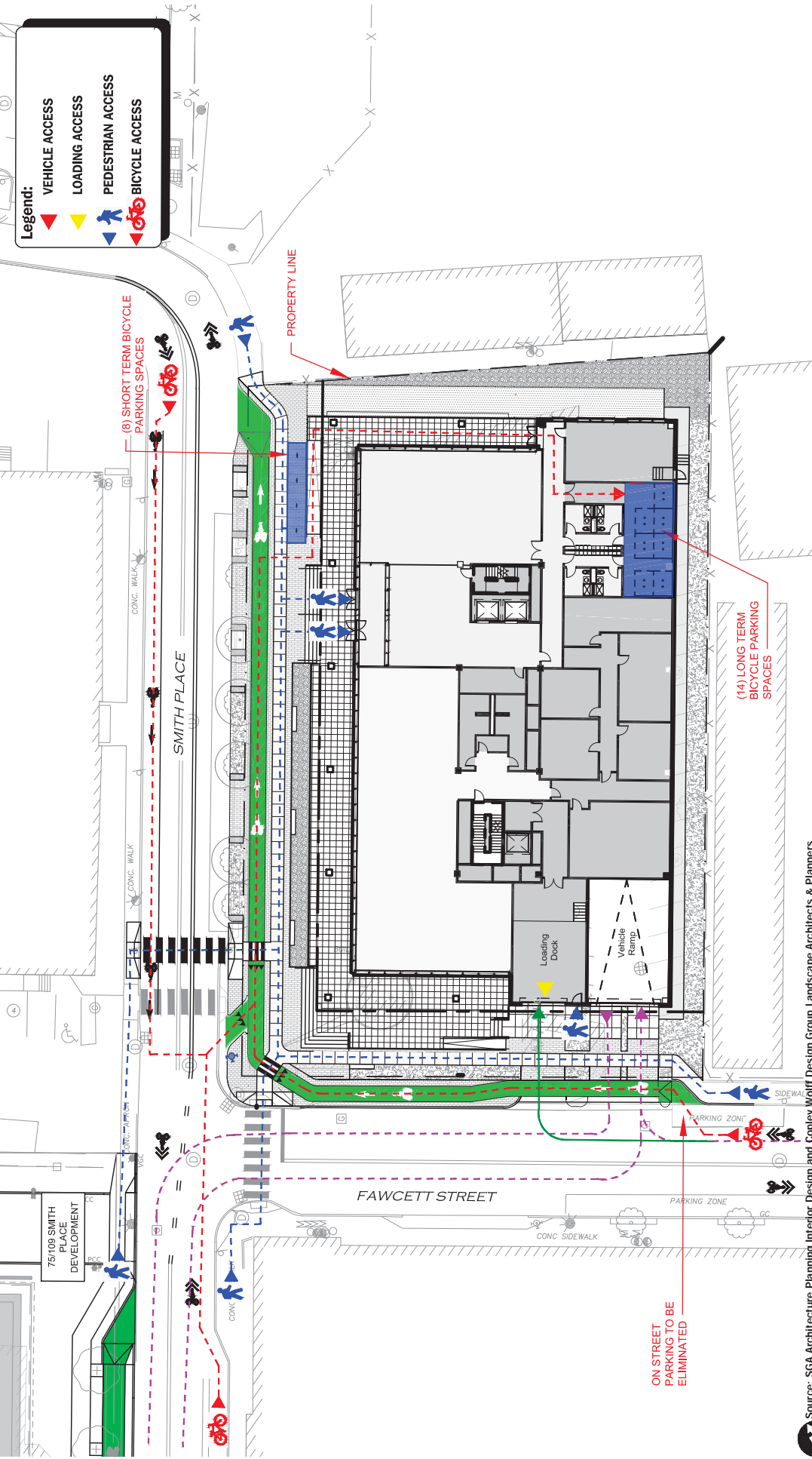


Figure C.6
Pedestrian/Bicycle Access to
the Alewife MBTA Station

Scale In Feet
0 200 400

W Vanasse &
Associates inc



Source: SGA Architecture Planning, Interior Design and Copley Wolff Design Group Landscape Architects & Planners

Scale in Feet

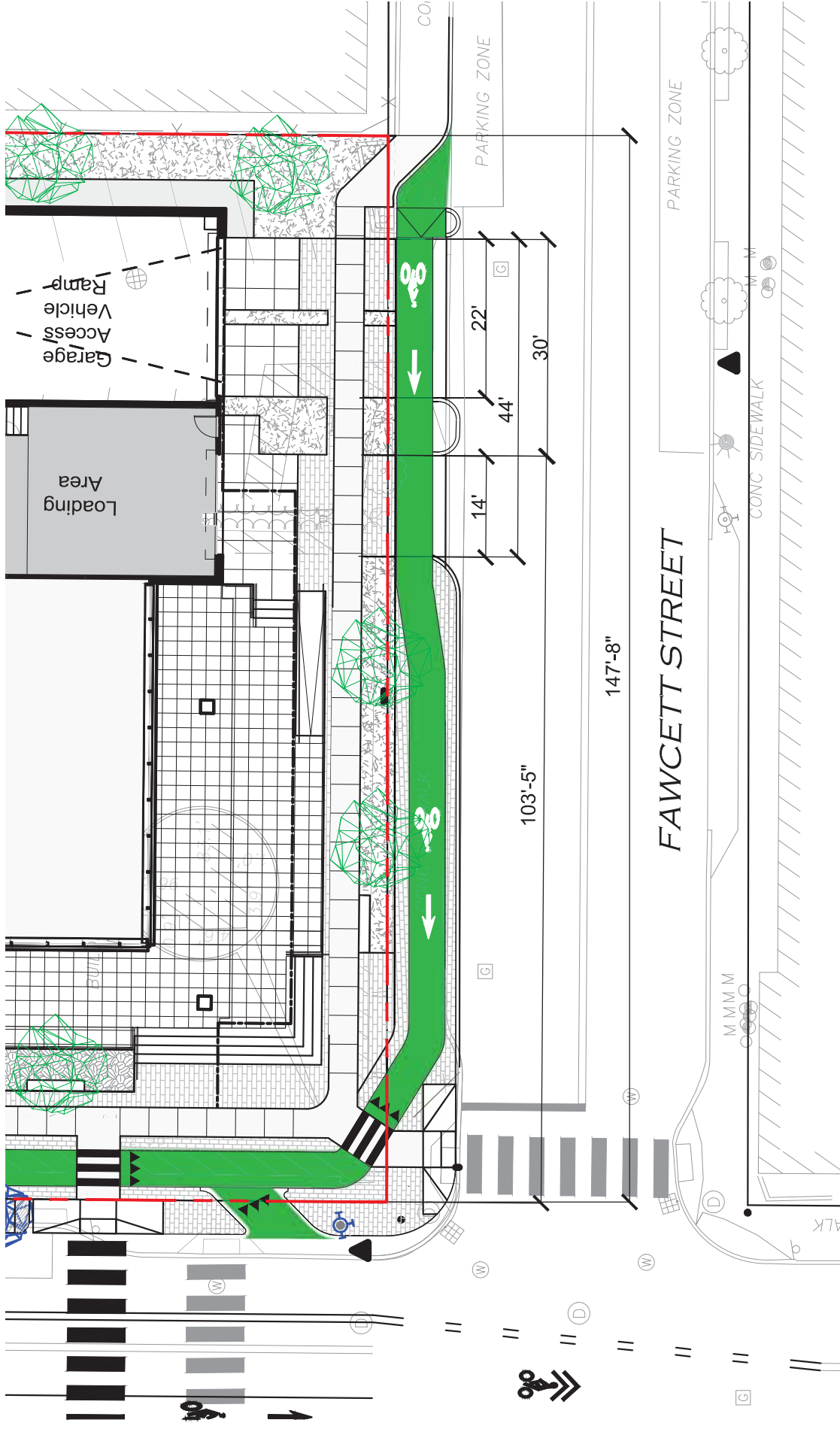
0 15 30



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Figure C.5

Proposed Site - Day one
Vehicles, Bicycles and
Pedestrian Access



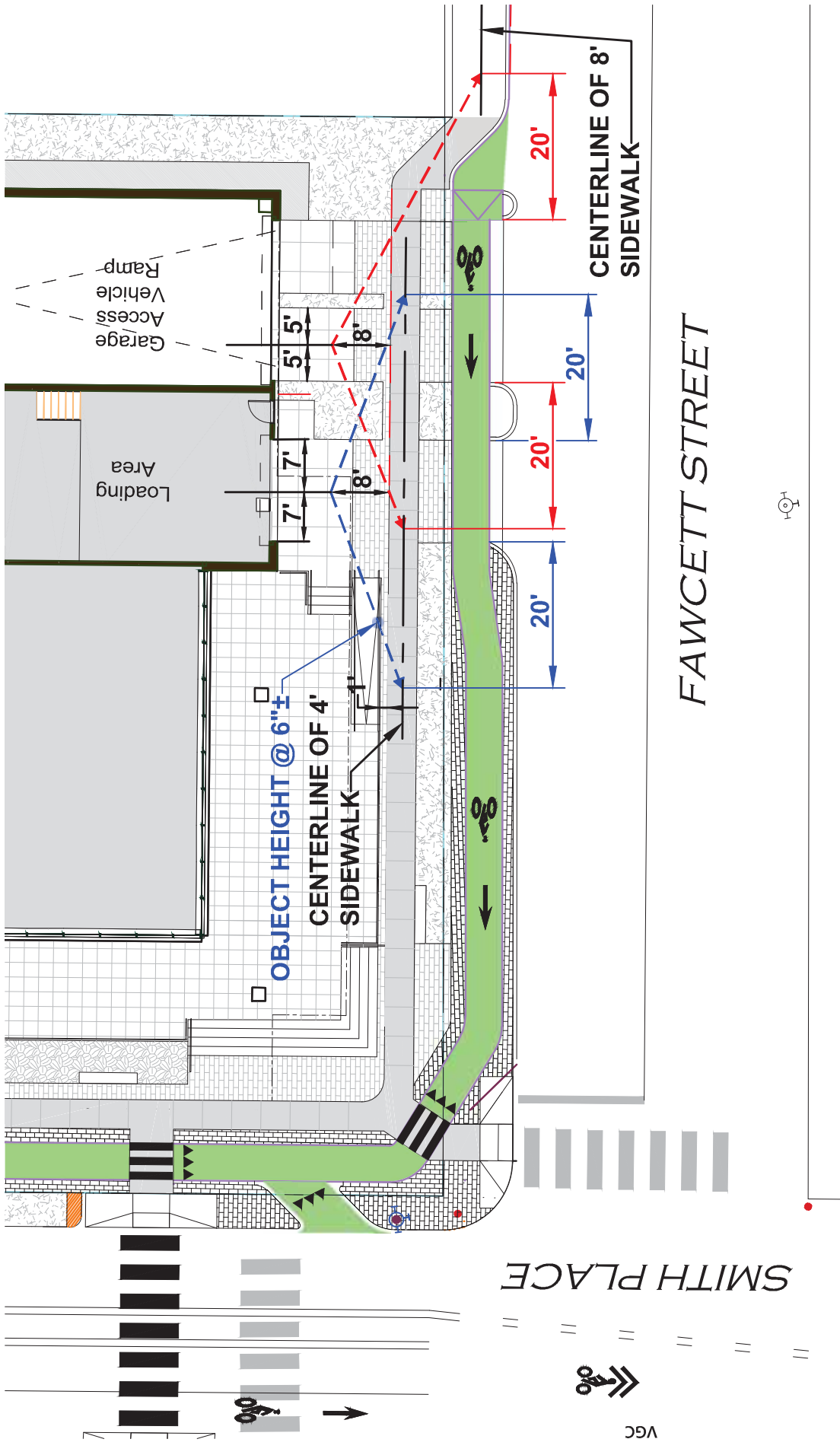
Source: SGA Architecture Planning Interior Design and
Copley Wolf Design Group Landscape Architects & Planners

Scale in Feet



Figure C.7

Proposed Site - Day one
Proposed Curb Cut



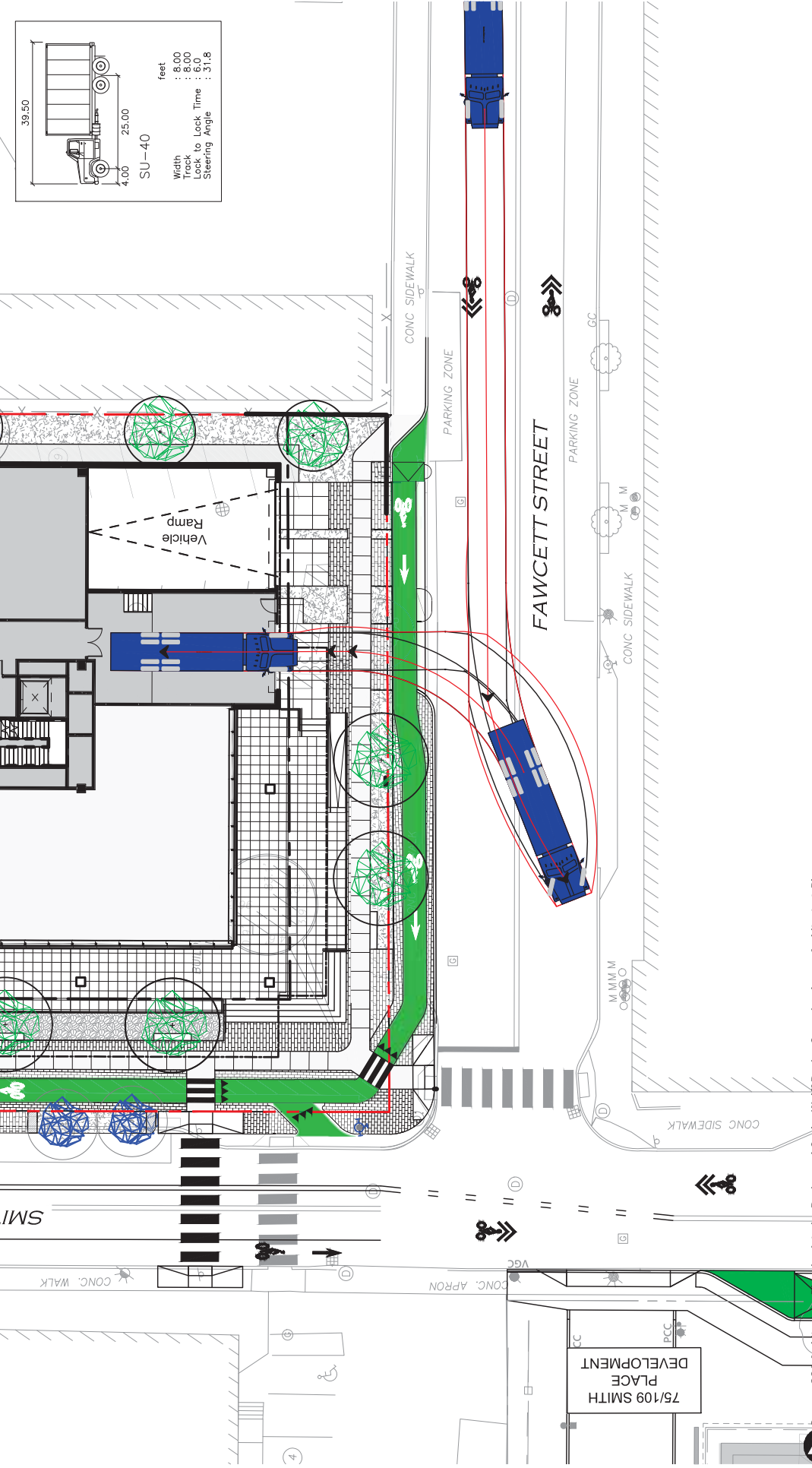
Source: SGA Architecture Planning Interior Design and Copley Wolff Design Group Landscape Architects & Planners

Scale in Feet



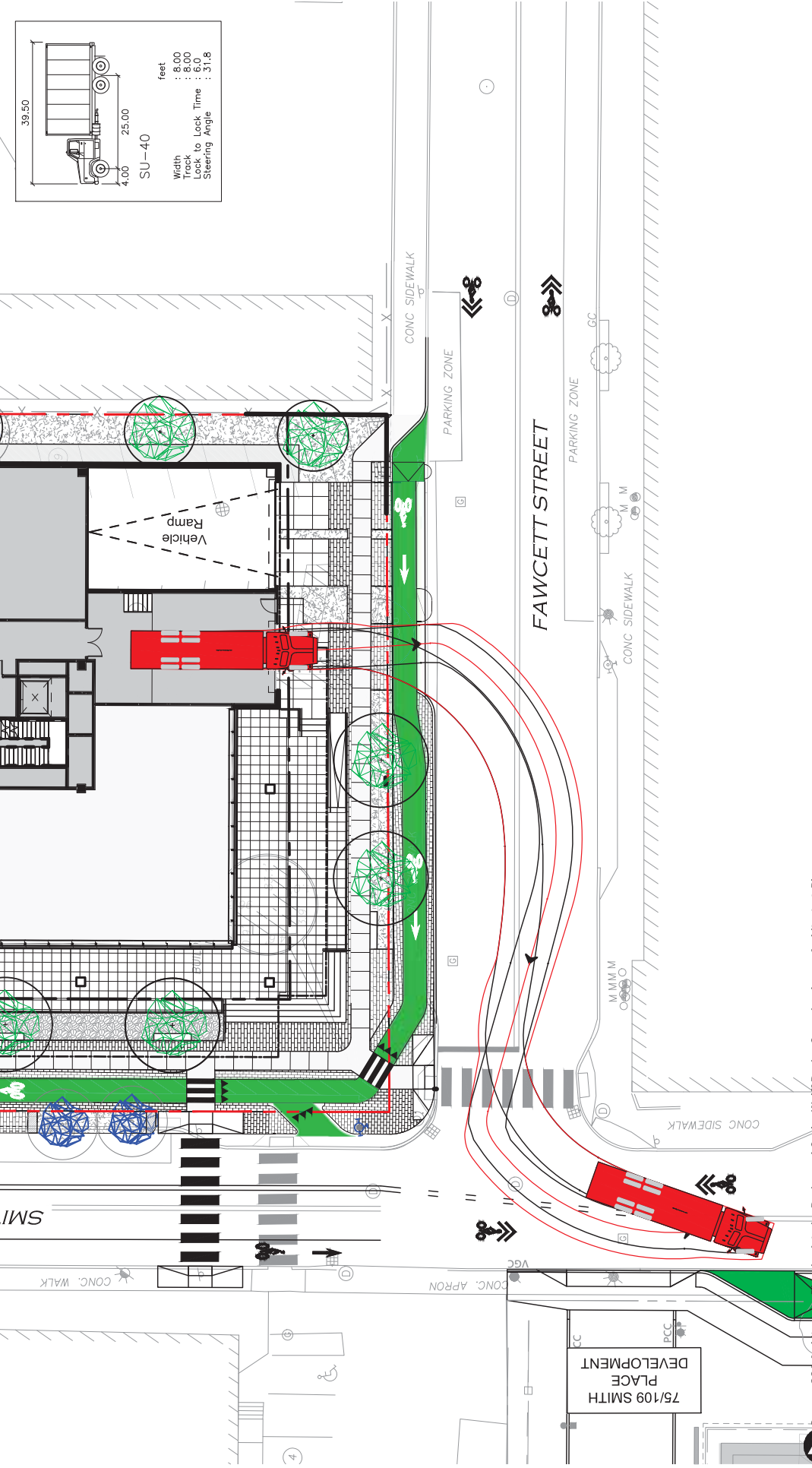
Figure C.8

Sightline Triangles for Vehicles Exiting from Loading and Garage



Source: SGA Architects, LLC, Planning, Interior Design and Copley Wolff Design Group, Landscape Architects & Planners

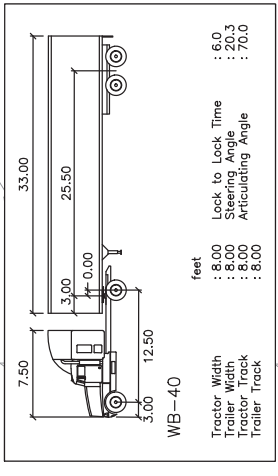
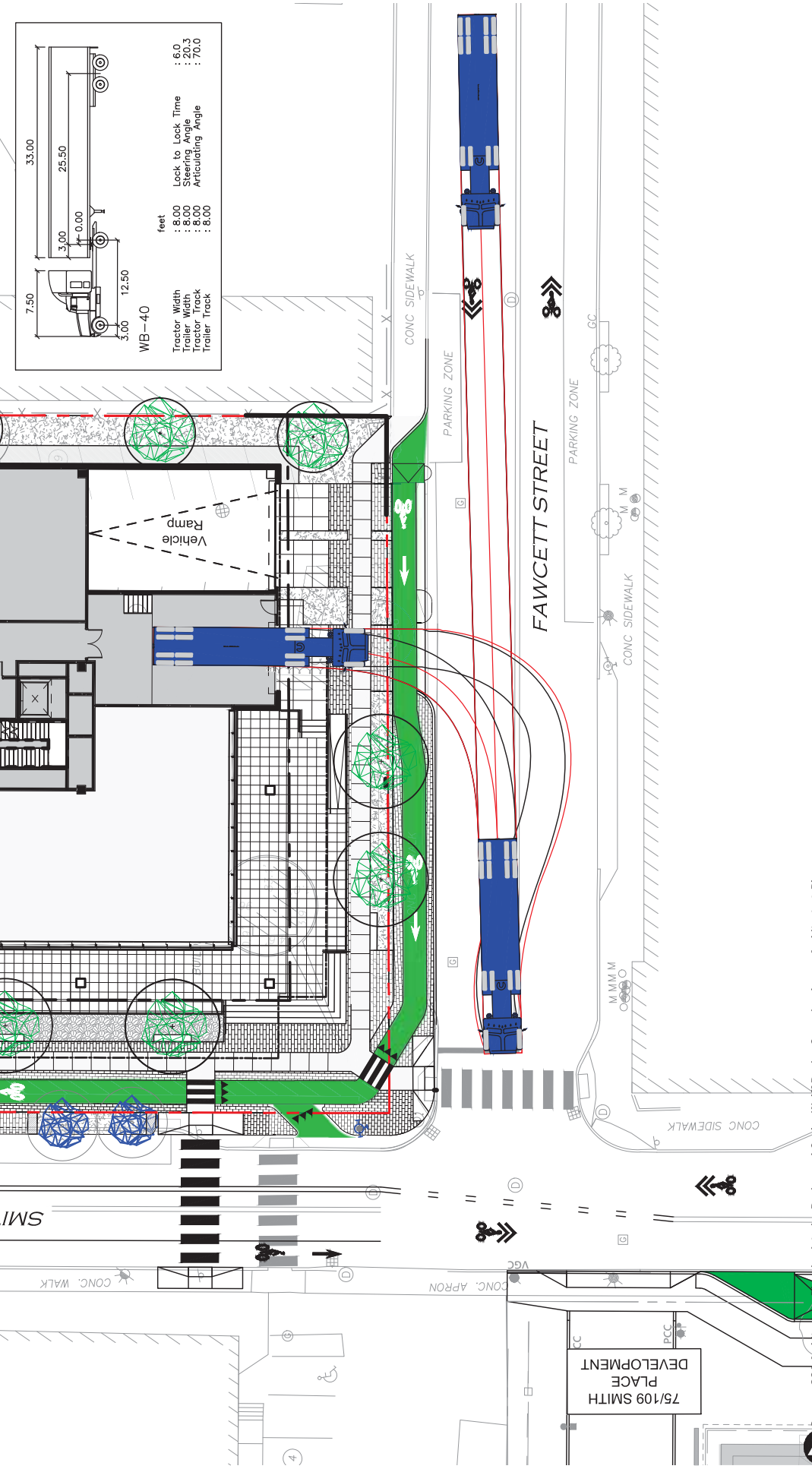
Figure C.9
Proposed Site - Day One
Autoturn Diagram
SU-40 Truck Entering
Loading Area



Source: SGA Architects, Inc. Planning, Interior Design and Copley Wolff Design Group Landscape Architects & Planners

Figure C-10
Proposed Site - Day One
Autoturn Diagram
SU-40 Truck Exiting
Loading Area





Source: SGA Architects, Inc. Planning, Interior Design and Copley Wolff Design Group Landscape Architects & Planners

Scale in Feet



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Figure C-11
Proposed Site - Day One
Autoturn Diagram
WB-40 Truck Entering
Loading Area

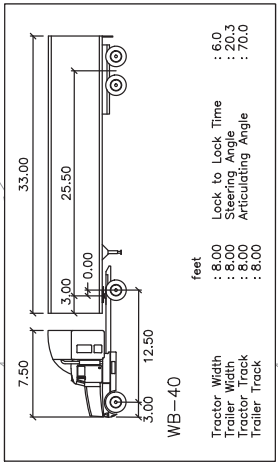
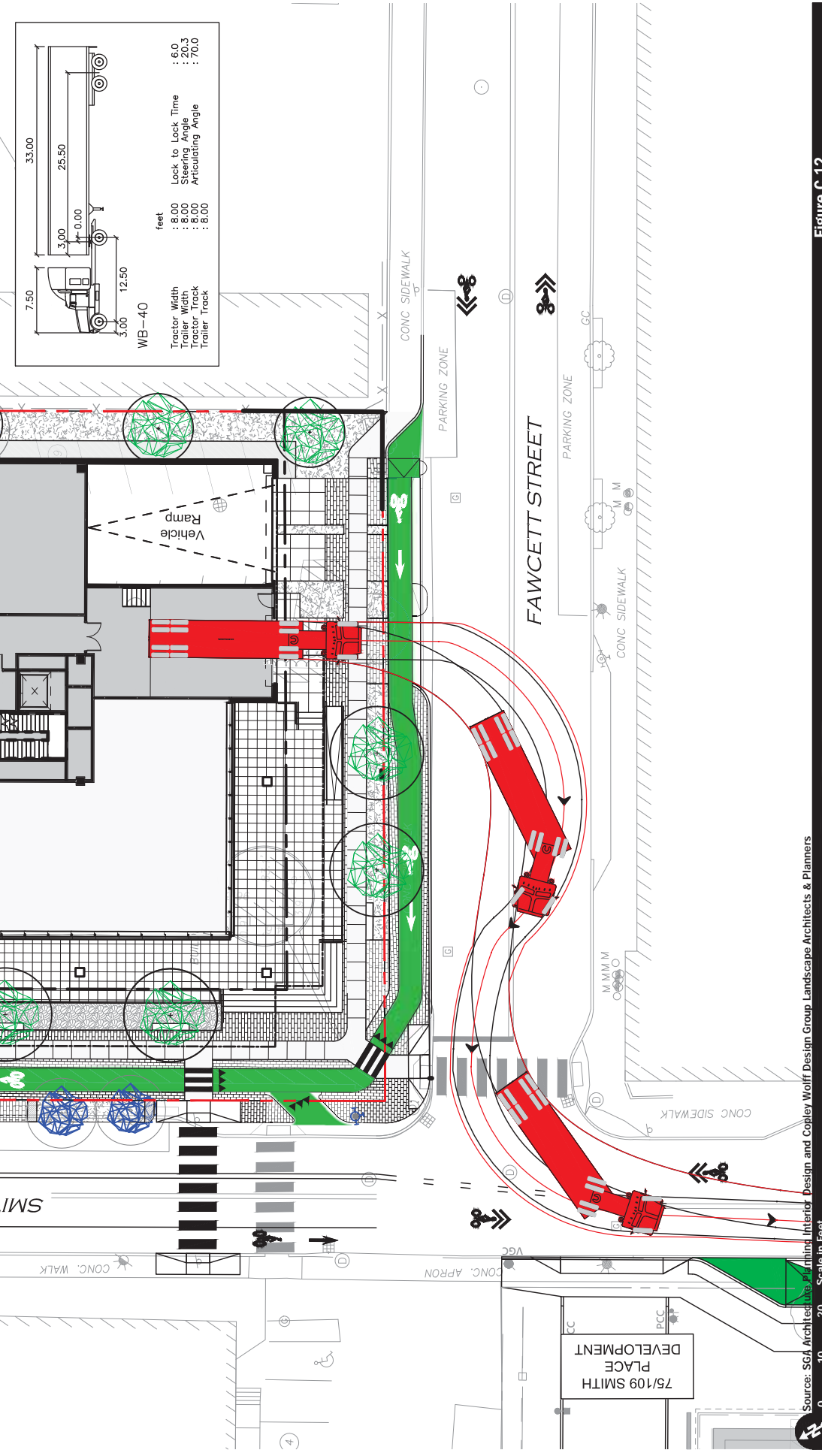


Figure C.12 Proposed Site - Day One Autoturn Diagram WB-40 Truck Exiting Loading Area



Vanasse & Associates inc

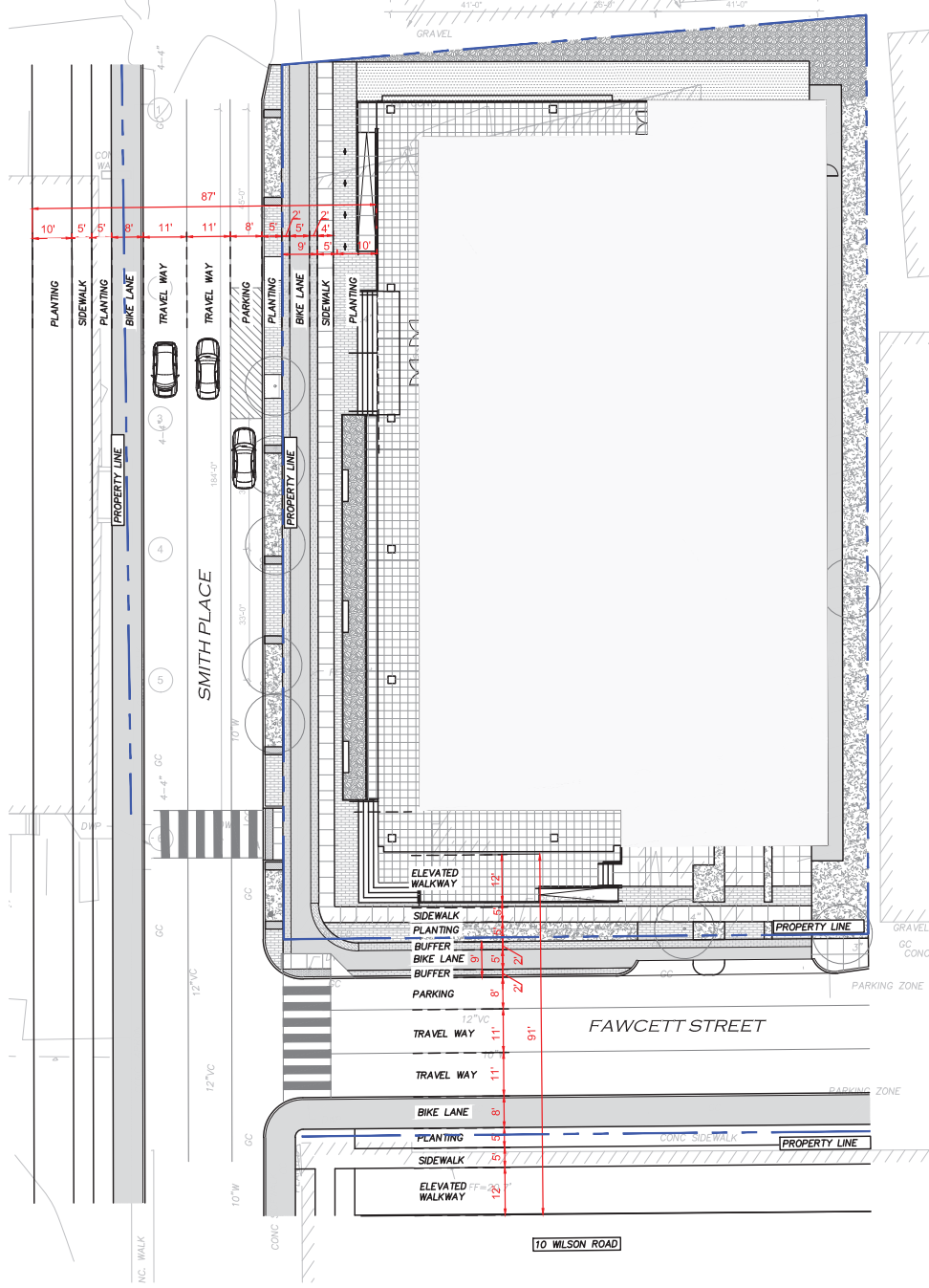


Figure C.13

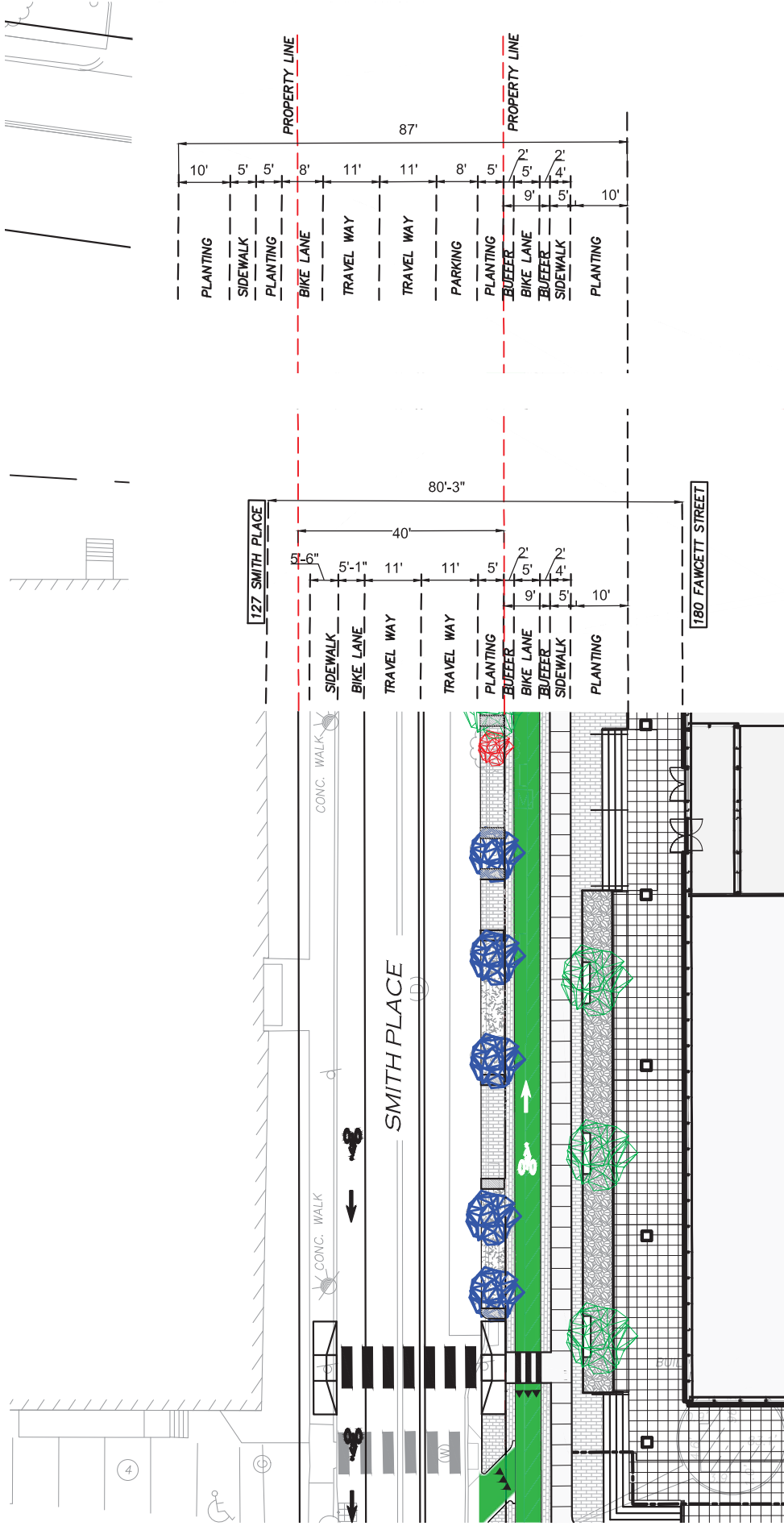
Proposed Site - Envision
Proposed Ground Floor Plan

Source: SGA Architecture Planning Interior Design and
Copley Wolff Design Group Landscape Architects & Planners

0 10 20 Scale in Feet



Vanasse &
Associates inc



DAY ONE

ENVISION PLAN

Source: SGA Architecture Planning Interior Design and
Copley Wolff Design Group Landscape Architects & Planners

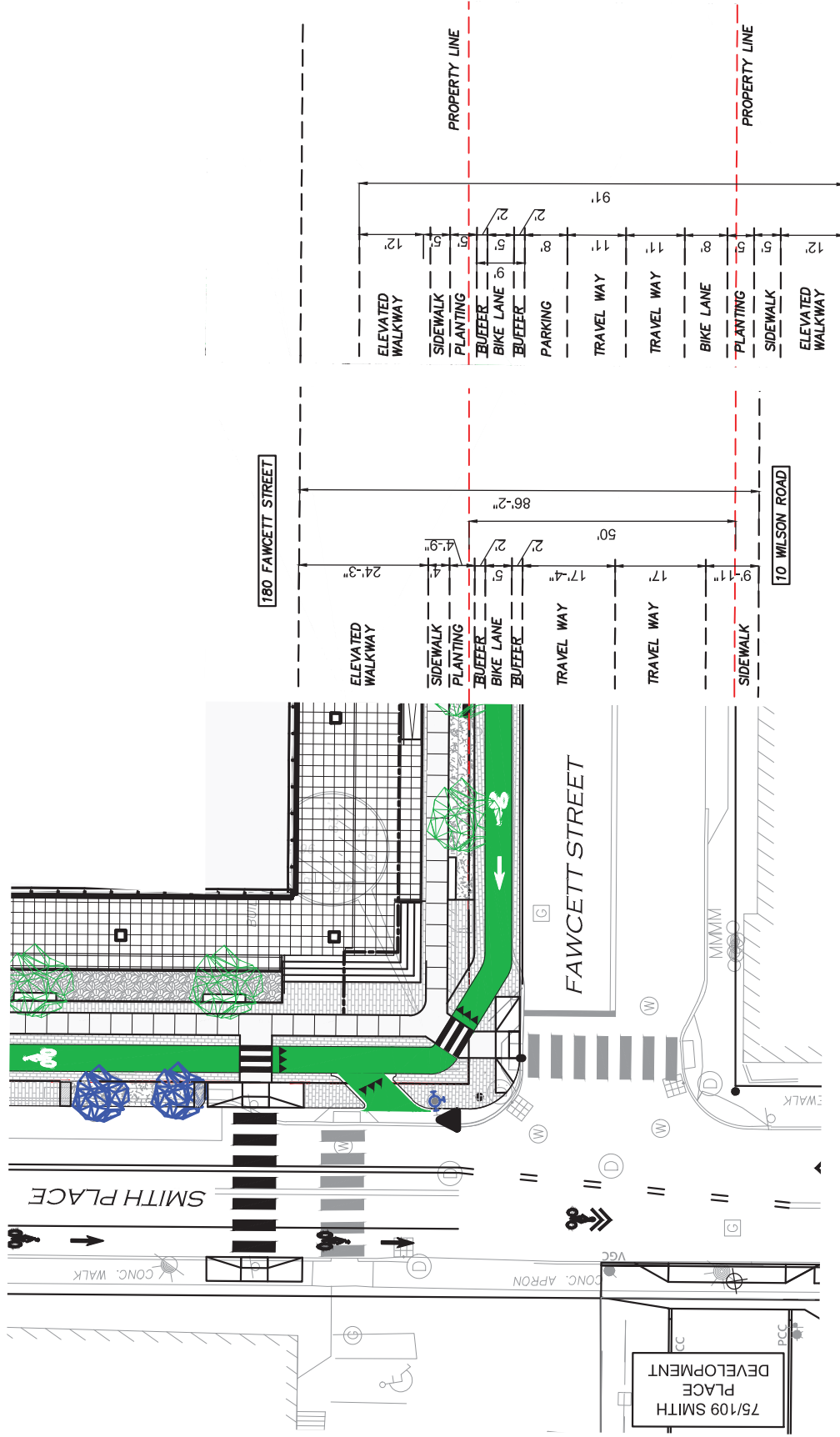
0 300 600 Scale in Feet



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Associates inc

Figure C.14

Proposed Site - Envision
Smith Place Dimensions



DAY ONE

ENVISION PLAN

Source: SGA Architecture Planning Interior Design and Copley Wolff Design Group Landscape Architects & Planners

Scale in Feet

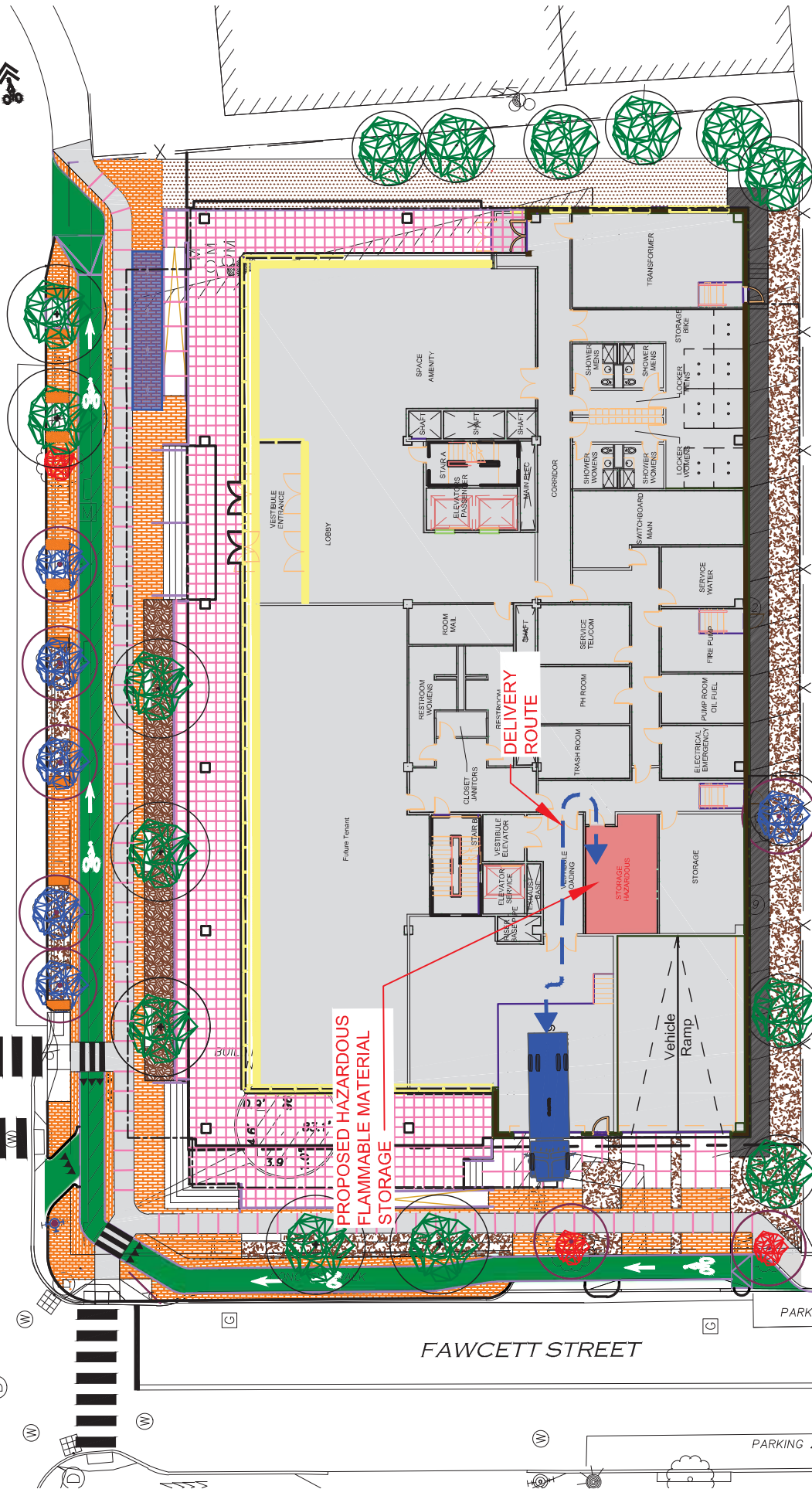


Figure C.15

Proposed Site - Envision Fawcett Street Dimensions

SMITH PLACE

FAWCETT STREET



Source: SGA Architecture Planning Interior Design and Copley Wolff Design Group Landscape Architects & Planners

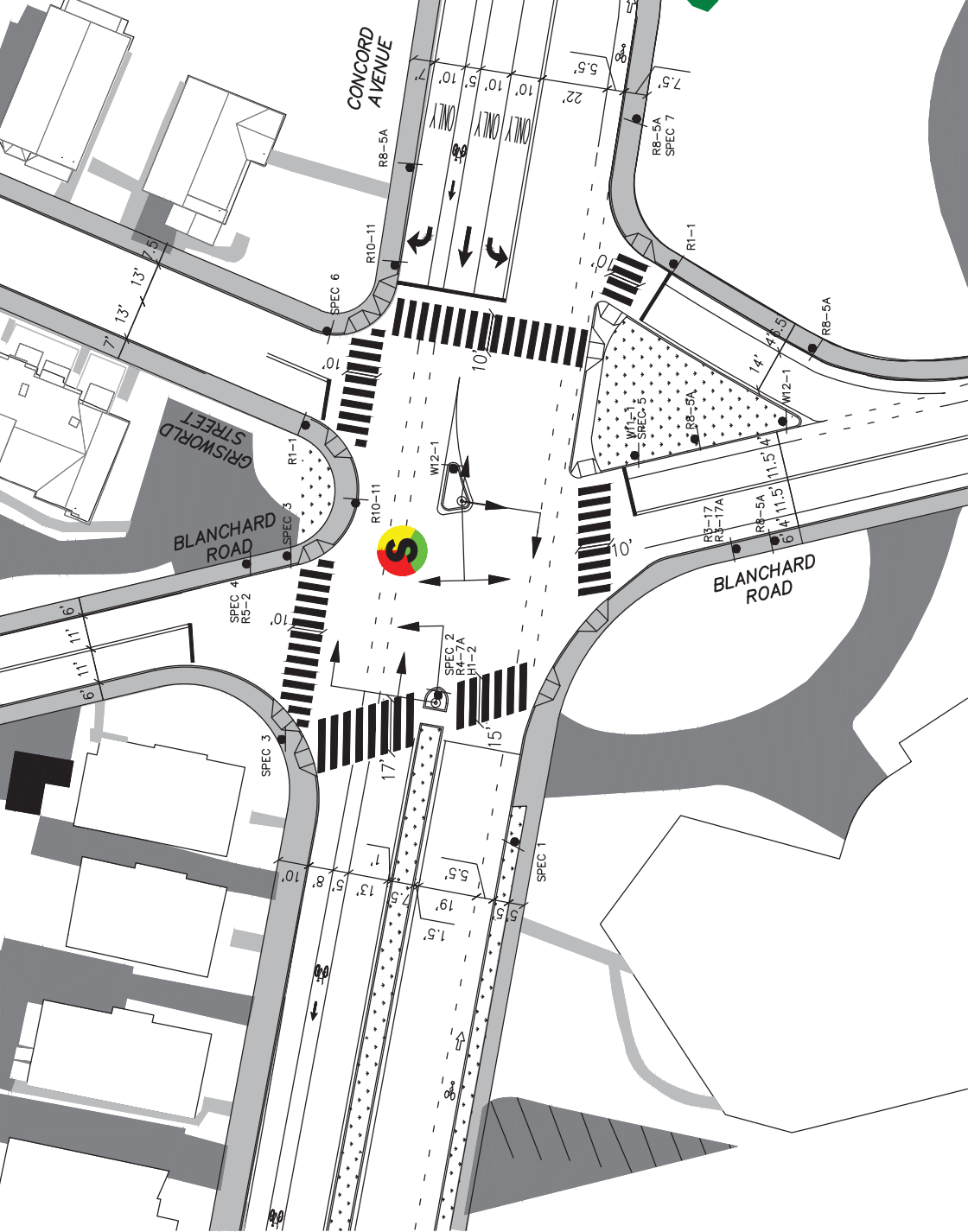
Scale in Feet

Figure C.16



Proposed Site - Day One
Hazardous and Flammable Material
Delivery and Storage

SIGN LEGEND					
H1-2	R8-5a	NO STOPPING	SPEC-2	SPEED CHECK BY RADAR	
R1-1	R10-6	STOP HERE ON RED	SPEC-3	NO UNLAWFUL PARKING (REAR DRIVE)	
R5-2	R10-11a	NO TURN ON RED	SPEC-4	BICYCLE MAY USE FULL LANE	
R3-17	W11-1	BICYCLE	SPEC-5	SHARE THE ROAD	NOT A TRAFFIC SIGNAL
R3-17a	W12-1	BIKE AHEAD	SPEC 6		
R4-7a	SPEC-1	KEEP RIGHT	SPEC-1	FORM TURNS LANES	



Note: All dimensions and pavement markings are approximate.
 Source: 101 Smith Place - Traffic Study - September 2019

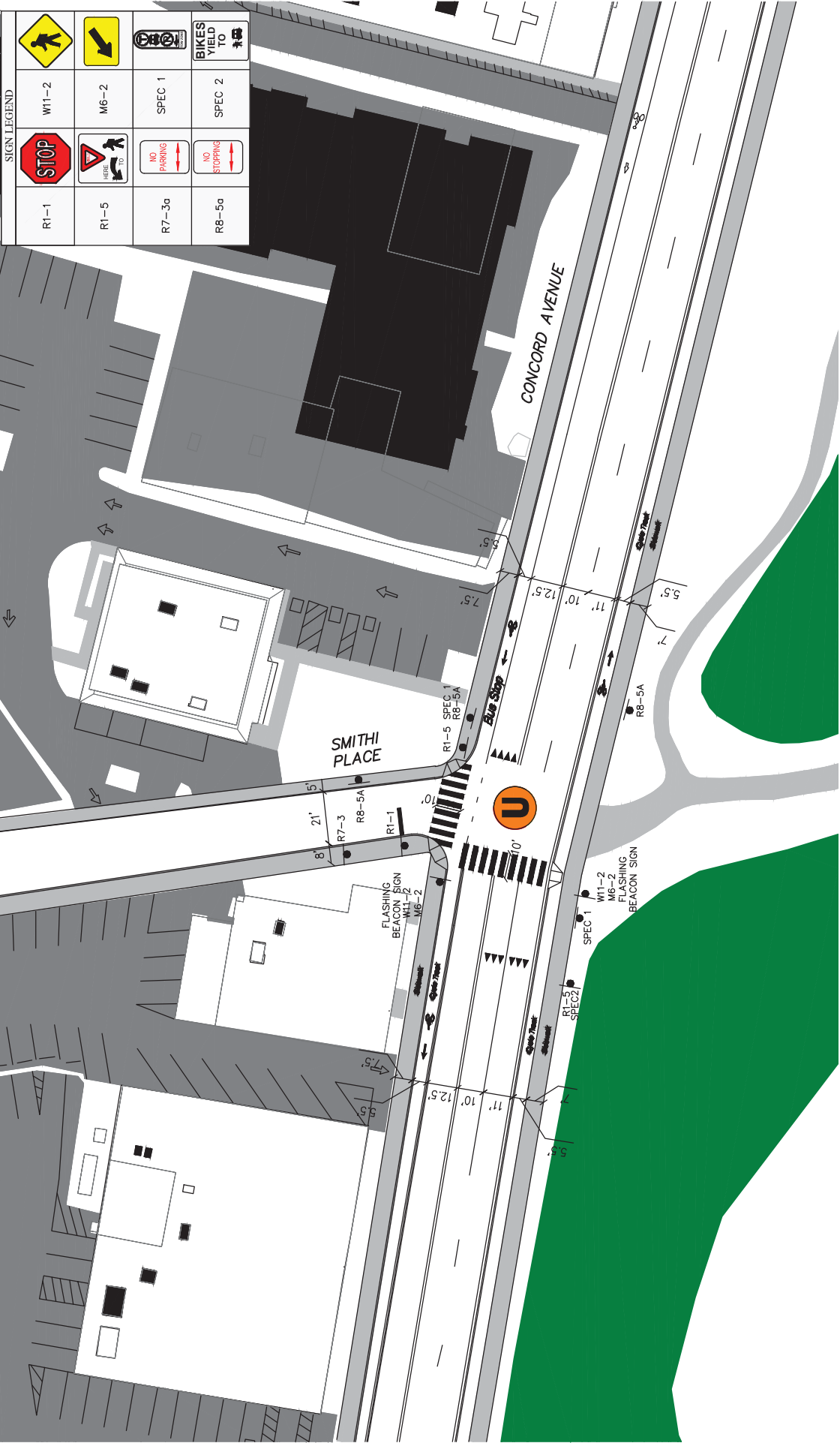
Not to Scale

Figure 1.a.1

Intersection Inventory
 Concord Avenue at
 Blanchard Road/Griswold Street



SIGN LEGEND			
R1-1	STOP	W11-2	WALKER
R1-5	YIELD	M6-2	LEFT TURN
R7-3a	NO PARKING	SPEC 1	BIKES YIELD TO
R8-5a	NO STOPPING	SPEC 2	



Note: All dimensions and pavement markings are approximate.
 Source: 101 Smith Place - Traffic Study - September 2019

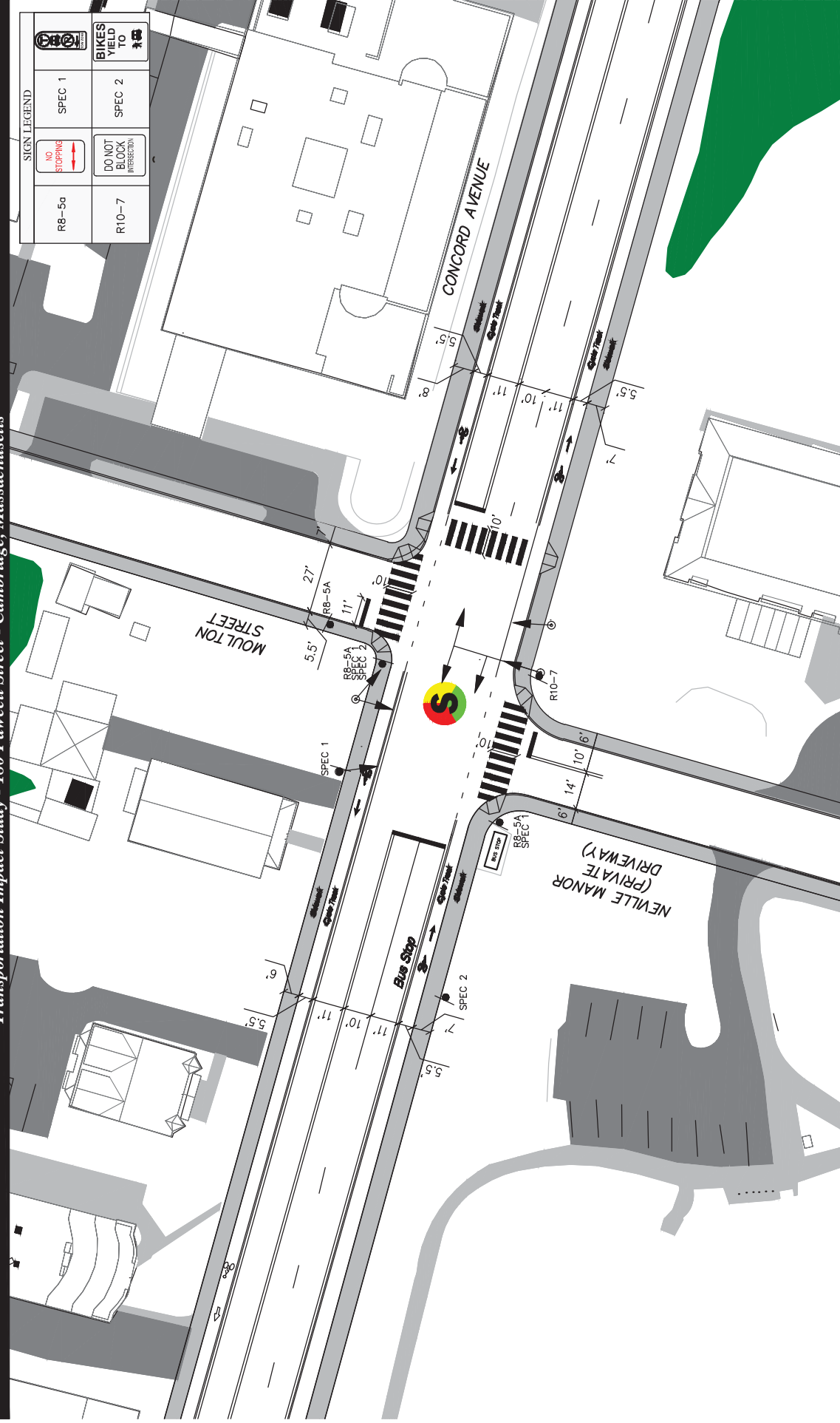
Not to Scale

Figure 1.a.2

Intersection Inventory
 Concord Avenue at
 Smith Place



SIGN LEGEND			
R8-5a	NO STOPPING	SPEC 1	BIKES YIELD TO TRUCKS
R10-7	DO NOT BLOCK INTERSECTION	SPEC 2	



Note: All dimensions and pavement markings are approximate.
 Source: 101 Smith Place - Traffic Study - September 2019

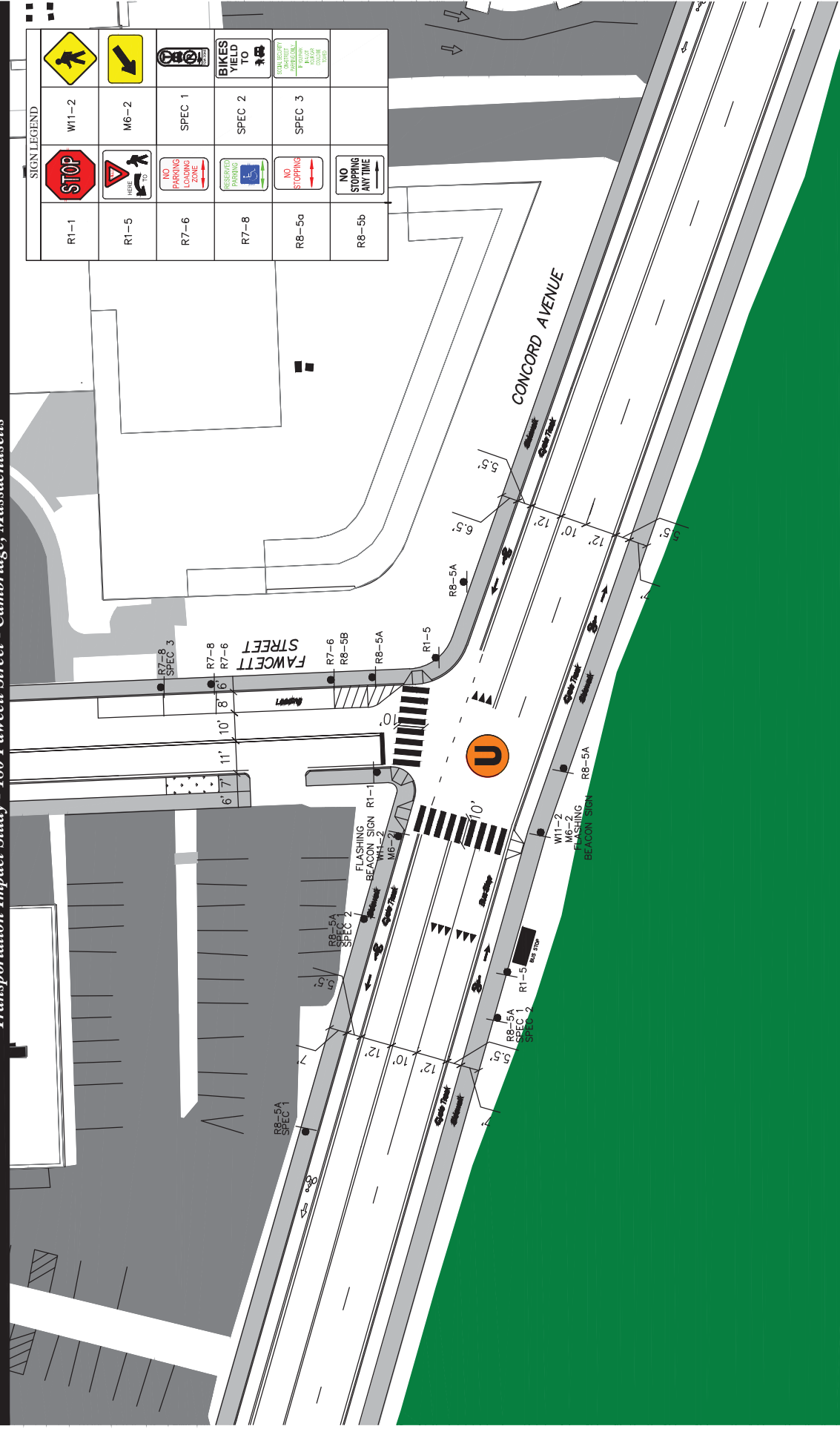


Not to Scale



Figure 1.a.3

Intersection Inventory
 Concord Avenue at
 Moulton Street



Note: All dimensions and pavement markings are approximate.
 Source: 101 Smith Place - Traffic Study - September 2019

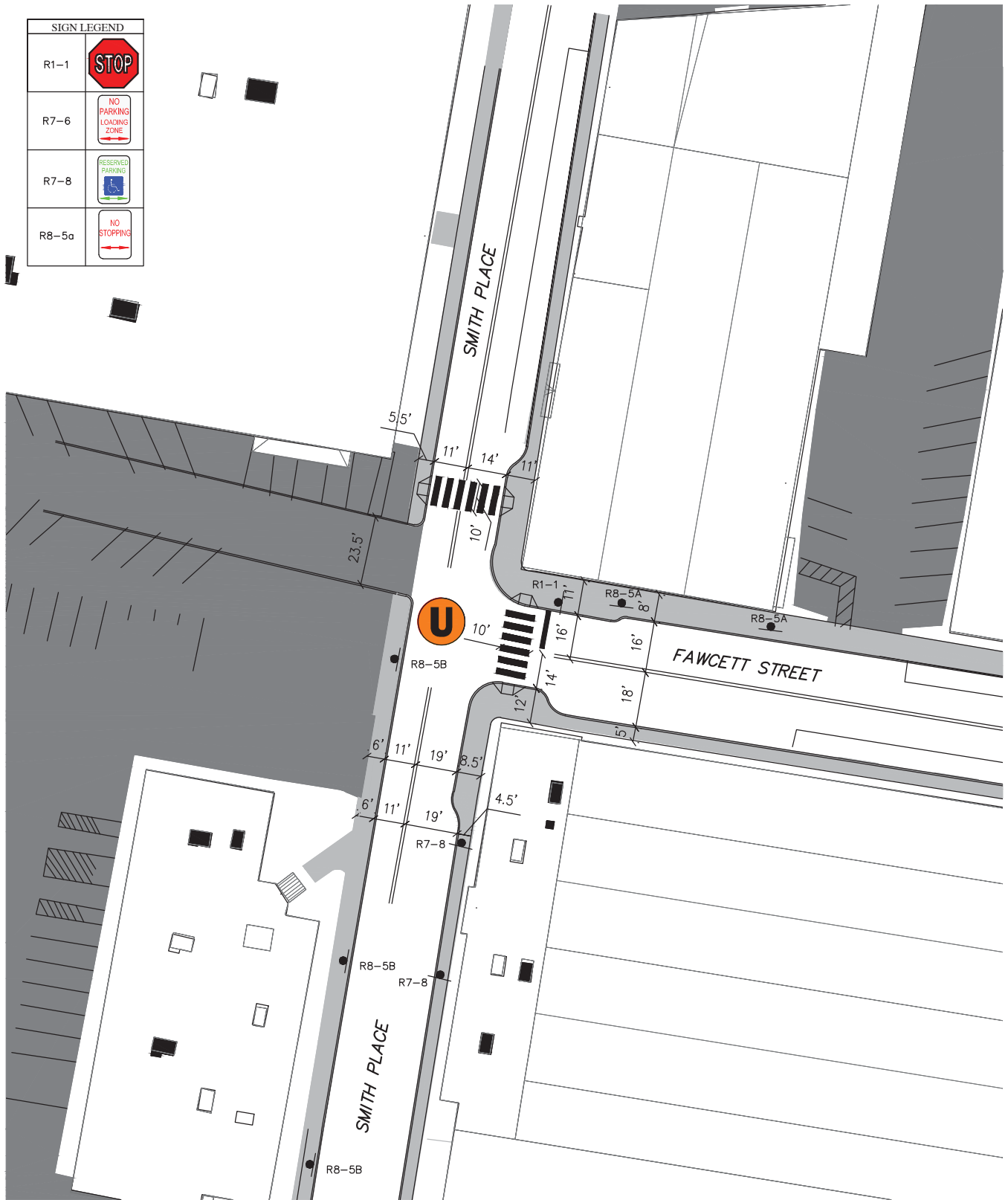
Not to Scale

Figure 1.a.4

Intersection Inventory
 Concord Avenue at
 Fawcett Street



SIGN LEGEND	
R1-1	
R7-6	
R7-8	
R8-5a	



Note: All dimensions and pavement markings are approximate.

Source: Cambridge Community Development Neighborhood Map and field inventory conducted by VAI



Not to Scale

Figure 1.a.5



Intersection Inventory
Smith Place at Fawcett Street

Legend:

- Signalized Turning Movement Count Location
- Unsignalized Turning Movement Count Location
- Automatic Traffic Recorder Count Location
- Automatic Traffic Recorder Count Location

TURNING MOVEMENT COUNT - PEAK HOURS

Weekday Morning	7:30 AM TO 9:30 AM
Weekday Evening	4:30 PM TO 6:30 PM



STUDY AREA INTERSECTIONS	
Turning Movement Counts	48-hour Automatic Traffic Recorder (ATR) counts and 12-hour Bicycle and Pedestrian Counts
<ol style="list-style-type: none"> Concord Avenue at Blanchard Road/Griswold Street (counted on 04/02/19) Concord Avenue at Smith Place (counted on 04/02/19) Concord Avenue at Moulton Street (counted on 04/02/19) Concord Avenue at Fawcett Street (counted on 04/02/19) Fawcett Street at Smith Place (counted on 04/02/19) 	<ol style="list-style-type: none"> Concord Avenue at Blanchard Road/Griswold Street (counted on 04/02/19) Concord Avenue at Moulton Street (counted on 04/02/19)

Source: Google Earth

Scale in Feet



Figure 1.b.1

Site Location and Study Area Map

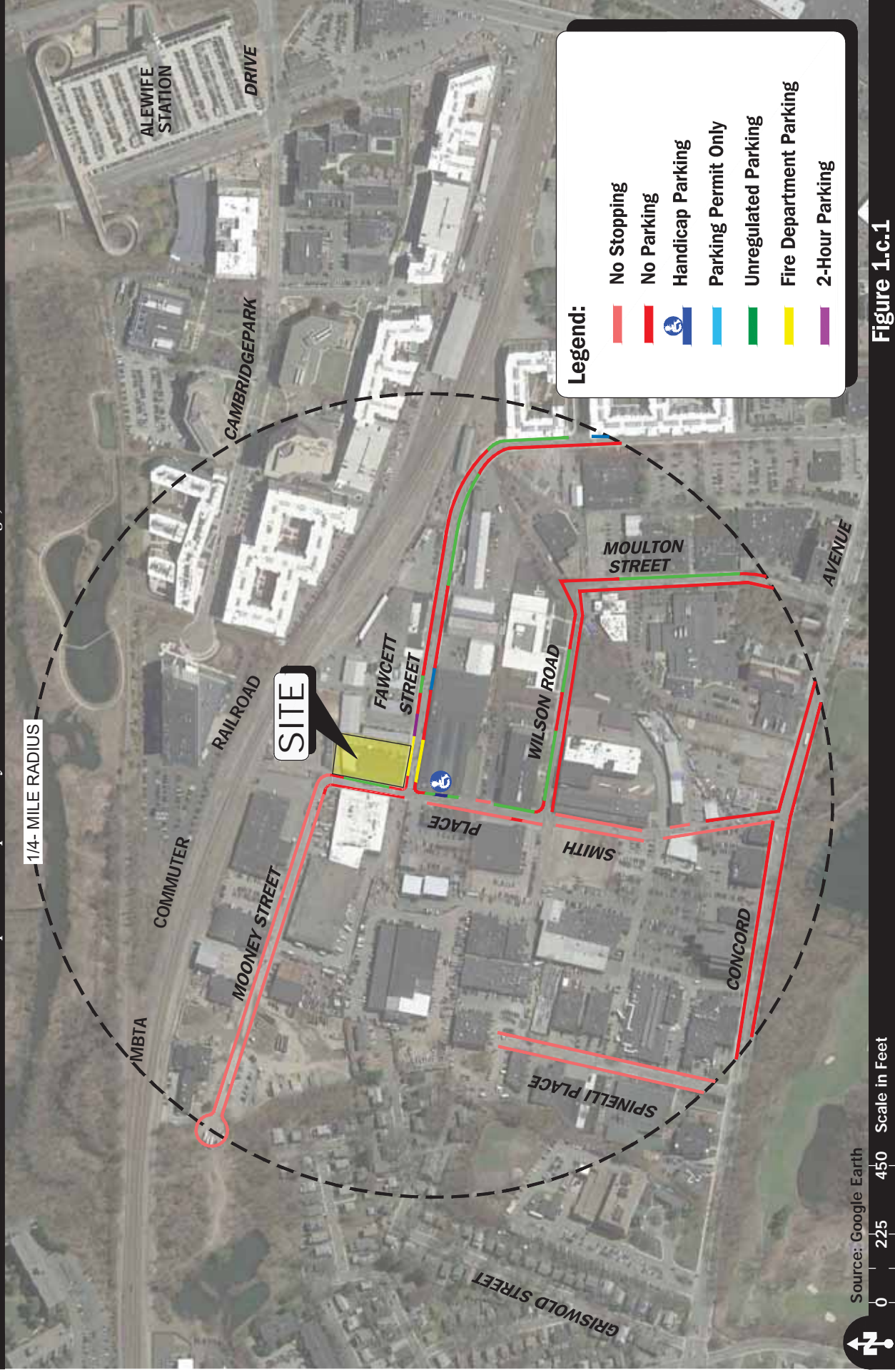


Figure 1.c.1

On-Street Parking Regulations

Effective August 30, 2020 Route 351 service is suspended. Riders can use Route 350 to connect to the Red Line for downtown service.

Route 79 will be suspended.

Route 62 and Route 76 service remains suspended. All trips will operate as combined Route 62/76

Route 84 service remains suspended until further notice; peak Route 78 trips modified to serve Arlmont

Route 351 service remains suspended until further notice. Riders can use Route 350 to connect to the Red Line for downtown service.

Route 78 notice:
Weekday trips during the peak will serve Arlmont and omit Arlington Heights due to temporary suspension of Route 84.

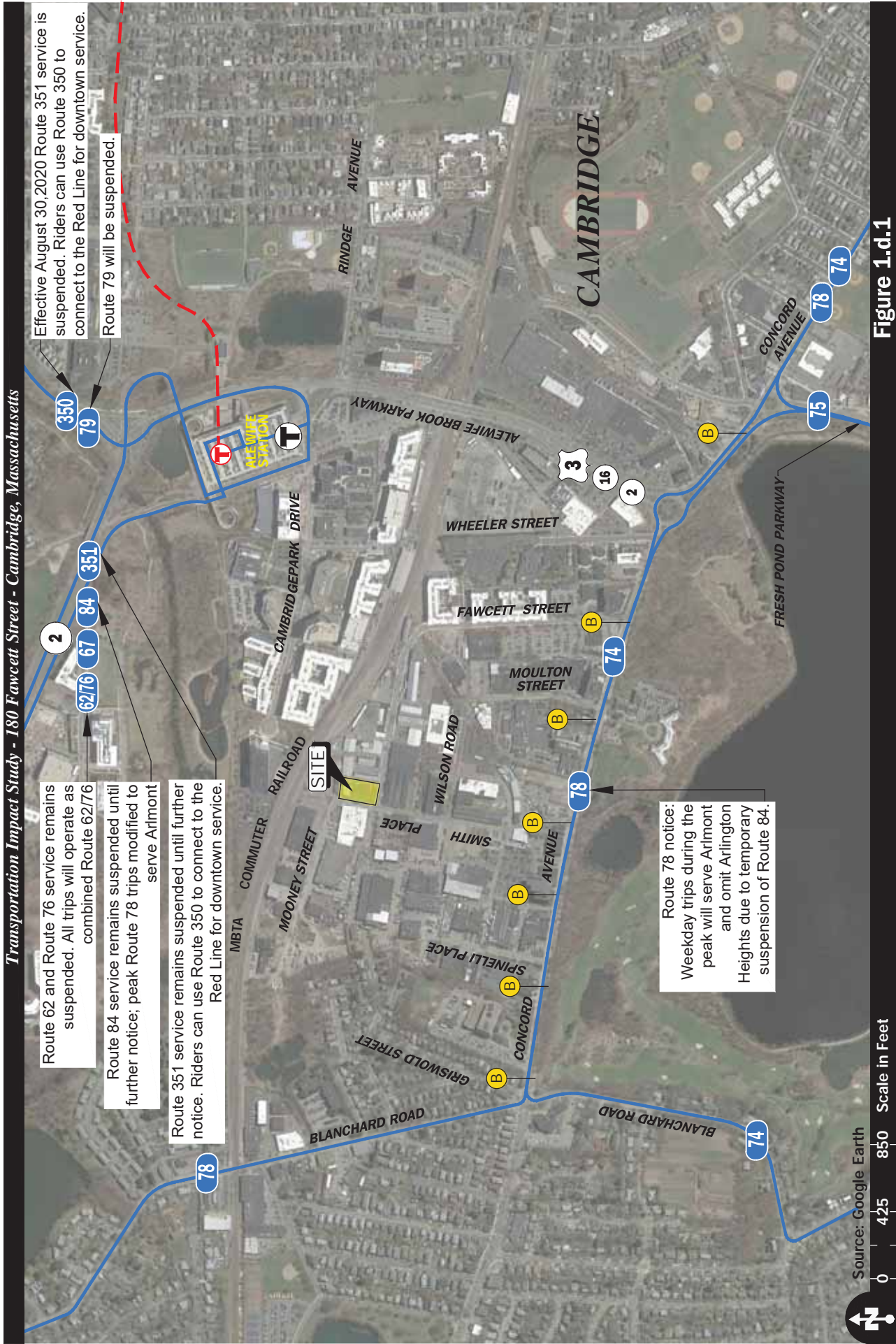
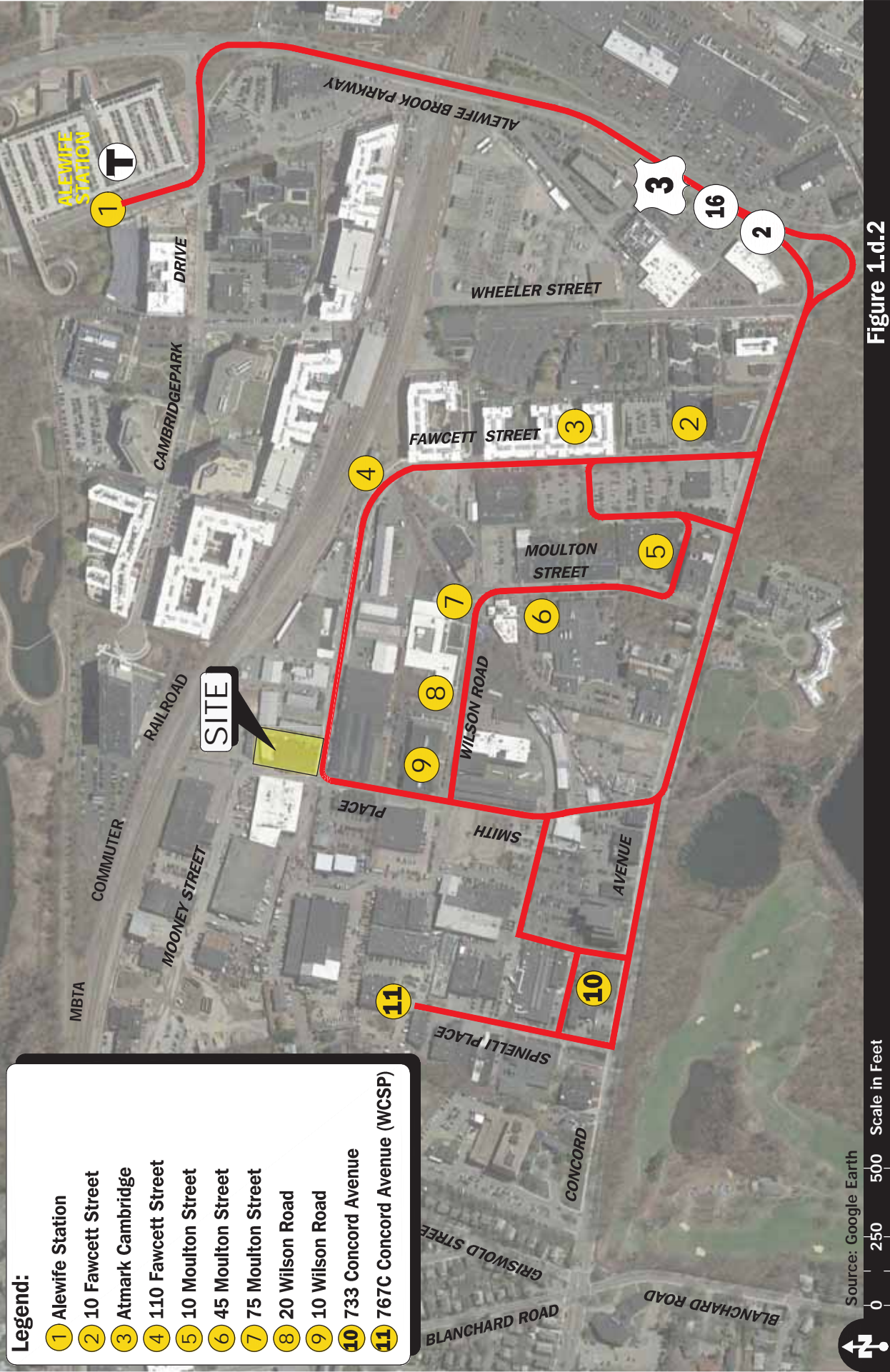


Figure 1.d.1

Public Transit



- Legend:**
- 1 Alewife Station
 - 2 10 Fawcett Street
 - 3 Atmark Cambridge
 - 4 110 Fawcett Street
 - 5 10 Moulton Street
 - 6 45 Moulton Street
 - 7 75 Moulton Street
 - 8 20 Wilson Road
 - 9 10 Wilson Road
 - 10 733 Concord Avenue
 - 11 767C Concord Avenue (WCSP)

Source: Google Earth
 0 250 500 Scale in Feet



Figure 1.d.2
 Alewife TMA Shuttle

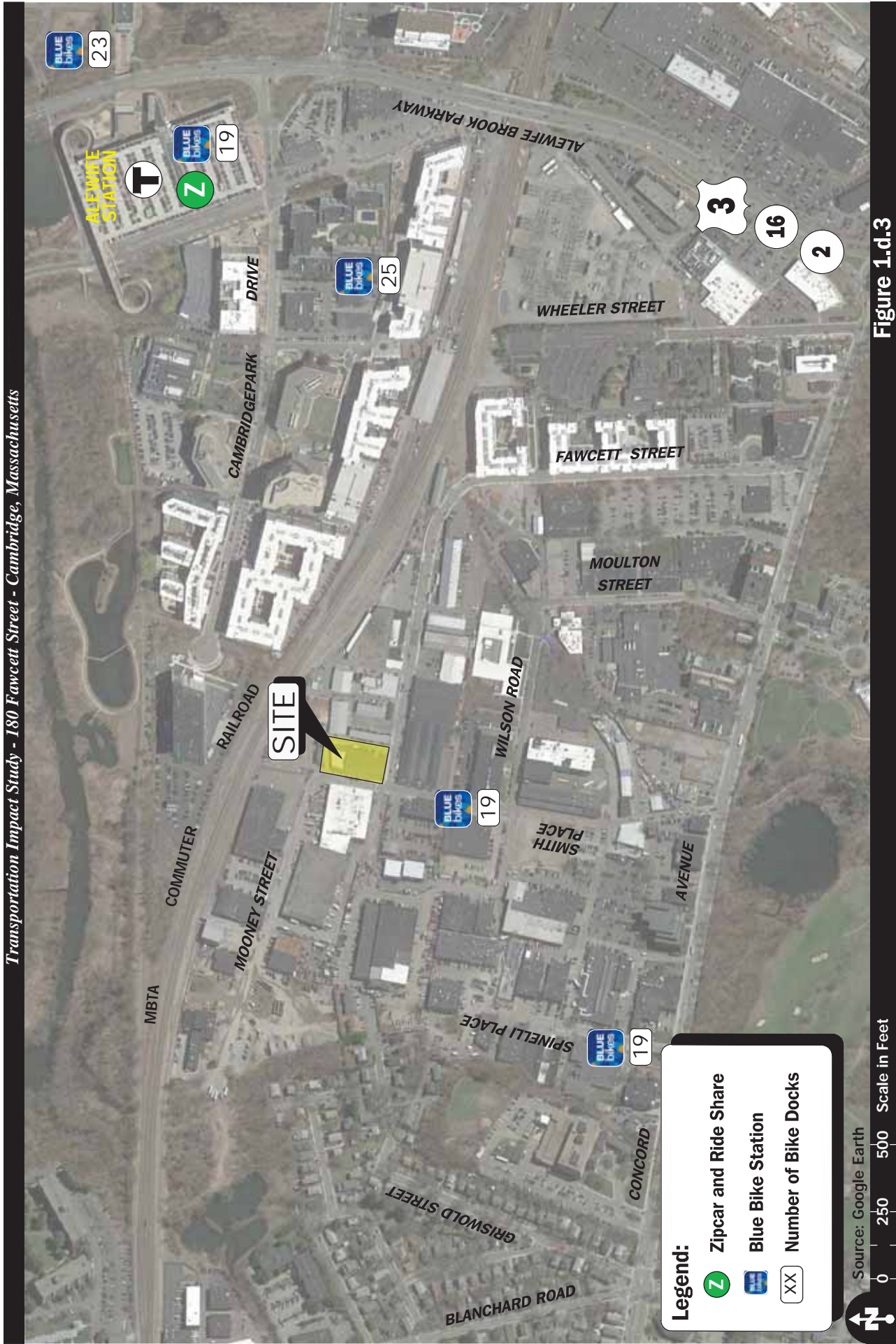





Figure 1.d.3

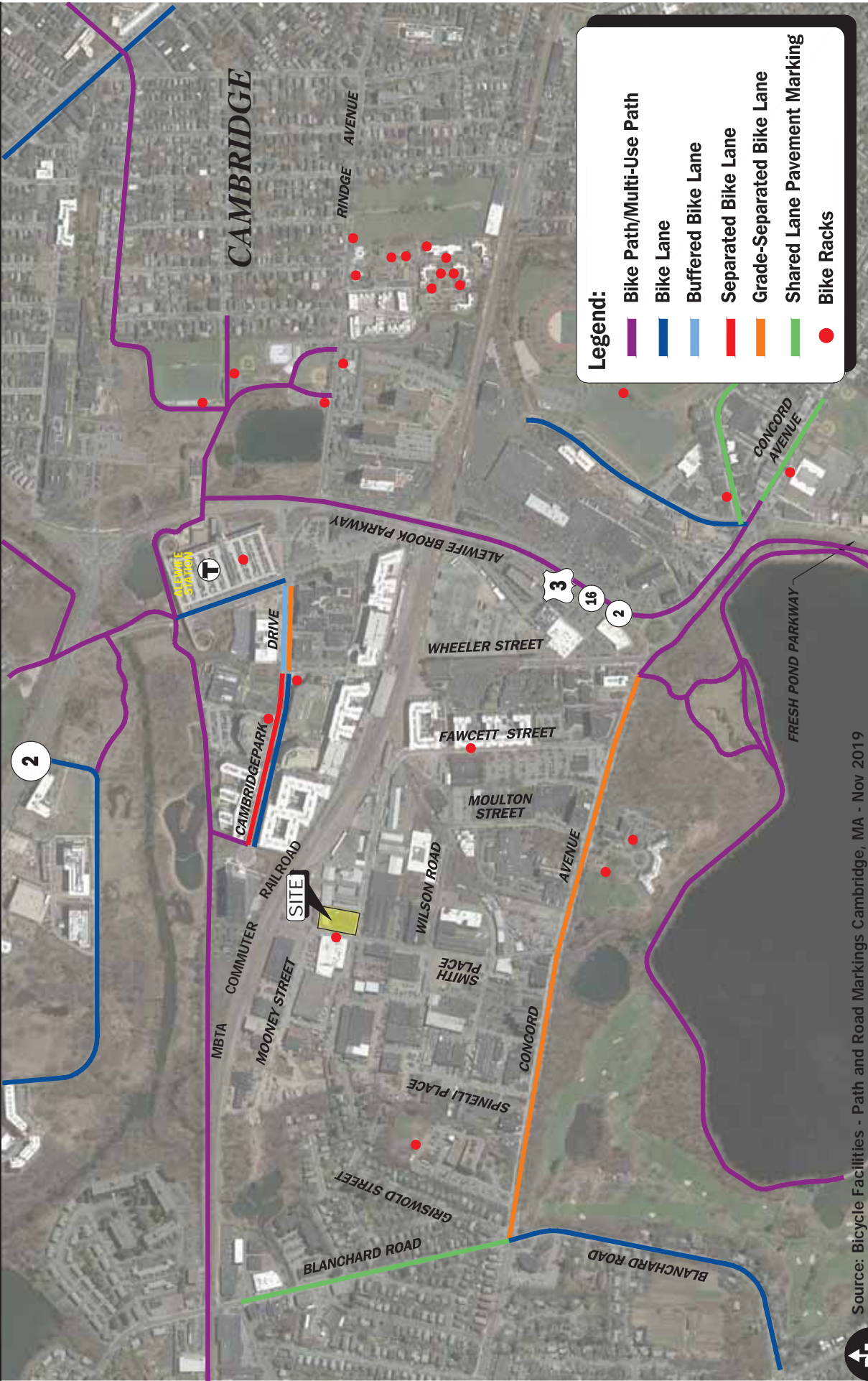
Car and Bike Sharing Stations Map

Legend:

-  Zipcar and Ride Share
-  Blue Bike Station
-  Number of Bike Docks

Source: Google Earth
 0 250 500 Scale in Feet





Source: Bicycle Facilities - Path and Road Markings Cambridge, MA - Nov 2019

Figure 1.d.4

Bicycle Parking and Route Access Map



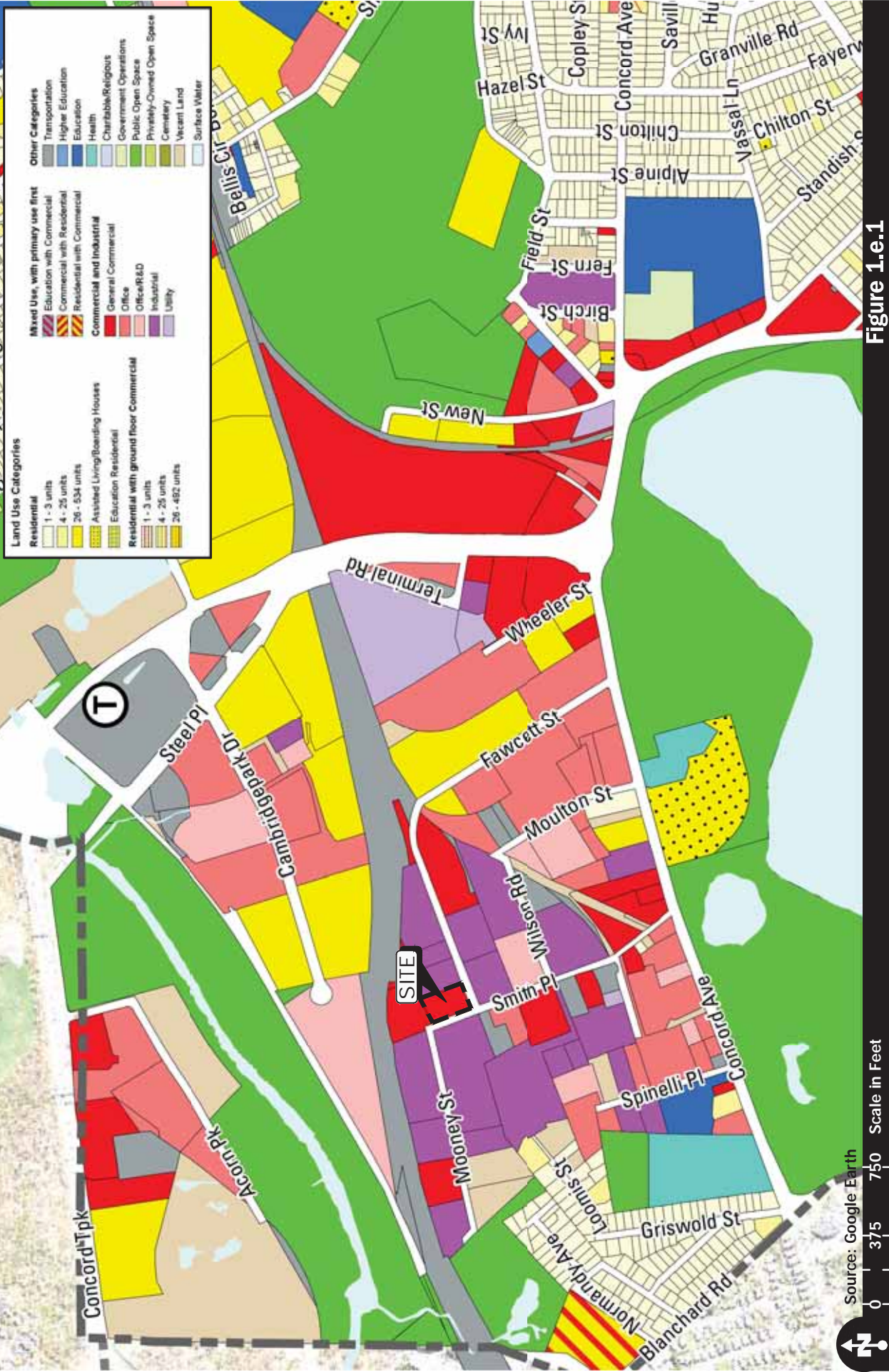


Figure 1.e.1

Land Use Map

TRANSPORTATION IMPACT STUDY
SUPPORTING GRAPHICS VOLUME II OF II
Section 2.0 through Section 14.0

180 Fawcett Street
Cambridge, Massachusetts

Prepared for:
CCF Fawcett Street Property Company, LLC
Cambridge, Massachusetts

July 2021

Prepared by:



35 New England Business Center Drive
Suite 140
Andover, MA 01810

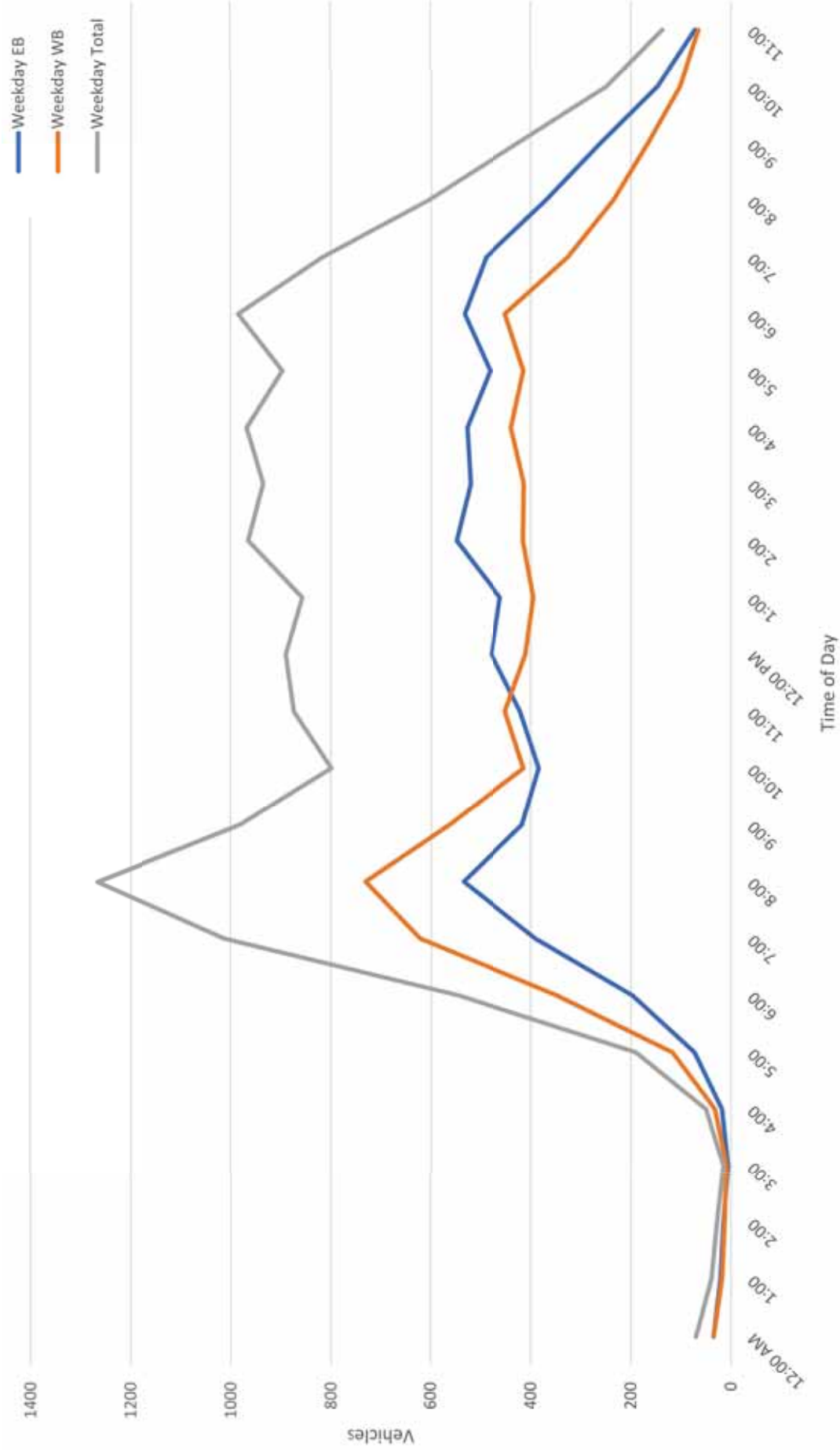


Figure 2.a.1

Average Hourly Traffic Volume
Concord Avenue
Tuesday, April 2 and 3, 2019



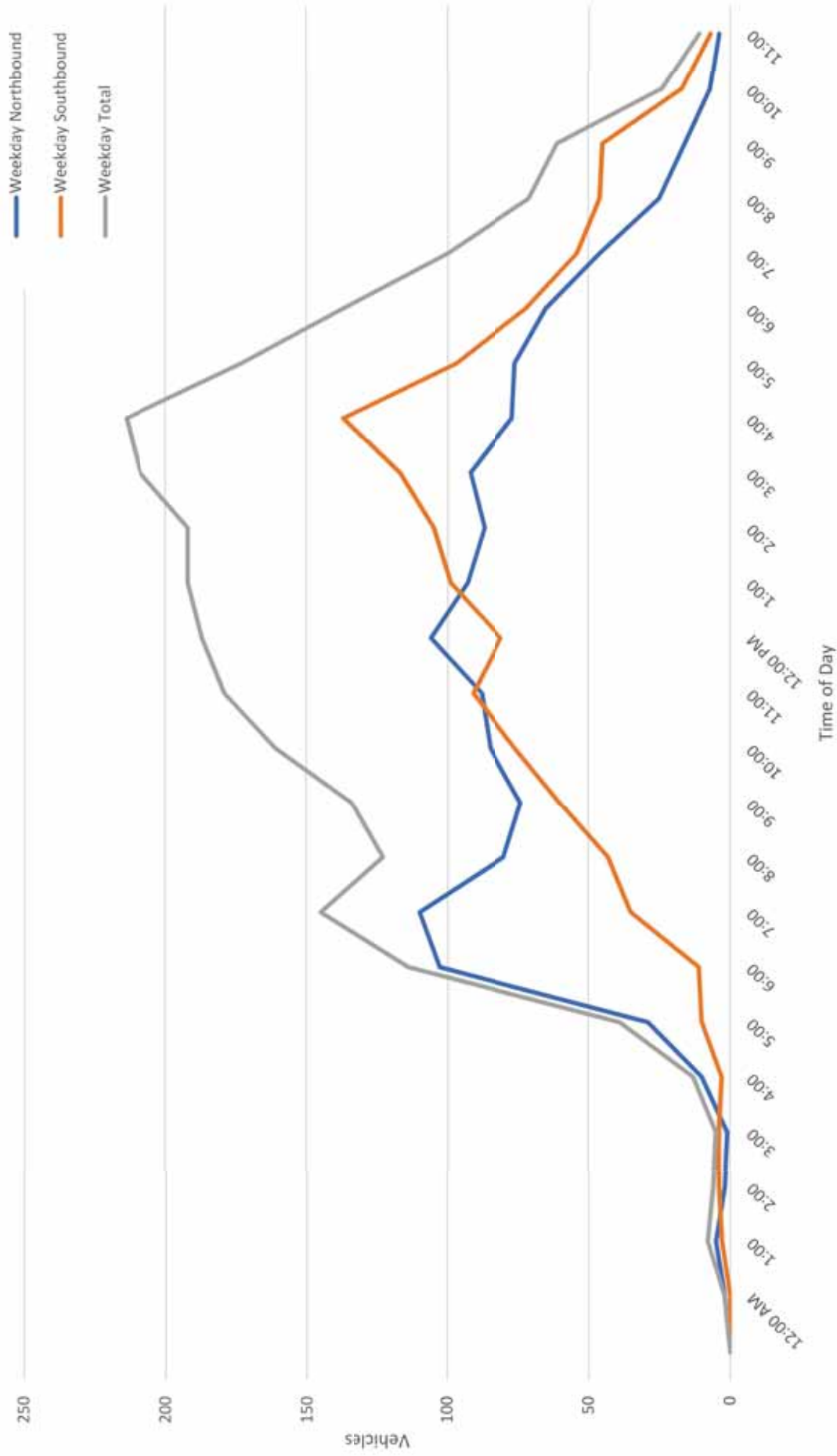
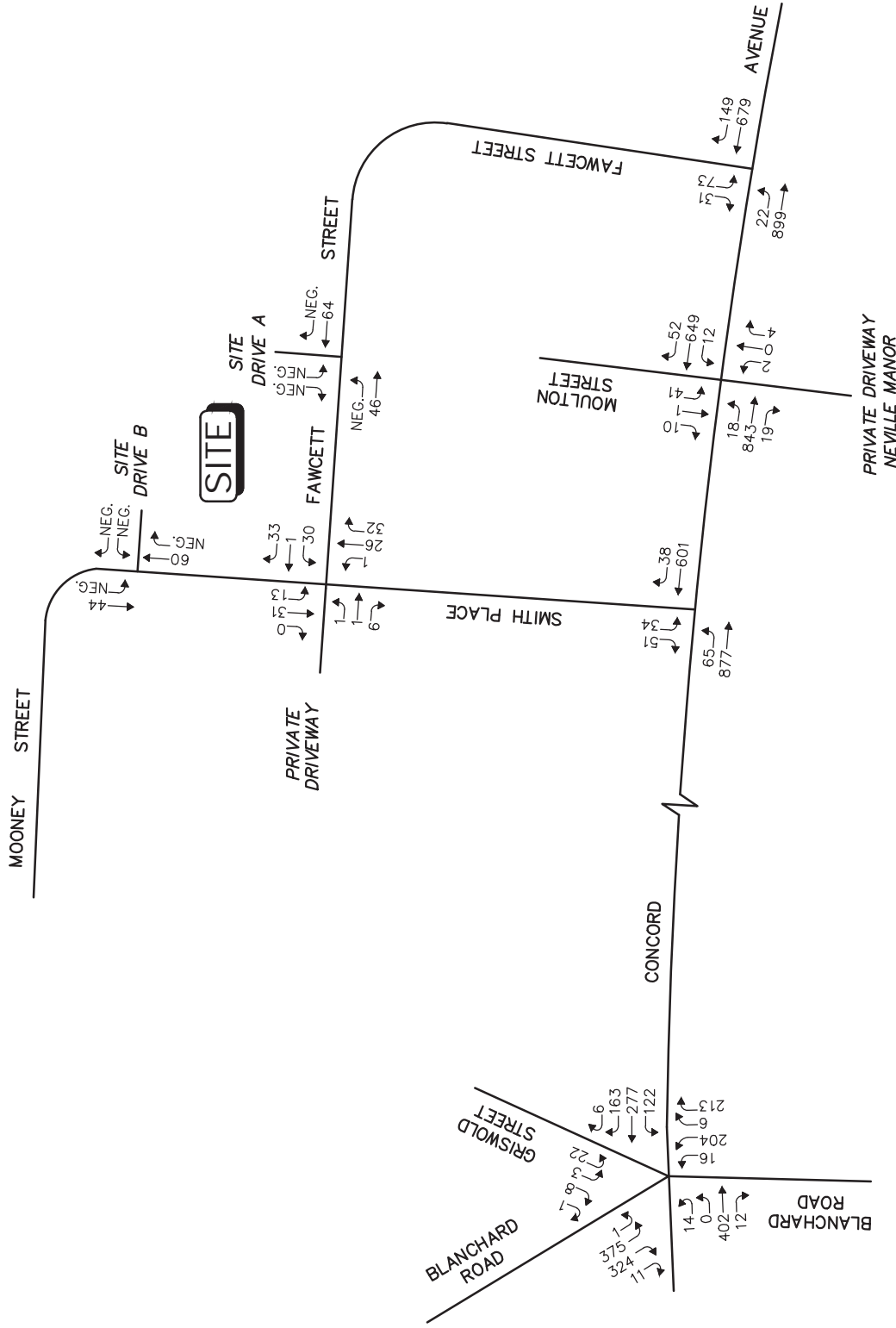


Figure 2.a.2

Average Hourly Traffic Volume
Smith Place
Tuesday, April 2 and 3, 2019



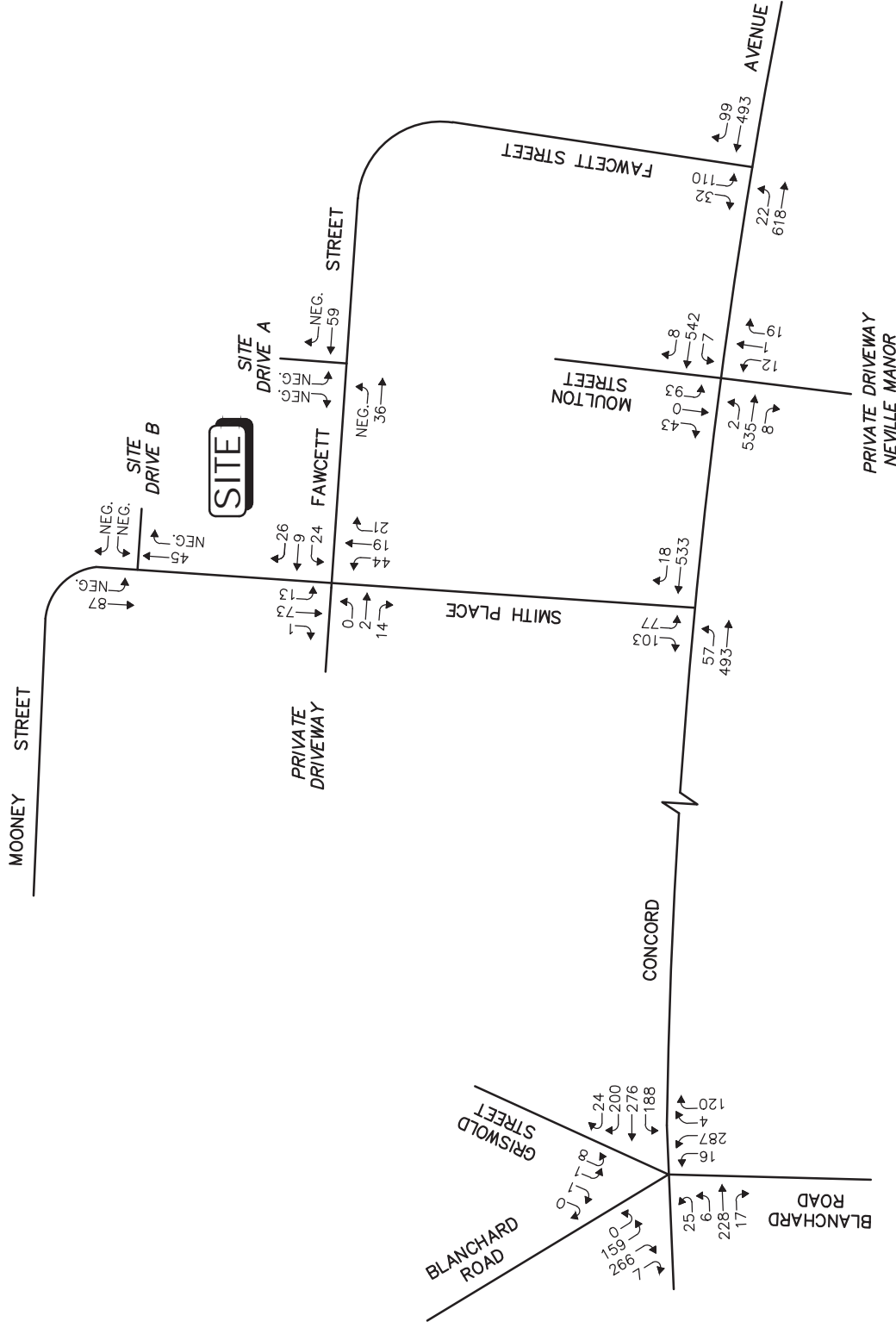


Note: 1 - Imbalances exist due to numerous curb cuts and side streets that are not shown.
 2 - Traffic counted April 2, 2019.
 3 - NEG. = Neglected

Figure 2.c.1

2021 Baseline Condition
 Weekday Morning
 8:00 - 9:00 AM
 Peak Hour Traffic Volumes



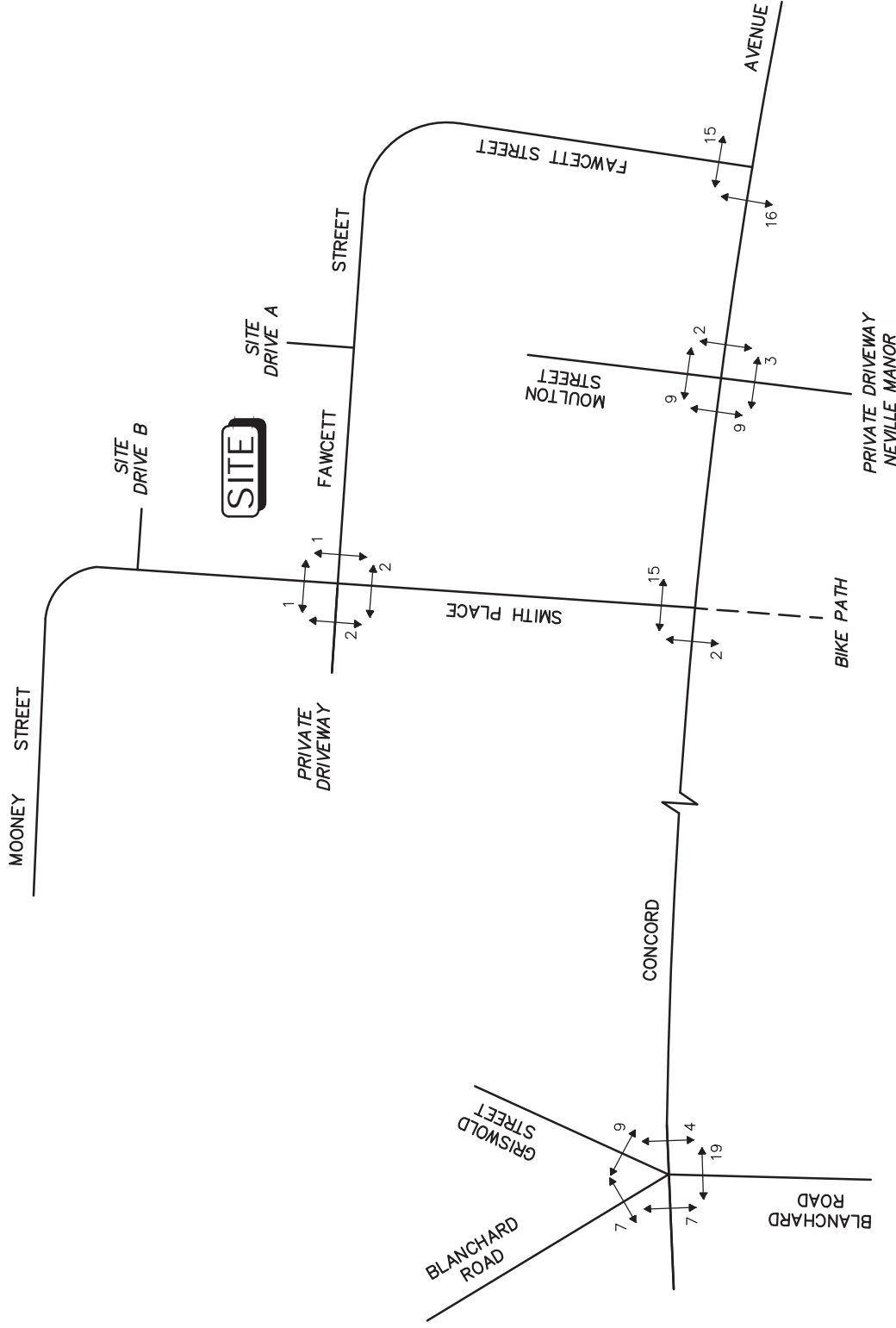


Note: 1 - Imbalances exist due to numerous curb cuts and side streets that are not shown.
 2 - Traffic counted April 2, 2019.
 3 - NEG. = Neglected

Figure 2.c.2

2021 Existing Condition
 Weekday Evening
 4:45 - 5:45 PM
 Peak Hour Traffic Volumes



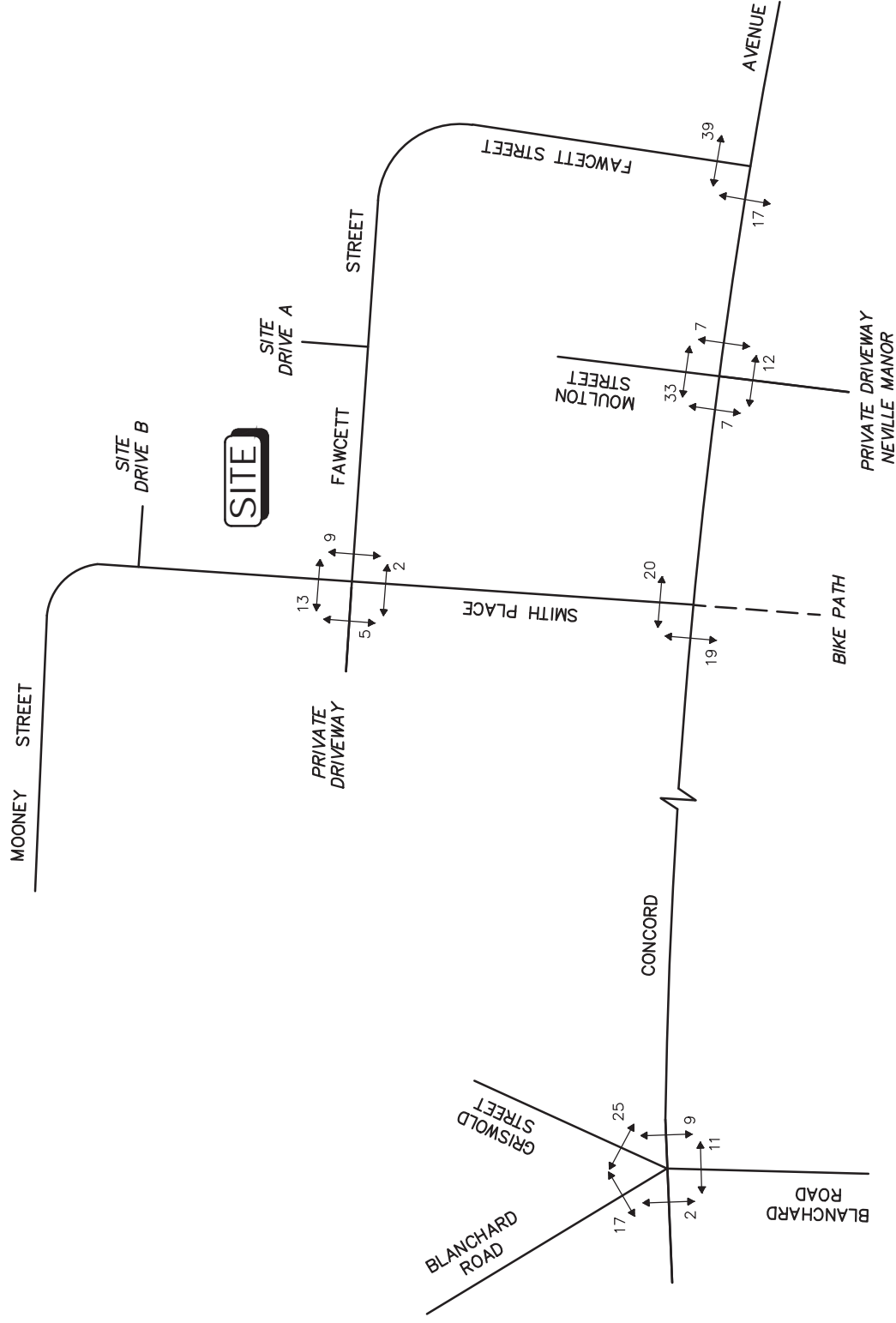


Note: Pedestrian counted April 2, 2019.



Figure 2.c.3

2021 Baseline Condition
 Weekday Morning
 8:00 - 9:00 AM
 Peak Hour Pedestrian Volumes

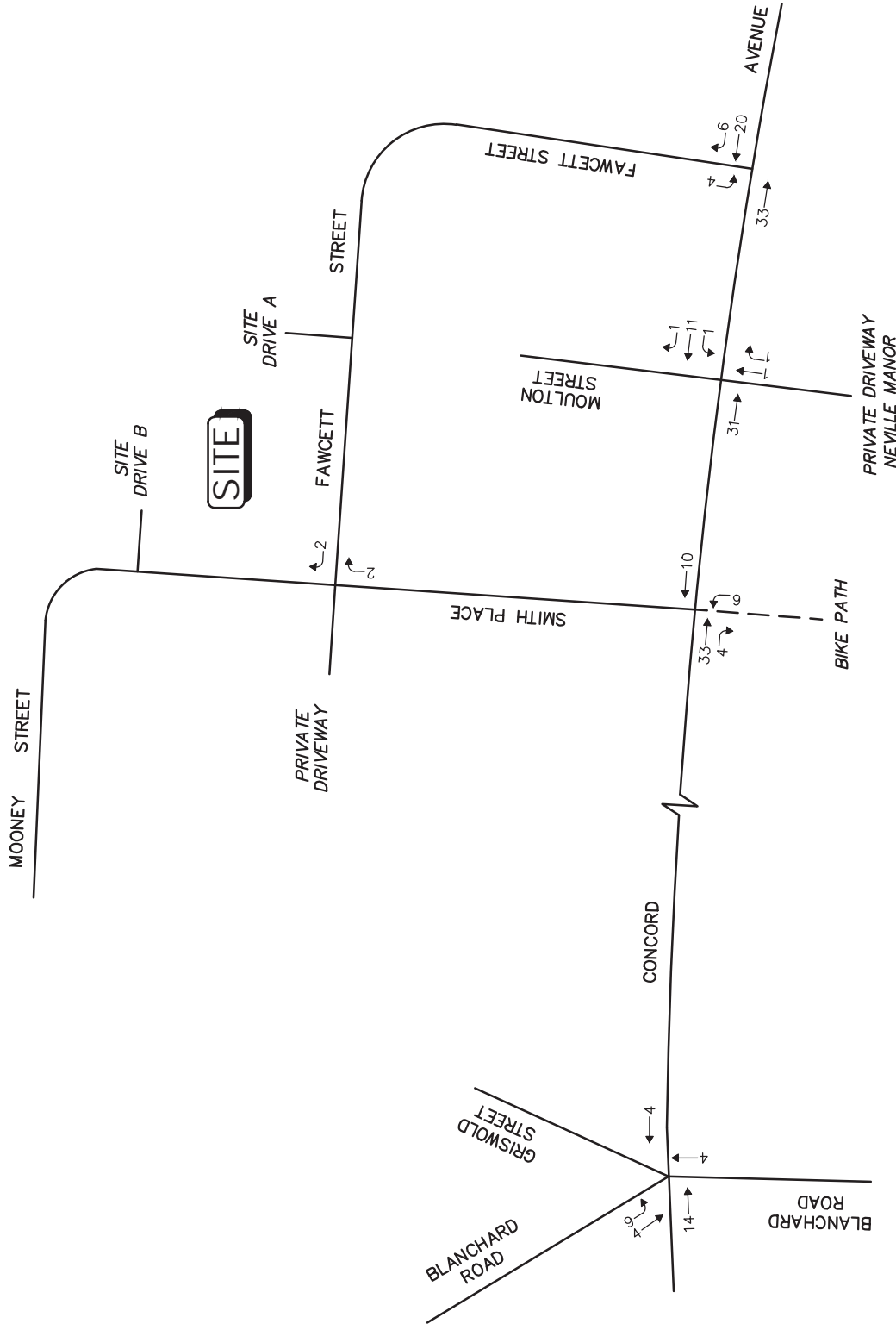


Note: Pedestrian counted April 2, 2019.

Figure 2.c-4

2021 Baseline Condition
 Weekday Evening
 4:45 - 5:45 PM
 Peak Hour Pedestrian Volumes



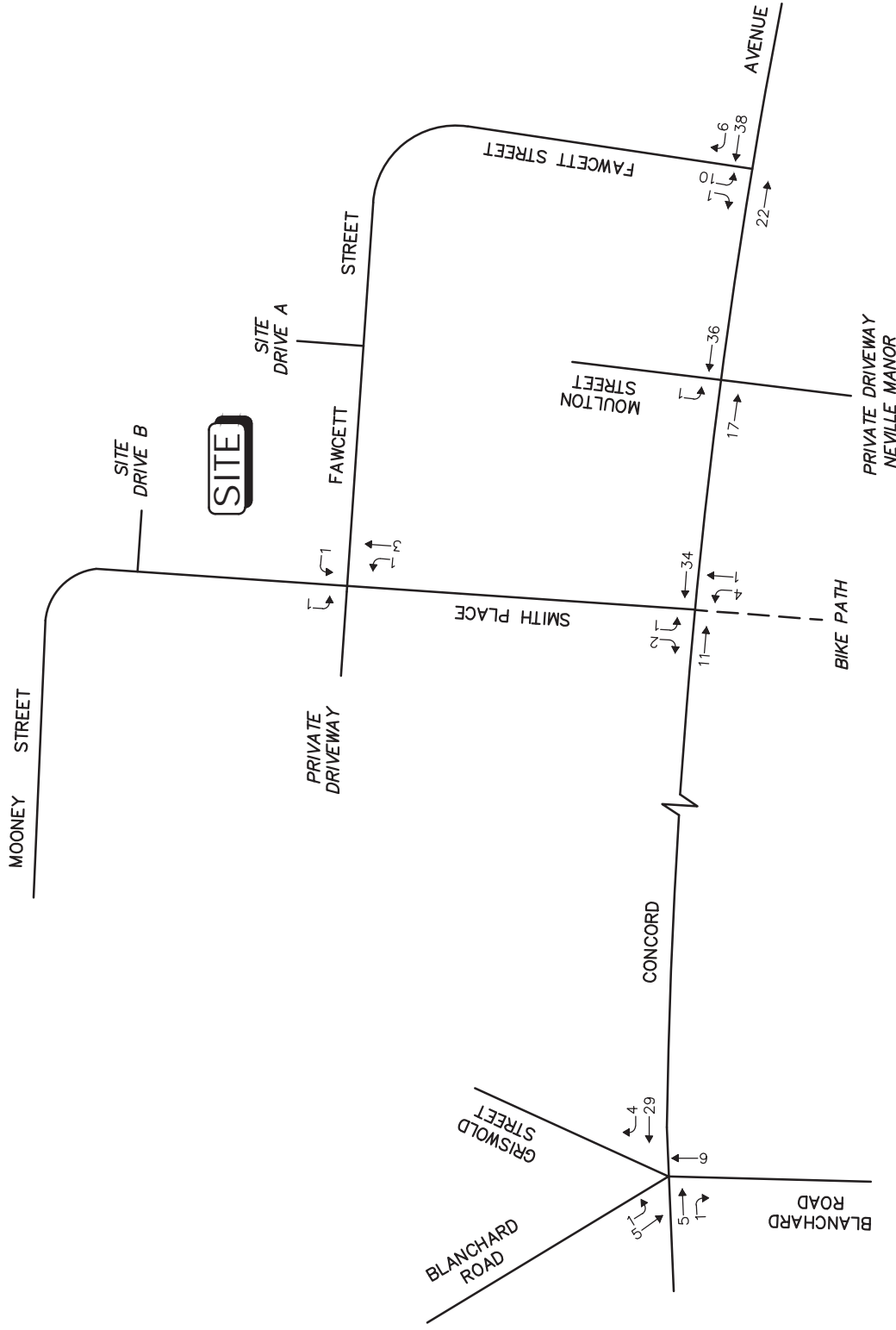


Note: Bicycles counted April 2, 2019.

Figure 2.c-5



2021 Baseline Condition
 Weekday Morning
 8:00 - 9:00 AM
 Peak Hour Bicycle Volume

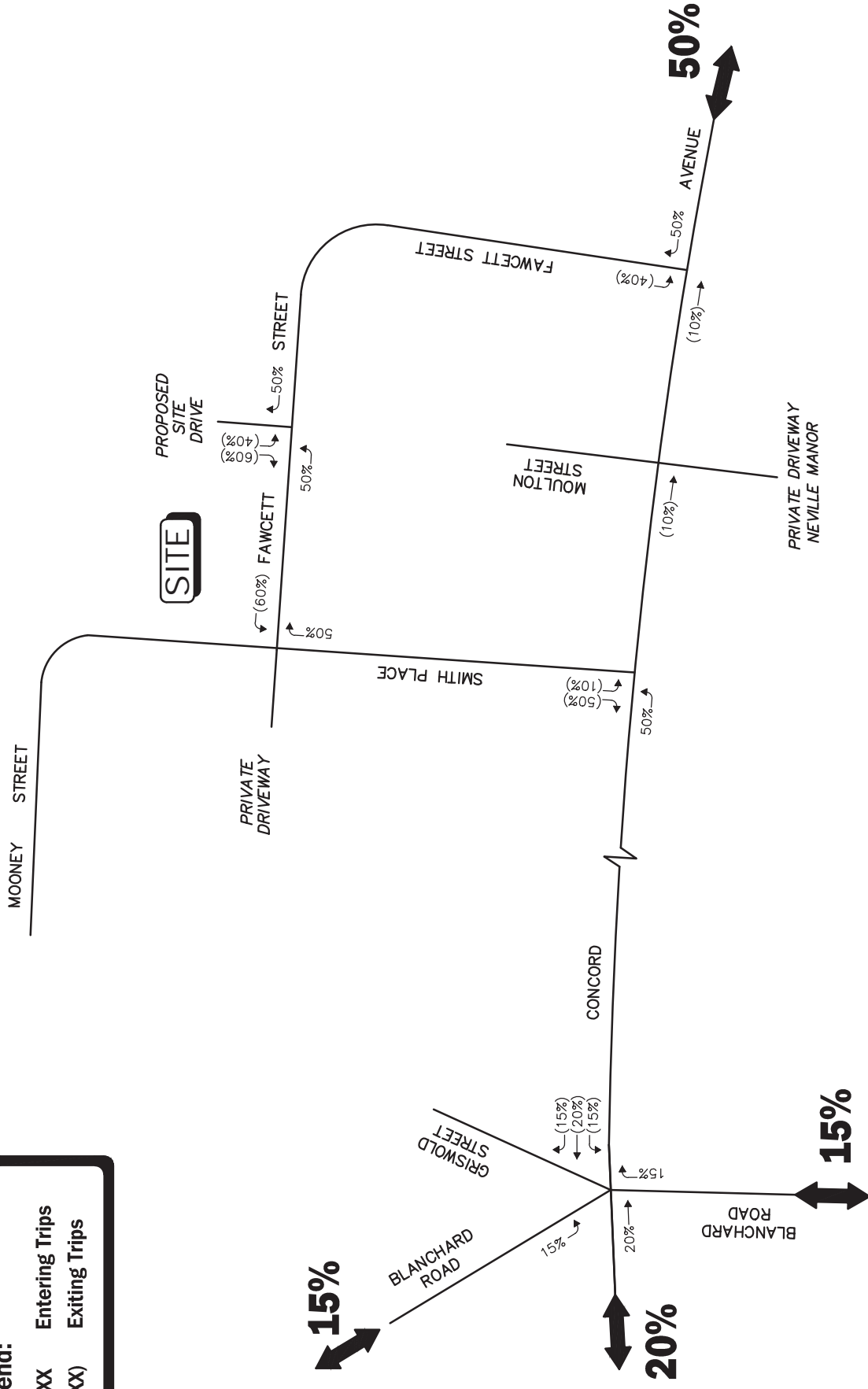


Note: Bicycles counted April 2, 2019.



Figure 2.c.6

2021 Baseline Condition
 Weekday Evening
 4:45 - 5:45 PM
 Peak Hour Bicycle Volume



Source: Alewife Critical Sums Analysis - Revised January 2019



Figure 3.c.1

R&D Trip Distribution Map

Legend:

- XX Entering Trips
- (XX) Exiting Trips



SITE	
In	35
Out	10
Total	45



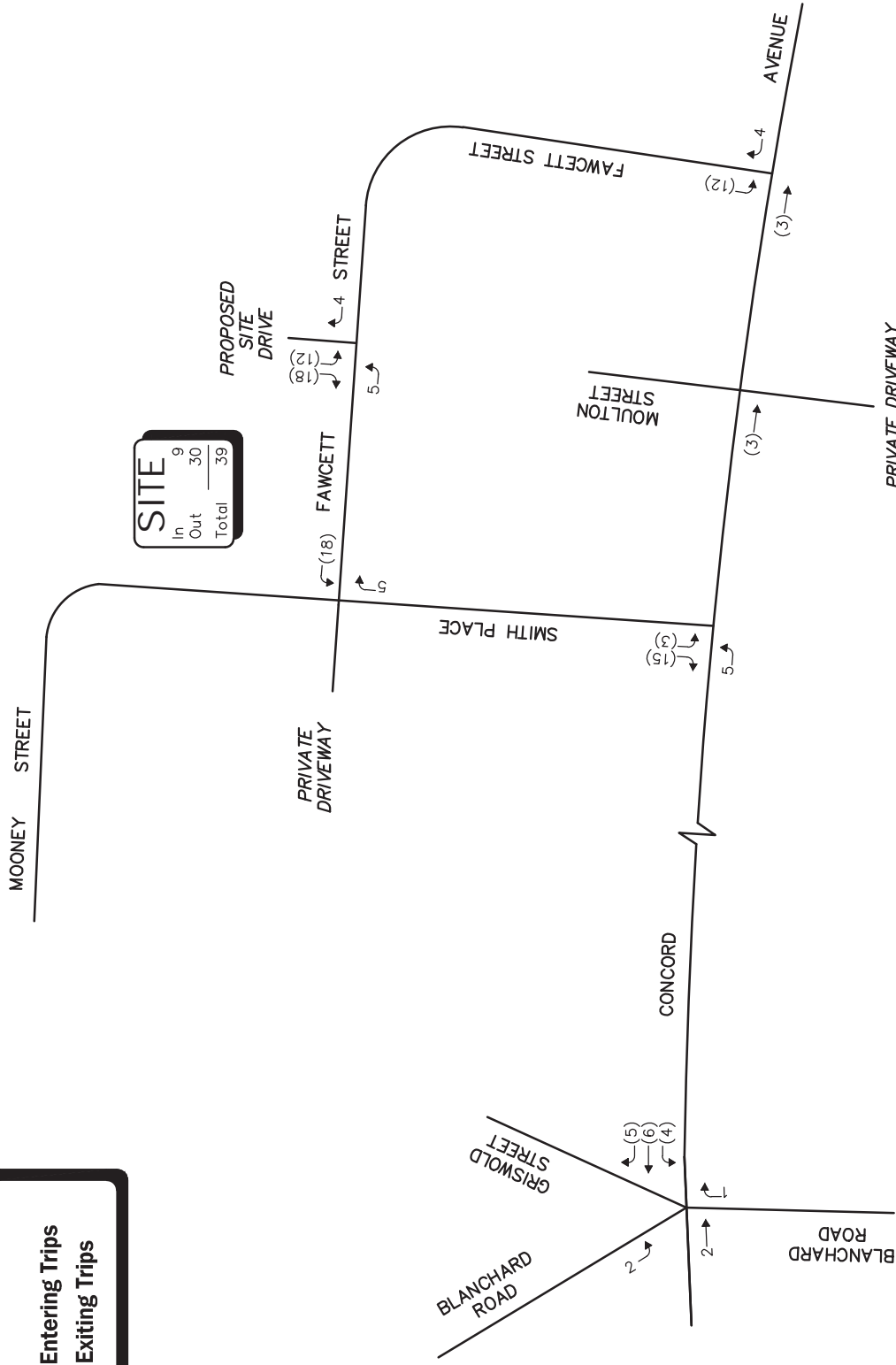
VAI Vanasse & Associates inc

Figure 3.c.2

**Project Generated
Proposed R&D Development
Weekday Morning
Peak Hour Traffic Volume**

Legend:

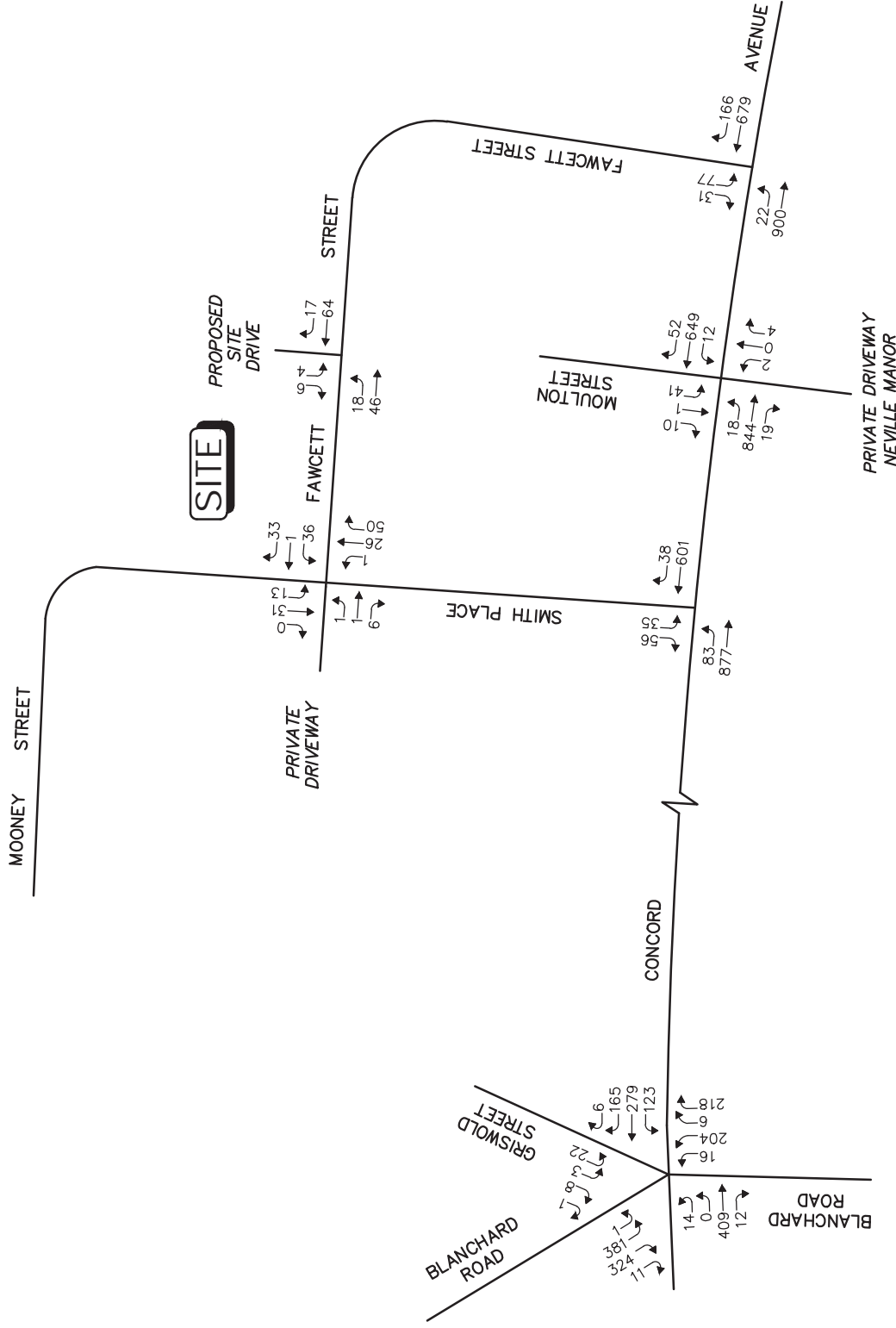
XX	Entering Trips
(XX)	Exiting Trips



VAI Vanasse & Associates inc

Figure 3.c.3

**Project Generated
Proposed R&D Development
Weekday Evening
Peak Hour Traffic Volume**

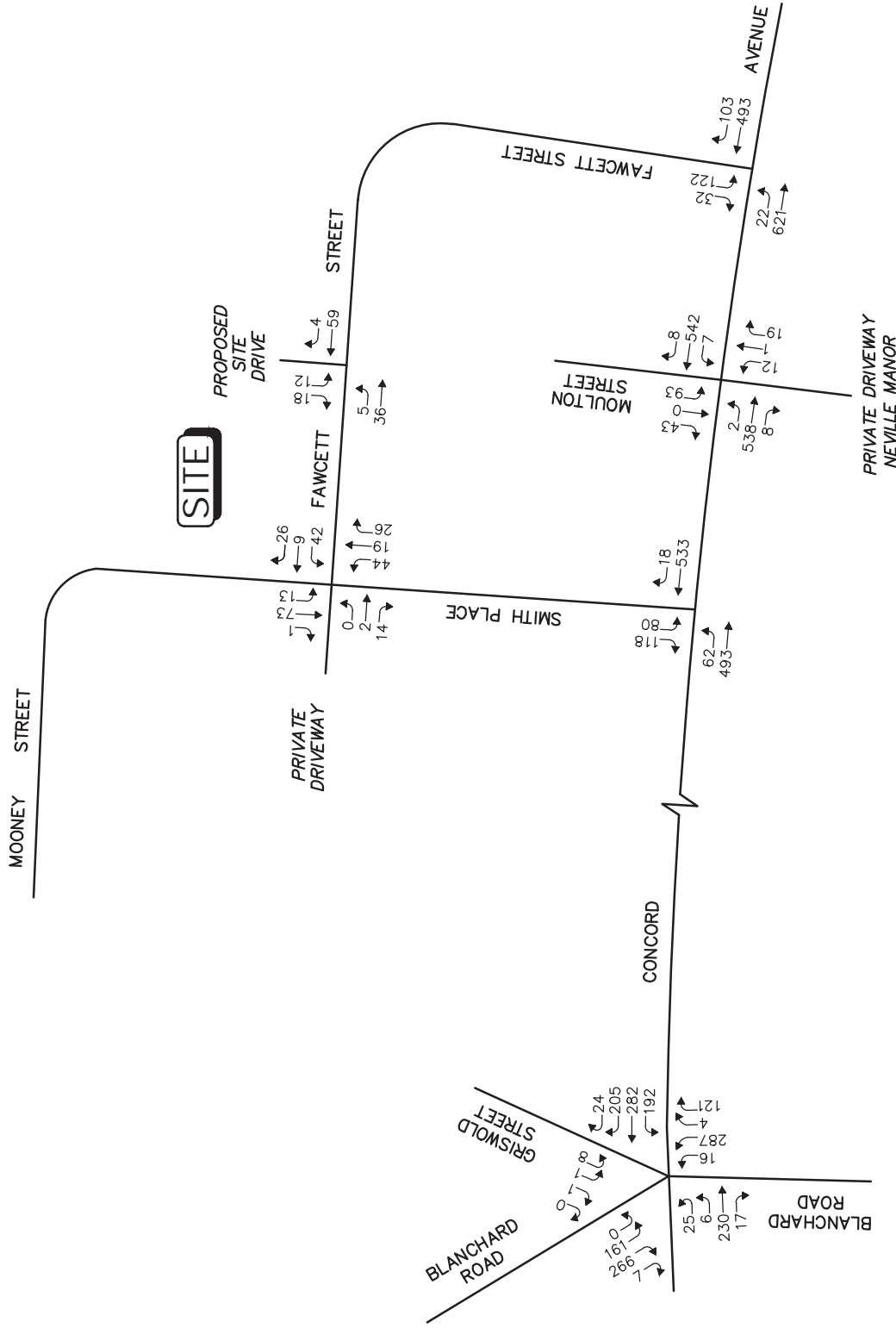


Note: 1 - Imbalances exist due to numerous curb cuts and side streets that are not shown.
 2 - Traffic counted April 2, 2019.

Figure 5.b.1

2021 Build Condition
 Weekday Morning
 Peak Hour Traffic Volumes





Note: 1 - Imbalances exist due to numerous curb cuts and side streets that are not shown.
 2 - Traffic counted April 2, 2019.

Figure 5.b.2

2021 Build Condition
 Weekday Evening
 Peak Hour Traffic Volumes



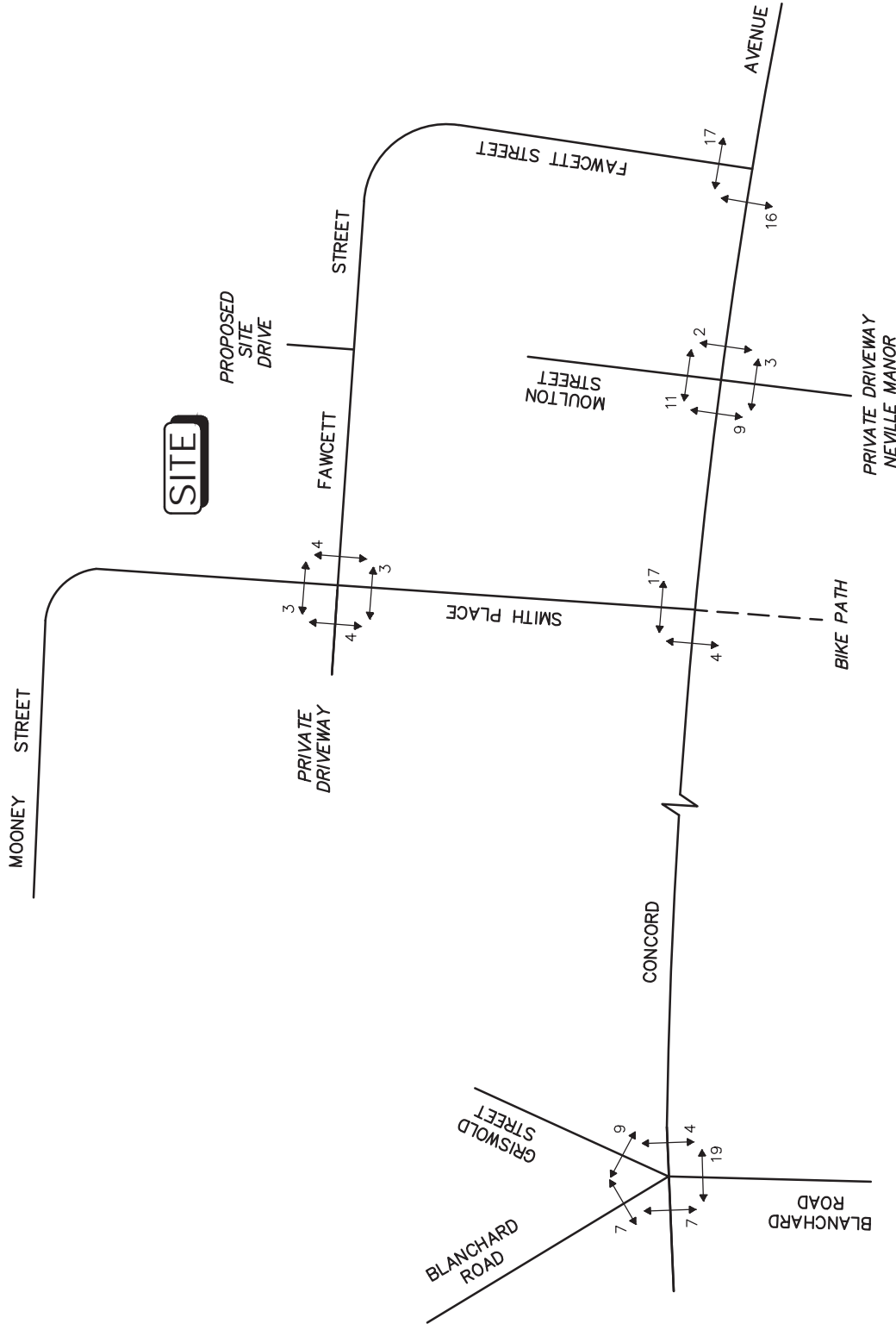


Figure 5.b.3

2021 Build Condition
Weekday Morning
Peak Hour Pedestrian Volumes

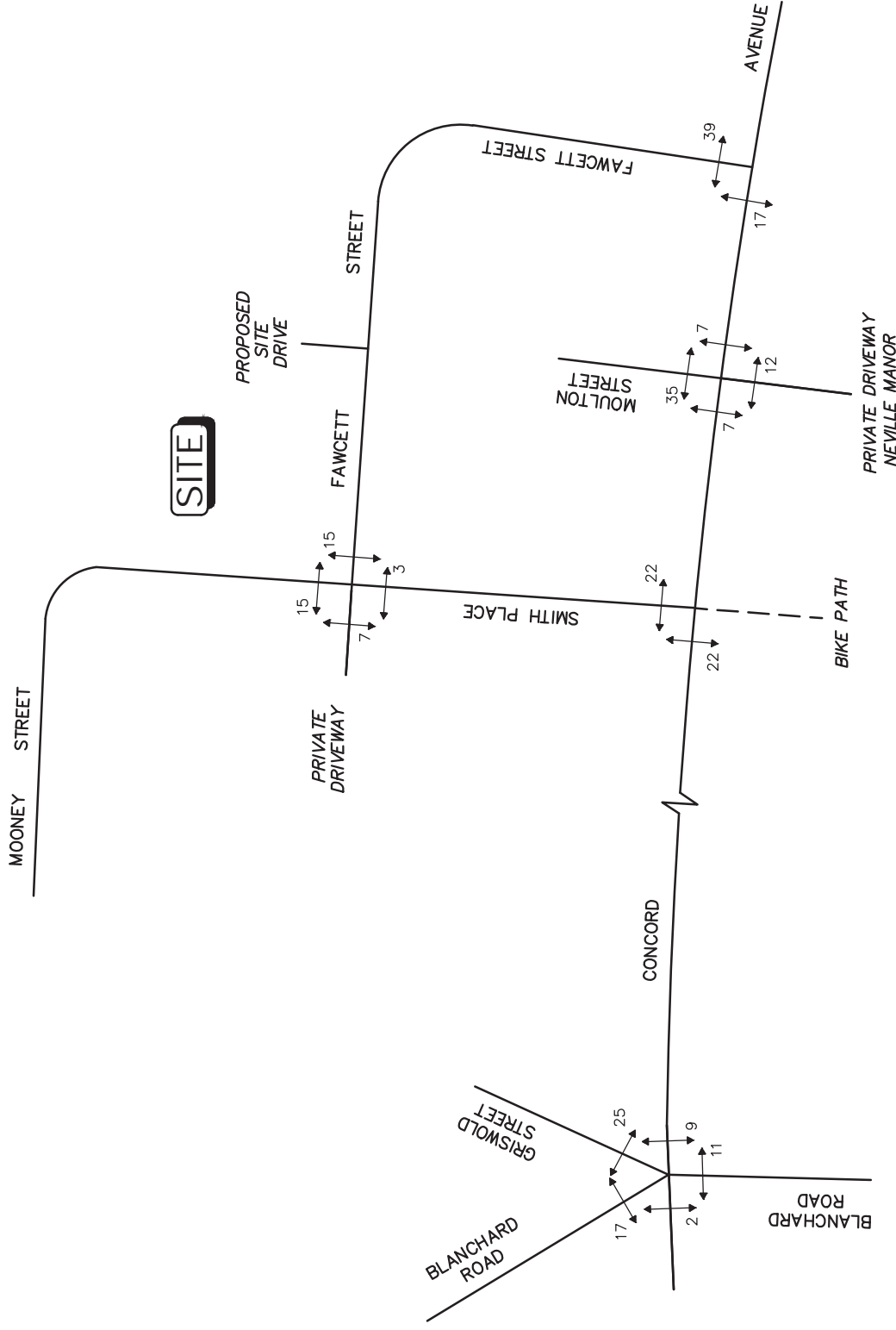
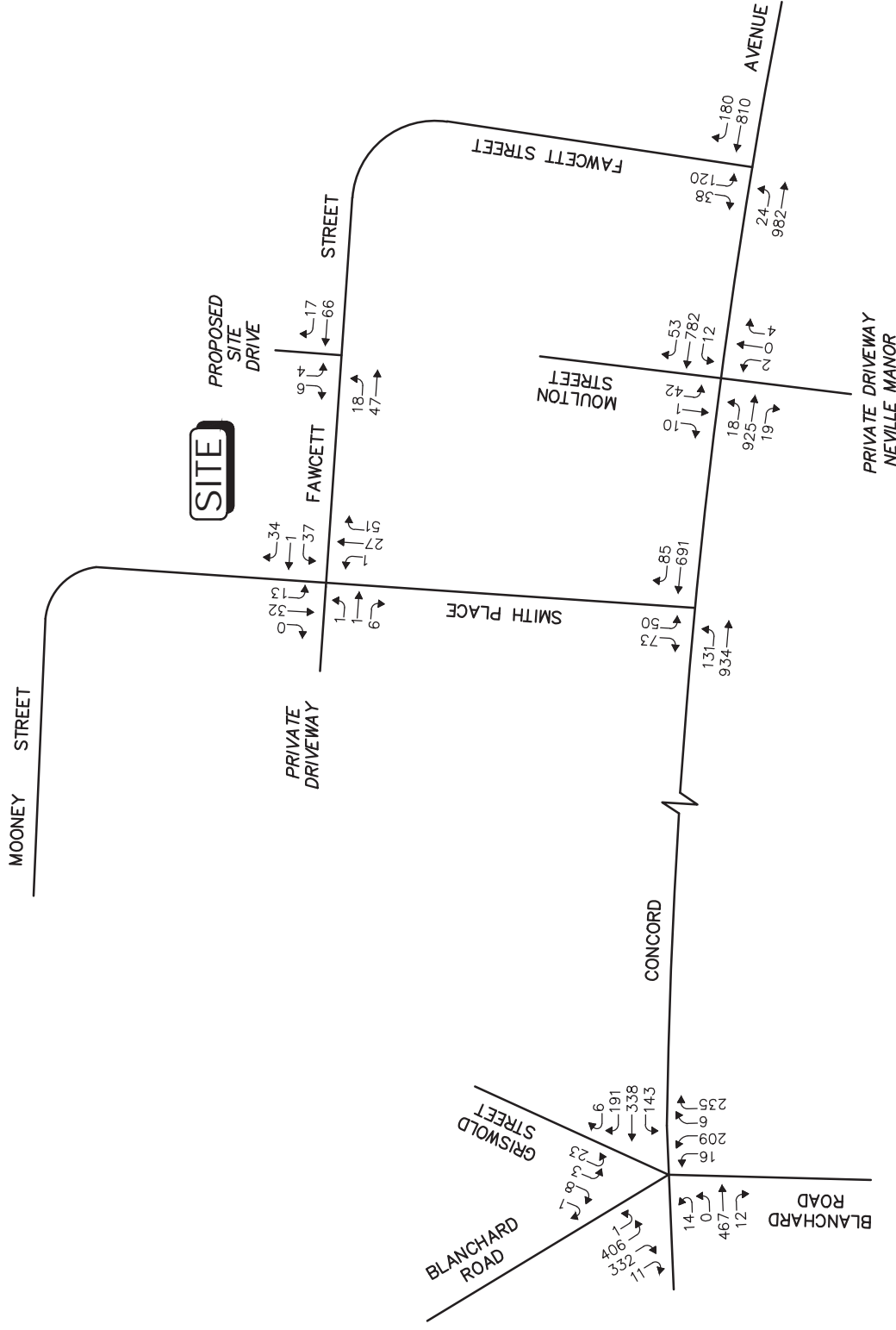


Figure 5.b.4

2021 Build Condition
 Weekday Evening
 Peak Hour Pedestrian Volumes

VAI Vanasse &
 Associates inc

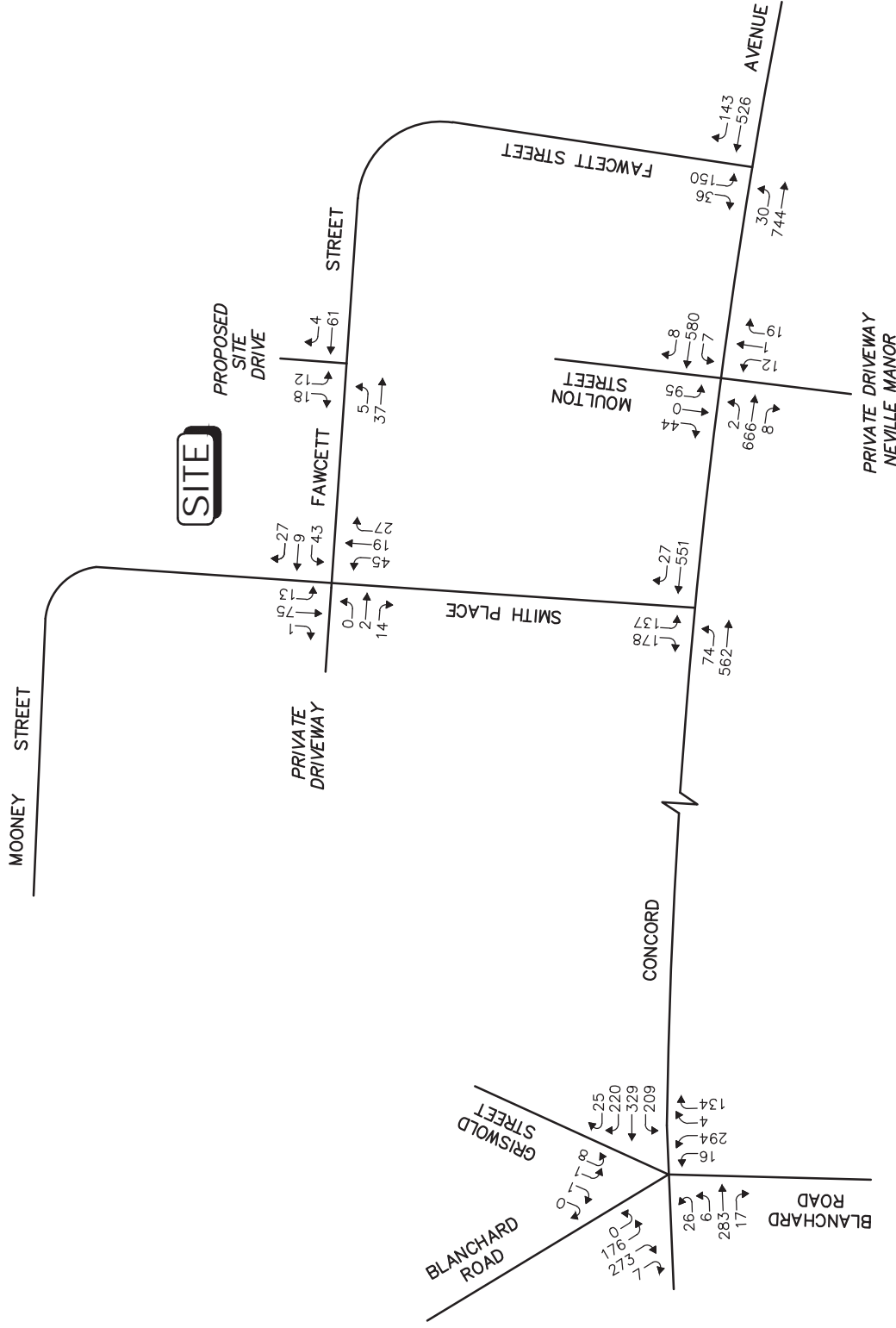


Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Figure 5.c.1

2026 Build Condition
Weekday Morning
Peak Hour Traffic Volumes





Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Figure 5.c.2

2026 Build Condition
Weekday Evening
Peak Hour Traffic Volumes



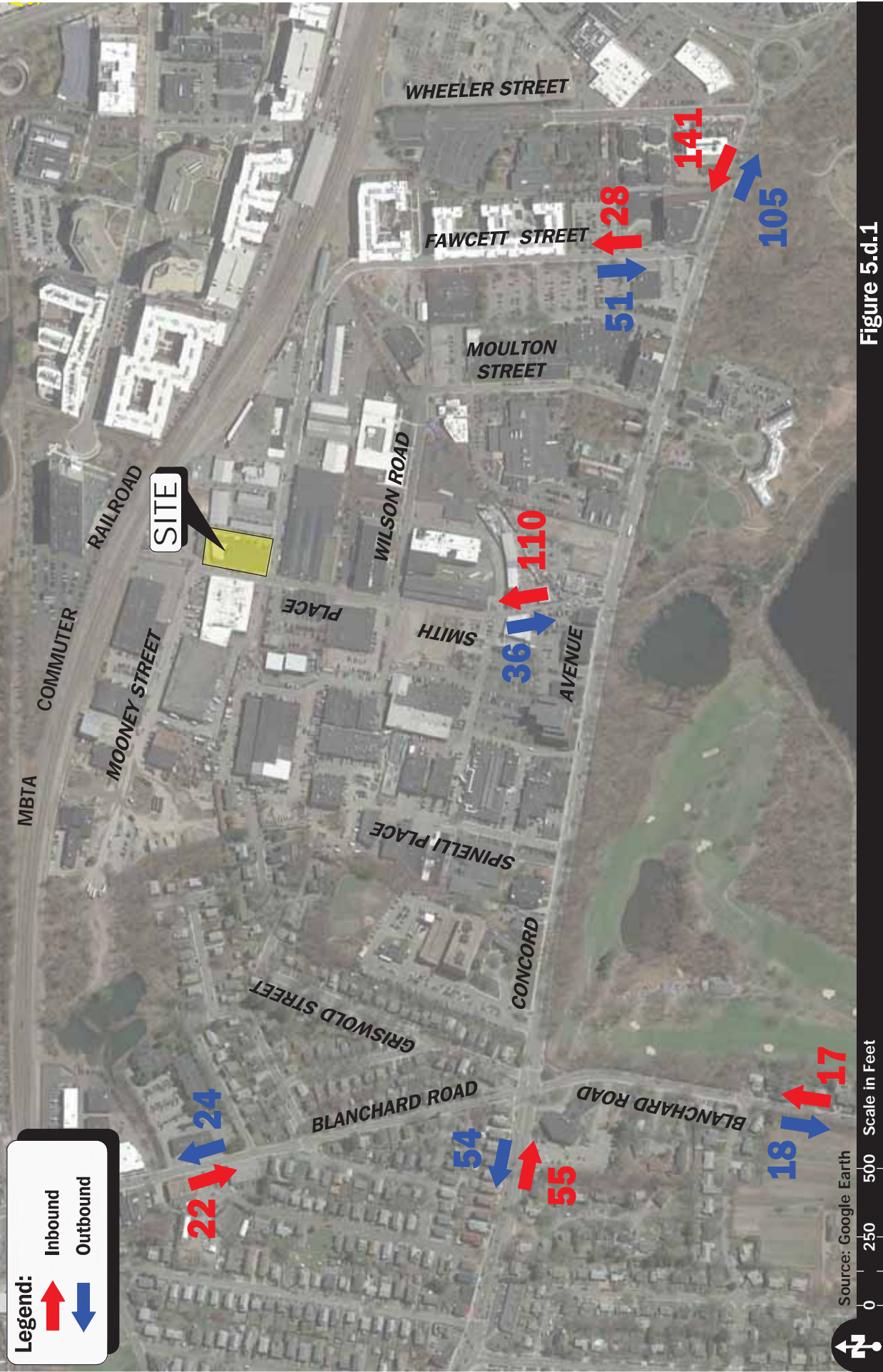


Figure 5.d.1

Cumulative Area Developments
Impact
Weekday Morning
Peak Hour Traffic Volumes



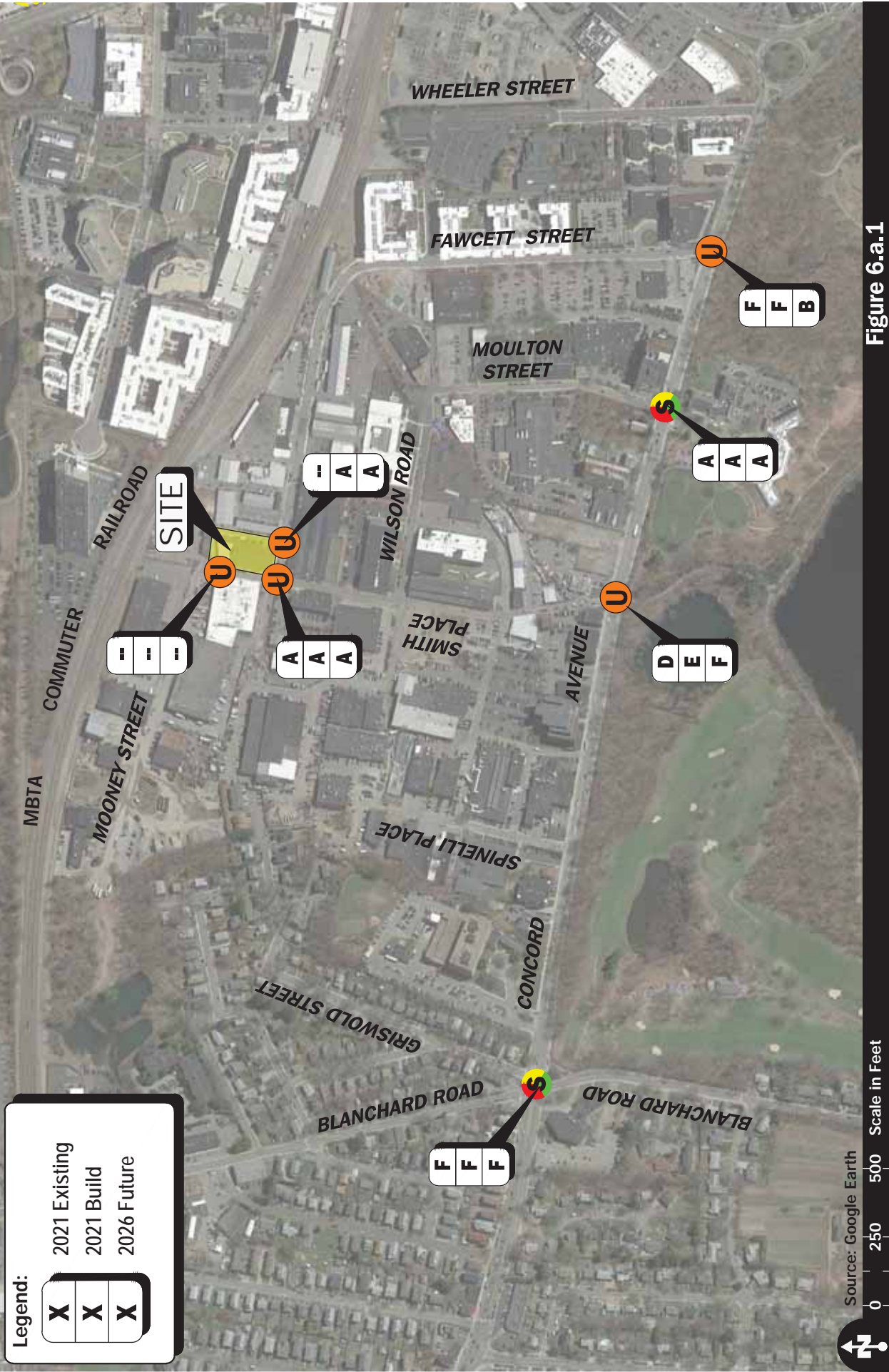
Legend:
↑ Inbound
↓ Outbound

Source: Google Earth
0 250 500 Scale in Feet



Figure 5.d.2

Cumulative Area Developments
Impact
Weekday Evening
Peak Hour Traffic Volumes



Legend:

X	2021 Existing
X	2021 Build
X	2026 Future

Source: Google Earth
 0 250 500 Scale in Feet



Figure 6.a.1
 Vehicle Level-of-Service Map
 Weekday Morning
 Peak Hour Traffic Volumes



Figure 6.a.2

Vehicle Level-of-Service Map
 Weekday Evening
 Peak Hour Traffic Volumes

Legend:
 Added Delay from Modified Existing Condition

Build		Future	< 10 Seconds
Build		Future	11 - 19 Seconds
Build		Future	> 20 Seconds

S = Signalized **U** = Signalized **R** = Rotary



Source: Google Earth
 0 250 500 Scale in Feet



Figure 6.a.3
 Vehicle Delay Change Map
 Weekday Morning
 Peak Hour Traffic Volumes

Legend:
 Added Delay from Modified Existing Condition

Build		Future	< 10 Seconds
Build		Future	11 - 19 Seconds
Build		Future	> 20 Seconds

S = Signalized **U** = Signalized **R** = Rotary



Source: Google Earth
 0 250 500 Scale in Feet



Figure 6.a.4
 Vehicle Delay Change Map
 Weekday Evening
 Peak Hour Traffic Volumes

Bicycle Parking Criteria

Use/Category:
 -Technical Offices, Research Facilities (Long-Term - N1)
 -Laboratories and Research Facilities (Short-Term - N2)

Required Parking:

-Long-Term - N1: 0.22 Space per 1,000 SF
 -Short-Term - N2: 0.06 Space per 1,000 SF

Calculation:
 62,050 GFA * (0.22 Space / 1,000 SF) = 14 Spaces
 62,050 GFA * (0.06 Space / 1,000 SF) = 4 Spaces

Total Required Spaces: 18 Spaces

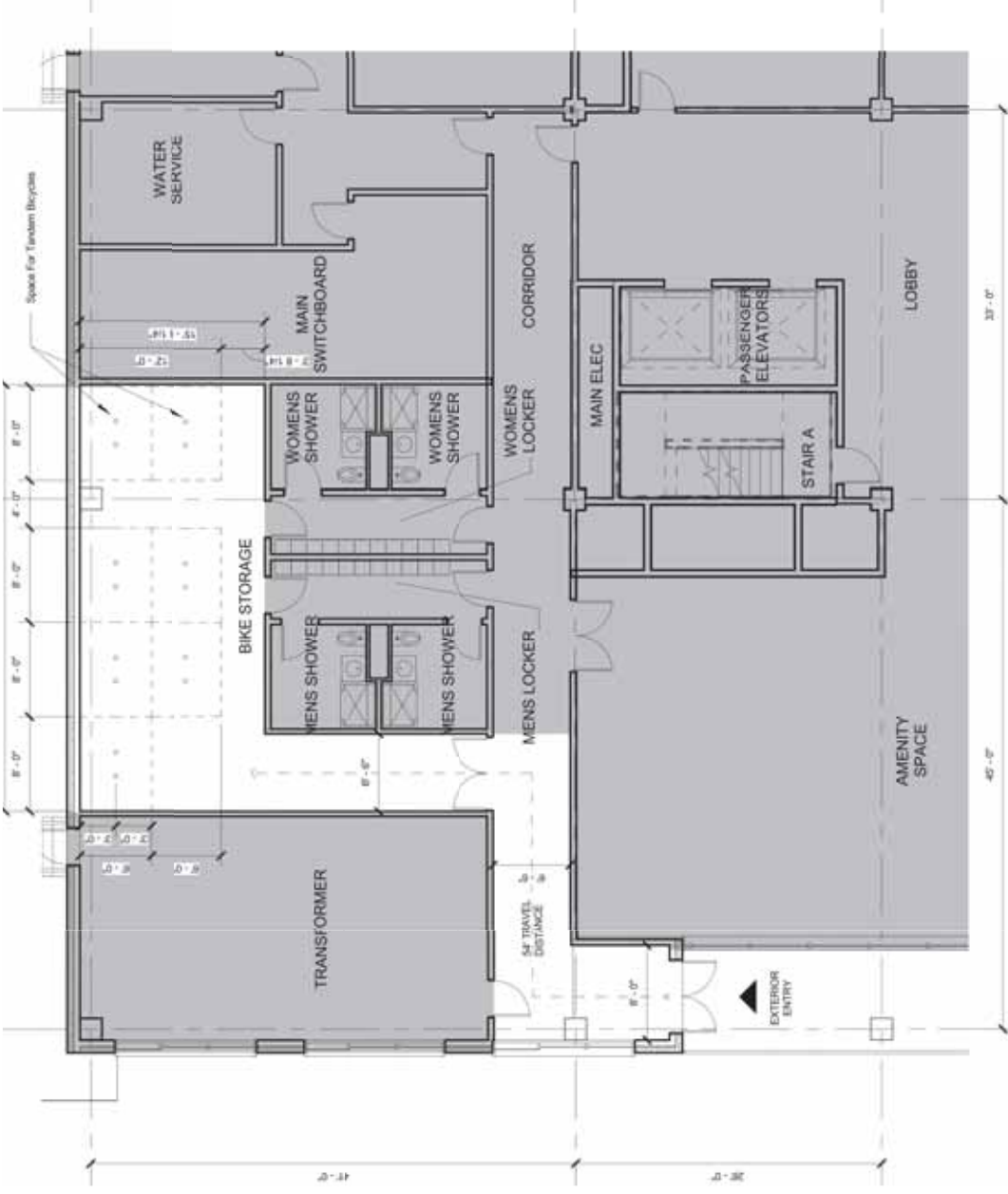
Total Long-Term Spaces Provided: 14 Spaces



Ultrasite Inverted U-Rack, Model # 5801DSM, Powdercoated Black

Note 1: The floor area of an underground parking garage and the floor area of the underground portion of a structure devoted in whole or in part to parking automobiles, shall not be counted as gross floor area and shall be exempt from the requirements as to floor area but shall conform to all other requirements of the district in which it is located.

Note 2: Long-term bicycle parking as a private lot shall be located within the building containing the use and it is intended to serve, or within a structure whose pedestrian entrance is no more than ten hundred (1000) feet from a pedestrian entrance to such a building.



Source: SGA Architecture Planning Interior Design

0 5 10 Scale in Feet



Vanasse & Associates inc

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Figure 9.d.1

Proposed Site Plan
 Long-Term Bicycle Parking

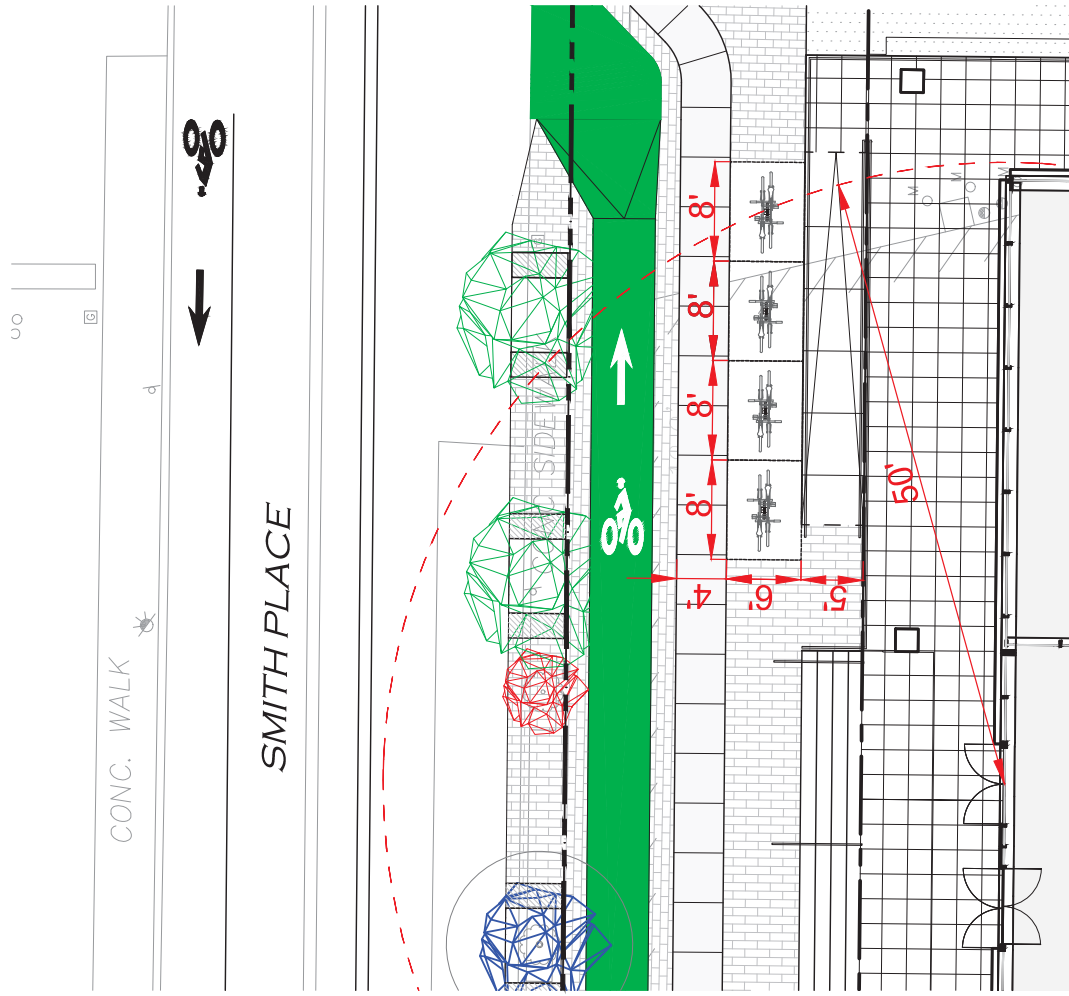
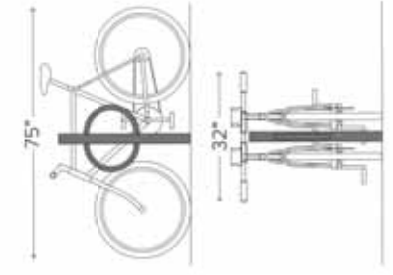
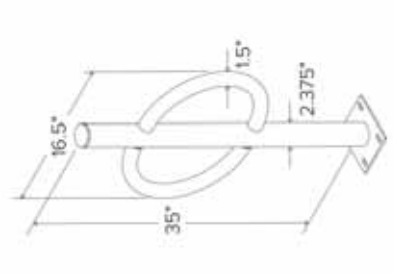
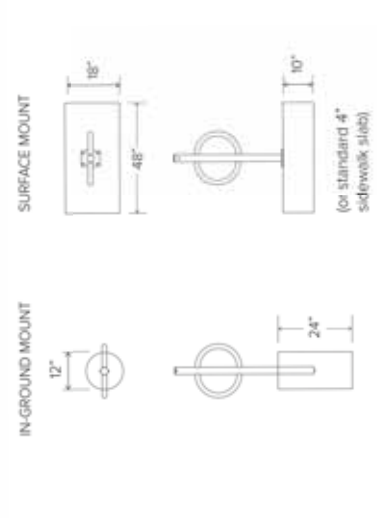


Figure 9.d.2

Proposed Site Plan
Short-Term Bicycle Parking

- CAPACITY** 2 Bikes
- MATERIALS** Centerbeam: 2" schedule 40 pipe (2.375" OD)
Ring: 1.5" OD 11 gauge tube
- FINISHES**
- Galvanized**
An after fabrication hot dipped galvanized finish is our standard option.
 - Powder Coat**
Our powder coat finish assures a high level of adhesion and durability by following these steps:
1. Sandblast
2. Epoxy primer electrostatically applied
3. Final thick TGIC polyester powder coat
 - PVC Dip**
Black PVC
 - Stainless**
Stainless Steel: 304 grade stainless steel material finished in either a high polished shine or a satin finish.

- MOUNT OPTIONS**
- Surface**
Foot Mount has a 5" x 6" x .25" foot with four anchors per foot. Specify foot mount for this option. Temper-resistant fasteners available upon request.
 - In-Ground**
In-ground mount is embedded into concrete base. Specify in-ground mount for this option.

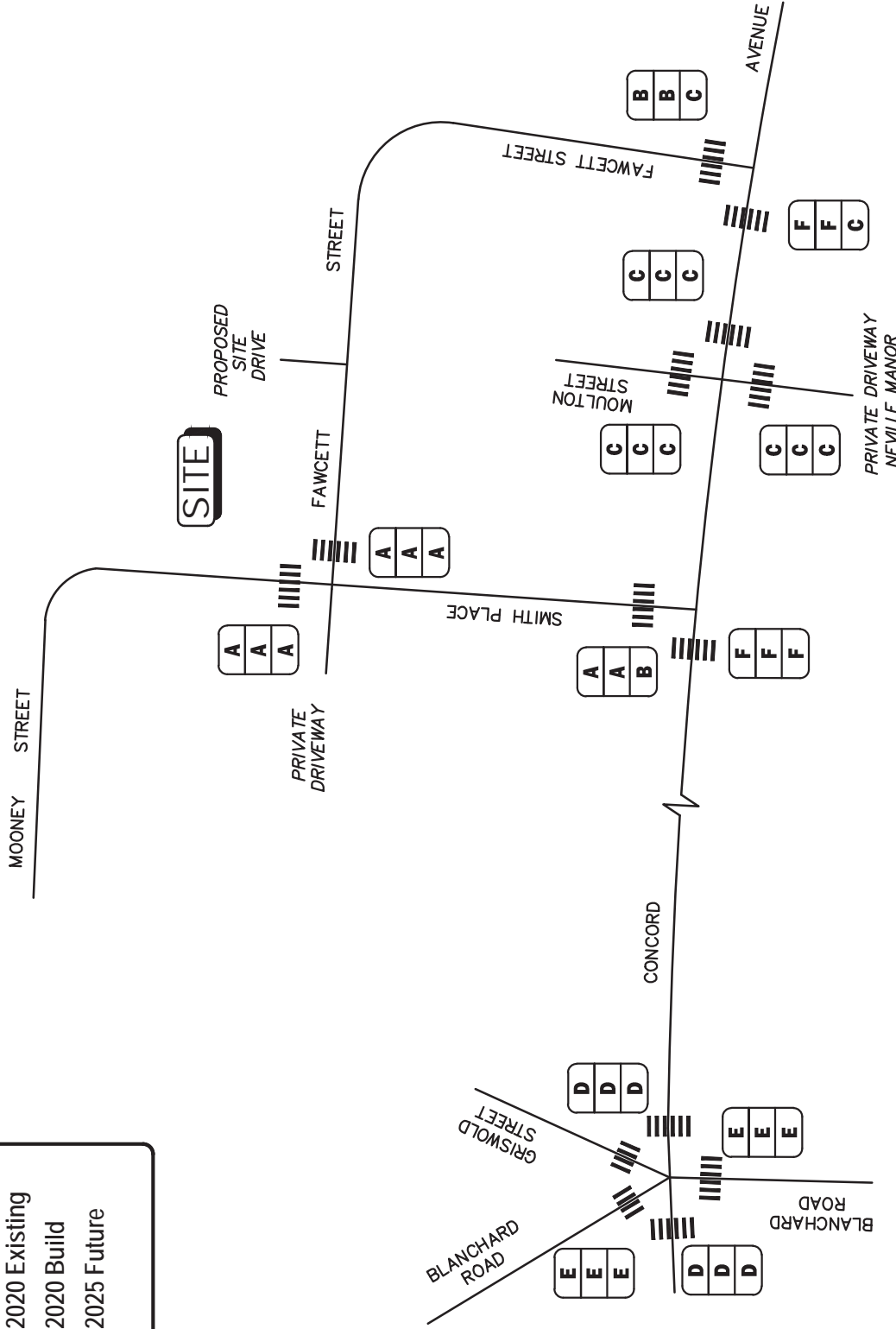
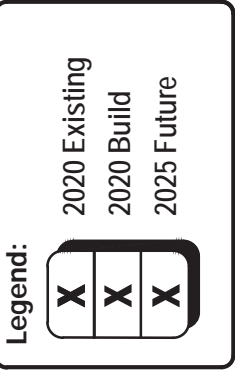


Source: SGA Architecture Planning Interior Design

0 5 10 Scale in Feet



Vanasse & Associates inc

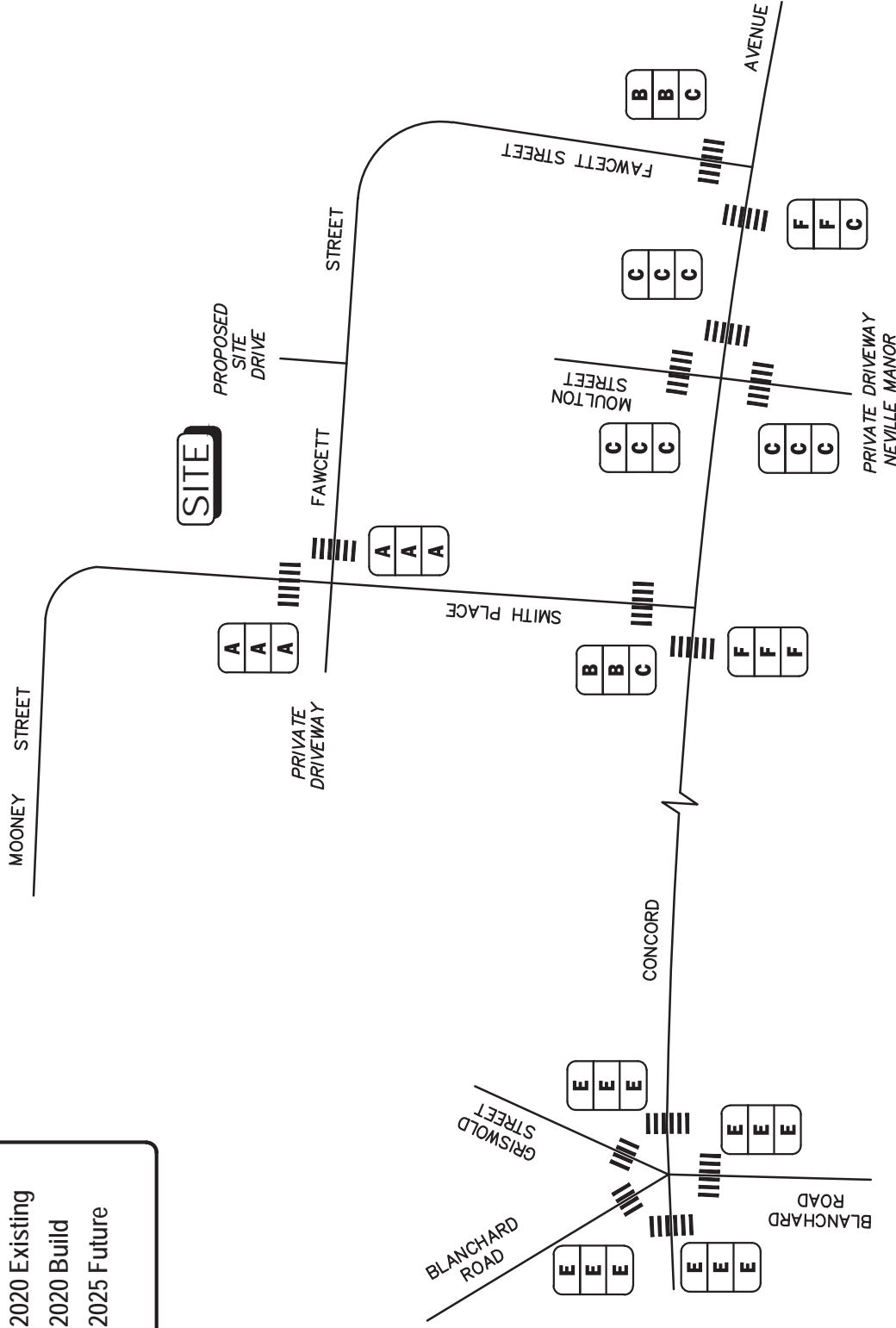
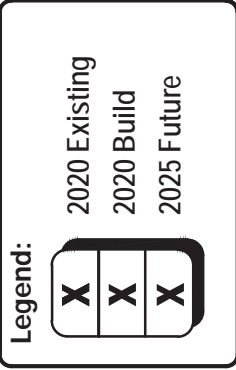


Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Figure 11.a.1

**Pedestrian Level-of-Service Map
Weekday Morning
Peak Hour Traffic Volumes**





Note: Imbalances exist due to numerous curb cuts and side streets that are not shown.

Figure 11.a.2

**Pedestrian Level-of-Service Map
Weekday Evening
Peak Hour Traffic Volumes**



Transportation Impact Study Appendix

180 Fawcett Street
Cambridge, Massachusetts

Prepared for:

CCF Fawcett Street Property Company, LLC
Cambridge, Massachusetts

July 2021

Prepared by:



35 New England Business Center Drive
Suite 140
Andover, MA 01810

APPENDIX

CITY OF CAMBRIDGE SCOPING LETTER
TRAFFIC COUNT DATA
PUBLIC AND PRIVATE TRANSIT DATA
VEHICLE CRASH DATA
MODE SPLIT DATA
TRIP GENERATION DATA
TRIP DISTRIBUTION DATA
CAPACITY ANALYSIS METHODOLOGY
QUEUE ANALYSIS
TRAFFIC ANALYSIS
PEDESTRIAN ANALYSIS



CITY OF CAMBRIDGE SCOPING LETTER





CITY OF CAMBRIDGE

TRAFFIC, PARKING, + TRANSPORTATION

Joseph E. Barr, Director
344 Broadway, Suite 102
Cambridge, MA 02139

May 5, 2021

Jennifer Conners
Vanasse & Associates
35 New England Business Center Drive, Suite 140
Andover, MA 01810

Matt D'Amico
Cabot, Cabot & Forbes
185 Dartmouth Street
Boston, MA 02116

RE: 180 Fawcett Street Transportation Impact Study (TIS) Scope

Dear Jennifer and Matt,

TP+T reviewed the TIS scoping letter, dated March 18, 2021 for the proposed 101,330 gross square feet Research and Development building with approximately 62,050 gross floor area (GFA) at 180 Fawcett Street by Cabot, Cabot & Forbes. The project proposes 55 automobile parking spaces, 17 long-term bicycle parking spaces and 5 short-term bicycle parking spaces. Overall, TP+T generally supports the proposed scope and provide the following comments for the TIS:

General Comments

- The TIS should follow the TP+T TIS Guidelines and latest supplemental TIS Guidelines.
- The TIS should illustrate in plans and explain how the proposed project is consistent with the 2019 Envision Cambridge Alewife District Plan.
- The TIS may use Pre-COVID trip generation data collected in 2019.

Project Site Plans, Access, Loading, Roadway, and Sidewalk Circulation

- The TIS shall show the proposed vehicle, pedestrian and bicycle access locations for the building and explain the rationale for their locations.
- The TIS should show the access route from the public right-of-way to the long-term and short-term bicycle parking spaces and label all widths and any slopes.
- The TIS should provide sightline triangles for vehicles exiting the parking garage based on TP+T's sightline triangle guidelines.

- The TIS should label the proposed curb cut width and explain if it meets City zoning requirements or if not explain why.
- The TIS should show turning movements for trucks and delivery service vehicles entering and exiting the loading dock for a SU-40 and WB-50 design vehicles and explain the rationale for the location of the loading dock.
- The TIS should show on a site plan and explain how flammable gas will be delivered and stored. Also show truck turning movements.
- The TIS should show on a plan and explain the access route between the Project site and Alewife MBTA station and area bus/shuttle stops. The distances should be labeled (i.e., linear feet or miles) and the pedestrian and bicycle connections should be described, including any deficiencies.
- All site plans should clearly label roadway and sidewalk widths, existing and proposed street trees, landscaping, and any other sidewalk elements (i.e., utility poles, signs fire hydrants, etc.).
- The TIS must provide a site plan that clearly shows any existing trees to be removed.
- The TIS must show the short-term and long-term bicycle parking spaces at ~~4 inch~~1-inch equals 10 feet scale and label all dimensions.
- The TIS should provide plans and explain how the proposed site plan is consistent with the Envision Cambridge Alewife District Plan including the City's preferred street cross-section widths.
- Site plans shall show the curbs and sidewalks for both sides of Fawcett Street and Smith Place and clearly show the property line and label the building setback and depict the location of the underground parking garage.
- The TIS should explain and show the project construction phasing plan, including changes to the streets and sidewalks. The TIS should specifically indicate what infrastructure changes will be implemented by the Project and when.

Transportation Analysis

- The list of six proposed study area intersections in the TIS scope request letter is acceptable.
- TP+T will work with you to determine final trip generation rates for the project, based on empirical trip rates from other project in the area from PTDM monitoring reports (i.e., driveway counts and survey data on where employees park). ITE rates.
- The mode share assumptions shall be as follows and based on the 10 Wilson Road 2017 PTDM report, 767 Concord Avenue 2019 PTDM report, and 75 Moulton Street 2019 PTDM report.

SOV	HOV	Transit	Bicycle	Pedestrian	Other
54%	10%	16%	10%	4%	6%

- TP+T supports the scope request letter which proposed the conservative assumption to not take trip credits for the existing building because of the minimal observed vehicle trips at the site.

- The 5-year Build Condition shall include a new traffic signal at the Concord Avenue/Fawcett Street intersection that will be installed as mitigation for the 55 Wheeler Street project.
- The 2021 Baseline Condition may use 2019 traffic volumes with no growth rate added. Although the TIS scope request letter suggested a 0.5 percent per year growth rate from 2019 to 2021, TP+T believes that would be overly conservative because regional traffic volumes have not grown from 2019 to 2021 due to the Covid-19 pandemic. For the 2026 Build Condition, the TIS should include a 0.5 percent per year growth rate.
- As proposed in the TIS scope request letter the trip distribution should be based on the Alewife Critical Sums Assumption report for commercial use.
- As proposed in the TIS scope request letter, the TIS shall include the cumulative traffic impacts from other area development projects permitted or under construction for the Future Build Condition and analysis.
- The transportation queue analysis shall use Sim Traffic. Synchro may be used for intersection level of service and delay.
- Crash data shall be collected directly from the Cambridge Police Department for the three most recent years at study area intersections.

Parking

- The TIS should document the existing number of on-site parking spaces.
- The project proposes approximately 55 automobile parking spaces which triggers the City's PTDM ordinance because according to TP&T's records 180 Fawcett Street has 14 registered employee parking spaces. TP+T recommends that the Project contact the City's PTDM Planning Officer regarding obtaining an approved PTDM plan.
- The TIS should Indicate the expected employee density (employees per 1,000 square feet). The TIS should cite the source for the estimated employee density and explain why this source is appropriate.
- The TIS should justify why the proposed parking ratios for the project will be appropriate and consistent with the Envision Cambridge Plan and Alewife Design Guidelines.
- The TIS should explain the proposed parking management plan for the site, including access management and parking fees.
- Consistent with Envision Cambridge, the actual automobile mode shares and parking ratios for this Project will likely need to be lower than the TIS mode shares, which are based on current area buildings. In order to prevent the Envision study area intersections from exceeding critical sum thresholds, this and any other development project in the Alewife Area will be expected to achieve the Envision Cambridge SOV mode share and parking ratio goals (approximately 40% SOV and 0.8 parking spaces per 1,000 square feet), based on the mitigation that is proposed.

Transportation Mitigation

- The TIS should list Planning Board exceedances and proposed mitigation. The TIS should discuss how the mitigation will or cannot mitigate the Planning Board Special Permit Transportation Exceedance.
- Transportation mitigation should be in-line with expectations set forth in the Envision Plan.
- The TIS should discuss how the proposed Project is consistent with the Envision Cambridge Plan and Alewife Design Guidelines.

If you have any questions, feel free to contact Adam Shulman of my staff at 617-349-4745.

Very truly yours,



Joseph E. Barr, Director

cc: Adam Shulman, TP&T
Patrick Baxter, TP&T

TRAFFIC COUNT DATA

Automatic Traffic Recorder Data

Turning Movement Count Data

12-Hour Bicycle and Pedestrian Count Data

Vehicle Queue Count Data



Automatic Traffic Recorder Data



Accurate Counts
978-664-2565

Location : Concord Avenue
Location : West of Smith Place
City/State: Cambridge, MA

8084VOL1

Start Time	4/2/2019 Tue	WB		Hour Totals		EB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		7	118			11	123				
12:15		7	127			11	104				
12:30		11	123			6	96				
12:45		4	138	29	506	6	101	34	424	63	930
01:00		3	91			5	86				
01:15		9	124			1	101				
01:30		3	107			4	108				
01:45		5	150	20	472	7	113	17	408	37	880
02:00		2	119			2	105				
02:15		7	148			4	102				
02:30		6	162			7	121				
02:45		5	148	20	577	1	119	14	447	34	1024
03:00		2	154			4	118				
03:15		1	134			1	106				
03:30		2	145			2	105				
03:45		1	109	6	542	4	106	11	435	17	977
04:00		2	131			4	91				
04:15		3	136			3	109				
04:30		4	148			10	128				
04:45		5	126	14	541	13	108	30	436	44	977
05:00		15	134			18	133				
05:15		13	120			17	87				
05:30		24	93			25	60				
05:45		28	105	80	452	48	90	108	370	188	822
06:00		42	124			48	128				
06:15		43	145			90	94				
06:30		48	131			103	100				
06:45		69	131	202	531	133	105	374	427	576	958
07:00		85	162			132	81				
07:15		94	125			135	76				
07:30		106	86			170	60				
07:45		111	101	396	474	207	69	644	286	1040	760
08:00		145	123			195	51				
08:15		162	74			207	66				
08:30		119	73			171	59				
08:45		104	77	530	347	139	55	712	231	1242	578
09:00		89	81			169	64				
09:15		110	54			137	40				
09:30		95	58			145	34				
09:45		114	59	408	252	104	34	555	172	963	424
10:00		93	51			110	43				
10:15		103	32			117	20				
10:30		97	43			103	18				
10:45		103	31	396	157	81	22	411	103	807	260
11:00		95	16			116	20				
11:15		120	9			103	17				
11:30		121	14			104	18				
11:45		105	12	441	51	127	12	450	67	891	118
Total		2542	4902			3360	3806			5902	8708
Percent		34.1%	65.9%			46.9%	53.1%			40.4%	59.6%

Accurate Counts
978-664-2565

8084SPDI

Location : Concord Avenue
Location : West of Smith Place
City/State: Cambridge, MA

WB

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	Total	
04/02/19	2	0	0	0	0	0	7	7	3	3	7	7	8	8	1	1	1	1	0	0	0	0	0	0	0	0	0	0	29
01:00	6	1	0	0	0	0	0	0	7	7	2	2	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	20
02:00	4	2	0	0	0	0	1	1	2	2	7	7	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	20
03:00	2	0	0	0	0	0	0	0	1	1	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6	
04:00	4	0	0	0	0	0	1	1	2	2	2	2	1	1	2	2	2	2	0	0	0	0	0	0	0	0	0	14	
05:00	5	2	2	2	3	3	8	8	26	26	23	23	9	9	3	3	1	1	0	0	0	0	0	0	0	0	0	80	
06:00	29	5	5	5	16	16	39	39	58	58	40	40	13	13	2	2	0	0	0	0	0	0	0	0	0	0	0	202	
07:00	89	25	23	23	89	89	55	55	132	132	65	65	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	396	
08:00	103	25	25	25	35	35	135	135	174	174	50	50	6	6	1	1	0	0	0	0	0	0	0	0	0	0	1	530	
09:00	65	25	25	25	25	25	107	107	124	124	49	49	11	11	2	2	0	0	0	0	0	0	0	0	0	0	0	408	
10:00	74	27	26	26	26	26	83	83	135	135	49	49	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	396	
11:00	96	39	32	32	32	32	111	111	117	117	39	39	5	5	1	1	0	0	0	0	0	0	0	0	0	0	0	441	
12 PM	106	52	81	81	81	81	166	166	91	91	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	506	
13:00	81	45	45	45	55	55	128	128	135	135	25	25	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	472	
14:00	111	35	35	35	82	82	161	161	137	137	44	44	4	4	1	1	0	0	0	0	0	0	0	0	0	0	0	577	
15:00	113	62	67	67	67	67	107	107	130	130	57	57	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	542	
16:00	106	51	59	59	59	59	136	136	156	156	27	27	4	4	1	1	0	0	0	0	0	0	0	0	0	0	0	541	
17:00	113	56	43	43	43	43	99	99	104	104	33	33	3	3	1	1	0	0	0	0	0	0	0	0	0	0	0	452	
18:00	84	44	31	31	31	31	136	136	163	163	63	63	9	9	1	1	0	0	0	0	0	0	0	0	0	0	0	531	
19:00	50	30	30	30	35	35	136	136	144	144	71	71	5	5	2	2	1	1	0	0	0	0	0	0	0	0	0	474	
20:00	22	17	12	12	12	12	51	51	135	135	83	83	24	24	3	3	0	0	0	0	0	0	0	0	0	0	0	347	
21:00	29	22	3	3	3	3	22	22	93	93	59	59	21	21	2	2	1	1	0	0	0	0	0	0	0	0	0	252	
22:00	11	7	6	6	6	6	14	14	47	47	52	52	18	18	1	1	0	0	0	0	0	0	0	0	0	0	0	157	
23:00	5	3	3	3	3	3	2	2	12	12	10	10	10	10	6	6	0	0	0	0	0	0	0	0	0	0	0	51	
Total	1310	575	637	637	637	637	1705	1705	2128	2128	869	869	171	171	34	34	8	8	0	0	0	0	0	0	0	0	0	4	7444

Daily
 15th Percentile : 12 MPH
 50th Percentile : 28 MPH
 85th Percentile : 34 MPH
 95th Percentile : 39 MPH
 Mean Speed(Average) : 26 MPH
 10 MPH Pace Speed : 26-35 MPH
 Number in Pace : 3833
 Percent in Pace : 51.5%
 Number of Vehicles > 35 MPH : 1089
 Percent of Vehicles > 35 MPH : 14.6%

Accurate Counts
978-664-2565

8084SPDI

Location : Concord Avenue
Location : West of Smith Place
City/State: Cambridge, MA

EB

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
04/02/19	1	0	0	1	7	7	9	5	3	1	0	0	0	0	34
01:00	3	0	1	2	1	7	2	0	0	1	0	0	0	0	17
02:00	1	1	1	2	0	2	5	0	1	1	0	0	0	0	14
03:00	3	0	0	0	2	1	3	1	1	0	0	0	0	0	11
04:00	8	1	1	1	3	7	2	6	1	2	0	0	0	0	30
05:00	18	12	3	1	5	26	33	6	2	2	0	0	0	0	108
06:00	73	39	15	7	23	77	98	33	9	0	0	0	0	0	374
07:00	119	32	30	29	124	195	87	23	4	1	0	0	0	0	644
08:00	134	18	22	54	171	197	83	29	1	3	0	0	0	0	712
09:00	98	15	18	29	140	149	72	26	7	1	0	0	0	0	555
10:00	76	17	12	26	73	119	67	18	2	1	0	0	0	0	411
11:00	99	15	21	35	83	121	61	11	4	0	0	0	0	0	450
12 PM	122	22	11	32	80	102	46	9	0	0	0	0	0	0	424
13:00	93	19	27	31	74	93	56	8	6	1	0	0	0	0	408
14:00	88	12	16	42	85	115	72	14	2	1	0	0	0	0	447
15:00	102	17	11	31	101	105	52	14	2	0	0	0	0	0	435
16:00	86	24	8	34	111	117	43	9	4	0	0	0	0	0	436
17:00	119	19	7	23	66	83	39	12	2	0	0	0	0	0	370
18:00	86	9	15	34	59	121	80	18	4	1	0	0	0	0	427
19:00	40	7	4	19	71	80	44	17	3	1	0	0	0	0	286
20:00	22	8	6	18	46	70	42	15	4	0	0	0	0	0	231
21:00	10	2	4	18	37	49	35	13	1	3	0	0	0	0	172
22:00	1	0	3	7	25	34	22	9	2	0	0	0	0	0	103
23:00	3	1	2	7	10	14	13	11	5	0	1	0	0	0	67
Total	1405	290	238	483	1397	1891	1066	307	70	18	1	0	0	0	7166

Daily
 15th Percentile : 11 MPH
 50th Percentile : 34 MPH
 85th Percentile : 41 MPH
 95th Percentile : 45 MPH
 Mean Speed(Average) : 31 MPH
 10 MPH Pace Speed : 31-40 MPH
 Number in Pace : 3288
 Percent in Pace : 45.9%
 Number of Vehicles > 35 MPH : 3363
 Percent of Vehicles > 35 MPH : 46.8%

Accurate Counts
978-664-2565

8084SPDI

Location : Concord Avenue
Location : West of Smith Place
City/State: Cambridge, MA

WB, EB

Start Time	15	16	21	26	30	31	36	41	46	51	56	61	66	71	76	Total
04/02/19	3	0	0	8	10	14	17	17	6	4	1	0	0	0	0	63
01:00	9	1	1	2	8	9	4	4	1	1	4	1	0	0	0	37
02:00	5	3	1	3	2	9	7	7	2	1	1	0	0	0	0	34
03:00	5	0	0	0	3	3	4	4	1	1	0	0	0	0	0	17
04:00	12	1	1	2	5	9	3	3	8	3	0	0	0	0	0	44
05:00	23	14	6	9	31	49	42	42	9	3	2	0	0	0	0	188
06:00	102	44	31	46	81	117	111	111	35	9	0	0	0	0	0	576
07:00	208	57	53	84	256	260	260	260	23	4	1	0	0	0	0	1040
08:00	237	43	57	189	345	247	247	89	30	1	3	0	0	0	1	1242
09:00	163	40	43	136	264	198	188	83	28	7	1	0	0	0	0	963
10:00	150	44	38	109	208	168	168	69	18	2	1	0	0	0	0	807
11:00	195	54	53	146	200	160	160	66	12	4	0	0	1	0	0	891
12 PM	228	74	92	198	171	112	112	46	9	0	0	0	0	0	0	930
13:00	174	64	82	159	209	118	118	59	8	6	1	0	0	0	0	880
14:00	199	47	98	203	222	159	159	76	15	2	1	0	0	0	2	1024
15:00	215	79	78	138	231	162	162	55	15	2	0	2	0	0	0	977
16:00	192	75	67	170	267	144	144	47	10	4	0	0	0	0	1	977
17:00	232	75	50	232	170	116	116	42	13	2	0	0	0	0	0	822
18:00	170	53	46	170	222	184	184	89	19	4	1	0	0	0	0	958
19:00	90	37	39	155	215	151	151	49	19	4	1	0	0	0	0	760
20:00	44	25	18	69	181	153	153	66	18	4	0	0	0	0	0	578
21:00	39	24	7	40	130	108	108	56	15	2	3	0	0	0	0	424
22:00	12	7	9	21	72	86	86	40	10	3	0	0	0	0	0	260
23:00	8	4	5	9	22	24	24	23	17	5	0	1	0	0	0	118
Total	2715	865	875	2188	3525	2760	1237	341	18	78	3	3	1	0	4	14610

Daily
 15th Percentile : 12 MPH
 50th Percentile : 30 MPH
 85th Percentile : 39 MPH
 95th Percentile : 43 MPH
 Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 31-40 MPH
 Number in Pace : 6285
 Percent in Pace : 43.0%
 Number of Vehicles > 35 MPH : 4442
 Percent of Vehicles > 35 MPH : 30.4%

Accurate Counts
978-664-2565

8084SPDI

Location : Concord Avenue
Location : West of Smith Place
City/State: Cambridge, MA

WB, EB

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	Total
04/03/19	4	4	1	1	0	0	3	3	27	27	19	40	13	5	5	3	3	3	0	0	1	1	0	0	0	0	0	76
01:00	5	0	0	1	1	3	3	9	9	9	7	8	8	4	4	1	1	1	8	1	0	0	0	0	0	0	0	39
02:00	2	2	2	0	0	0	0	1	1	1	9	5	5	3	3	0	0	0	0	0	0	0	0	0	0	0	0	22
03:00	4	0	0	0	0	1	1	2	2	2	4	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13
04:00	12	3	3	1	1	4	4	5	5	5	9	9	9	9	9	0	0	0	0	0	0	0	0	0	0	0	0	55
05:00	20	14	14	6	6	13	13	30	30	30	48	48	40	40	16	16	16	3	3	1	1	0	0	0	0	0	0	191
06:00	85	34	23	23	23	51	51	106	106	106	130	130	65	65	12	12	7	7	1	1	0	0	0	0	0	0	0	514
07:00	174	51	45	160	160	192	192	278	278	278	192	192	64	64	19	19	1	1	0	0	0	0	0	0	1	1	986	
08:00	235	40	91	227	227	398	398	309	309	309	150	150	56	56	8	8	3	3	0	0	0	0	0	0	0	0	0	1200
09:00	166	44	61	224	224	139	139	237	237	237	131	131	42	42	4	4	1	1	0	0	0	0	0	0	0	0	0	790
10:00	149	42	55	149	149	165	165	200	200	200	119	119	24	24	6	6	0	0	0	0	0	0	0	0	0	0	0	855
11:00	189	61	91	189	189	191	191	153	153	153	79	79	17	17	1	1	0	0	0	0	0	0	0	0	0	0	0	850
12 PM	228	56	125	228	228	170	170	187	187	187	106	106	60	60	17	17	2	2	0	0	1	1	0	0	0	0	0	833
13:00	175	70	77	175	175	153	153	198	198	198	128	128	63	63	14	14	2	2	0	0	0	0	0	0	0	0	0	905
14:00	192	71	97	192	192	175	175	158	158	158	129	129	53	53	12	12	3	3	1	1	0	0	0	0	0	0	0	891
15:00	199	68	88	199	199	145	145	231	231	231	179	179	63	63	13	13	0	0	0	0	0	0	0	0	0	0	0	957
16:00	208	57	42	208	208	153	153	249	249	249	172	172	63	63	21	21	4	4	2	2	0	0	0	0	0	0	0	971
17:00	182	81	81	182	182	155	155	201	201	201	212	212	71	71	23	23	4	4	0	0	0	0	0	0	0	0	0	1010
18:00	104	39	28	104	104	137	137	228	228	228	174	174	61	61	19	19	2	2	1	1	0	0	1	1	0	0	0	870
19:00	65	19	16	65	65	40	40	122	122	122	137	137	44	44	17	17	5	5	1	1	0	0	0	0	0	0	0	632
20:00	36	16	11	36	36	16	16	60	60	60	60	60	39	39	12	12	0	0	4	4	0	0	0	0	0	0	0	429
21:00	16	9	8	16	16	6	6	72	72	72	54	54	27	27	11	11	9	9	0	0	0	0	0	0	0	0	0	236
22:00	6	0	3	6	6	3	3	39	39	39	54	54	27	27	11	11	9	9	0	0	0	0	0	0	0	0	0	155
23:00	2626	839	997	2406	2406	3641	3641	2708	2708	2708	611	611	2240	2240	611	611	135	135	36	36	5	5	2	2	1	1	14570	

Daily
 15th Percentile : 12 MPH
 50th Percentile : 30 MPH
 85th Percentile : 38 MPH
 95th Percentile : 43 MPH
 Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 31-40 MPH
 Number in Pace : 6349
 Percent in Pace : 43.6%
 Number of Vehicles > 35 MPH : 4061
 Percent of Vehicles > 35 MPH : 27.9%

Grand Total	5341	1704	1872	4594	4594	7166	7166	5468	5468	5468	2240	2240	611	611	135	135	36	36	5	5	2	2	1	1	1	1	29180
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Overall
 15th Percentile : 12 MPH
 50th Percentile : 30 MPH
 85th Percentile : 38 MPH
 95th Percentile : 43 MPH
 Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 31-40 MPH
 Number in Pace : 12634
 Percent in Pace : 43.3%
 Number of Vehicles > 35 MPH : 8503
 Percent of Vehicles > 35 MPH : 29.1%

Accurate Counts
978-664-2565

Location : Smith Place
Location : North of Concord Avenue
City/State: Cambridge, MA

8084VOL2

Start Time	4/2/2019 Tue	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		0	31			0	23				
12:15		0	27			0	30				
12:30		1	31			0	20				
12:45		0	29	1	118	0	15	0	88	1	206
01:00		2	24			0	22				
01:15		1	22			3	23				
01:30		1	25			0	35				
01:45		1	26	5	97	1	27	4	107	9	204
02:00		1	19			0	25				
02:15		1	15			0	29				
02:30		1	15			2	25				
02:45		0	33	3	82	2	17	4	96	7	178
03:00		0	18			2	37				
03:15		1	21			1	25				
03:30		0	20			1	33				
03:45		1	18	2	77	0	31	4	126	6	203
04:00		1	17			0	45				
04:15		1	22			2	27				
04:30		1	22			0	46				
04:45		5	21	8	82	1	32	3	150	11	232
05:00		4	17			1	29				
05:15		5	22			3	27				
05:30		8	17			4	34				
05:45		19	19	36	75	2	25	10	115	46	190
06:00		10	10			3	26				
06:15		30	18			6	11				
06:30		33	17			3	24				
06:45		40	25	113	70	0	21	12	82	125	152
07:00		32	16			10	24				
07:15		26	9			11	14				
07:30		25	7			10	8				
07:45		28	11	111	43	8	17	39	63	150	106
08:00		21	7			4	16				
08:15		22	2			11	11				
08:30		14	5			15	13				
08:45		23	12	80	26	10	6	40	46	120	72
09:00		18	7			14	24				
09:15		19	4			15	10				
09:30		21	6			13	10				
09:45		15	3	73	20	27	10	69	54	142	74
10:00		20	1			14	4				
10:15		24	3			20	6				
10:30		29	5			22	6				
10:45		23	3	96	12	31	6	87	22	183	34
11:00		18	3			34	8				
11:15		29	1			23	0				
11:30		15	0			27	1				
11:45		32	0	94	4	23	0	107	9	201	13
Total		622	706			379	958			1001	1664
Percent		46.8%	53.2%			28.3%	71.7%			37.6%	62.4%

Accurate Counts
978-664-2565

8084SPD2

Location : Smith Place
Location : North of Concord Avenue
City/State: Cambridge, MA

NB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
04/02/19	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
01:00	1	0	3	1	0	0	0	0	0	0	0	0	0	0	5
02:00	0	0	0	1	1	0	1	0	0	0	0	0	0	0	3
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	2	2	3	1	0	0	0	0	0	0	0	0	0	8
05:00	6	2	10	13	5	0	0	0	0	0	0	0	0	0	36
06:00	2	2	56	50	3	0	0	0	0	0	0	0	0	0	113
07:00	1	11	50	45	3	0	1	0	0	0	0	0	0	0	111
08:00	1	16	26	29	6	1	0	0	1	0	0	0	0	0	80
09:00	1	19	28	17	8	0	0	0	0	0	0	0	0	0	73
10:00	8	34	34	13	6	1	0	0	0	0	0	0	0	0	96
11:00	18	35	30	9	1	0	1	0	0	0	0	0	0	0	94
12 PM	19	34	46	15	4	0	0	0	0	0	0	0	0	0	118
13:00	23	31	26	16	1	0	0	0	0	0	0	0	0	0	97
14:00	7	22	41	10	2	0	0	0	0	0	0	0	0	0	82
15:00	12	30	25	10	0	0	0	0	0	0	0	0	0	0	77
16:00	9	35	29	9	0	0	0	0	0	0	0	0	0	0	82
17:00	2	20	31	18	3	0	1	0	0	0	0	0	0	0	75
18:00	0	13	32	23	2	0	0	0	0	0	0	0	0	0	70
19:00	0	9	23	9	1	1	0	0	0	0	0	0	0	0	43
20:00	0	6	14	4	2	0	0	0	0	0	0	0	0	0	26
21:00	2	4	8	5	1	0	0	0	0	0	0	0	0	0	20
22:00	1	5	1	4	1	0	0	0	0	0	0	0	0	0	12
23:00	0	0	0	4	0	0	0	0	0	0	0	0	0	0	4
Total	113	332	516	308	51	3	4	0	1	0	0	0	0	0	1328

Daily
 15th Percentile : 16 MPH
 50th Percentile : 22 MPH
 85th Percentile : 27 MPH
 95th Percentile : 29 MPH
 Mean Speed(Average) : 22 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 848
 Percent in Pace : 63.9%
 Number of Vehicles > 20 MPH : 883
 Percent of Vehicles > 20 MPH : 66.5%

Accurate Counts
978-664-2565

8084SPD2

Location : Smith Place
Location : North of Concord Avenue
City/State: Cambridge, MA

NB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
04/03/19	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
01:00	1	0	3	1	0	0	0	0	0	0	0	0	0	0	5
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	1	4	3	3	0	0	0	0	0	0	0	0	0	0	11
05:00	0	9	8	3	0	0	0	0	0	1	0	0	0	0	21
06:00	3	25	43	19	3	0	0	0	0	0	0	0	0	0	93
07:00	3	18	50	36	2	0	0	0	0	0	0	0	0	0	109
08:00	1	17	30	25	5	0	0	0	1	0	0	0	0	0	79
09:00	0	23	38	10	2	1	0	0	0	0	0	0	0	0	74
10:00	2	23	36	11	0	1	0	0	0	0	0	0	0	0	73
11:00	12	25	31	13	1	0	0	0	0	0	0	0	0	0	82
12 PM	29	35	22	8	0	0	0	0	0	0	0	0	0	0	94
13:00	11	27	30	17	3	1	0	0	0	0	0	0	0	0	89
14:00	6	23	43	19	0	0	0	0	0	0	0	0	0	0	91
15:00	9	29	48	16	5	0	0	0	0	0	0	0	0	0	107
16:00	4	16	32	17	2	0	0	0	0	0	0	0	0	0	71
17:00	2	14	32	24	4	1	0	0	0	0	0	0	0	0	77
18:00	1	5	26	24	4	0	0	0	0	0	0	0	0	0	60
19:00	0	6	25	16	2	0	0	0	0	0	0	0	0	0	49
20:00	0	2	13	7	0	1	0	0	0	0	0	0	0	0	23
21:00	0	3	5	3	0	0	0	0	0	0	0	0	0	0	11
22:00	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
23:00	0	0	1	2	1	0	0	0	0	0	0	0	0	0	4
Total	85	305	521	276	34	5	4	0	2	1	0	0	0	0	1228

Daily
 15th Percentile : 16 MPH
 50th Percentile : 22 MPH
 85th Percentile : 27 MPH
 95th Percentile : 29 MPH
 Mean Speed(Average) : 22 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 826
 Percent in Pace : 67.3%
 Number of Vehicles > 20 MPH : 838
 Percent of Vehicles > 20 MPH : 68.2%

Grand Total	198	637	1037	584	85	8	4	0	2	1	0	0	0	0	2556
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Overall
 15th Percentile : 16 MPH
 50th Percentile : 22 MPH
 85th Percentile : 27 MPH
 95th Percentile : 29 MPH
 Mean Speed(Average) : 22 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 1674
 Percent in Pace : 65.5%
 Number of Vehicles > 20 MPH : 1721
 Percent of Vehicles > 20 MPH : 67.3%

Accurate Counts
978-664-2565

8084SPD2

Location : Smith Place
Location : North of Concord Avenue
City/State: Cambridge, MA

SB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
04/02/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	1	0	2	1	0	0	0	0	0	0	0	0	0	0	4
02:00	0	2	1	1	0	0	0	0	0	0	0	0	0	0	4
03:00	2	1	1	0	0	0	0	0	0	0	0	0	0	0	4
04:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
05:00	2	3	4	1	0	0	0	0	0	0	0	0	0	0	10
06:00	2	4	5	1	0	0	0	0	0	0	0	0	0	0	12
07:00	4	19	9	7	0	0	0	0	0	0	0	0	0	0	39
08:00	6	15	15	3	1	0	0	0	0	0	0	0	0	0	40
09:00	10	34	18	5	2	0	0	0	0	0	0	0	0	0	69
10:00	19	48	14	6	0	0	0	0	0	0	0	0	0	0	87
11:00	29	50	24	4	0	0	0	0	0	0	0	0	0	0	107
12 PM	33	38	14	3	0	0	0	0	0	0	0	0	0	0	88
13:00	31	50	21	5	0	0	0	0	0	0	0	0	0	0	107
14:00	29	36	25	5	1	0	0	0	0	0	0	0	0	0	96
15:00	30	58	33	4	0	0	1	0	0	0	0	0	0	0	126
16:00	43	56	46	4	1	0	0	0	0	0	0	0	0	0	150
17:00	16	57	39	1	1	0	1	0	0	0	0	0	0	0	115
18:00	8	36	27	11	0	0	0	0	0	0	0	0	0	0	82
19:00	4	28	27	3	1	0	0	0	0	0	0	0	0	0	63
20:00	4	12	24	6	0	0	0	0	0	0	0	0	0	0	46
21:00	2	24	25	3	0	0	0	0	0	0	0	0	0	0	54
22:00	2	7	11	1	0	1	0	0	0	0	0	0	0	0	22
23:00	0	2	5	2	0	0	0	0	0	0	0	0	0	0	9
Total	277	583	390	77	7	1	2	0	0	0	0	0	0	0	1337

Daily
 15th Percentile : 10 MPH
 50th Percentile : 18 MPH
 85th Percentile : 23 MPH
 95th Percentile : 26 MPH
 Mean Speed(Average) : 18 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 973
 Percent in Pace : 72.8%
 Number of Vehicles > 20 MPH : 477
 Percent of Vehicles > 20 MPH : 35.7%

Accurate Counts
978-664-2565

8084SPD2

Location : Smith Place
Location : North of Concord Avenue
City/State: Cambridge, MA

SB

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
04/03/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
02:00	2	0	1	0	0	0	0	0	0	0	0	0	0	0	3
03:00	2	0	1	0	0	0	0	0	0	0	0	0	0	0	3
04:00	1	2	0	0	0	0	0	0	0	0	0	0	0	0	3
05:00	6	4	0	0	0	0	0	0	0	0	0	0	0	0	10
06:00	3	2	4	0	0	0	0	0	0	0	0	0	0	0	9
07:00	4	16	7	3	0	0	1	0	0	0	0	0	0	0	31
08:00	10	19	15	1	0	0	0	0	0	0	0	0	0	0	45
09:00	11	27	12	1	0	0	0	0	0	0	0	0	0	0	51
10:00	11	30	18	4	1	0	0	0	0	0	0	0	0	0	64
11:00	21	30	21	3	0	0	0	0	0	0	0	0	0	0	75
12 PM	22	32	17	3	0	0	0	0	0	0	0	0	0	0	74
13:00	28	36	22	5	0	0	0	0	0	0	0	0	0	0	91
14:00	24	52	31	6	0	0	0	0	0	0	0	0	0	0	113
15:00	18	51	32	5	2	0	0	0	0	0	0	0	0	0	108
16:00	23	46	48	4	2	1	0	0	0	0	0	0	0	0	124
17:00	10	33	26	8	2	0	0	0	0	0	0	0	0	0	79
18:00	2	30	28	1	1	0	0	0	0	0	0	0	0	0	62
19:00	3	18	18	5	0	0	0	0	0	0	0	0	0	0	44
20:00	0	19	23	3	0	0	0	0	0	0	0	0	0	0	45
21:00	0	14	19	2	0	0	0	0	0	0	0	0	0	0	35
22:00	1	4	4	3	0	0	0	0	0	0	0	0	0	0	12
23:00	0	2	1	1	0	0	0	0	0	0	0	0	0	0	4
Total	202	467	349	58	8	1	1	0	0	0	0	0	0	0	1086

Daily
 15th Percentile : 12 MPH
 50th Percentile : 18 MPH
 85th Percentile : 23 MPH
 95th Percentile : 26 MPH
 Mean Speed(Average) : 18 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 816
 Percent in Pace : 75.1%
 Number of Vehicles > 20 MPH : 417
 Percent of Vehicles > 20 MPH : 38.4%

Grand Total	479	1050	739	135	15	2	3	0	0	0	0	0	0	0	2423
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Overall
 15th Percentile : 11 MPH
 50th Percentile : 18 MPH
 85th Percentile : 23 MPH
 95th Percentile : 26 MPH
 Mean Speed(Average) : 18 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 1789
 Percent in Pace : 73.8%
 Number of Vehicles > 20 MPH : 894
 Percent of Vehicles > 20 MPH : 36.9%

Accurate Counts
978-664-2565

Location : Mooney Street
Location : West of Smith Place
City/State: Cambridge, MA

8084VOL3

Start Time	4/2/2019 Tue	WB		Hour Totals		EB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		0	8			0	3				
12:15		0	4			0	7				
12:30		0	10			1	13				
12:45		3	16	3	38	0	6	1	29	4	67
01:00		0	7			1	17				
01:15		0	10			0	7				
01:30		0	11			0	6				
01:45		1	6	1	34	1	6	2	36	3	70
02:00		0	12			1	7				
02:15		0	8			1	1				
02:30		1	7			0	4				
02:45		0	10	1	37	1	5	3	17	4	54
03:00		1	5			0	5				
03:15		0	8			0	8				
03:30		0	11			1	5				
03:45		0	17	1	41	0	9	1	27	2	68
04:00		0	15			5	10				
04:15		3	14			2	7				
04:30		0	27			0	7				
04:45		2	14	5	70	2	6	9	30	14	100
05:00		2	17			3	4				
05:15		4	8			4	3				
05:30		0	18			2	6				
05:45		1	7	7	50	6	4	15	17	22	67
06:00		2	12			3	1				
06:15		1	9			7	2				
06:30		5	21			9	4				
06:45		1	12	9	54	11	5	30	12	39	66
07:00		6	18			15	3				
07:15		5	12			9	2				
07:30		6	7			12	1				
07:45		5	13	22	50	25	2	61	8	83	58
08:00		6	6			12	2				
08:15		6	8			13	1				
08:30		4	6			12	1				
08:45		8	3	24	23	11	2	48	6	72	29
09:00		8	11			6	3				
09:15		4	4			8	1				
09:30		5	3			11	0				
09:45		22	7	39	25	13	0	38	4	77	29
10:00		14	0			12	0				
10:15		19	2			19	2				
10:30		16	4			11	1				
10:45		10	0	59	6	8	0	50	3	109	9
11:00		16	2			16	1				
11:15		5	0			4	0				
11:30		7	0			0	0				
11:45		0	0	28	2	0	0	20	1	48	3
Total		199	430			278	190			477	620
Percent		31.6%	68.4%			59.4%	40.6%			43.5%	56.5%

Accurate Counts
978-664-2565

8084SPD3

Location : Mooney Street
Location : West of Smith Place
City/State: Cambridge, MA

WB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
04/02/19	0	0	2	1	0	0	0	0	0	0	0	0	0	0	3
01:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
02:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	2	3	0	0	0	0	0	0	0	0	0	0	0	0	5
05:00	2	3	2	0	0	0	0	0	0	0	0	0	0	0	7
06:00	0	7	1	1	0	0	0	0	0	0	0	0	0	0	9
07:00	2	6	11	3	0	0	0	0	0	0	0	0	0	0	22
08:00	3	9	8	4	0	0	0	0	0	0	0	0	0	0	24
09:00	6	15	12	5	1	0	0	0	0	0	0	0	0	0	39
10:00	10	24	14	11	0	0	0	0	0	0	0	0	0	0	59
11:00	7	8	9	4	0	0	0	0	0	0	0	0	0	0	28
12 PM	15	11	11	1	0	0	0	0	0	0	0	0	0	0	38
13:00	8	9	12	5	0	0	0	0	0	0	0	0	0	0	34
14:00	6	10	14	7	0	0	0	0	0	0	0	0	0	0	37
15:00	4	17	14	5	1	0	0	0	0	0	0	0	0	0	41
16:00	4	21	26	17	2	0	0	0	0	0	0	0	0	0	70
17:00	3	10	21	16	0	0	0	0	0	0	0	0	0	0	50
18:00	3	8	21	18	4	0	0	0	0	0	0	0	0	0	54
19:00	4	9	29	5	2	1	0	0	0	0	0	0	0	0	50
20:00	0	5	12	5	1	0	0	0	0	0	0	0	0	0	23
21:00	1	7	11	5	1	0	0	0	0	0	0	0	0	0	25
22:00	1	1	2	2	0	0	0	0	0	0	0	0	0	0	6
23:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Total	84	183	234	115	12	1	0	0	0	0	0	0	0	0	629

Daily
 15th Percentile : 15 MPH
 50th Percentile : 21 MPH
 85th Percentile : 26 MPH
 95th Percentile : 29 MPH
 Mean Speed(Average) : 21 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 417
 Percent in Pace : 66.3%
 Number of Vehicles > 20 MPH : 362
 Percent of Vehicles > 20 MPH : 57.6%

Accurate Counts
978-664-2565

8084SPD3

Location : Mooney Street
Location : West of Smith Place
City/State: Cambridge, MA

WB

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
04/03/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	2	3	0	0	0	0	0	0	0	0	0	0	0	0	5
05:00	2	3	0	1	0	0	0	0	0	0	0	0	0	0	6
06:00	1	2	3	1	0	0	0	0	0	0	0	0	0	0	7
07:00	6	5	6	2	0	0	0	0	0	0	0	0	0	0	19
08:00	8	13	8	3	0	0	0	0	0	0	0	0	0	0	32
09:00	13	15	13	5	0	0	0	0	0	0	0	0	0	0	46
10:00	10	22	19	2	2	0	0	0	0	0	0	0	0	0	55
11:00	10	5	15	7	1	0	0	0	0	0	0	0	0	0	38
12 PM	2	10	23	5	0	0	0	0	0	0	0	0	0	0	40
13:00	8	10	14	4	1	0	0	0	0	0	0	0	0	0	37
14:00	8	8	15	5	1	0	0	0	0	0	0	0	0	0	37
15:00	6	14	18	10	3	0	0	0	0	0	0	0	0	0	51
16:00	4	25	32	8	1	0	0	0	0	0	0	0	0	0	70
17:00	3	13	27	9	1	0	1	0	0	0	0	0	0	0	54
18:00	9	17	19	9	0	0	0	0	0	0	0	0	0	0	54
19:00	1	16	21	11	0	0	0	0	0	0	0	0	0	0	49
20:00	3	10	24	6	0	0	0	0	0	0	0	0	0	0	43
21:00	0	2	6	7	0	0	0	0	0	0	0	0	0	0	15
22:00	1	1	3	2	0	0	0	0	0	0	0	0	0	0	7
23:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
Total	98	195	266	98	10	0	1	0	0	0	0	0	0	0	668

Daily
 15th Percentile : 15 MPH
 50th Percentile : 20 MPH
 85th Percentile : 25 MPH
 95th Percentile : 28 MPH
 Mean Speed(Average) : 20 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 461
 Percent in Pace : 69.0%
 Number of Vehicles > 20 MPH : 375
 Percent of Vehicles > 20 MPH : 56.1%

Grand Total	182	378	500	213	22	1	1	0	0	0	0	0	0	0	1297
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Overall
 15th Percentile : 15 MPH
 50th Percentile : 20 MPH
 85th Percentile : 25 MPH
 95th Percentile : 29 MPH
 Mean Speed(Average) : 20 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 878
 Percent in Pace : 67.7%
 Number of Vehicles > 20 MPH : 737
 Percent of Vehicles > 20 MPH : 56.8%

Accurate Counts
978-664-2565

8084SPD3

Location : Mooney Street
Location : West of Smith Place
City/State: Cambridge, MA

EB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04/02/19	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
01:00	0	1	0	1	0	0	0	0	0	0	0	0	0	0	2
02:00	0	1	0	1	0	1	0	0	0	0	0	0	0	0	3
03:00	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
04:00	3	1	5	0	0	0	0	0	0	0	0	0	0	0	9
05:00	0	2	8	5	0	0	0	0	0	0	0	0	0	0	15
06:00	0	6	18	5	1	0	0	0	0	0	0	0	0	0	30
07:00	8	9	25	16	3	0	0	0	0	0	0	0	0	0	61
08:00	5	18	17	8	0	0	0	0	0	0	0	0	0	0	48
09:00	8	17	11	2	0	0	0	0	0	0	0	0	0	0	38
10:00	9	25	12	4	0	0	0	0	0	0	0	0	0	0	50
11:00	2	9	7	2	0	0	0	0	0	0	0	0	0	0	20
12 PM	4	20	4	1	0	0	0	0	0	0	0	0	0	0	29
13:00	6	15	10	5	0	0	0	0	0	0	0	0	0	0	36
14:00	6	3	8	0	0	0	0	0	0	0	0	0	0	0	17
15:00	2	11	12	2	0	0	0	0	0	0	0	0	0	0	27
16:00	3	9	14	3	1	0	0	0	0	0	0	0	0	0	30
17:00	4	5	7	1	0	0	0	0	0	0	0	0	0	0	17
18:00	3	2	6	1	0	0	0	0	0	0	0	0	0	0	12
19:00	1	3	3	1	0	0	0	0	0	0	0	0	0	0	8
20:00	0	1	4	1	0	0	0	0	0	0	0	0	0	0	6
21:00	1	1	2	0	0	0	0	0	0	0	0	0	0	0	4
22:00	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
23:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	65	159	178	60	5	1	0	0	0	0	0	0	0	0	468

Daily
 15th Percentile : 15 MPH
 50th Percentile : 20 MPH
 85th Percentile : 24 MPH
 95th Percentile : 28 MPH
 Mean Speed(Average) : 20 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 337
 Percent in Pace : 72.0%
 Number of Vehicles > 20 MPH : 244
 Percent of Vehicles > 20 MPH : 52.1%

Accurate Counts
978-664-2565

8084SPD3

Location : Mooney Street
Location : West of Smith Place
City/State: Cambridge, MA

WB, EB

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
04/02/19	0	0	2	2	0	0	0	0	0	0	0	0	0	0	4
01:00	1	1	0	1	0	0	0	0	0	0	0	0	0	0	3
02:00	1	1	0	1	0	1	0	0	0	0	0	0	0	0	4
03:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	5	4	5	0	0	0	0	0	0	0	0	0	0	0	14
05:00	2	5	10	5	0	0	0	0	0	0	0	0	0	0	22
06:00	0	13	19	6	1	0	0	0	0	0	0	0	0	0	39
07:00	10	15	36	19	3	0	0	0	0	0	0	0	0	0	83
08:00	8	27	25	12	0	0	0	0	0	0	0	0	0	0	72
09:00	14	32	23	7	1	0	0	0	0	0	0	0	0	0	77
10:00	19	49	26	15	0	0	0	0	0	0	0	0	0	0	109
11:00	9	17	16	6	0	0	0	0	0	0	0	0	0	0	48
12 PM	19	31	15	2	0	0	0	0	0	0	0	0	0	0	67
13:00	14	24	22	10	0	0	0	0	0	0	0	0	0	0	70
14:00	12	13	22	7	0	0	0	0	0	0	0	0	0	0	54
15:00	6	28	26	7	1	0	0	0	0	0	0	0	0	0	68
16:00	7	30	40	20	3	0	0	0	0	0	0	0	0	0	100
17:00	7	15	28	17	0	0	0	0	0	0	0	0	0	0	67
18:00	6	10	27	19	4	0	0	0	0	0	0	0	0	0	66
19:00	5	12	32	6	2	1	0	0	0	0	0	0	0	0	58
20:00	0	6	16	6	1	0	0	0	0	0	0	0	0	0	29
21:00	2	8	13	5	1	0	0	0	0	0	0	0	0	0	29
22:00	1	1	5	2	0	0	0	0	0	0	0	0	0	0	9
23:00	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Total	149	342	412	175	17	2	0	0	0	0	0	0	0	0	1097

Daily
 15th Percentile : 15 MPH
 50th Percentile : 20 MPH
 85th Percentile : 25 MPH
 95th Percentile : 28 MPH
 Mean Speed(Average) : 20 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 754
 Percent in Pace : 68.7%
 Number of Vehicles > 20 MPH : 606
 Percent of Vehicles > 20 MPH : 55.2%

Accurate Counts
978-664-2565

8084SPD3

Location : Mooney Street
Location : West of Smith Place
City/State: Cambridge, MA

WB, EB

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	
04/03/19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	1	0	2	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
03:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:00	2	4	4	4	2	0	0	0	0	0	0	0	0	0	16
05:00	3	8	1	5	0	0	0	0	0	0	0	0	0	0	17
06:00	2	7	20	6	1	0	0	0	0	0	0	0	0	0	36
07:00	18	33	07	9	0	0	0	0	0	0	0	0	0	0	87
08:00	18	34	21	6	0	0	0	0	0	0	0	0	0	0	79
09:00	22	39	23	5	0	0	0	0	0	0	0	0	0	0	89
10:00	21	42	31	6	2	0	0	0	0	0	0	0	0	0	102
11:00	21	14	26	10	1	0	0	0	0	0	0	0	0	0	72
12 PM	11	21	32	10	0	0	0	0	0	0	0	0	0	0	74
13:00	13	22	22	7	1	0	0	0	0	0	0	0	0	0	65
14:00	10	15	23	5	1	0	0	0	0	0	0	0	0	0	54
15:00	10	29	29	13	4	0	0	0	0	0	0	0	0	0	85
16:00	8	33	44	10	2	0	0	0	0	0	0	0	0	0	97
17:00	5	19	34	9	1	0	1	0	0	0	0	0	0	0	69
18:00	16	22	24	9	0	0	0	0	0	0	0	0	0	0	71
19:00	2	19	27	12	0	0	0	0	0	0	0	0	0	0	60
20:00	4	11	28	6	0	0	0	0	0	0	0	0	0	0	49
21:00	0	3	6	7	0	0	0	0	0	0	0	0	0	0	16
22:00	1	3	5	2	1	0	0	0	0	0	0	0	0	0	12
23:00	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
Total	190	381	430	142	16	0	1	0	0	0	0	0	0	0	1160

Daily
 15th Percentile : 13 MPH
 50th Percentile : 20 MPH
 85th Percentile : 24 MPH
 95th Percentile : 28 MPH
 Mean Speed(Average) : 20 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 811
 Percent in Pace : 69.9%
 Number of Vehicles > 20 MPH : 589
 Percent of Vehicles > 20 MPH : 50.8%

Grand Total	339	723	842	317	33	2	1	0	0	0	0	0	0	0	2257
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Overall
 15th Percentile : 14 MPH
 50th Percentile : 20 MPH
 85th Percentile : 25 MPH
 95th Percentile : 28 MPH
 Mean Speed(Average) : 20 MPH
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 1565
 Percent in Pace : 69.3%
 Number of Vehicles > 20 MPH : 1195
 Percent of Vehicles > 20 MPH : 52.9%

Turning Movement Count Data



Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 1

Start Time	Blanchard Rd From North												Griswold St From Northeast												Concord Ave From East												Concord Ave From West												Blanchard Rd From South												Concord Ave From West																			
	HdLt				Left				Thru				Right				HdLt				BrLt				BrRt				HdRt				Left				Thru				Right				HdLt				BrLt				BrRt				HdRt				Left				Thru				Right											
	0				70				97				6				10				3				1				0				30				53				16				2				1				53				0				45				3				0				93				1			
07:30 AM	0				70				97				6				10				3				1				0				30				53				16				2				1				53				0				45				3				0				93				1			
07:45 AM	1				98				82				2				8				3				1				1				27				53				22				1				1				56				0				79				1				0				69				4			
Total	1				168				179				8				18				6				2				1				57				106				38				3				2				109				0				124				4				0				162				5			
08:00 AM	1				86				85				3				5				1				2				1				29				73				34				3				4				53				1				46				3				0				95				5			
08:15 AM	0				91				90				2				6				1				4				0				34				66				36				0				0				51				3				53				1				0				97				1			
08:30 AM	0				100				76				4				5				1				2				0				21				58				45				2				7				49				2				55				3				0				102				3			
08:45 AM	0				98				73				2				6				0				0				0				38				80				48				1				5				51				0				59				7				0				108				3			
Total	1				375				324				11				22				3				8				1				122				277				163				6				16				204				6				213				14				0				402				12			
09:00 AM	0				97				71				5				4				1				0				0				22				47				23				1				2				44				0				58				6				1				94				6			
09:15 AM	0				72				99				2				5				1				0				0				24				48				27				1				6				42				1				43				4				0				57				13			
Grand Total	2				712				673				26				49				11				10				2				225				478				251				11				26				399				7				438				28				1				715				36			
Apprch %	0.1				50.4				47.6				1.8				68.1				15.3				13.9				2.8				23.3				49.5				26				1.1				3				45.9				0.8				50.3				3.6				0.1				91.7				4.6			
Total %	0				17.4				16.4				0.6				1.2				0.3				0.2				0				5.5				11.7				6.1				0.3				0.6				9.7				0.2				10.7				0.7				0				17.4				0.9			
Cars	2				707				670				26				49				11				10				2				212				473				246				11				26				396				7				432				28				1				710				36			
% Cars	100				99.3				99.6				100				100				100				100				100				94.2				99				98				100				100				99.2				100				98.6				100				99.3				100							
Trucks	0				5				3				0				0				0				0				0				13				5				5				0				0				3				0				0				5				0											
% Trucks	0				0.7				0.4				0				0				0				0				5.8				1				2				0				0				0.8				0				1.4				0				0.7				0											

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 2

Start Time	Blanchard Rd From North			Griswold St From Northeast			Concord Ave From East			Blanchard Rd From South			Concord Ave From West			Int. Total										
	HdLt	Left	Thru	Right	HdLt	BrLt	BrRt	HdRt	App. Total	Left	Thru	BrRt	Right	App. Total	Left		Thru	BrLt	Right	App. Total						
08:00 AM	1	86	85	3	175	5	1	2	1	9	29	73	34	3	139	4	53	1	46	104	3	0	95	5	103	530
08:15 AM	0	91	90	2	183	6	1	4	0	11	34	66	36	0	136	0	51	3	53	107	1	0	97	1	99	536
08:30 AM	0	100	76	4	180	5	1	2	0	8	21	58	45	2	126	7	49	2	55	113	3	0	102	3	108	535
08:45 AM	0	98	73	2	173	6	0	0	0	6	38	80	48	1	167	5	51	0	59	115	7	0	108	3	118	579
Total Volume	1	375	324	11	711	22	3	8	1	34	122	277	163	6	568	16	204	6	213	439	14	0	402	12	428	2180
% App. Total	0.1	52.7	45.6	1.5		64.7	8.8	23.5	2.9		21.5	48.8	28.7	1.1		3.6	46.5	1.4	48.5		3.3	0	93.9	2.8		
PHF	.250	.938	.900	.688	.971	.917	.750	.500	.250	.773	.803	.866	.849	.500	.850	.571	.962	.500	.903	.954	.500	.000	.931	.600	.907	.941
Cars	1	373	322	11	707	22	3	8	1	34	113	275	161	6	555	16	203	6	209	434	14	0	398	12	424	2154
% Cars	100	99.5	99.4	100	99.4	100	100	100	100	100	92.6	99.3	98.8	100	97.7	100	99.5	100	98.1	98.9	100	0	99.0	100	99.1	98.8
Trucks	0	2	2	0	4	0	0	0	0	0	9	2	2	0	13	0	1	0	4	5	0	0	4	0	4	26
% Trucks	0	0.5	0.6	0	0.6	0	0	0	0	0	7.4	0.7	1.2	0	2.3	0	0.5	0	1.9	1.1	0	0	1.0	0	0.9	1.2

Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

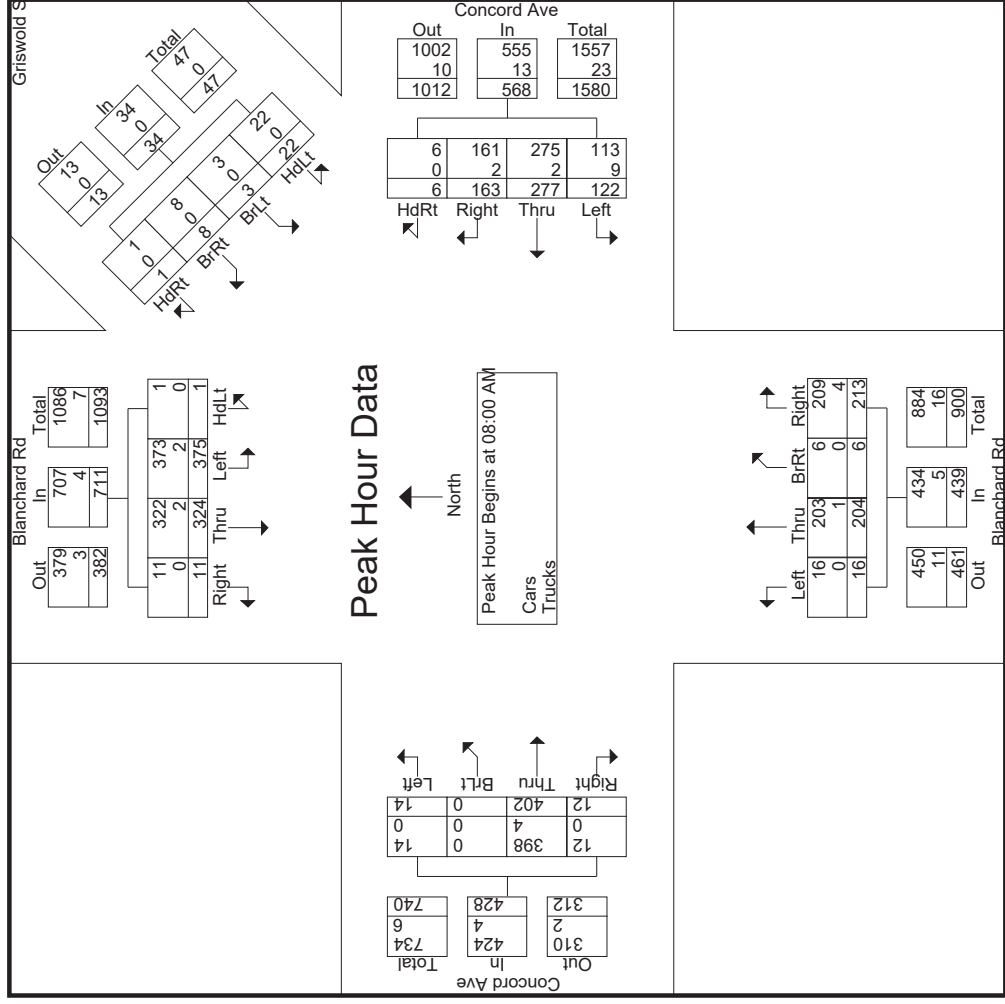
Peak Hour for Entire Intersection Begins at 08:00 AM

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 3



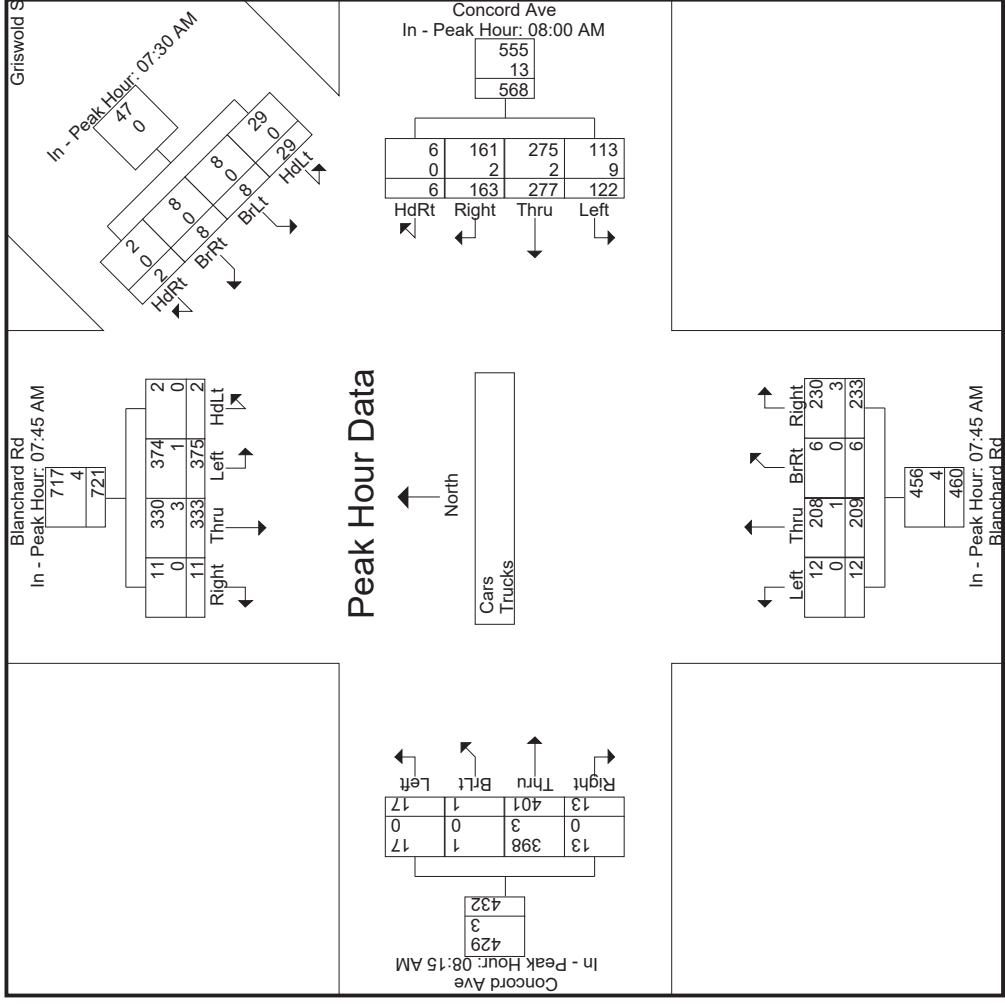
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:45 AM	07:30 AM	08:00 AM	08:45 AM	08:15 AM	
+0 mins.	1	10	29	1	1	99
+15 mins.	1	8	34	4	3	108
+30 mins.	0	5	21	0	7	118
+45 mins.	0	6	38	7	6	107
Total Volume	2	29	122	12	17	432
% App. Total	0.3	61.7	28.7	2.6	3.9	92.8

Accurate Counts

978-664-2565

PHF	.500	.938	.925	.688	.985	.725	.667	.500	.500	.839	.803	.866	.849	.500	.850	.429	.933	.500	.737	.846	.607	.250	.928	.542	.915
Cars	2	374	330	11	717	29	8	2	47	113	275	161	6	555	12	208	6	230	456	17	1	398	13	429	
% Cars	100	99.7	99.1	100	99.4	100	100	100	100	92.6	99.3	98.8	100	97.7	100	99.5	100	98.7	99.1	100	100	99.3	100	99.3	
Trucks	0	1	3	0	4	0	0	0	0	9	2	2	0	13	0	1	0	3	4	0	0	3	0	3	
% Trucks	0	0.3	0.9	0	0.6	0	0	0	0	7.4	0.7	1.2	0	2.3	0	0.5	0	1.3	0.9	0	0	0.7	0	0.7	



Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 5

Groups Printed- Cars

Start Time	Blanchard Rd From North			Griswold St From Northeast			Concord Ave From East			Blanchard Rd From South			Concord Ave From West			Int. Total					
	HdLt	Left	Thru	Right	HdRt	BrLt	BrRt	HdRt	Left	Thru	Right	Left	Thru	Right	Left		BrLt	BrRt	Thru	Right	
07:30 AM	0	70	97	6	10	3	1	0	29	51	16	2	1	52	0	45	3	0	92	1	479
07:45 AM	1	98	81	2	8	3	1	1	25	52	20	1	1	56	0	78	1	0	69	4	502
Total	1	168	178	8	18	6	2	1	54	103	36	3	2	108	0	123	4	0	161	5	981
08:00 AM	1	85	84	3	5	1	2	1	24	72	34	3	4	53	1	45	3	0	94	5	520
08:15 AM	0	91	89	2	6	1	4	0	33	66	35	0	0	50	3	52	1	0	97	1	531
08:30 AM	0	100	76	4	5	1	2	0	19	58	45	2	7	49	2	55	3	0	99	3	530
08:45 AM	0	97	73	2	6	0	0	0	37	79	47	1	5	51	0	57	7	0	108	3	573
Total	1	373	322	11	22	3	8	1	113	275	161	6	16	203	6	209	14	0	398	12	2154
09:00 AM	0	96	71	5	4	1	0	0	21	47	23	1	2	44	0	57	6	1	94	6	479
09:15 AM	0	70	99	2	5	1	0	0	24	48	26	1	6	41	1	43	4	0	57	13	441
Grand Total	2	707	670	26	49	11	10	2	212	473	246	11	26	396	7	432	28	1	710	36	4055
Apprch %	0.1	50.3	47.7	1.9	68.1	15.3	13.9	2.8	22.5	50.2	26.1	1.2	3	46	0.8	50.2	3.6	0.1	91.6	4.6	
Total %	0	17.4	16.5	0.6	1.2	0.3	0.2	0	5.2	11.7	6.1	0.3	0.6	9.8	0.2	10.7	0.7	0	17.5	0.9	

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 6

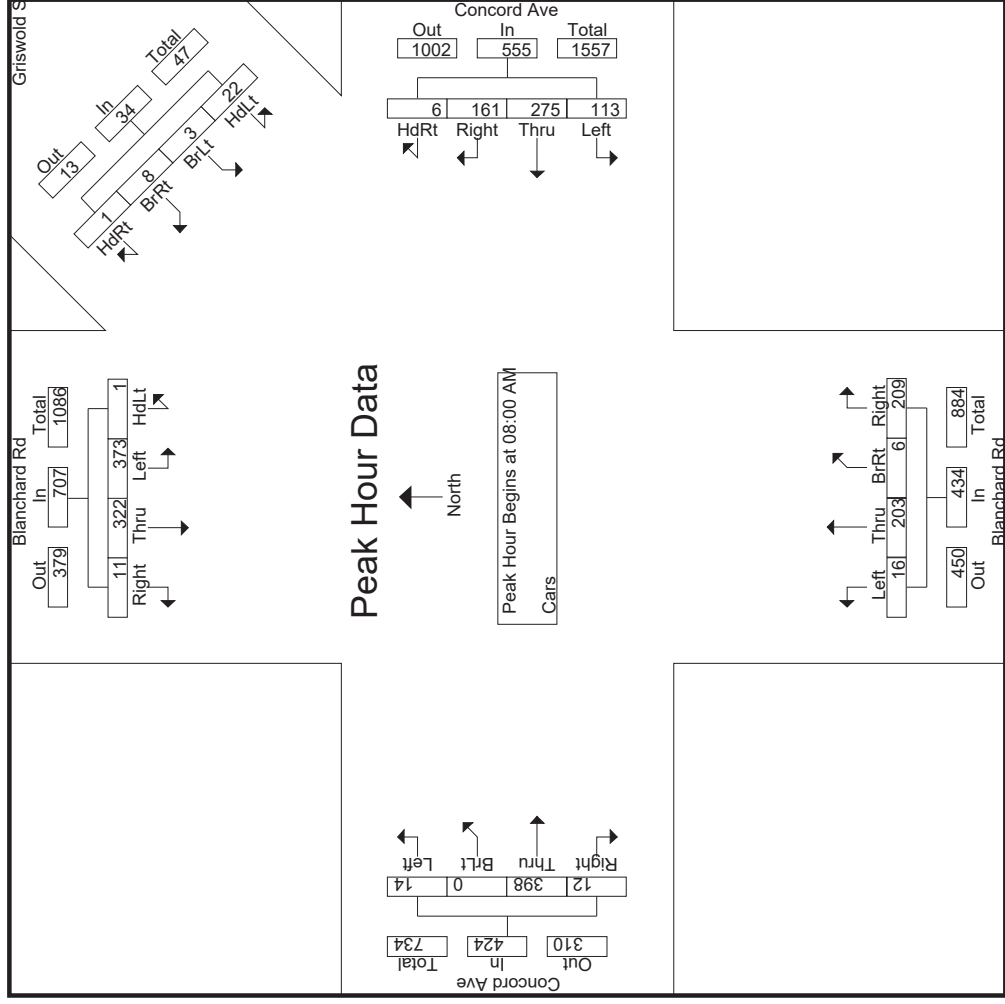
Start Time	Blanchard Rd From North			Griswold St From Northeast			Concord Ave From East			Blanchard Rd From South			Concord Ave From West			Int. Total										
	HdLt	Left	Thru	Right	App. Total	HdLt	BrLt	BrRt	HdRt	App. Total	Left	Thru	BrRt	Right	App. Total		Left	Thru	Right	App. Total						
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																										
08:00 AM	1	85	84	3	173	5	1	2	1	9	24	72	34	3	133	4	53	1	45	103	3	0	94	5	102	520
08:15 AM	0	91	89	2	182	6	1	4	0	11	33	66	35	0	134	0	50	3	52	105	1	0	97	1	99	531
08:30 AM	0	100	76	4	180	5	1	2	0	8	19	58	45	2	124	7	49	2	55	113	3	0	99	3	105	530
08:45 AM	0	97	73	2	172	6	0	0	0	6	37	79	47	1	164	5	51	0	57	113	7	0	108	3	118	573
Total Volume	1	373	322	11	707	22	3	8	1	34	113	275	161	6	555	16	203	6	209	434	14	0	398	12	424	2154
% App. Total	0.1	52.8	45.5	1.6		64.7	8.8	23.5	2.9		20.4	49.5	29	1.1		3.7	46.8	1.4	48.2		3.3	0	93.9	2.8		
PHF	.250	.933	.904	.688	.971	.917	.750	.500	.250	.773	.764	.870	.856	.500	.846	.571	.958	.500	.917	.960	.500	.000	.921	.600	.898	.940

Peak Hour for Entire Intersection Begins at 08:00 AM

Accurate Counts
978-664-2565

N/S Street : Blanchard Rd / Griswold St
E/W Street : Concord Avenue
City/State : Cambridge, MA
Weather : Clear

File Name : 80840001
Site Code : 80840001
Start Date : 4/2/2019
Page No : 7

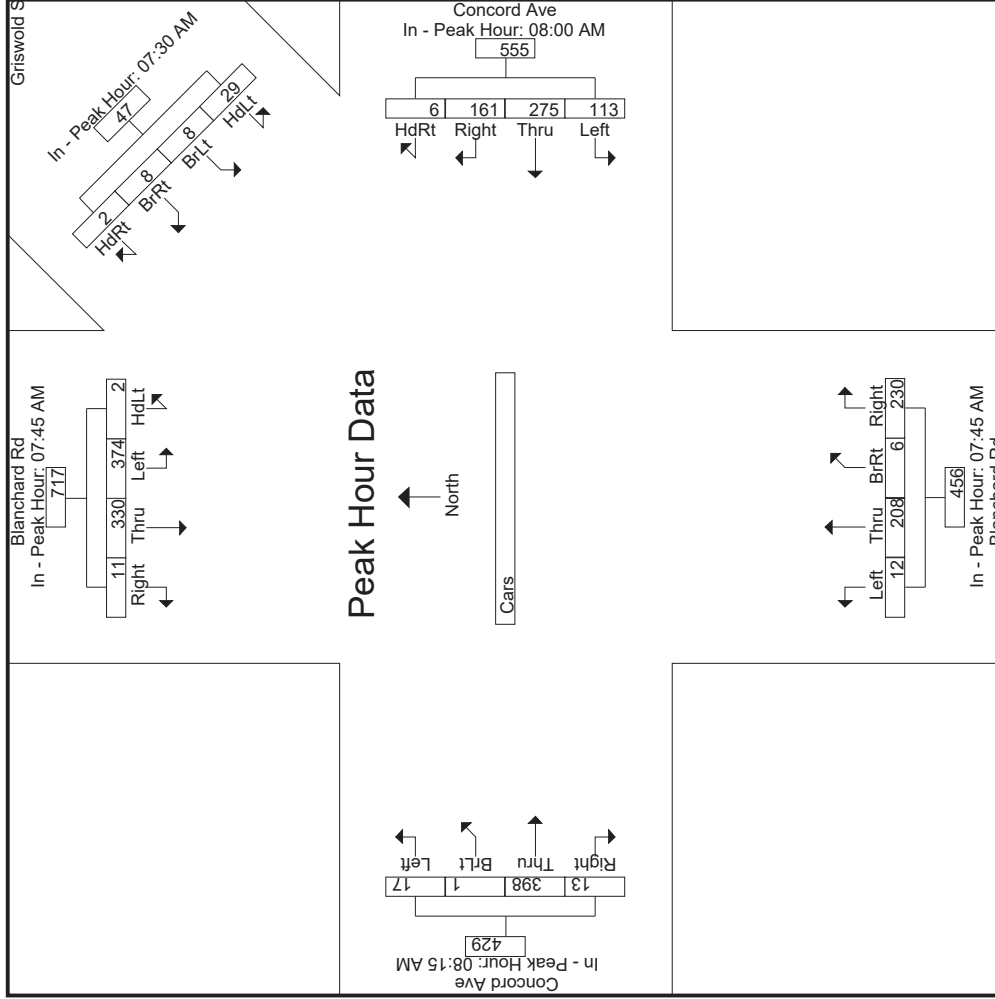


Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:45 AM	07:30 AM	08:00 AM	07:45 AM	08:15 AM
+0 mins.	1	10	24	1	1
+15 mins.	1	8	33	4	3
+30 mins.	0	5	19	0	0
+45 mins.	0	6	37	7	6
Total Volume	2	29	113	12	17
% App. Total	0.3	61.7	20.4	2.6	4
	81	8	275	208	398
	98	3	72	56	13
	85	3	66	53	45
	84	3	58	50	52
	89	2	45	49	108
	76	4	79	2	94
	330	11	161	6	230
	46	1.5	49.5	1.3	50.4
	182	173	134	103	105
	182	180	124	105	118
	180	180	164	113	107
	717	47	555	456	429
	52.2	46	45.6	92.8	3

Accurate Counts
978-664-2565

PHF .500 .935 .927 .688 .985 .725 .667 .500 .500 .839 .764 .870 .856 .500 .846 .429 .929 .500 .737 .844 .607 .250 .921 .542 .909



Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 9

Groups Printed- Trucks

Start Time	Blanchard Rd From North			Griswold St From Northeast			Concord Ave From East			Blanchard Rd From South			Concord Ave From West			Int. Total	
	HdLt	Left	Thru	Right	HdLt	Brlt	BrRt	HdRt	Left	Thru	BrRt	Right	Left	Brlt	Thru		Right
07:30 AM	0	0	0	0	0	0	0	0	1	2	0	0	0	0	1	0	5
07:45 AM	0	0	1	0	0	0	0	0	2	1	2	0	0	0	0	0	7
Total	0	0	1	0	0	0	0	0	3	3	2	0	0	0	1	0	12
08:00 AM	0	1	1	0	0	0	0	0	5	1	0	0	0	0	1	0	10
08:15 AM	0	0	1	0	0	0	0	0	1	0	1	0	0	0	0	0	5
08:30 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	3	0	5
08:45 AM	0	1	0	0	0	0	0	0	1	1	1	0	0	0	0	0	6
Total	0	2	2	0	0	0	0	0	9	2	2	0	0	0	4	0	26
09:00 AM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3
09:15 AM	0	2	0	0	0	0	0	0	0	0	1	0	0	0	0	0	4
Grand Total	0	5	3	0	0	0	0	0	13	5	5	0	0	0	5	0	45
Apprch %	0	62.5	37.5	0	0	0	0	0	56.5	21.7	21.7	0	0	0	100	0	
Total %	0	11.1	6.7	0	0	0	0	0	28.9	11.1	11.1	0	0	0	11.1	0	

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 10

Start Time	Blanchard Rd From North			Griswold St From Northeast			Concord Ave From East			Blanchard Rd From South			Concord Ave From West			Int. Total				
	HdLt	Left	Thru	Right	App. Total	HdLt	BrLt	BrRt	HdRt	App. Total	Left	Thru	BrRt	Right	App. Total		Left	Thru	Right	App. Total
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																				
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
% App. Total	0	25	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27
PHF	.000	.250	.750	.000	.500	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.675

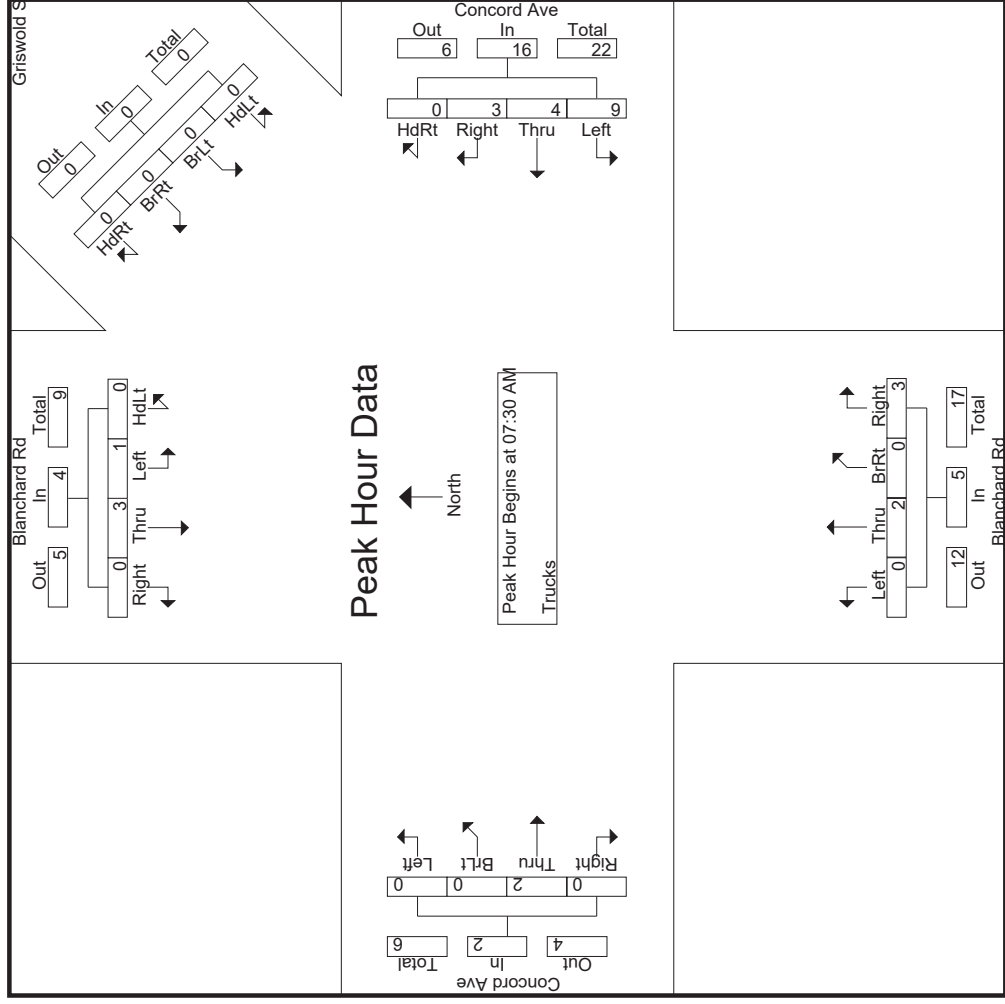
Peak Hour for Entire Intersection Begins at 07:30 AM

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 11

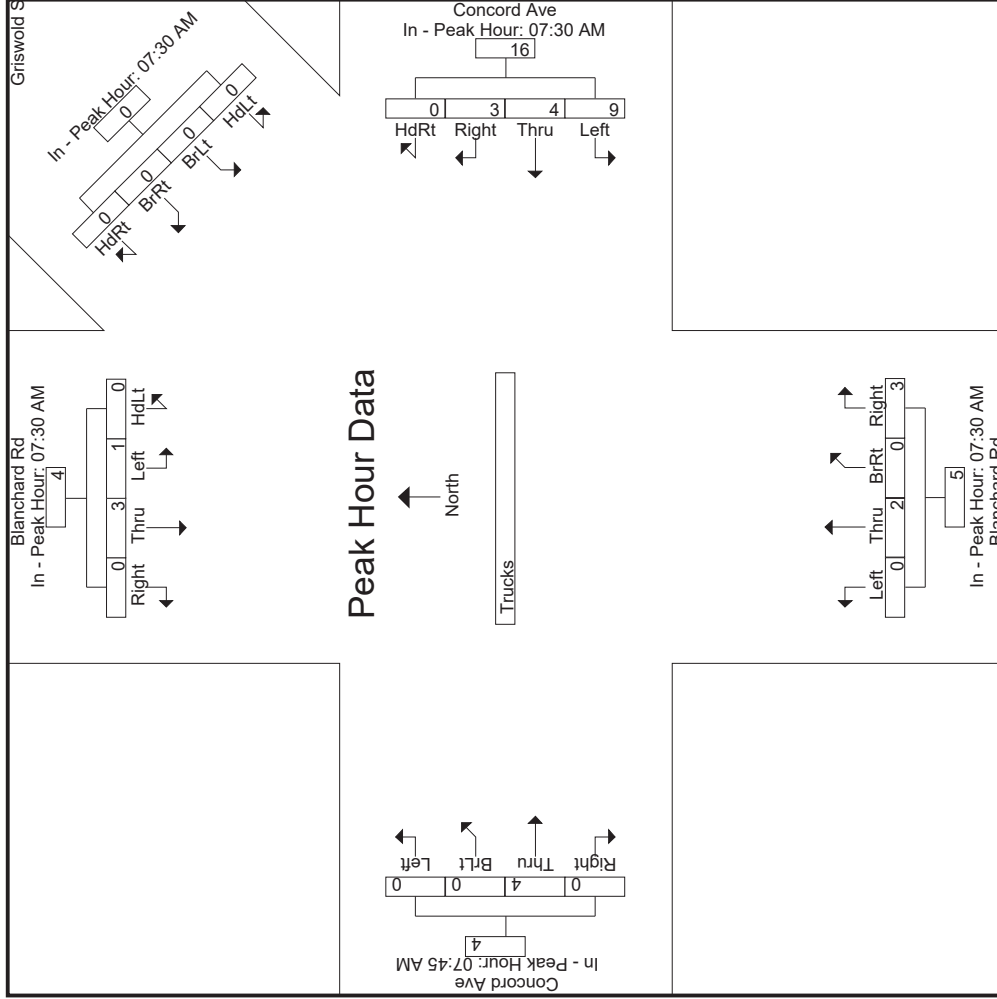


Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM				07:30 AM				07:45 AM							
+0 mins.	0	0	0	0	0	0	0	0	3	0	1	0	0	0	0	0
+15 mins.	0	0	1	0	0	0	0	0	5	0	0	0	1	0	0	1
+30 mins.	0	1	0	0	0	0	0	0	6	0	0	0	1	0	0	0
+45 mins.	0	0	1	0	0	0	0	0	2	0	1	0	1	0	0	3
Total Volume	0	1	3	0	0	0	0	0	16	0	2	0	5	0	0	4
% App. Total	0	25	75	0	0	0	0	0	56.2	25	18.8	0	0	0	100	0

Accurate Counts
978-664-2565

PHF .000 .250 .750 .000 .500 .000 .000 .000 .000 .000 .000 .000 .000 .667 .000 .500 .000 .750 .000 .333 .000 .000 .000 .333 .000 .333



Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 13

Groups Printed- Bikes Peds

Start Time	Blanchard Rd From North						Griswold St From Northeast						Concord Ave From East						Blanchard Rd From South						Concord Ave From West													
	HdLt		Left		Thru		Right		Peds		HdLt		BrLt		BrRt		HdRt		HdRt		Left		Thru		BrLt		BrRt		Left		Thru		Right		Peds			
07:30 AM	0	0	0	1	4	0	0	0	0	3	0	0	0	0	1	0	0	0	0	0	0	2	0	2	1	0	2	0	2	1	0	0	4	0	2	11	9	20
07:45 AM	0	0	1	0	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	1	4	0	0	4	0	2	10	7	17
Total	0	0	1	1	6	0	0	0	0	5	0	0	0	0	1	0	3	0	3	5	0	3	0	3	5	0	3	0	3	5	0	0	8	0	4	21	16	37
08:00 AM	0	3	3	0	0	0	0	0	0	3	0	2	0	0	3	0	1	0	0	6	0	0	3	0	2	0	0	3	0	2	14	12	26					
08:15 AM	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	8	0	0	6	0	1	11	7	18										
08:30 AM	0	4	1	0	2	0	0	0	0	2	0	0	0	0	1	0	1	0	0	2	0	0	3	0	1	8	9	17										
08:45 AM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	4	0	2	0	1	1	0	0	2	0	0	6	8	14										
Total	0	9	4	0	4	0	0	0	0	6	0	4	0	0	8	0	4	0	1	17	0	0	14	0	4	39	36	75										
09:00 AM	0	1	0	0	4	0	0	0	0	3	1	0	0	0	3	0	1	0	0	3	0	0	5	0	0	13	8	21										
09:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	5	5										
Grand Total	0	10	6	1	14	0	0	0	0	14	1	4	0	0	12	0	8	0	4	25	0	0	31	0	8	73	65	138										
Approch %	0	58.8	35.3	5.9	0	0	0	0	20	80	0	0	0	66.7	0	33.3	0	100	0	0	0	100	0	0	0	100												
Total %	0	15.4	9.2	1.5	0	0	0	0	1.5	6.2	0	0	0	12.3	0	6.2	0	47.7	0	0	0	47.7	0	52.9	47.1													

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 14

Start Time	Blanchard Rd From North			Griswold St From Northeast			Concord Ave From East			Blanchard Rd From South			Concord Ave From West			Int. Total					
	HdLt	Left	Thru	Right	App. Total	HdLt	BrLt	BrRt	HdRt	App. Total	Left	Thru	BrRt	Right	App. Total		Left	Thru	Right	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																					
08:00 AM	0	3	3	0	6	0	0	0	0	0	0	0	1	0	0	0	0	3	0	3	12
08:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	6	0	6	7
08:30 AM	0	4	1	0	5	0	0	0	0	0	0	1	0	0	1	0	0	3	0	3	9
08:45 AM	0	1	0	0	1	0	0	0	0	2	0	2	0	0	1	0	0	2	0	2	8
Total Volume	0	9	4	0	13	0	0	0	0	4	4	4	0	1	5	0	0	14	0	14	36
% App. Total	0	69.2	30.8	0		0	0	0	0		100	100	0	20		0	0	100	0		
PHF	.000	.563	.333	.000	.542	.000	.000	.000	.000	.500	.000	.500	.000	.250	.417	.000	.000	.583	.000	.583	.750

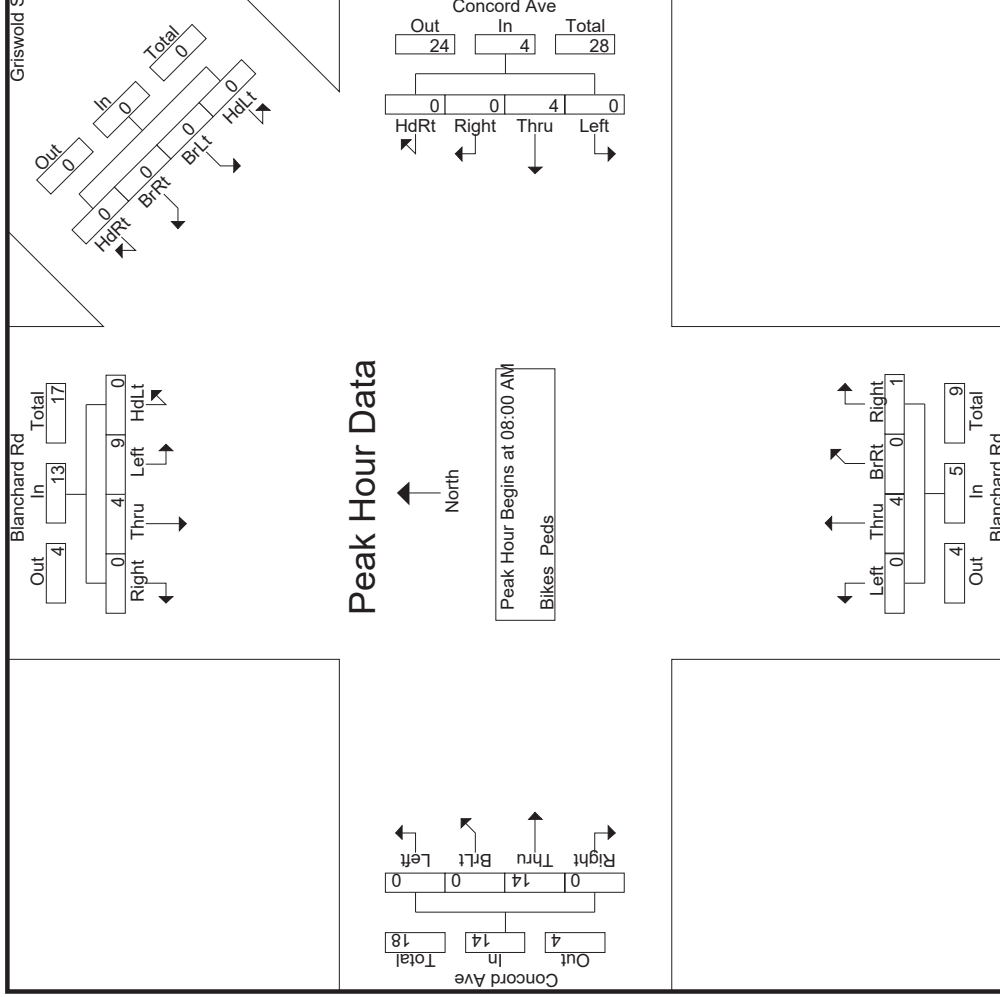
Peak Hour for Entire Intersection Begins at 08:00 AM

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 15

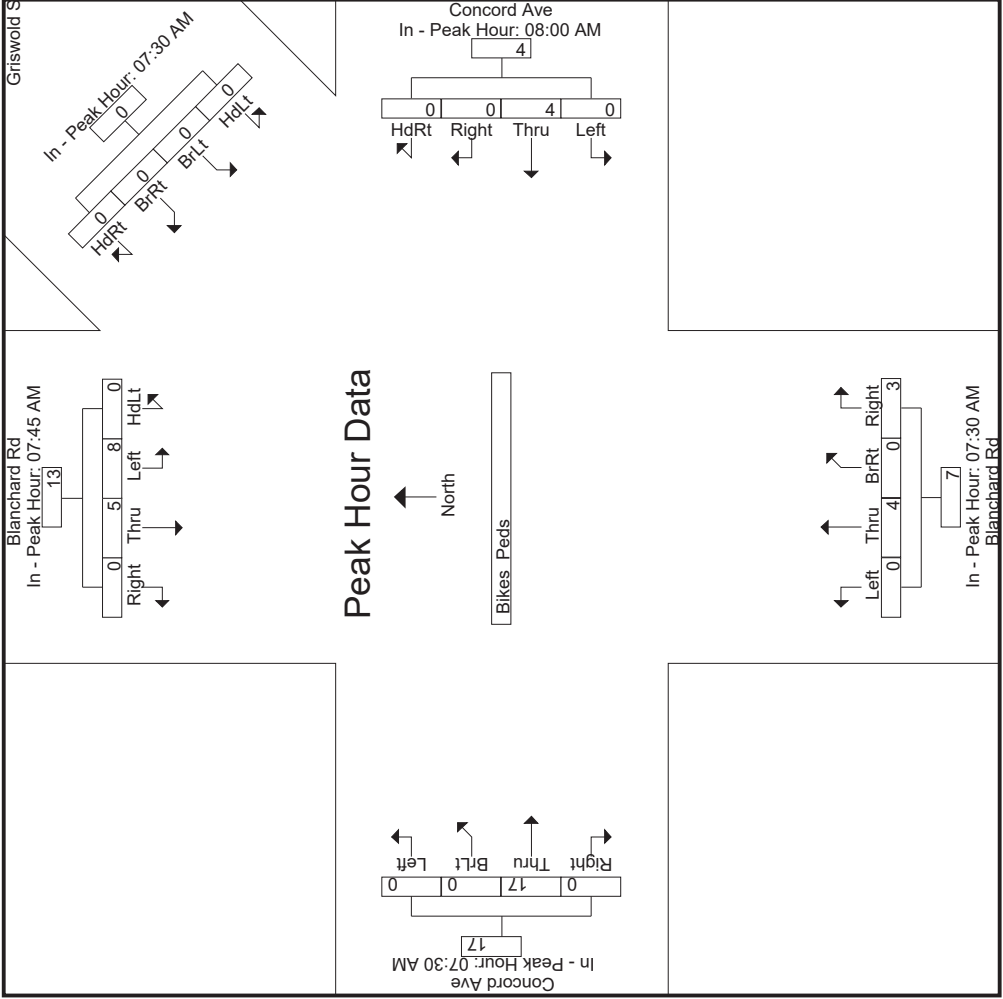


Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:45 AM				07:30 AM				08:00 AM				07:30 AM				07:30 AM							
+0 mins.	0	0	1	0	1	0	0	0	0	0	0	0	2	0	0	0	0	2	0	4	0	0	0	0
+15 mins.	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
+30 mins.	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
+45 mins.	0	4	1	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	0	0
Total Volume	0	8	5	0	13	0	0	0	4	4	0	0	4	0	0	0	7	0	0	3	0	0	0	0
% App. Total	0	61.5	38.5	0	0	0	0	0	100	0	0	0	57.1	0	0	0	42.9	0	0	0	0	0	0	0

Accurate Counts
978-664-2565

PHF .000 .500 .417 .000 .542 .000 .000 .000 .000 .000 .000 .000 .000 .438 .000 .000 .000 .708



Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 1

Start Time	Groups Printed- Cars - Trucks																													
	Blanchard Rd From North						Griswold St From Northeast						Concord Ave From East						Blanchard Rd From South						Concord Ave From West					
	HdLt	Left	Thru	Right	HdLt	BrLt	BrRt	HdRt	HdLt	Left	Thru	Right	HdRt	Left	Thru	BrRt	Right	Left	BrLt	BrRt	Right	Left	BrLt	Thru	Right	Int. Total				
04:30 PM	0	12	43	1	2	1	0	0	43	67	56	3	31	2	90	1	31	9	0	63	1	425								
04:45 PM	0	37	55	3	4	1	0	0	41	69	46	5	28	3	77	0	28	8	1	58	9	445								
Total	0	49	98	4	6	2	0	0	84	136	102	8	59	5	167	1	59	17	1	121	10	870								
05:00 PM	0	26	58	1	6	1	1	0	48	73	78	2	35	2	70	0	35	12	0	59	5	477								
05:15 PM	0	28	56	1	2	0	1	0	37	66	49	4	19	5	69	0	19	6	0	47	5	395								
05:30 PM	0	41	62	2	2	1	1	0	44	80	49	5	24	5	67	0	24	2	4	61	4	454								
05:45 PM	0	35	76	1	2	0	0	0	58	64	50	10	34	6	60	2	34	7	1	56	3	465								
Total	0	130	252	5	12	2	3	0	187	283	226	21	112	18	266	2	112	27	5	223	17	1791								
06:00 PM	0	40	58	2	2	0	0	0	44	72	50	4	35	3	95	1	35	9	0	58	6	479								
06:15 PM	0	43	70	2	2	0	0	0	42	60	51	5	27	2	65	1	27	7	1	53	4	435								
Grand Total	0	262	478	13	22	4	3	0	357	551	429	38	233	28	593	5	233	60	7	455	37	3575								
Apprch %	0	34.8	63.5	1.7	75.9	13.8	10.3	0	26	40.1	31.2	2.8	27.1	3.3	69	0.6	27.1	10.7	1.3	81.4	6.6									
Total %	0	7.3	13.4	0.4	0.6	0.1	0.1	0	10	15.4	12	1.1	6.5	0.8	16.6	0.1	6.5	1.7	0.2	12.7	1									
Cars	0	259	477	13	22	4	3	0	355	551	424	38	231	28	593	5	231	60	7	453	37	3560								
% Cars	0	98.9	99.8	100	100	100	100	0	99.4	100	98.8	100	99.1	100	100	100	99.1	100	100	99.6	100	99.6								
Trucks	0	3	1	0	0	0	0	0	2	0	5	0	2	0	0	0	2	0	0	2	0	15								
% Trucks	0	1.1	0.2	0	0	0	0	0	0.6	0	1.2	0	0.9	0	0	0	0.9	0	0	0.4	0	0.4								

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 2

Start Time	Blanchard Rd From North			Griswold St From Northeast			Concord Ave From East			Blanchard Rd From South			Concord Ave From West			Int. Total										
	HdLt	Left	Thru	Right	HdLt	BrLt	BrRt	HdRt	Left	Thru	BrRt	BrRt	Right	Left	Thru		Right	App. Total								
05:30 PM	0	41	62	2	105	2	1	1	0	4	44	80	49	5	178	5	67	0	24	96	2	4	61	4	71	454
05:45 PM	0	35	76	1	112	2	0	0	0	2	58	64	50	10	182	6	60	2	34	102	7	1	56	3	67	465
06:00 PM	0	40	58	2	100	2	0	0	0	2	44	72	50	4	170	3	95	1	35	134	9	0	58	6	73	479
06:15 PM	0	43	70	2	115	2	0	0	0	2	42	60	51	5	158	2	65	1	27	95	7	1	53	4	65	435
Total Volume	0	159	266	7	432	8	1	1	0	10	188	276	200	24	688	16	287	4	120	427	25	6	228	17	276	1833
% App. Total	0	36.8	61.6	1.6		80	10	10	0		27.3	40.1	29.1	3.5		3.7	67.2	0.9	28.1		9.1	2.2	82.6	6.2		
PHF	.000	.924	.875	.875	.939	1.00	.250	.250	.000	.625	.810	.863	.980	.600	.945	.667	.755	.500	.857	.797	.694	.375	.934	.708	.945	.957
Cars	0	158	265	7	430	8	1	1	0	10	187	276	198	24	685	16	287	4	119	426	25	6	227	17	275	1826
% Cars	0	99.4	99.6	100	99.5	100	100	100	0	100	99.5	100	99.0	100	99.6	100	100	100	99.2	99.8	100	100	99.6	100	99.6	99.6
Trucks	0	1	1	0	2	0	0	0	0	0	1	0	2	0	3	0	0	0	1	1	0	0	1	0	1	7
% Trucks	0	0.6	0.4	0	0.5	0	0	0	0	0	0.5	0	1.0	0	0.4	0	0	0	0.8	0.2	0	0	0.4	0	0.4	0.4

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

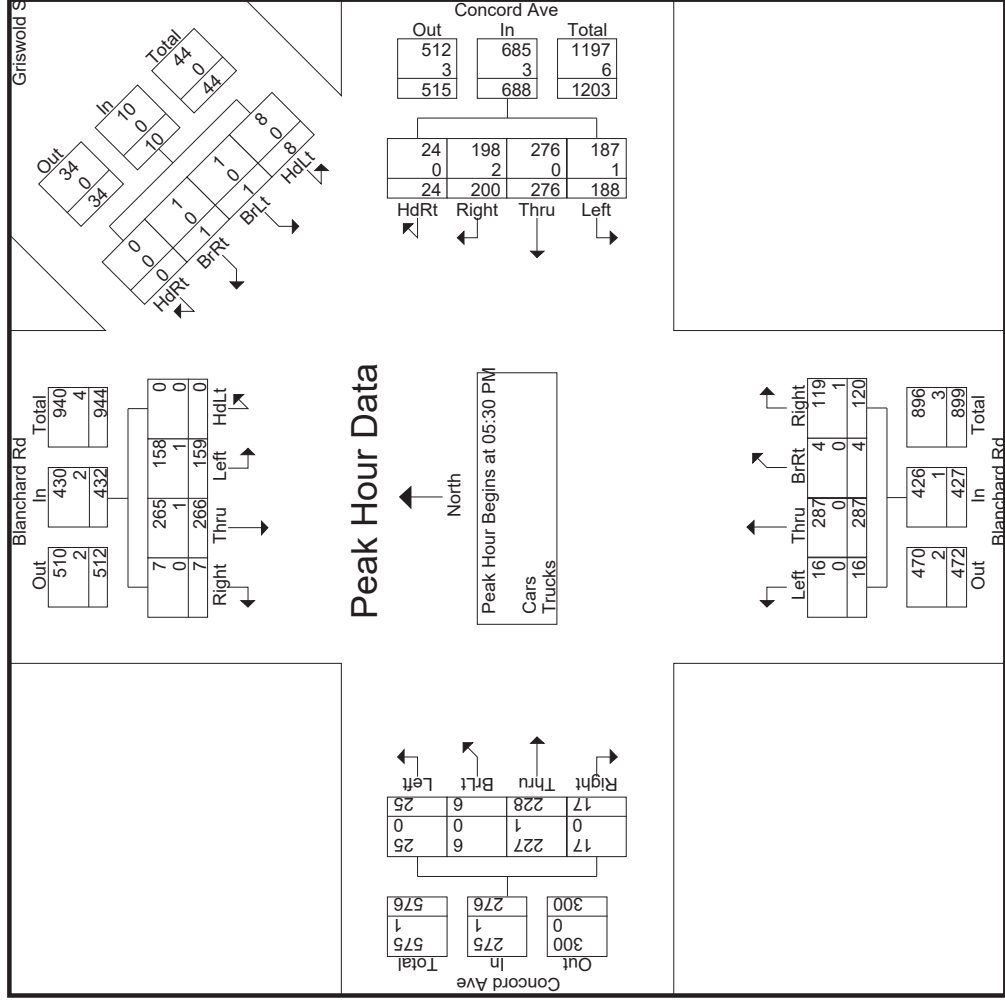
Peak Hour for Entire Intersection Begins at 05:30 PM

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 3



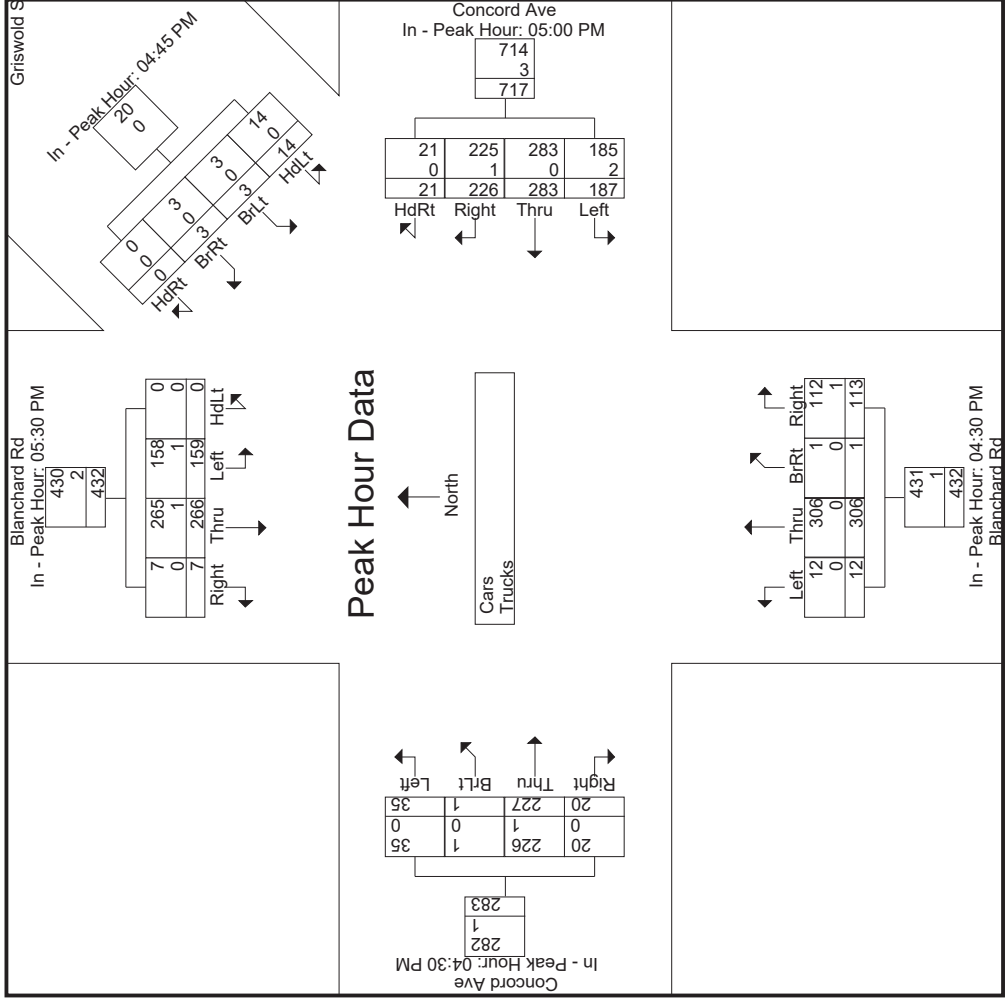
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

Time	04:30 PM	05:00 PM	05:30 PM	04:45 PM	04:30 PM	04:30 PM
+0 mins.	9	48	5	4	1	73
+15 mins.	8	37	8	6	1	76
+30 mins.	12	44	3	2	0	76
+45 mins.	6	58	4	2	1	58
Total Volume	35	187	20	14	3	283
% App. Total	12.4	26.1	0	70	15	80.2

Accurate Counts

978-664-2565

PHF	.000	.924	.875	.875	.939	.583	.750	.750	.000	.625	.806	.884	.724	.525	.892	.600	.850	.250	.807	.871	.729	.250	.901	.556	.931
Cars	0	158	265	7	430	14	3	3	0	20	185	283	225	21	714	12	306	1	112	431	35	1	226	20	282
% Cars	0	99.4	99.6	100	99.5	100	100	100	0	100	98.9	100	99.6	100	99.6	100	100	100	99.1	99.8	100	100	99.6	100	99.6
Trucks	0	1	1	0	2	0	0	0	0	0	2	0	1	0	3	0	0	0	1	1	0	0	1	0	1
% Trucks	0	0.6	0.4	0	0.5	0	0	0	0	0	1.1	0	0.4	0	0.4	0	0	0	0.9	0.2	0	0	0.4	0	0.4



Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 5

Groups Printed- Cars

Start Time	Blanchard Rd From North			Griswold St From Northeast			Concord Ave From East			Blanchard Rd From South			Concord Ave From West			Int. Total					
	HdLt	Left	Thru	Right	HdLt	BrLt	BrRt	HdRt	Left	Thru	BrRt	Right	Left	BrLt	Thru		Right				
04:30 PM	0	12	43	1	2	1	0	0	43	67	55	3	2	90	1	30	9	0	63	1	423
04:45 PM	0	37	55	3	4	1	0	0	41	69	45	5	3	77	0	28	8	1	57	9	443
Total	0	49	98	4	6	2	0	0	84	136	100	8	5	167	1	58	17	1	120	10	866
05:00 PM	0	26	58	1	6	1	1	0	48	73	78	2	2	70	0	35	12	0	59	5	477
05:15 PM	0	26	56	1	2	0	1	0	36	66	48	4	5	69	0	19	6	0	47	5	391
05:30 PM	0	41	62	2	2	1	1	0	44	80	49	5	5	67	0	24	2	4	60	4	453
05:45 PM	0	35	76	1	2	0	0	0	57	64	50	10	6	60	2	34	7	1	56	3	464
Total	0	128	252	5	12	2	3	0	185	283	225	21	18	266	2	112	27	5	222	17	1785
06:00 PM	0	39	57	2	2	0	0	0	44	72	48	4	3	95	1	34	9	0	58	6	474
06:15 PM	0	43	70	2	2	0	0	0	42	60	51	5	2	65	1	27	7	1	53	4	435
Grand Total	0	259	477	13	22	4	3	0	355	551	424	38	28	593	5	231	60	7	453	37	3560
Apprch %	0	34.6	63.7	1.7	75.9	13.8	10.3	0	26	40.3	31	2.8	3.3	69.2	0.6	27	10.8	1.3	81.3	6.6	
Total %	0	7.3	13.4	0.4	0.6	0.1	0.1	0	10	15.5	11.9	1.1	0.8	16.7	0.1	6.5	1.7	0.2	12.7	1	

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 6

Start Time	Blanchard Rd From North			Griswold St From Northeast			Concord Ave From East			Blanchard Rd From South			Concord Ave From West													
	HdLt	Left	Thru	Right	HdLt	BrLt	BrRt	HdRt	Left	Thru	BrRt	Right	Left	BrLt	Thru	Right	App. Total	Int. Total								
05:30 PM	0	41	62	2	105	2	1	1	0	4	44	80	49	5	178	5	67	0	24	96	2	4	60	4	70	453
05:45 PM	0	35	76	1	112	2	0	0	0	2	57	64	50	10	181	6	60	2	34	102	7	1	56	3	67	464
06:00 PM	0	39	57	2	98	2	0	0	0	2	44	72	48	4	168	3	95	1	34	133	9	0	58	6	73	474
06:15 PM	0	43	70	2	115	2	0	0	0	2	42	60	51	5	158	2	65	1	27	95	7	1	53	4	65	435
Total Volume	0	158	265	7	430	8	1	1	0	10	187	276	198	24	685	16	287	4	119	426	25	6	227	17	275	1826
% App. Total	0	36.7	61.6	1.6		80	10	10	0		27.3	40.3	28.9	3.5		3.8	67.4	0.9	27.9		9.1	2.2	82.5	6.2		
PHF	.000	.919	.872	.875	.935	1.00	.250	.250	.000	.625	.820	.863	.971	.600	.946	.667	.755	.500	.875	.801	.694	.375	.946	.708	.942	.963

Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

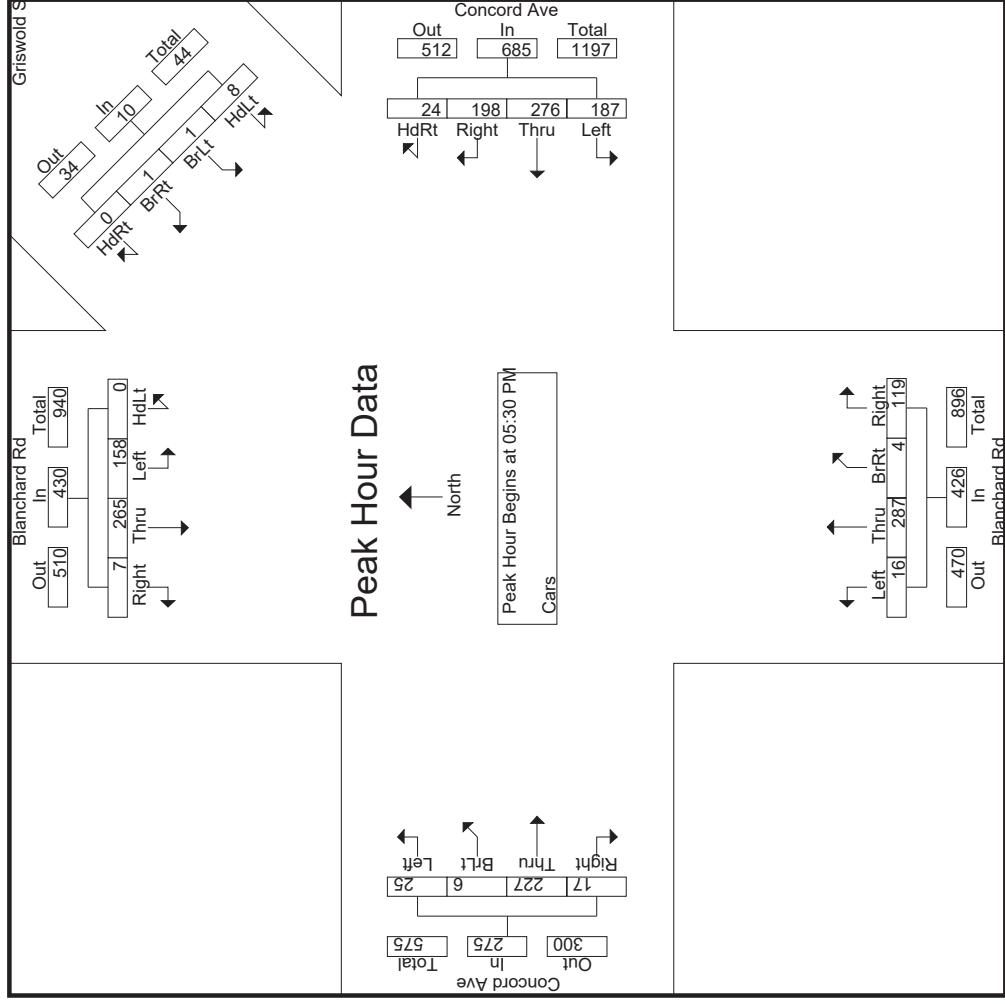
Peak Hour for Entire Intersection Begins at 05:30 PM

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 7

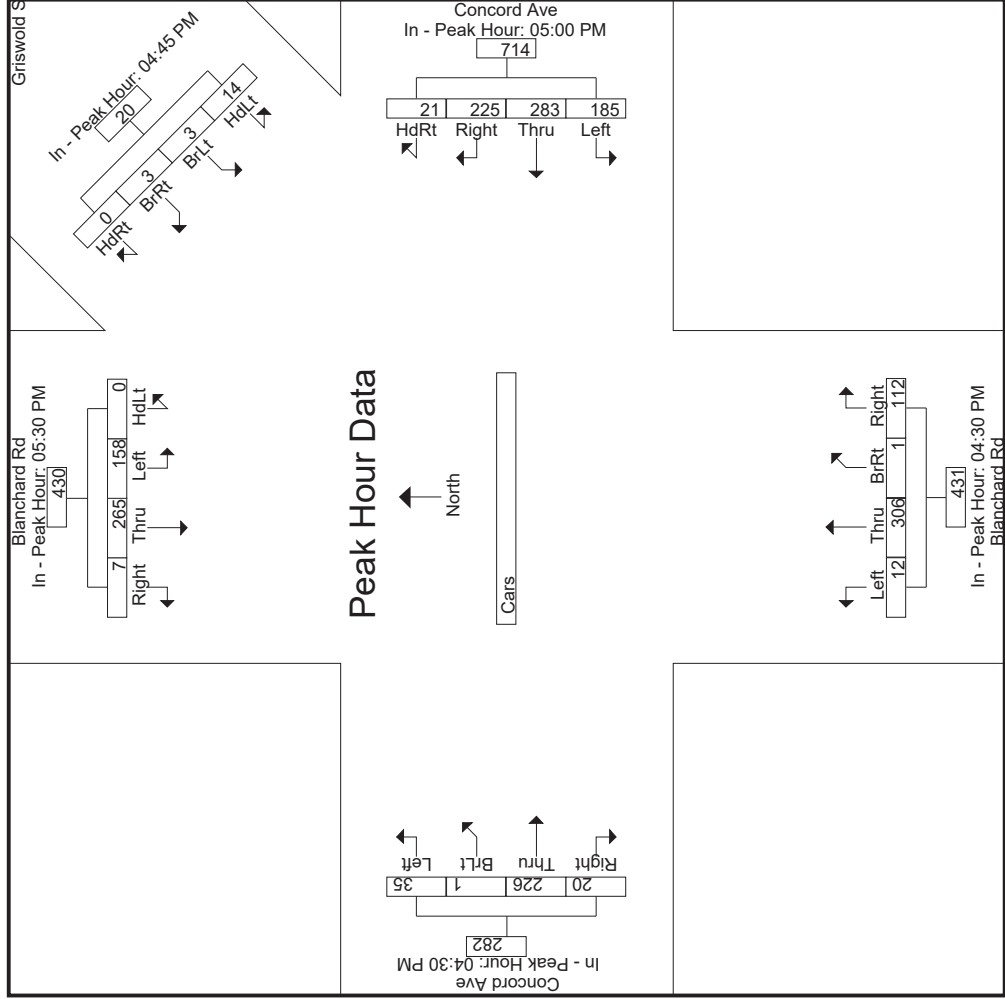


Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:30 PM				04:45 PM				05:00 PM				04:30 PM				04:30 PM			
+0 mins.	0	41	62	2	105	4	1	0	5	48	73	2	201	2	90	1	30	123	9	73
+15 mins.	0	35	76	1	112	6	1	0	8	36	66	4	154	3	77	0	28	108	8	75
+30 mins.	0	39	57	2	98	2	0	0	3	44	80	5	178	2	70	0	35	107	12	76
+45 mins.	0	43	70	2	115	2	1	0	4	57	64	10	181	5	69	0	19	93	6	58
Total Volume	0	158	265	7	430	14	3	0	20	185	283	21	714	12	306	1	112	431	35	282
% App. Total	0	36.7	61.6	1.6		70	15	0		25.9	39.6	31.5	2.9	2.8	71	0.2	26		12.4	7.1

Accurate Counts
978-664-2565

PHF .000 .919 .872 .875 .935 .583 .750 .750 .000 .625 .811 .884 .721 .525 .888 .600 .850 .250 .800 .876 .729 .250 .897 .556 .928



Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 9

Groups Printed- Trucks

Start Time	Blanchard Rd From North			Griswold St From Northeast			Concord Ave From East			Blanchard Rd From South			Concord Ave From West			Int. Total	
	HdLt	Left	Thru	Right	HdLt	BrLt	BrRt	HdRt	Left	Thru	BrRt	Right	Left	BrLt	Thru		Right
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	2
Total	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
05:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Total	0	2	0	0	0	0	0	2	0	0	0	0	0	0	1	0	6
06:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	3	1	0	0	0	0	2	0	0	0	0	0	0	2	0	15
Apprch %	0	75	25	0	0	0	0	28.6	0	71.4	0	100	0	0	100	0	
Total %	0	20	6.7	0	0	0	0	13.3	0	33.3	0	13.3	0	0	13.3	0	

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 10

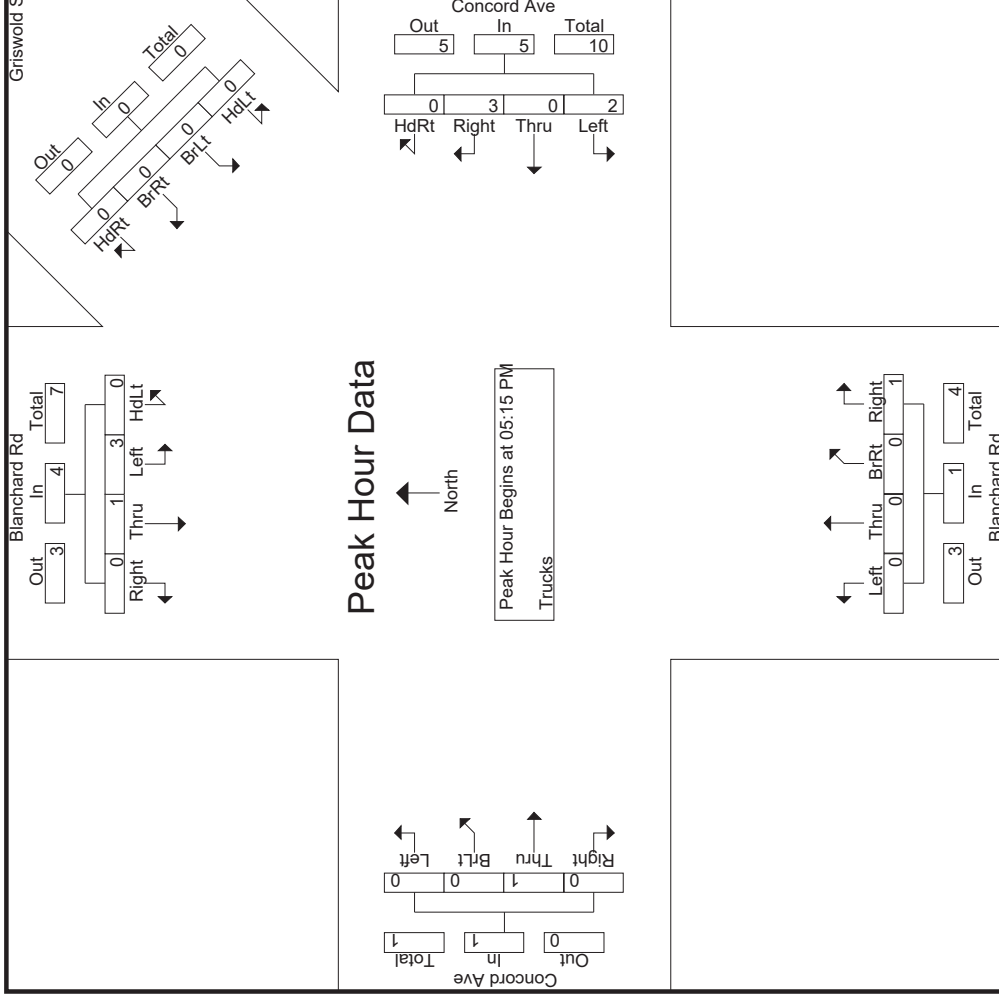
Start Time	Blanchard Rd From North			Griswold St From Northeast			Concord Ave From East			Blanchard Rd From South			Concord Ave From West						
	HdLt	Left	Thru	Right	HdLt	BrLt	BrRt	HdRt	Left	Thru	BrRt	Right	Left	BrLt	Thru	Right			
	App. Total			App. Total			App. Total			App. Total			App. Total						
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																			
Peak Hour for Entire Intersection Begins at 05:15 PM																			
05:15 PM	0	2	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
06:00 PM	0	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	5
Total Volume	0	3	1	0	0	0	0	5	2	0	3	0	0	0	0	1	0	0	11
% App. Total	0	.375	.250	.000	.500	.000	.000	.000	.625	.000	.375	.000	.000	.000	.250	.000	.250	.000	.550
PHF	.000	.375	.250	.000	.500	.000	.000	.000	.625	.000	.375	.000	.000	.000	.250	.000	.250	.000	.550

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 11

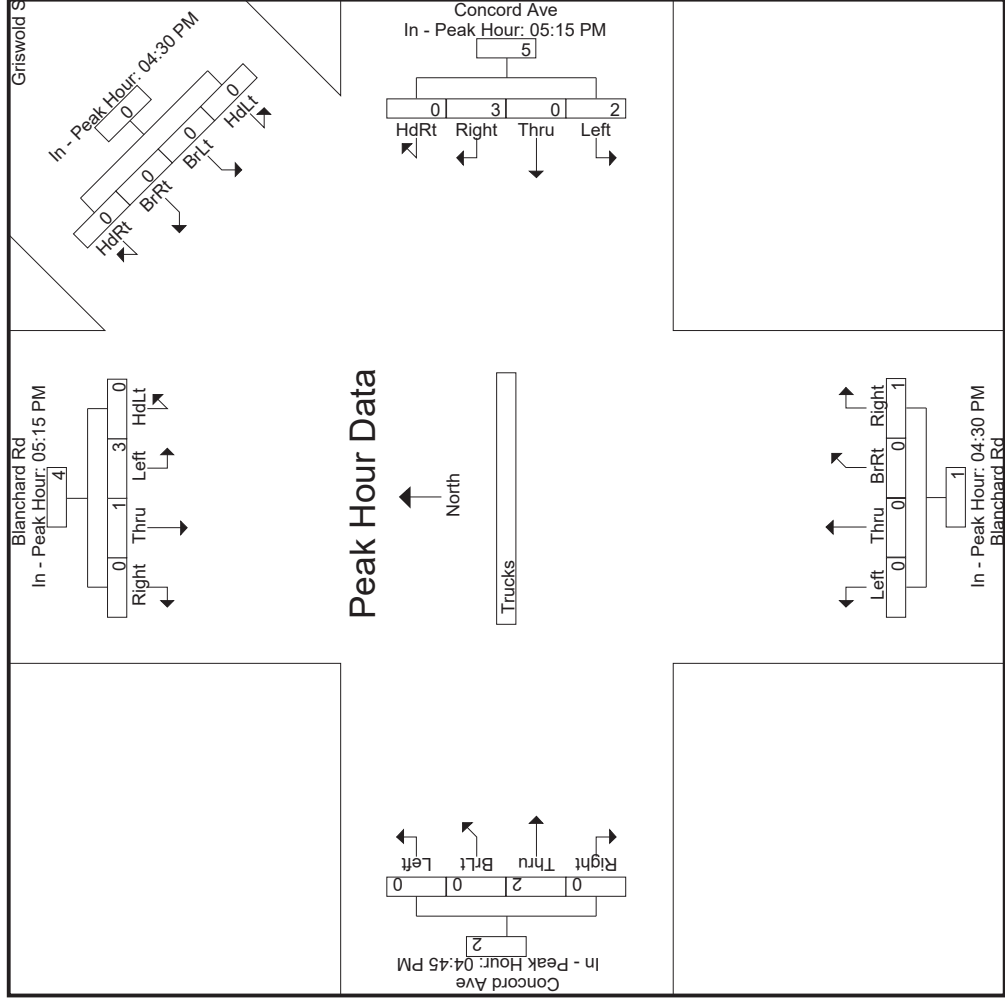


Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:15 PM		04:30 PM		05:15 PM		04:30 PM		04:45 PM	
+0 mins.	0	2	0	0	1	0	2	0	1	0
+15 mins.	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	1	0	1	0	0	0
+45 mins.	0	1	0	0	0	0	2	0	0	1
Total Volume	0	3	0	0	2	0	5	0	0	2
% App. Total	0	75	0	0	40	0	100	0	0	0

Accurate Counts
978-664-2565

PHF .000 .375 .250 .000 .500 .000 .000 .000 .000 .000 .000 .000 .000 .000 .625 .000 .000 .000 .250 .250 .500 .000 .500



Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 13

Start Time	Groups Printed- Bikes Peds																													
	Blanchard Rd From North						Griswold St From Northeast						Concord Ave From East						Blanchard Rd From South						Concord Ave From West					
	HdLt	Left	Thru	Right	Peds	HdLt	BrLt	BrRt	HdRt	Peds	Left	Thru	Right	HdRt	Peds	Left	Thru	BrRt	BrLt	Right	Peds	Left	BrLt	Thru	Right	Peds	Exclu. Total	Inclu. Total	Int. Total	
04:30 PM	0	0	0	0	7	0	0	0	0	9	0	2	0	0	2	0	0	0	0	0	2	0	0	1	0	0	20	3	23	
04:45 PM	0	0	0	0	2	0	0	0	0	5	0	1	2	0	2	0	0	0	0	0	4	0	0	0	1	0	13	4	17	
Total	0	0	0	0	9	0	0	0	0	14	0	3	2	0	4	0	0	0	0	0	6	0	0	1	1	0	33	7	40	
05:00 PM	0	0	3	0	2	0	0	0	0	3	0	1	0	0	1	0	1	0	0	0	0	0	0	1	0	1	7	6	13	
05:15 PM	0	0	0	0	6	0	0	0	0	8	0	4	0	0	4	0	1	0	1	0	5	0	0	0	1	1	24	7	31	
05:30 PM	0	0	2	0	1	0	0	0	0	3	0	5	0	0	2	0	0	0	0	0	3	0	0	2	0	0	9	9	18	
05:45 PM	0	0	0	0	5	0	0	0	0	9	0	11	0	0	1	0	5	0	1	0	2	0	0	1	1	1	18	19	37	
Total	0	0	5	0	14	0	0	0	0	23	0	21	0	0	8	0	7	0	2	10	0	0	4	2	3	58	41	99		
06:00 PM	0	0	1	0	3	0	0	0	0	3	0	8	2	0	4	0	0	0	0	0	0	0	0	0	0	0	10	11	21	
06:15 PM	0	1	2	0	2	0	0	0	0	3	0	5	2	0	0	0	1	0	0	0	2	0	0	2	0	1	8	13	21	
Grand Total	0	1	8	0	28	0	0	0	0	43	0	37	6	0	16	0	8	0	2	18	0	0	7	3	4	109	72	181		
Apprch %	0	11.1	88.9	0	0	0	0	0	0	0	0	86	14	0	0	0	80	0	20	0	0	0	70	30	0	60.2	39.8	0		
Total %	0	1.4	11.1	0	0	0	0	0	0	0	0	51.4	8.3	0	0	0	11.1	0	2.8	0	0	0	9.7	4.2	0	60.2	39.8	0		

Accurate Counts

978-664-2565

N/S Street : Blanchard Rd / Griswold St
 E/W Street : Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840001
 Site Code : 80840001
 Start Date : 4/2/2019
 Page No : 14

Start Time	Blanchard Rd From North			Griswold St From Northeast			Concord Ave From East			Blanchard Rd From South			Concord Ave From West			App. Total	Int. Total	
	HdLt	Left	Thru	Right	HdLt	BrLt	BrRt	HdRt	Left	Thru	BrRt	Right	Left	BrLt	Thru			Right
05:30 PM	0	0	2	0	0	0	0	0	0	5	0	0	0	0	0	0	0	9
05:45 PM	0	0	0	0	0	0	0	0	11	11	0	0	0	0	1	1	2	19
06:00 PM	0	0	1	0	0	0	0	2	8	10	0	0	0	0	0	0	0	11
06:15 PM	0	1	2	0	0	0	0	2	5	7	0	0	0	0	2	0	2	13
Total Volume	0	1	5	0	0	0	0	4	29	33	0	6	0	0	5	1	6	52
% App. Total	0	16.7	83.3	0	0	0	0	12.1	87.9	0	0	85.7	0	0	83.3	16.7	0	0
PHF	.000	.250	.625	.000	.000	.000	.000	.500	.659	.750	.000	.300	.000	.000	.625	.250	.750	.684

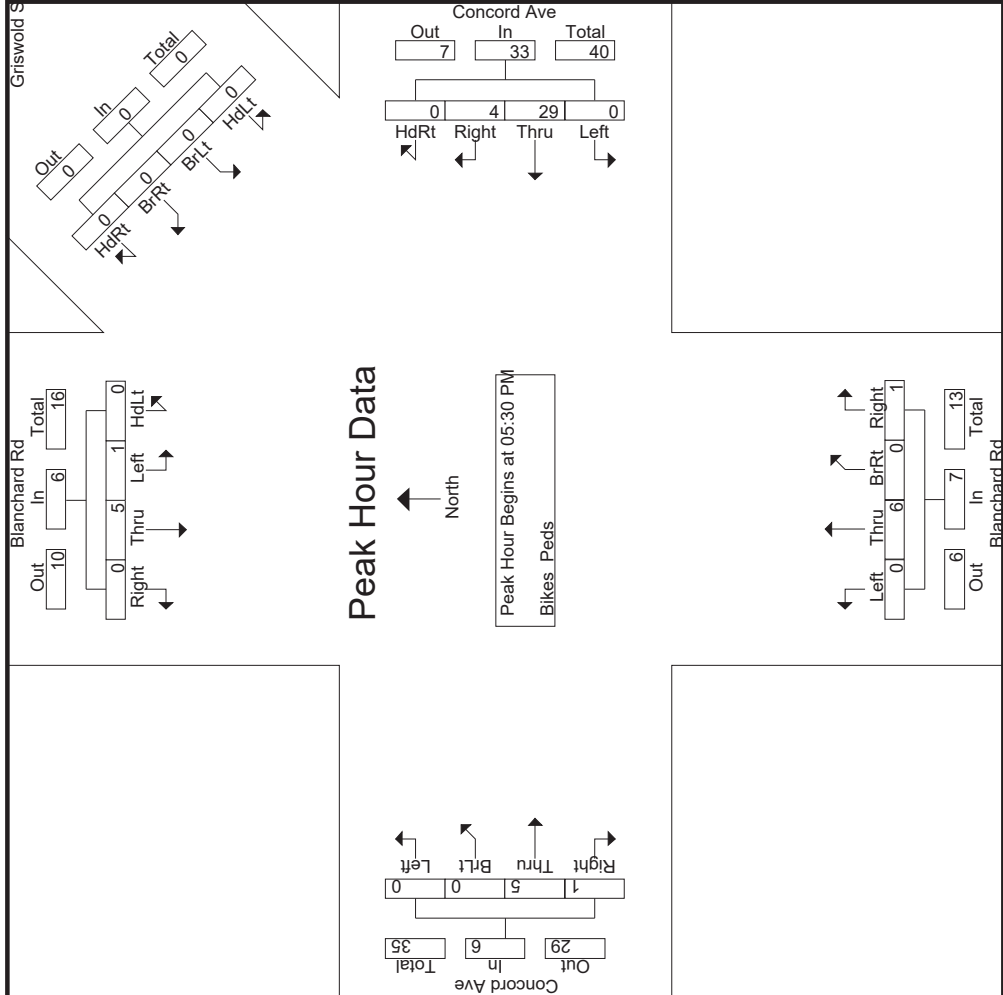
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:30 PM

Accurate Counts
978-664-2565

N/S Street : Blanchard Rd / Griswold St
E/W Street : Concord Avenue
City/State : Cambridge, MA
Weather : Clear

File Name : 80840001
Site Code : 80840001
Start Date : 4/2/2019
Page No : 15



Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:30 PM	04:30 PM	05:30 PM	05:00 PM	05:00 PM
+0 mins.	0	0	0	5	1
+15 mins.	0	0	0	11	2
+30 mins.	0	0	0	8	0
+45 mins.	0	0	0	5	7
Total Volume	0	0	0	29	4
% App. Total	0	16.7	83.3	0	0
				0	77.8
				0	22.2
				0	66.7
				0	33.3

Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 1

Start Time	Groups Printed- Cars - Trucks											
	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
07:30 AM	8	0	15	0	105	18	0	0	25	173	0	344
07:45 AM	5	0	12	0	121	18	0	0	20	239	0	415
Total	13	0	27	0	226	36	0	0	45	412	0	759
08:00 AM	6	0	8	0	141	14	0	0	17	186	0	372
08:15 AM	14	0	13	0	158	11	0	0	18	206	0	420
08:30 AM	7	0	16	0	158	3	0	0	14	250	0	448
08:45 AM	7	0	14	0	144	10	0	0	16	235	0	426
Total	34	0	51	0	601	38	0	0	65	877	0	1666
09:00 AM	11	0	11	0	101	6	0	0	15	221	0	365
09:15 AM	10	0	19	0	109	6	0	0	13	157	0	314
Grand Total	68	0	108	0	1037	86	0	0	138	1667	0	3104
Approch %	38.6	0	61.4	0	92.3	7.7	0	0	7.6	92.4	0	
Total %	2.2	0	3.5	0	33.4	2.8	0	0	4.4	53.7	0	
Cars	63	0	100	0	1019	78	0	0	130	1654	0	3044
% Cars	92.6	0	92.6	0	98.3	90.7	0	0	94.2	99.2	0	98.1
Trucks	5	0	8	0	18	8	0	0	8	13	0	60
% Trucks	7.4	0	7.4	0	1.7	9.3	0	0	5.8	0.8	0	1.9

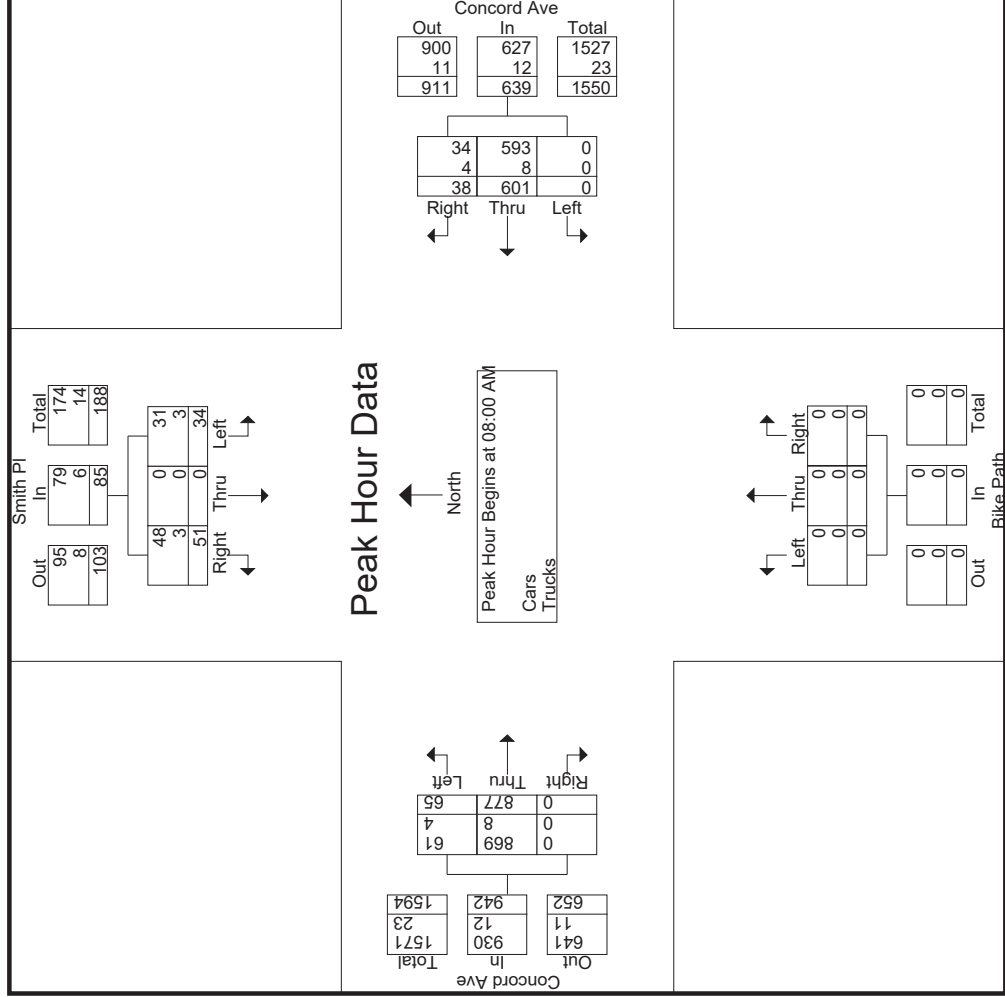
Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 2

Start Time	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West							
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total				
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	6	0	8	14	0	141	14	155	0	0	0	0	17	186	0	203	372
08:15 AM	14	0	13	27	0	158	11	169	0	0	0	0	18	206	0	224	420
08:30 AM	7	0	16	23	0	158	3	161	0	0	0	0	14	250	0	264	448
08:45 AM	7	0	14	21	0	144	10	154	0	0	0	0	16	235	0	251	426
Total Volume	34	0	51	85	0	601	38	639	0	0	0	0	65	877	0	942	1666
% App. Total	40	0	60		0	94.1	5.9		0	0	0	0	6.9	93.1	0		
PHF	.607	.000	.797	.787	.000	.951	.679	.945	.000	.000	.000	.000	.903	.877	.000	.892	.930
Cars	31	0	48	79	0	593	34	627	0	0	0	0	61	869	0	930	1636
% Cars	91.2	0	94.1	92.9	0	98.7	89.5	98.1	0	0	0	0	93.8	99.1	0	98.7	98.2
Trucks	3	0	3	6	0	8	4	12	0	0	0	0	4	8	0	12	30
% Trucks	8.8	0	5.9	7.1	0	1.3	10.5	1.9	0	0	0	0	6.2	0.9	0	1.3	1.8



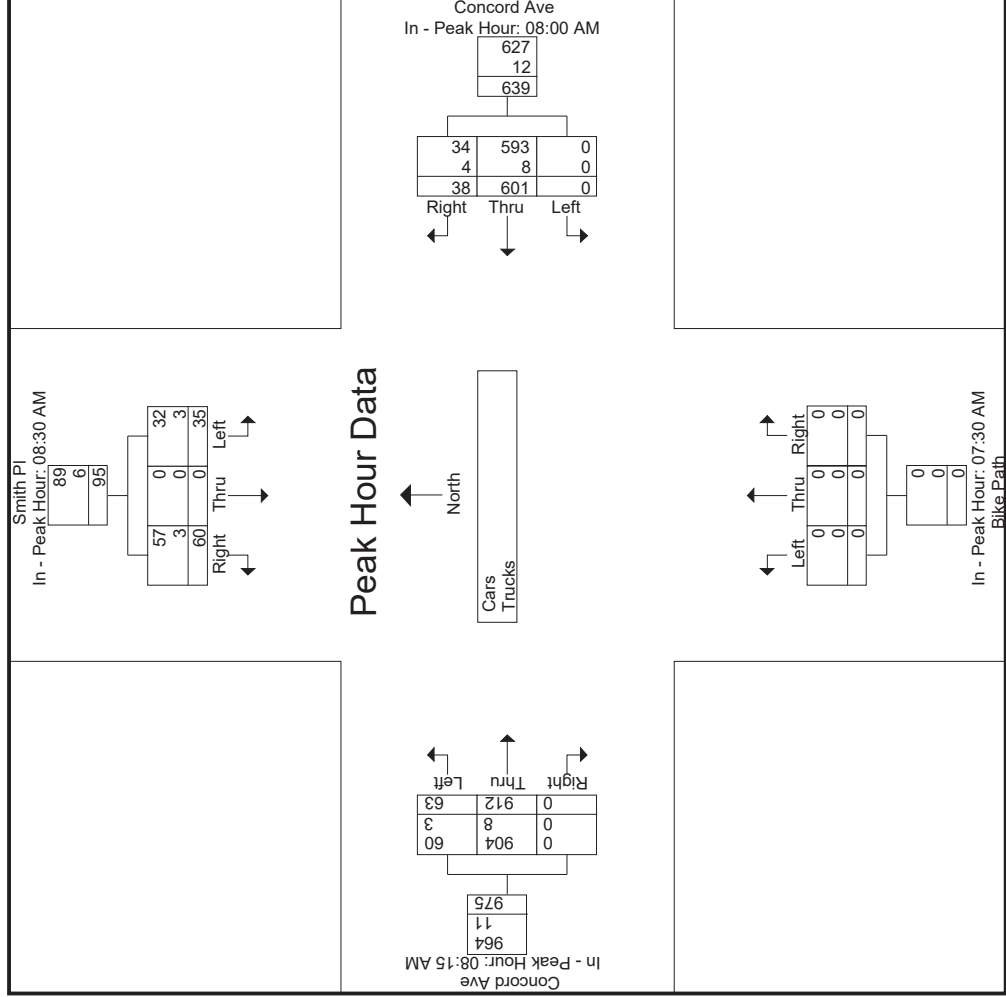
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM	08:00 AM	08:15 AM
+0 mins.	155	0	0
+15 mins.	14	141	0
+30 mins.	11	158	18
+45 mins.	3	158	14
Total Volume	10	144	15
	35	60	63
	639	601	912
	206	0	0
	250	0	0
	235	0	0
	221	0	0
	975	0	0

Accurate Counts

978-664-2565

	36.8	0	63.2	0	94.1	5.9	0	0	0	0	0	0	0	6.5	93.5	0	.923
% App. Total	36.8	0	63.2	0	94.1	5.9	0	0	0	0	0	0	0	6.5	93.5	0	.923
PHF	.795	.000	.789	.819	.951	.679	.945	.000	.000	.000	.000	.000	.000	.875	.912	.000	
Cars	32	0	57	89	593	34	627	0	0	0	0	0	0	60	904	0	964
% Cars	91.4	0	95	93.7	98.7	89.5	98.1	0	0	0	0	0	0	95.2	99.1	0	98.9
Trucks	3	0	3	6	8	4	12	0	0	0	0	0	0	3	8	0	11
% Trucks	8.6	0	5	6.3	1.3	10.5	1.9	0	0	0	0	0	0	4.8	0.9	0	1.1



Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 5

Groups Printed- Cars

Start Time	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	8	0	14	0	102	18	0	0	0	24	172	0	338
07:45 AM	5	0	9	0	117	17	0	0	0	18	238	0	404
Total	13	0	23	0	219	35	0	0	0	42	410	0	742
08:00 AM	5	0	7	0	137	13	0	0	0	16	184	0	362
08:15 AM	13	0	13	0	156	10	0	0	0	17	206	0	415
08:30 AM	6	0	16	0	157	3	0	0	0	13	249	0	444
08:45 AM	7	0	12	0	143	8	0	0	0	15	230	0	415
Total	31	0	48	0	593	34	0	0	0	61	869	0	1636
09:00 AM	10	0	11	0	100	5	0	0	0	15	219	0	360
09:15 AM	9	0	18	0	107	4	0	0	0	12	156	0	306
Grand Total	63	0	100	0	1019	78	0	0	0	130	1654	0	3044
Apprch %	38.7	0	61.3	0	92.9	7.1	0	0	0	7.3	92.7	0	
Total %	2.1	0	3.3	0	33.5	2.6	0	0	0	4.3	54.3	0	

Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

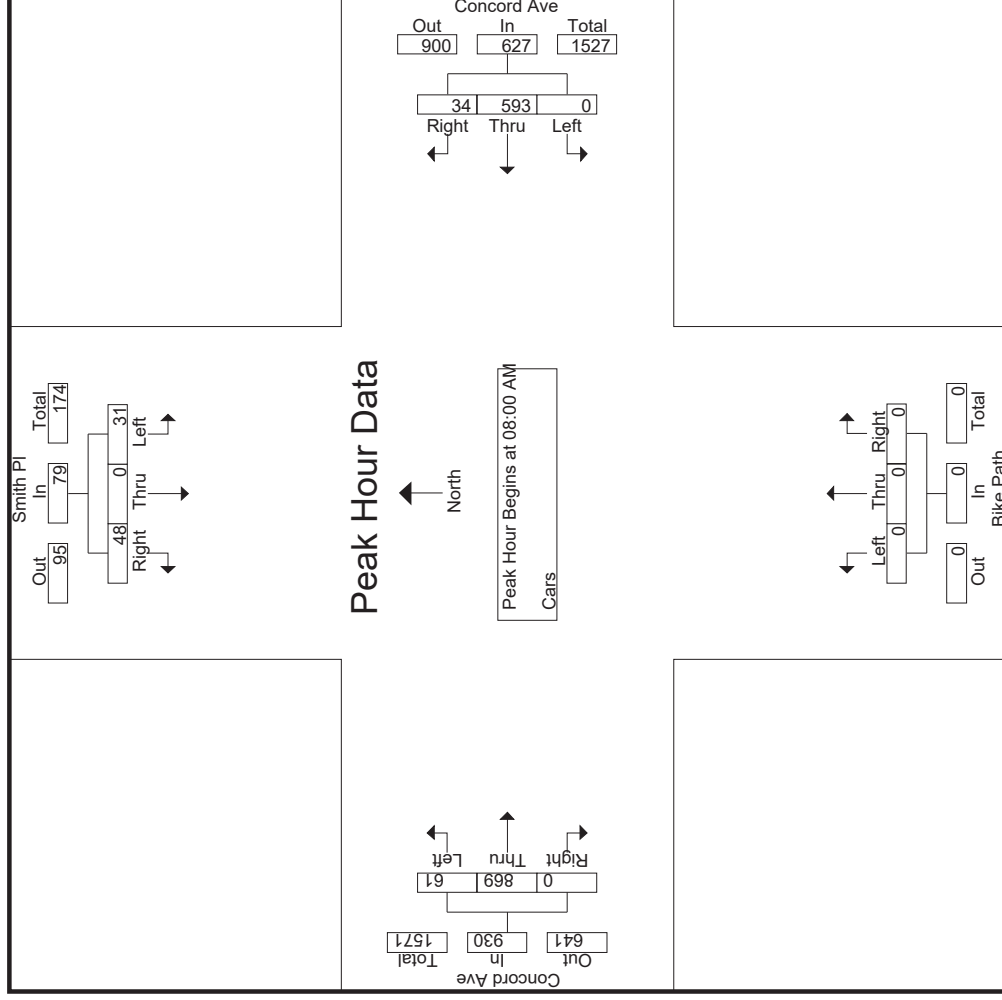
File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 6

Start Time	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West			Int. Total				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total					
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	5	0	7	12	0	137	13	150	0	0	0	0	16	184	0	200	362
08:15 AM	13	0	13	26	0	156	10	166	0	0	0	0	17	206	0	223	415
08:30 AM	6	0	16	22	0	157	3	160	0	0	0	0	13	249	0	262	444
08:45 AM	7	0	12	19	0	143	8	151	0	0	0	0	15	230	0	245	415
Total Volume	31	0	48	79	0	593	34	627	0	0	0	0	61	869	0	930	1636
% App. Total	39.2	0	60.8		0	94.6	5.4		0	0	0	0	6.6	93.4	0		
PHF	.596	.000	.750	.760	.000	.944	.654	.944	.000	.000	.000	.000	.897	.872	.000	.887	.921

Accurate Counts
978-664-2565

N/S Street : Smith Place / Bike Path
E/W Street: Concord Avenue
City/State : Cambridge, MA
Weather : Clear

File Name : 80840003
Site Code : 80840003
Start Date : 4/2/2019
Page No : 7



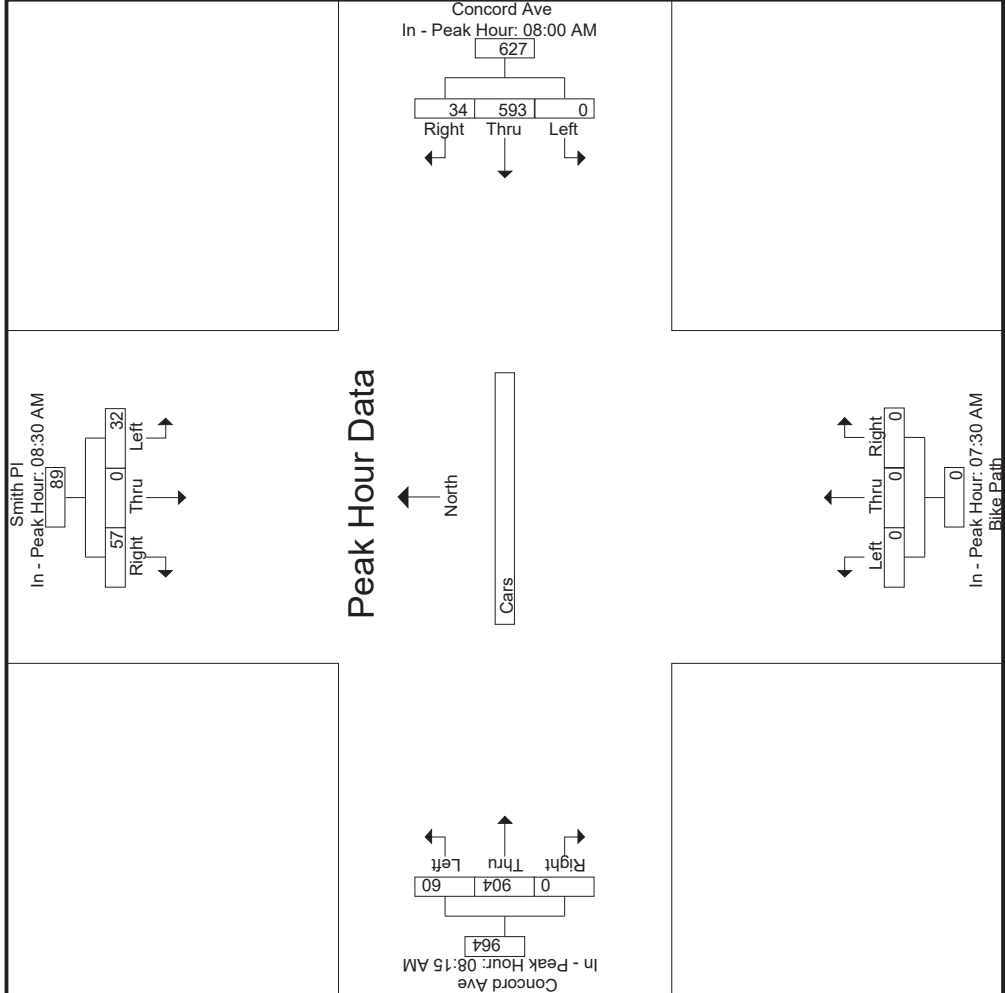
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:30 AM			08:00 AM			07:30 AM			08:15 AM				
+0 mins.	6	0	16	22	0	137	150	0	0	0	17	206	0	223
+15 mins.	7	0	12	19	0	156	166	0	0	0	13	249	0	262
+30 mins.	10	0	11	21	0	157	160	0	0	0	15	230	0	245
+45 mins.	9	0	18	27	0	143	151	0	0	0	15	219	0	234
Total Volume	32	0	57	89	0	593	627	0	0	0	60	904	0	964

Accurate Counts
978-664-2565

% App. Total	36	64	0	94.6	5.4	0	0	0	0	0	0	0	6.2	93.8	0	.920
PHF	.800	.000	.792	.944	.654	.944	.000	.000	.000	.000	.000	.000	.882	.908	.000	.920



Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 9

Groups Printed- Trucks

Start Time	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	0	0	1	0	3	0	0	0	0	1	1	0	6
07:45 AM	0	0	3	0	4	1	0	0	0	2	1	0	11
Total	0	0	4	0	7	1	0	0	0	3	2	0	17
08:00 AM	1	0	1	0	4	1	0	0	0	1	2	0	10
08:15 AM	1	0	0	0	2	1	0	0	0	1	0	0	5
08:30 AM	1	0	0	0	1	0	0	0	0	1	1	0	4
08:45 AM	0	0	2	0	1	2	0	0	0	1	5	0	11
Total	3	0	3	0	8	4	0	0	0	4	8	0	30
09:00 AM	1	0	0	0	1	1	0	0	0	0	2	0	5
09:15 AM	1	0	1	0	2	2	0	0	0	1	1	0	8
Grand Total	5	0	8	0	18	8	0	0	0	8	13	0	60
Apprch %	38.5	0	61.5	0	69.2	30.8	0	0	0	38.1	61.9	0	0
Total %	8.3	0	13.3	0	30	13.3	0	0	0	13.3	21.7	0	0

Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

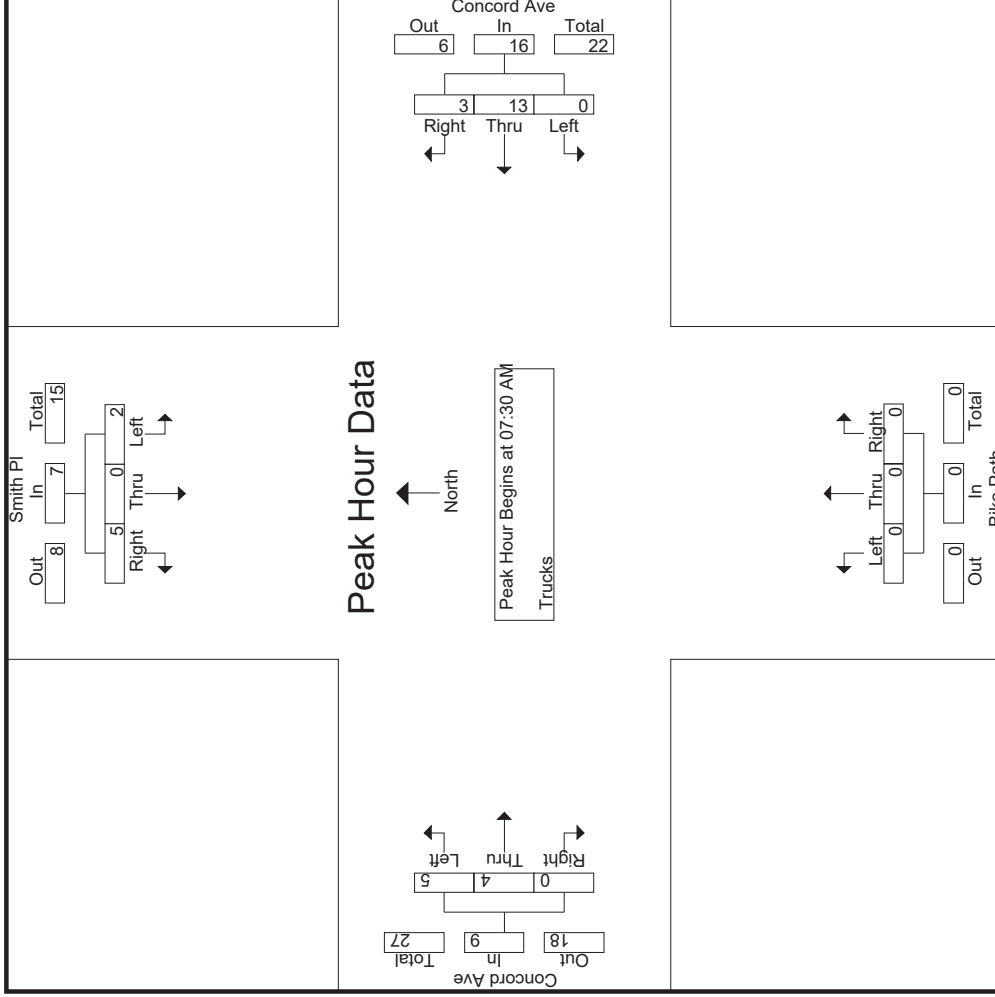
File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 10

Start Time	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West							
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total				
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	0	0	1	1	0	3	0	3	0	0	0	0	1	1	0	2	6
07:45 AM	0	0	3	3	0	4	1	5	0	0	0	0	2	1	0	3	11
08:00 AM	1	0	1	2	0	4	1	5	0	0	0	0	1	2	0	3	10
08:15 AM	1	0	0	1	0	2	1	3	0	0	0	0	1	0	0	1	5
Total Volume	2	0	5	7	0	13	3	16	0	0	0	0	5	4	0	9	32
% App. Total	28.6	0	71.4	.583	0	81.2	18.8	.800	0	0	0	0	55.6	44.4	0	.750	.727
PHF	.500	.000	.417	.583	.000	.813	.750	.800	.000	.000	.000	.000	.625	.500	.000	.750	.727

Accurate Counts
978-664-2565

N/S Street : Smith Place / Bike Path
E/W Street: Concord Avenue
City/State : Cambridge, MA
Weather : Clear

File Name : 80840003
Site Code : 80840003
Start Date : 4/2/2019
Page No : 11

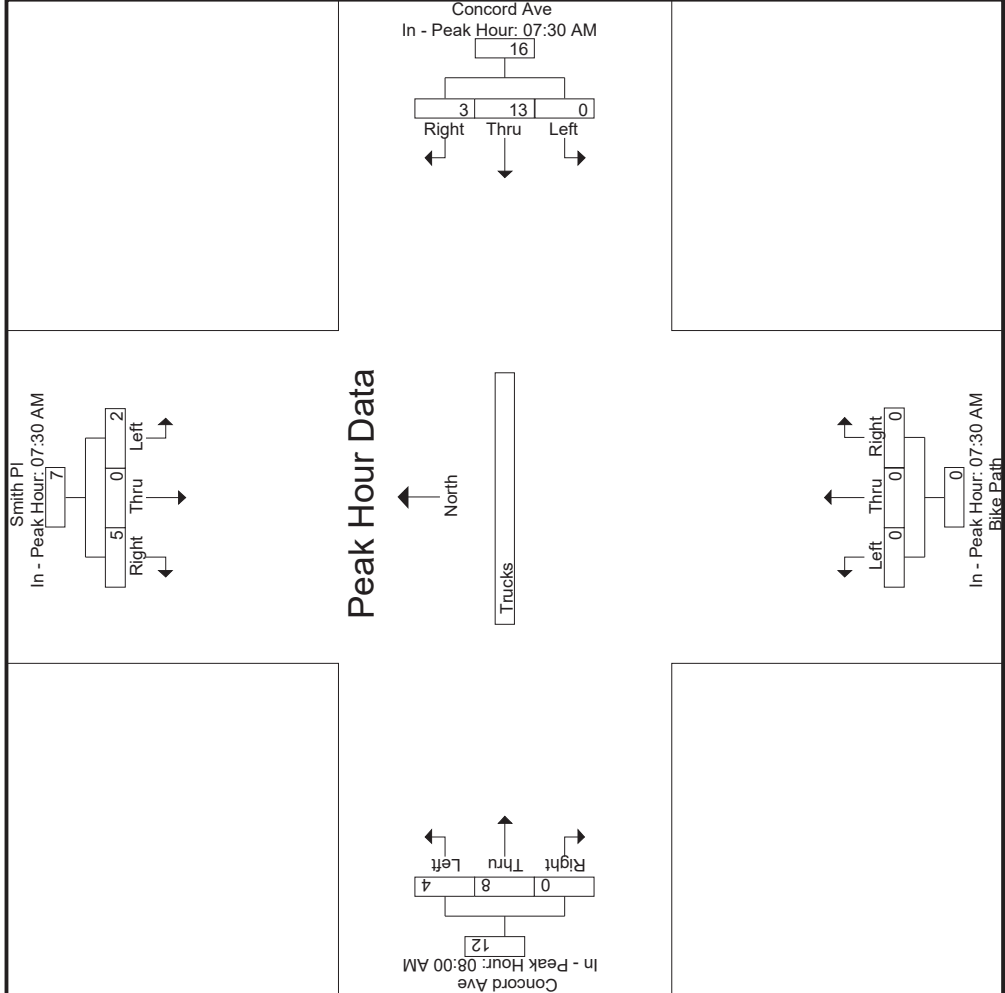


Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:30 AM			08:00 AM				
+0 mins.	0	0	1	1	0	3	0	0	0	0	0	0	0	3
+15 mins.	0	0	3	3	0	5	1	0	0	0	0	0	0	1
+30 mins.	1	0	2	2	0	5	1	0	0	0	0	0	1	2
+45 mins.	1	0	1	1	0	3	1	0	0	0	0	0	1	6
Total Volume	2	0	5	7	0	13	3	0	0	0	0	0	4	12

Accurate Counts
978-664-2565

% App. Total	28.6	0	71.4	0	81.2	18.8	0	0	0	0	33.3	66.7	0	0	.500
PHF	.500	.000	.417	.000	.813	.750	.800	.000	.000	.000	1.000	.400	.000	.000	.500



Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 13

Groups Printed- Bikes- Peds

Start Time	Smith Pl			Concord Ave			Bike Path			Concord Ave			Exclu. Total	Inclu. Total	Int. Total	
	From North			From East			From South			From West						
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right				Peds
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	10	12
07:45 AM	0	0	0	0	2	0	1	0	0	0	0	0	0	6	9	15
Total	0	0	0	0	2	0	1	0	0	0	0	0	0	8	19	27
08:00 AM	0	0	0	0	4	0	3	0	0	0	0	0	0	1	17	18
08:15 AM	0	0	0	0	4	0	1	0	0	0	0	0	0	3	13	16
08:30 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	5	14	19
08:45 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	3	8	11
Total	0	0	0	0	11	0	5	0	0	0	0	0	0	12	52	64
09:00 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	5	11	16
09:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	4	7	11
Grand Total	0	0	0	0	15	1	6	0	0	0	0	0	0	29	89	118
Approch %	0	0	0	0	93.8	6.2	100	0	0	0	0	0	0	24.6	75.4	
Total %	0	0	0	0	16.9	1.1	6.7	0	0	0	0	0	0	67.4	7.9	

Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 14

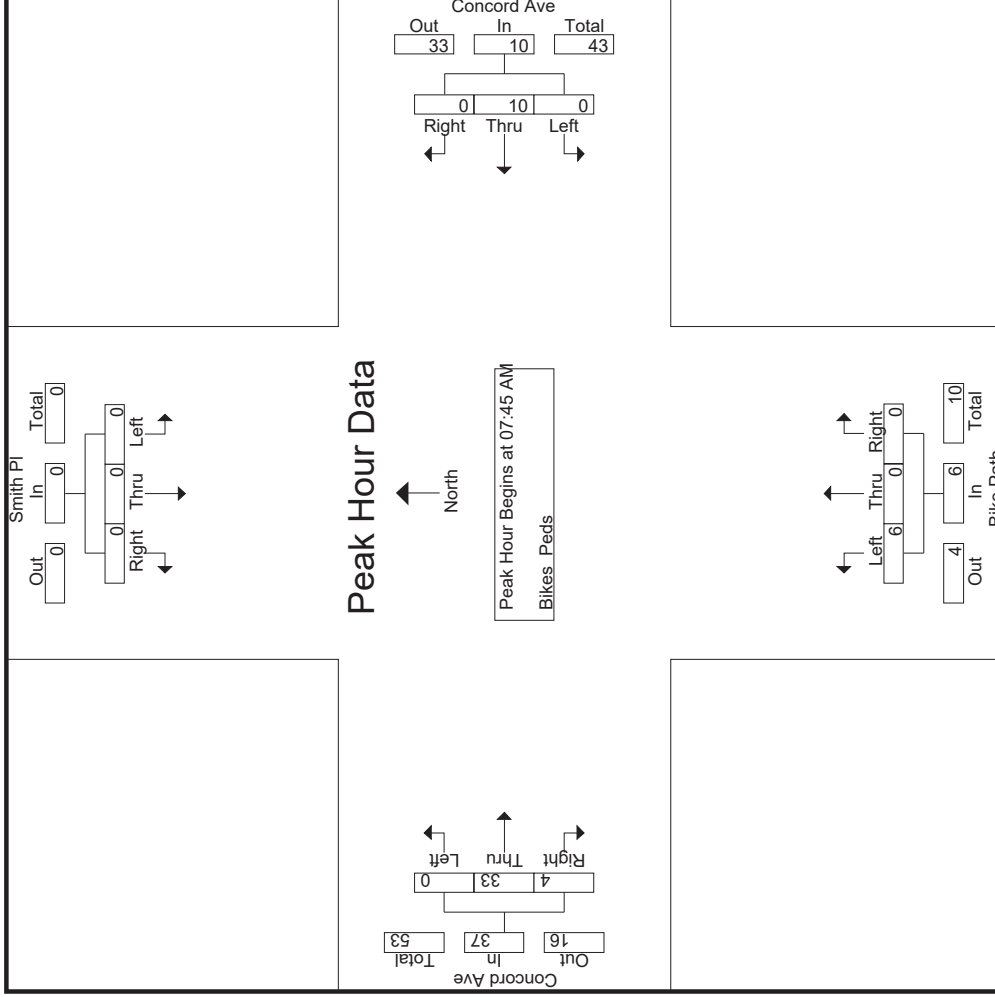
Start Time	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West			Int. Total					
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total						
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 07:45 AM																		
07:45 AM	0	0	0	0	0	2	0	0	2	1	0	0	1	0	6	0	6	9
08:00 AM	0	0	0	0	0	4	0	0	4	3	0	0	3	0	8	2	10	17
08:15 AM	0	0	0	0	0	4	0	0	4	1	0	0	1	0	7	1	8	13
08:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	0	12	1	13	14
Total Volume	0	0	0	0	0	10	0	0	10	6	0	0	6	0	33	4	37	53
% App. Total	0	0	0	0	0	100	0	0	100	100	0	0	60	0	89.2	10.8	70	100
PHF	.000	.000	.000	.000	.000	.625	.000	.000	.625	.500	.000	.000	.500	.000	.688	.500	.712	.779

Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 15



Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM			08:00 AM			07:45 AM			07:45 AM					
+0 mins.	0	0	0	0	0	0	0	4	0	1	0	0	0	6	0
+15 mins.	0	0	0	0	4	0	4	4	3	0	0	0	0	8	2
+30 mins.	0	0	0	0	0	0	0	0	1	0	0	0	0	7	1
+45 mins.	0	0	0	0	3	0	3	0	1	0	0	0	0	12	1
Total Volume	0	0	0	0	11	0	11	0	6	6	0	0	0	33	4

Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 1

Start Time	Groups Printed- Cars - Trucks												Int. Total
	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	22	0	34	0	115	10	0	0	0	0	124	0	321
04:45 PM	28	0	22	0	125	8	0	0	0	0	123	0	318
Total	50	0	56	0	240	18	0	0	0	0	247	0	639
05:00 PM	23	0	28	0	121	3	0	0	0	0	132	0	322
05:15 PM	12	0	22	0	144	4	0	0	0	0	113	0	313
05:30 PM	14	0	31	0	143	3	0	0	0	0	125	0	328
05:45 PM	14	0	27	0	107	5	0	0	0	0	118	0	286
Total	63	0	108	0	515	15	0	0	0	0	488	0	1249
06:00 PM	16	0	26	0	127	4	0	0	0	0	159	0	339
06:15 PM	8	0	16	0	145	7	0	0	0	0	115	0	302
Grand Total	137	0	206	0	1027	44	0	0	0	0	1009	0	2529
Approch %	39.9	0	60.1	0	95.9	4.1	0	0	0	0	90.5	0	
Total %	5.4	0	8.1	0	40.6	1.7	0	0	0	0	39.9	0	
Cars	137	0	205	0	1020	44	0	0	0	0	1002	0	2514
% Cars	100	0	99.5	0	99.3	100	0	0	0	0	99.3	0	99.4
Trucks	0	0	1	0	7	0	0	0	0	0	7	0	15
% Trucks	0	0	0.5	0	0.7	0	0	0	0	0	0.7	0	0.6

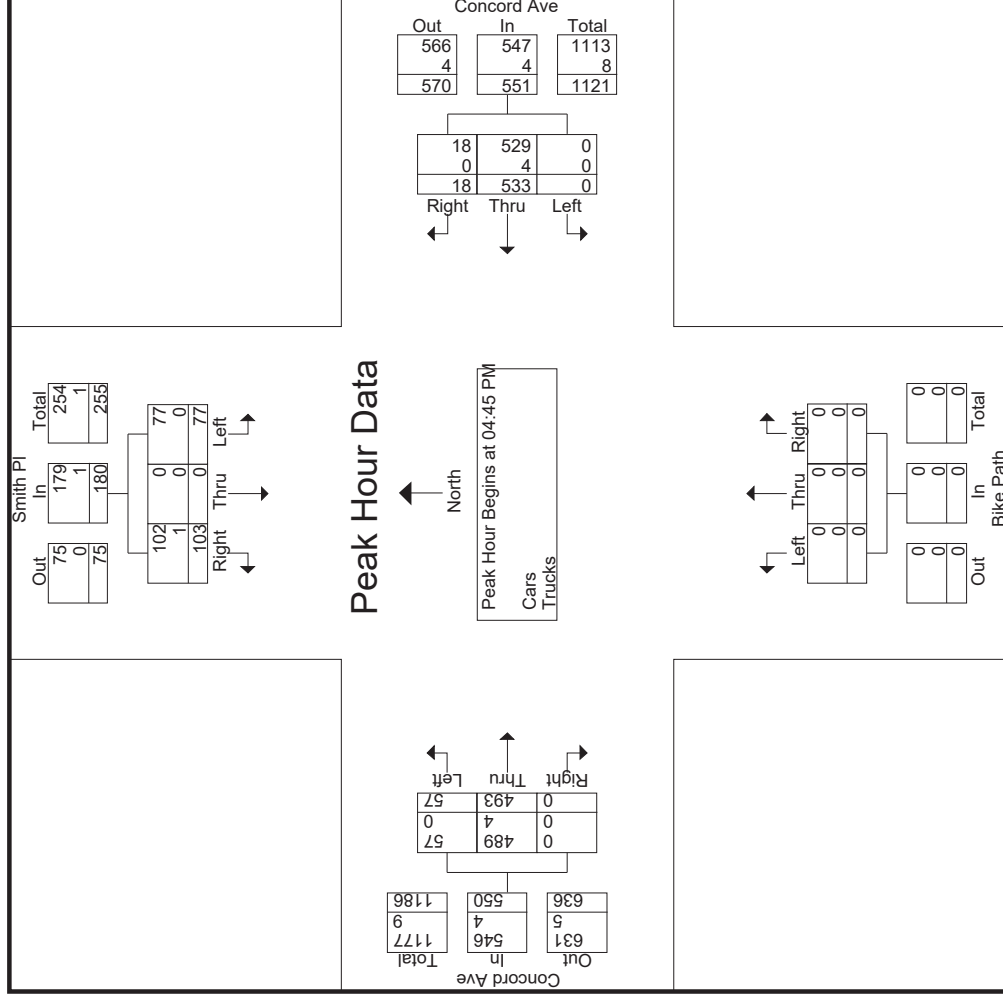
Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 2

Start Time	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West						
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total			
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 04:45 PM																
04:45 PM	28	0	22	50	0	125	8	133	0	0	0	0	123	0	135	318
05:00 PM	23	0	28	51	0	121	3	124	0	0	0	0	132	0	147	322
05:15 PM	12	0	22	34	0	144	4	148	0	0	0	0	113	0	131	313
05:30 PM	14	0	31	45	0	143	3	146	0	0	0	0	125	0	137	328
Total Volume	77	0	103	180	0	533	18	551	0	0	0	0	493	0	550	1281
% App. Total	42.8	0	57.2		0	96.7	3.3		0	0	0	0	89.6	0		
PHF	.688	.000	.831	.882	.000	.925	.563	.931	.000	.000	.000	.000	.934	.000	.935	.976
Cars	77	0	102	179	0	529	18	547	0	0	0	0	489	0	546	1272
% Cars	100	0	99.0	99.4	0	99.2	100	99.3	0	0	0	0	99.2	0	99.3	99.3
Trucks	0	0	1	1	0	4	0	4	0	0	0	0	4	0	4	9
% Trucks	0	0	1.0	0.6	0	0.8	0	0.7	0	0	0	0	0.8	0	0.7	0.7

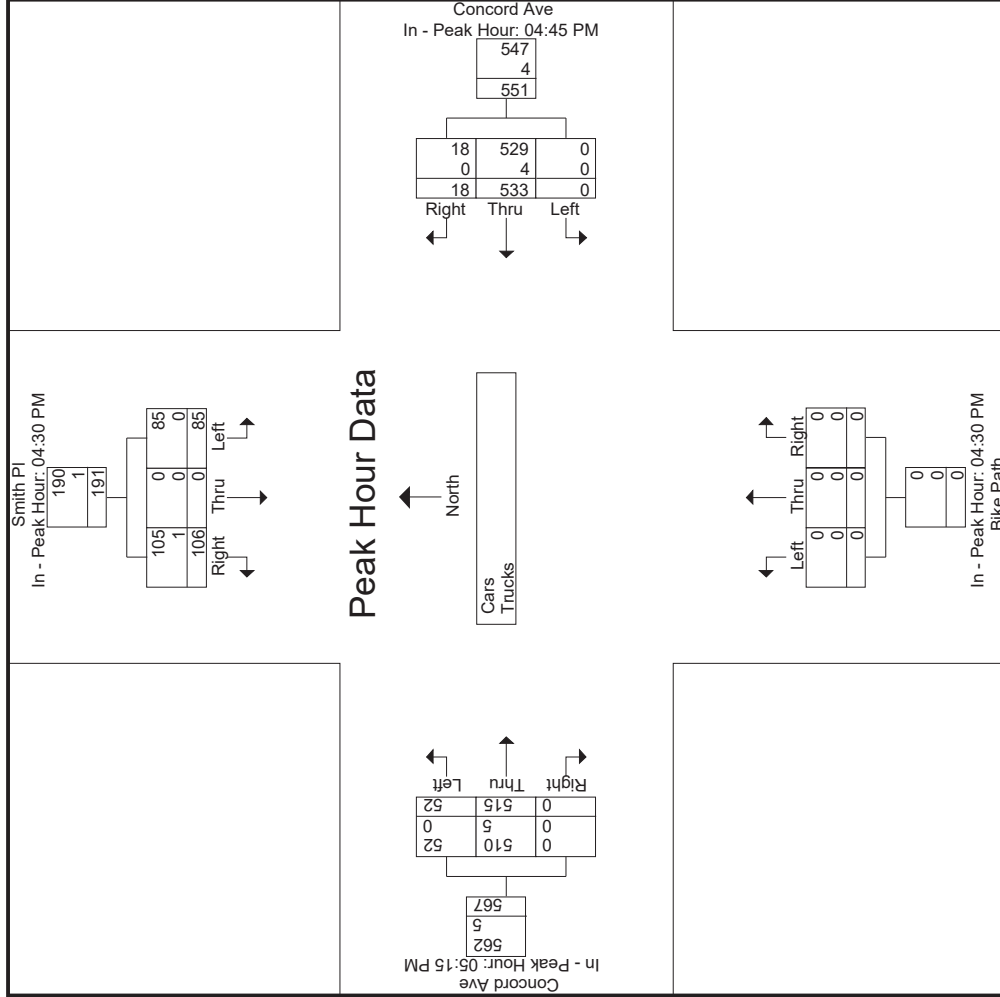


Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM	04:45 PM	04:30 PM	05:15 PM
+0 mins.	22	0	133	0
+15 mins.	28	0	124	0
+30 mins.	23	0	148	0
+45 mins.	12	0	146	0
Total Volume	85	0	533	0
			18	551
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
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			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
			143	0
			8	133
			3	124
			4	148
			3	146
			125	0
			121	0
			144	0
	</			

Accurate Counts
978-664-2565

% App. Total	44.5	0	55.5	0	96.7	3.3	0	0	0	0	0	9.2	90.8	0	.854
PHF	.759	.000	.779	.853	.000	.563	.931	.000	.000	.000	.000	.722	.810	.000	.854
Cars	85	0	105	190	0	18	547	0	0	0	0	52	510	0	562
% Cars	100	0	99.1	99.5	0	100	99.3	0	0	0	0	100	99	0	99.1
Trucks	0	0	1	1	0	4	4	0	0	0	0	0	5	0	5
% Trucks	0	0	0.9	0.5	0	0.8	0.7	0	0	0	0	0	1	0	0.9



Accurate Counts
978-664-2565

N/S Street : Smith Place / Bike Path
E/W Street: Concord Avenue
City/State : Cambridge, MA
Weather : Clear

File Name : 80840003
Site Code : 80840003
Start Date : 4/2/2019
Page No : 5

Groups Printed- Cars

Start Time	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	22	0	34	0	114	10	0	0	0	16	123	0	319
04:45 PM	28	0	22	0	124	8	0	0	0	12	122	0	316
Total	50	0	56	0	238	18	0	0	0	28	245	0	635
05:00 PM	23	0	28	0	121	3	0	0	0	15	132	0	322
05:15 PM	12	0	21	0	142	4	0	0	0	18	112	0	309
05:30 PM	14	0	31	0	142	3	0	0	0	12	123	0	325
05:45 PM	14	0	27	0	107	5	0	0	0	15	118	0	286
Total	63	0	107	0	512	15	0	0	0	60	485	0	1242
06:00 PM	16	0	26	0	125	4	0	0	0	7	157	0	335
06:15 PM	8	0	16	0	145	7	0	0	0	11	115	0	302
Grand Total	137	0	205	0	1020	44	0	0	0	106	1002	0	2514
Apprch %	40.1	0	59.9	0	95.9	4.1	0	0	0	9.6	90.4	0	
Total %	5.4	0	8.2	0	40.6	1.8	0	0	0	4.2	39.9	0	

Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 6

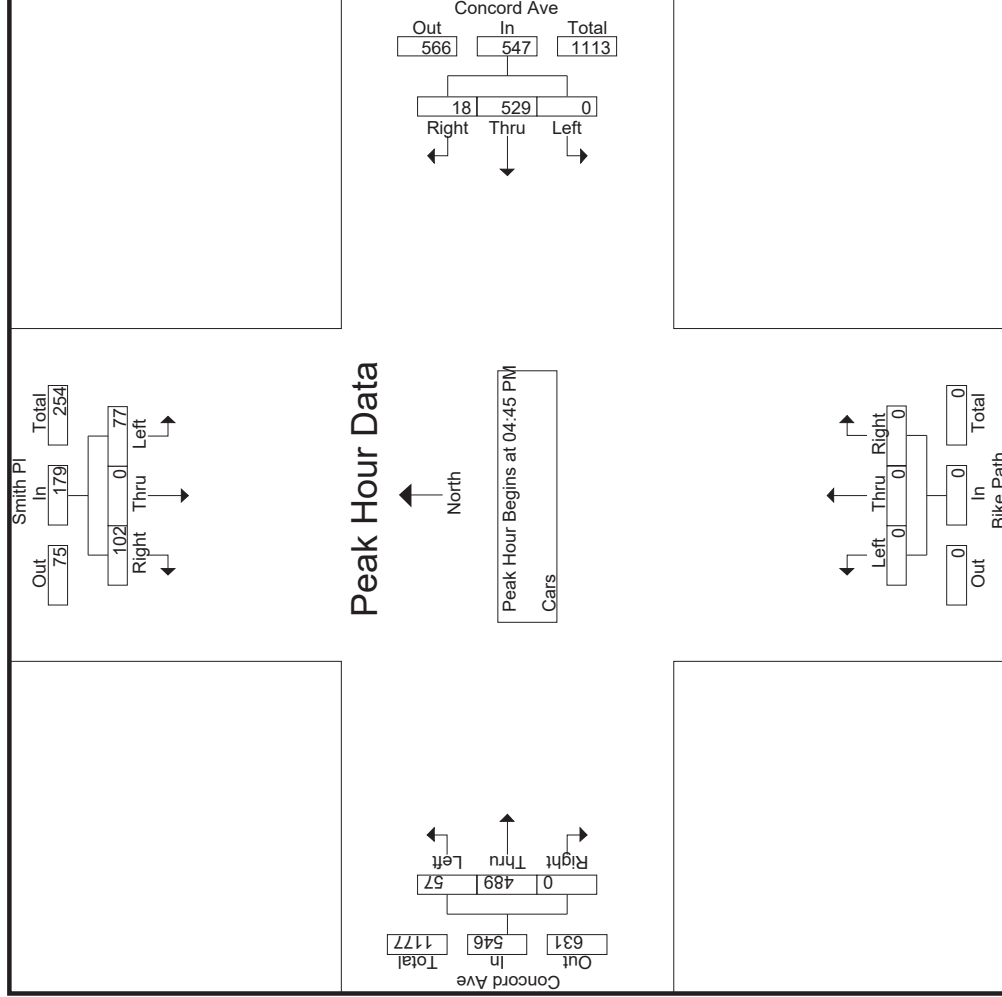
Start Time	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:45 PM														
04:45 PM	28	0	22	50	0	124	8	132	0	0	0	0	134	316
05:00 PM	23	0	28	51	0	121	3	124	0	0	0	0	147	322
05:15 PM	12	0	21	33	0	142	4	146	0	0	0	0	130	309
05:30 PM	14	0	31	45	0	142	3	145	0	0	0	0	135	325
Total Volume	77	0	102	179	0	529	18	547	0	0	0	0	546	1272
% App. Total	43	0	57		0	96.7	3.3		0	0	0	0		
PHF	.688	.000	.823	.877	.000	.931	.563	.937	.000	.000	.000	.000	.929	.978

Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 7



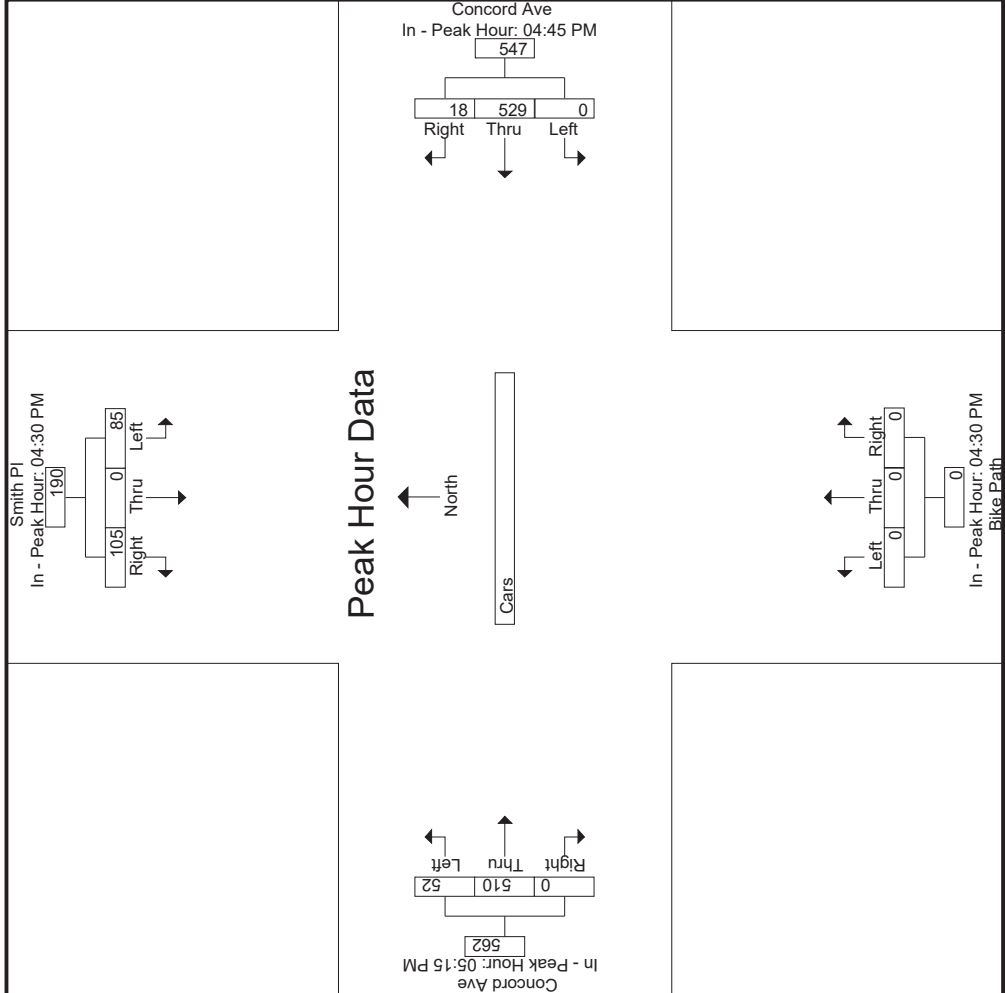
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:30 PM			04:45 PM			04:30 PM			05:15 PM			
+0 mins.	22	0	34	56	124	0	132	0	0	0	112	0	130
+15 mins.	28	0	22	50	121	0	124	0	0	0	123	0	135
+30 mins.	23	0	28	51	142	0	146	0	0	0	118	0	133
+45 mins.	12	0	21	33	142	0	145	0	0	0	157	0	164
Total Volume	85	0	105	190	529	0	547	0	0	0	510	0	562

Accurate Counts

978-664-2565

% App. Total	44.7	0	55.3	0	96.7	0	.848	.000	.931	.563	.937	.000	.000	.000	.000	.000	.722	.90.7	0	.857
PHF	.759	.000	.772	.000	.931	.000	.848	.000	.931	.563	.937	.000	.000	.000	.000	.000	.722	.812	.000	.857



Accurate Counts
978-664-2565

N/S Street : Smith Place / Bike Path
E/W Street: Concord Avenue
City/State : Cambridge, MA
Weather : Clear

File Name : 80840003
Site Code : 80840003
Start Date : 4/2/2019
Page No : 9

Groups Printed- Trucks

Start Time	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
04:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
Total	0	0	0	0	2	0	0	0	0	0	2	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	1	0	2	0	0	0	0	0	1	0	4
05:30 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	1	0	3	0	0	0	0	0	3	0	7
06:00 PM	0	0	0	0	2	0	0	0	0	0	2	0	4
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	1	0	7	0	0	0	0	0	7	0	15
Apprch %	0	0	100	0	100	0	0	0	0	0	100	0	0
Total %	0	0	6.7	0	46.7	0	0	0	0	0	46.7	0	0

Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

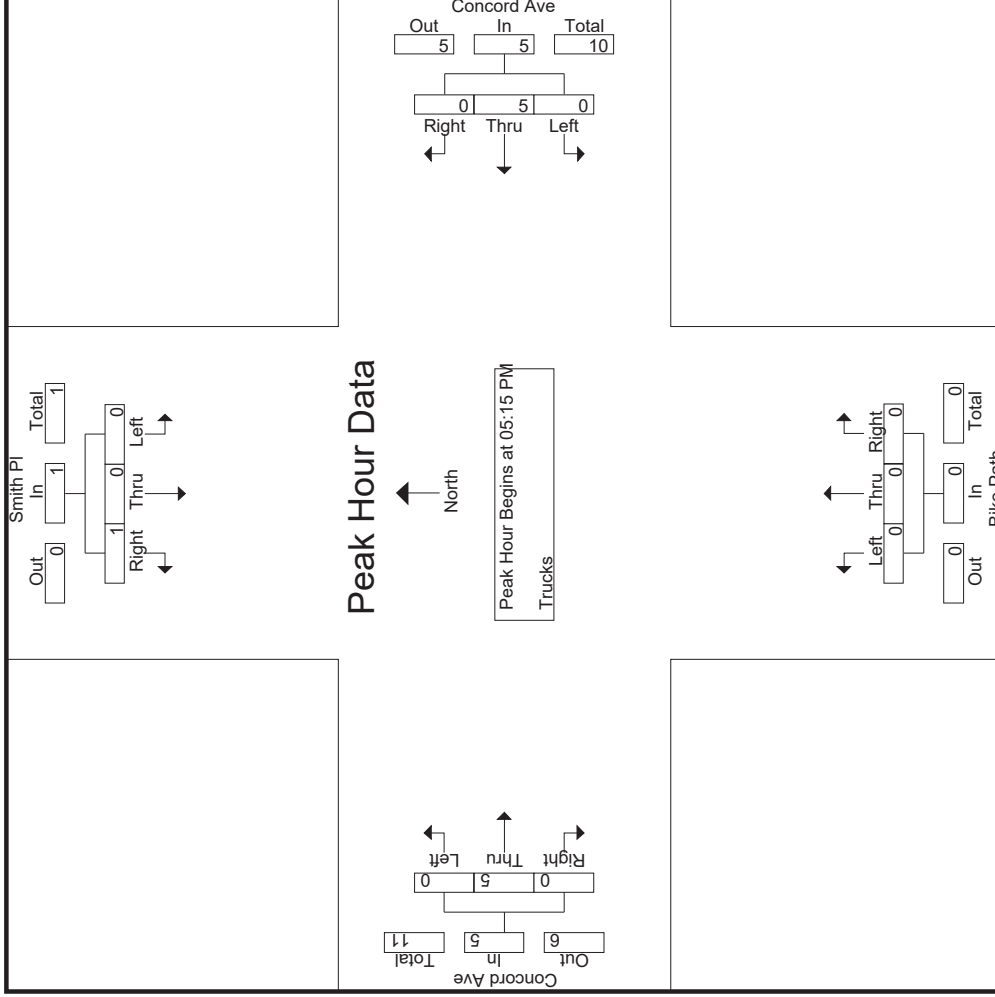
File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 10

Start Time	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 05:15 PM														
05:15 PM	0	0	1	1	0	2	0	2	0	0	0	0	1	4
05:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	2	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	0	2	0	2	0	0	0	0	2	4
Total Volume	0	0	1	1	0	5	0	5	0	0	0	0	5	11
% App. Total	0	0	100		0	100	0	0	0	0	0	0	100	
PHF	.000	.000	.250	.250	.000	.625	.000	.625	.000	.000	.000	.000	.625	.688

Accurate Counts
978-664-2565

N/S Street : Smith Place / Bike Path
E/W Street: Concord Avenue
City/State : Cambridge, MA
Weather : Clear

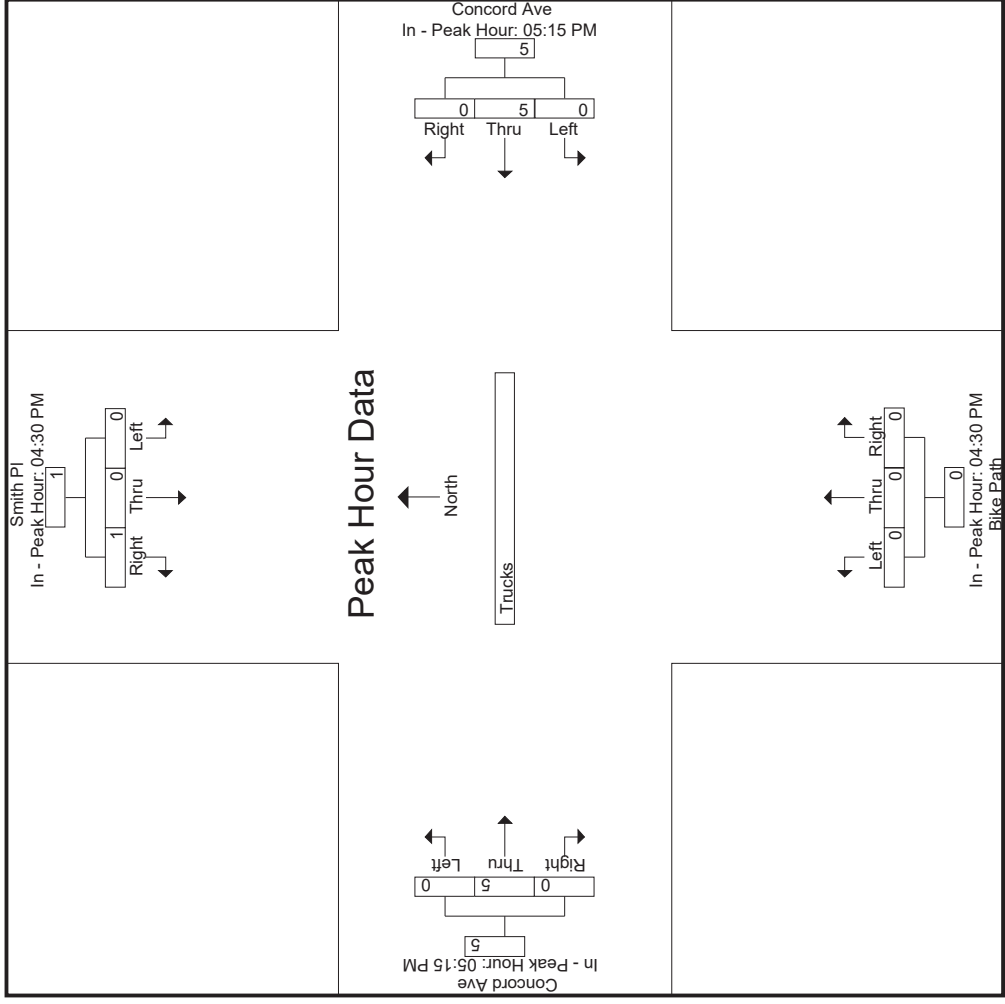
File Name : 80840003
Site Code : 80840003
Start Date : 4/2/2019
Page No : 11



Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			05:15 PM			04:30 PM			05:15 PM		
+0 mins.	0	0	0	0	0	0	2	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	1	0	0	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	1	0	0	2	0	0	0	0	0
Total Volume	0	0	1	1	0	0	5	0	0	0	0	5

% App. Total	0	0	0	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PHF	.000	.000	.000	.250	.000	.625	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.625



Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 13

Groups Printed- Bikes- Peds

Start Time	Smith Pl			Concord Ave			Bike Path			Concord Ave			Exclu. Total	Inclu. Total	Int. Total				
	From North			From East			From South			From West									
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right				Peds			
04:30 PM	0	0	0	0	5	1	0	0	0	0	0	0	0	3	0	2	4	9	13
04:45 PM	2	0	0	0	3	0	0	0	0	0	0	0	0	3	1	4	9	9	18
Total	2	0	0	0	8	1	0	0	0	0	0	0	0	6	1	6	13	18	31
05:00 PM	0	0	0	0	5	0	0	0	1	0	0	0	0	2	1	10	10	9	19
05:15 PM	0	0	0	0	6	1	0	0	0	0	0	0	0	2	0	2	6	9	15
05:30 PM	0	0	0	0	7	0	0	2	1	0	0	0	0	3	0	5	12	13	25
05:45 PM	0	0	1	0	10	0	0	2	0	0	0	0	0	4	0	7	10	17	27
Total	0	0	1	0	28	1	0	4	2	0	0	0	0	11	1	24	38	48	86
06:00 PM	0	0	0	0	9	0	0	0	0	0	0	0	0	0	0	5	11	9	20
06:15 PM	1	0	1	0	8	0	0	0	0	0	0	0	0	4	0	4	6	14	20
Grand Total	3	0	2	0	53	2	0	4	2	0	0	0	0	21	2	39	68	89	157
Approch %	60	0	40	0	96.4	3.6	0	66.7	33.3	0	0	0	0	91.3	8.7	0	43.3	56.7	0
Total %	3.4	0	2.2	0	59.6	2.2	0	4.5	2.2	0	0	0	0	23.6	2.2	0	43.3	56.7	0

Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 14

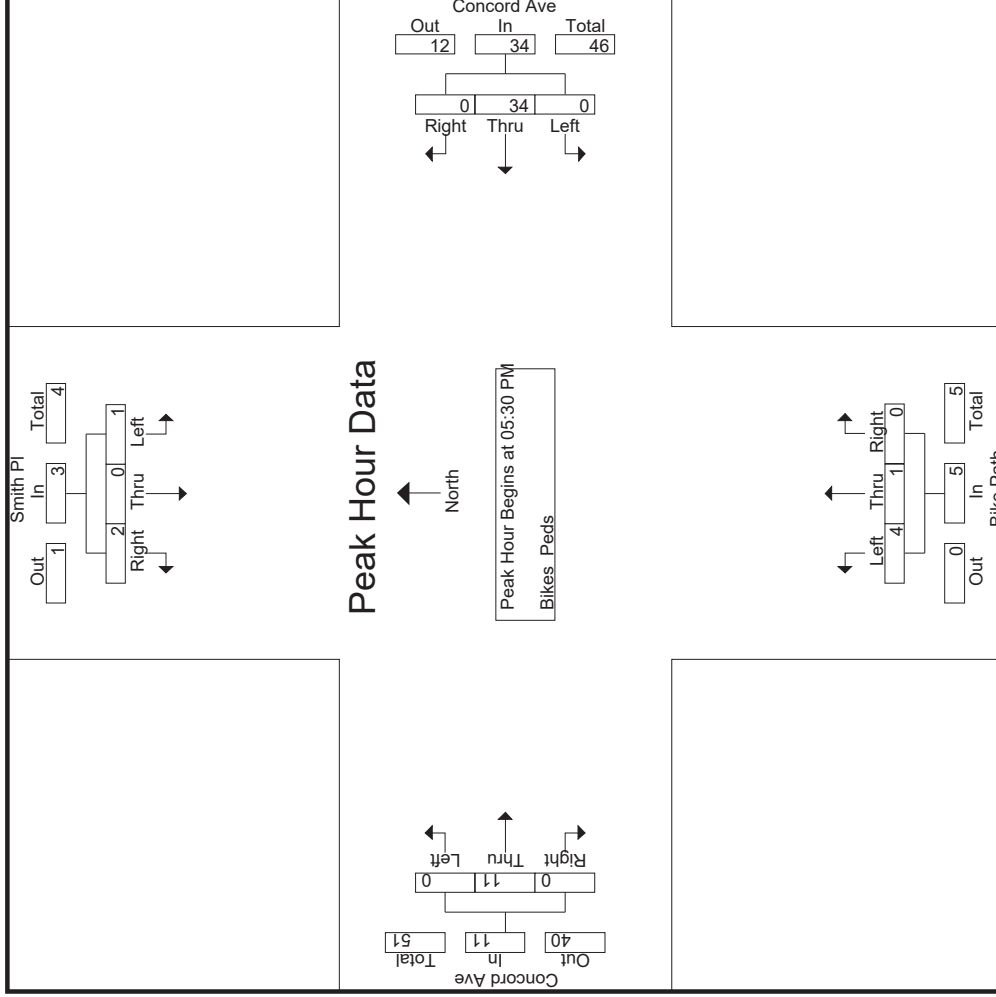
Start Time	Smith Pl From North			Concord Ave From East			Bike Path From South			Concord Ave From West				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 05:30 PM														
05:30 PM	0	0	0	0	0	7	0	0	7	0	0	0	3	13
05:45 PM	0	0	1	1	0	10	0	0	10	0	0	0	4	17
06:00 PM	0	0	0	0	0	9	0	0	9	0	0	0	0	9
06:15 PM	1	0	1	2	0	8	0	0	8	0	0	0	4	14
Total Volume	1	0	2	3	0	34	0	0	34	0	0	0	11	53
% App. Total	33.3	0	66.7		0	100	0	0	100	0	0	0	100	
PHF	.250	.000	.500	.375	.000	.850	.000	.000	.850	.000	.000	.417	.688	.779

Accurate Counts

978-664-2565

N/S Street : Smith Place / Bike Path
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840003
 Site Code : 80840003
 Start Date : 4/2/2019
 Page No : 15

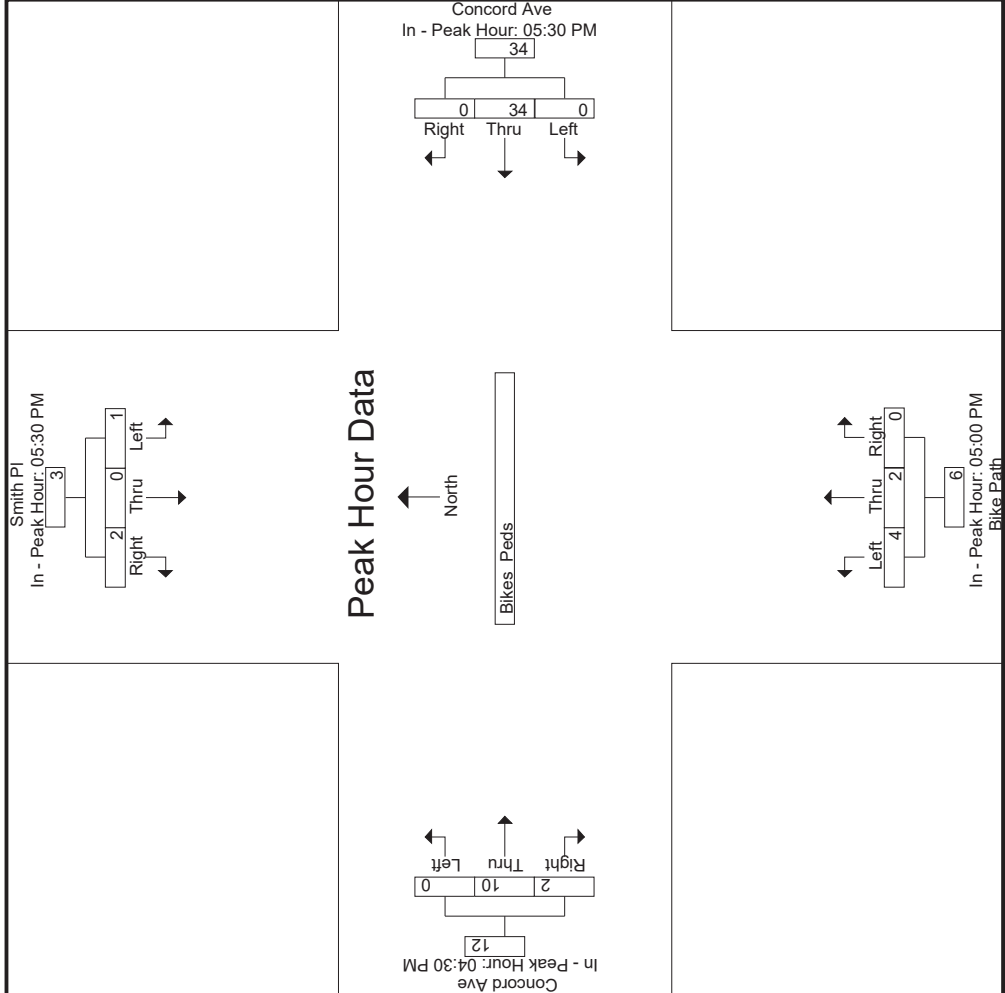


Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:30 PM			05:00 PM			04:30 PM			
+0 mins.	0	0	0	7	0	0	1	0	0	3
+15 mins.	0	0	1	0	0	0	0	0	0	4
+30 mins.	0	0	0	9	0	9	1	0	0	3
+45 mins.	1	0	1	8	0	8	0	0	2	2
Total Volume	1	0	2	34	0	34	6	0	10	2

Accurate Counts
978-664-2565

% App. Total	33.3	0	66.7	0	100	0	0	66.7	33.3	0	0	50.0	50.0	100.0	0	0	100.0	0	0	100.0
PHF	.250	.000	.500	.000	.850	.000	.850	.500	.500	.000	.000	.500	.500	1.000	.000	.000	1.000	.000	.000	1.000



Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	16	0	3	5	120	4	0	0	2	1	183	1	335
07:45 AM	7	0	0	3	148	11	1	0	1	2	232	2	407
Total	23	0	3	8	268	15	1	0	3	3	415	3	742
08:00 AM	8	0	4	4	168	12	0	0	1	2	184	3	386
08:15 AM	7	0	1	2	169	10	2	0	1	5	198	7	402
08:30 AM	13	0	2	3	153	12	0	0	0	4	236	5	428
08:45 AM	13	1	3	3	159	18	0	0	2	7	225	4	435
Total	41	1	10	12	649	52	2	0	4	18	843	19	1651
09:00 AM	8	0	1	3	111	16	0	0	1	12	204	6	362
09:15 AM	6	0	2	10	106	17	4	0	2	8	158	1	314
Grand Total	78	1	16	33	1134	100	7	0	10	41	1620	29	3069
Apprch %	82.1	1.1	16.8	2.6	89.5	7.9	41.2	0	58.8	2.4	95.9	1.7	
Total %	2.5	0	0.5	1.1	37	3.3	0.2	0	0.3	1.3	52.8	0.9	
Cars	74	1	16	32	1108	99	6	0	10	41	1598	29	3014
% Cars	94.9	100	100	97	97.7	99	85.7	0	100	100	98.6	100	98.2
Trucks	4	0	0	1	26	1	1	0	0	0	22	0	55
% Trucks	5.1	0	0	3	2.3	1	14.3	0	0	0	1.4	0	1.8

Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

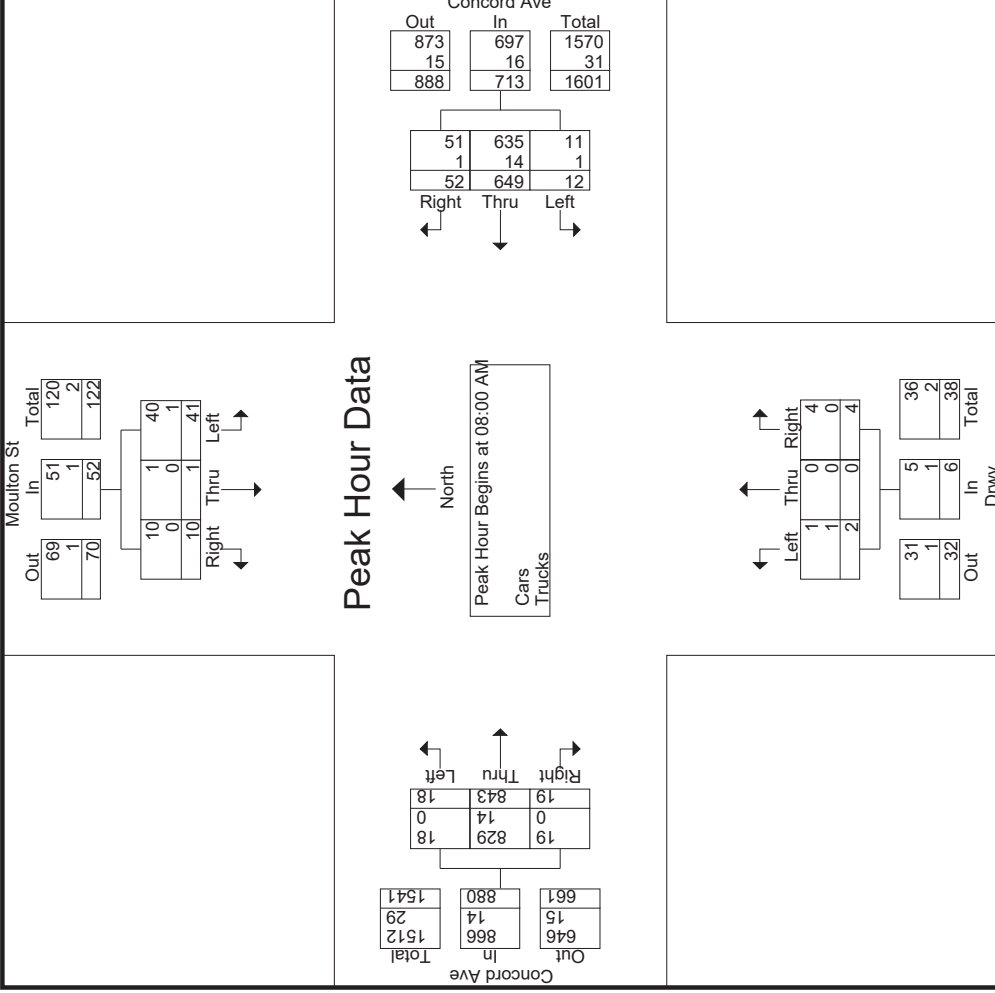
File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 2

Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 08:00 AM														
08:00 AM	8	0	4	12	168	12	184	0	0	1	1	3	189	386
08:15 AM	7	0	1	8	169	10	181	2	0	1	3	7	210	402
08:30 AM	13	0	2	15	153	12	168	0	0	0	0	5	245	428
08:45 AM	13	1	3	17	159	18	180	0	0	2	2	4	236	435
Total Volume	41	1	10	52	649	52	713	2	0	4	6	19	880	1651
% App. Total	78.8	1.9	19.2		91	7.3		33.3	0	66.7		2.2		
PHF	.788	.250	.625	.765	.960	.722	.969	.250	.000	.500	.500	.679	.898	.949
Cars	40	1	10	51	635	51	697	1	0	4	5	19	866	1619
% Cars	97.6	100	100	98.1	97.8	98.1	97.8	50.0	0	100	83.3	100	98.4	98.1
Trucks	1	0	0	1	14	1	16	1	0	0	1	0	14	32
% Trucks	2.4	0	0	1.9	2.2	1.9	2.2	50.0	0	0	16.7	0	1.6	1.9

Accurate Counts
978-664-2565

N/S Street : Moulton Street / Driveway
E/W Street: Concord Avenue
City/State : Cambridge, MA
Weather : Clear

File Name : 80840004
Site Code : 80840004
Start Date : 4/2/2019
Page No : 3

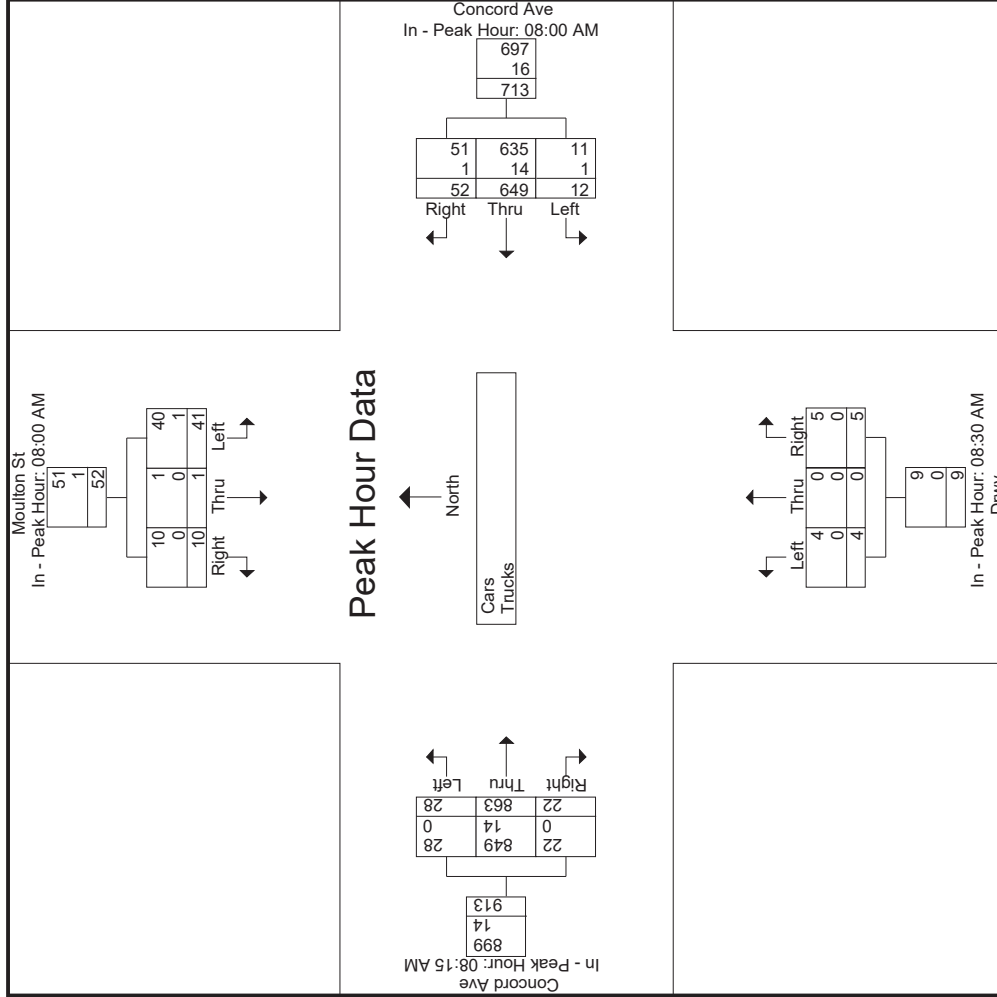


Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM				08:30 AM				08:15 AM						
+0 mins.	8	0	4	12	12	168	12	184	0	0	0	5	198	7	210
+15 mins.	7	0	1	8	10	169	10	181	0	0	2	4	236	5	245
+30 mins.	13	0	2	15	12	153	12	168	0	0	1	7	225	4	236
+45 mins.	13	1	3	17	18	159	18	180	0	0	2	12	204	6	222
Total Volume	41	1	10	52	52	649	52	713	4	0	5	28	863	22	913

Accurate Counts
978-664-2565

	78.8	1.9	19.2	1.7	91	7.3	44.4	0	55.6	3.1	94.5	2.4
% App. Total	.788	.250	.625	.750	.960	.722	.969	.000	.625	.583	.914	.786
PHF												.932
Cars	40	1	10	11	635	51	697	4	5	28	849	22
% Cars	97.6	100	100	91.7	97.8	98.1	97.8	100	100	100	98.4	100
Trucks	1	0	0	1	14	1	16	0	0	0	14	0
% Trucks	2.4	0	0	8.3	2.2	1.9	2.2	0	0	0	1.6	0



Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 5

Groups Printed- Cars

Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	15	0	3	5	119	4	0	0	2	1	181	1	331
07:45 AM	7	0	0	3	143	11	1	0	1	2	231	2	401
Total	22	0	3	8	262	15	1	0	3	3	412	3	732
08:00 AM	8	0	4	3	161	11	0	0	1	2	181	3	374
08:15 AM	6	0	1	2	167	10	1	0	1	5	196	7	396
08:30 AM	13	0	2	3	151	12	0	0	0	4	233	5	423
08:45 AM	13	1	3	3	156	18	0	0	2	7	219	4	426
Total	40	1	10	11	635	51	1	0	4	18	829	19	1619
09:00 AM	7	0	1	3	108	16	0	0	1	12	201	6	355
09:15 AM	5	0	2	10	103	17	4	0	2	8	156	1	308
Grand Total	74	1	16	32	1108	99	6	0	10	41	1598	29	3014
Apprch %	81.3	1.1	17.6	2.6	89.4	8	37.5	0	62.5	2.5	95.8	1.7	
Total %	2.5	0	0.5	1.1	36.8	3.3	0.2	0	0.3	1.4	53	1	

Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 6

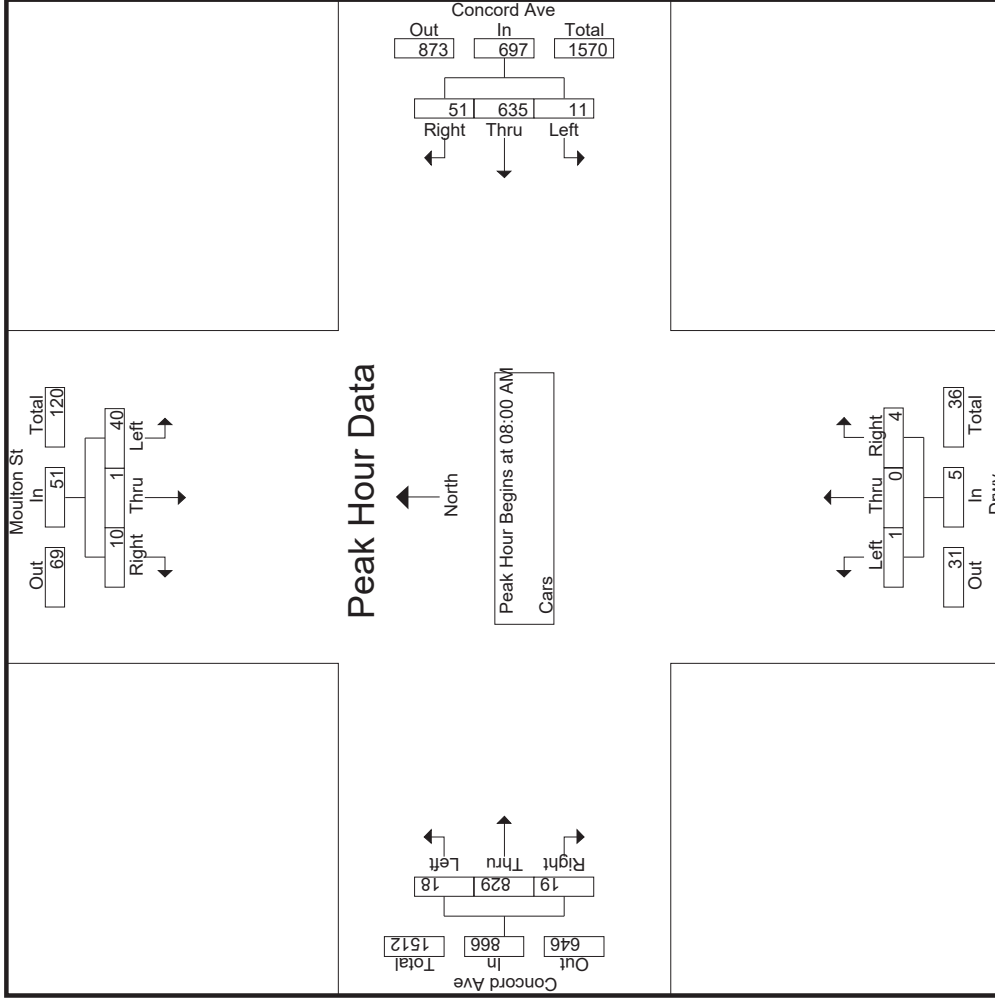
Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West			Int. Total				
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total	App. Total	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	8	0	4	12	161	11	175	0	0	1	1	1	2	181	3	186	374
08:15 AM	6	0	1	7	167	10	179	1	0	1	2	5	196	7	208	396	
08:30 AM	13	0	2	15	151	12	166	0	0	0	0	4	233	5	242	423	
08:45 AM	13	1	3	17	156	18	177	0	0	2	2	7	219	4	230	426	
Total Volume	40	1	10	51	635	51	697	1	0	4	5	18	829	19	866	1619	
% App. Total	78.4	2	19.6		91.1	7.3		20	0	80		2.1	95.7	2.2			
PHF	.769	.250	.625	.750	.917	.708	.973	.250	.000	.500	.625	.643	.889	.679	.895	.950	

Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 7



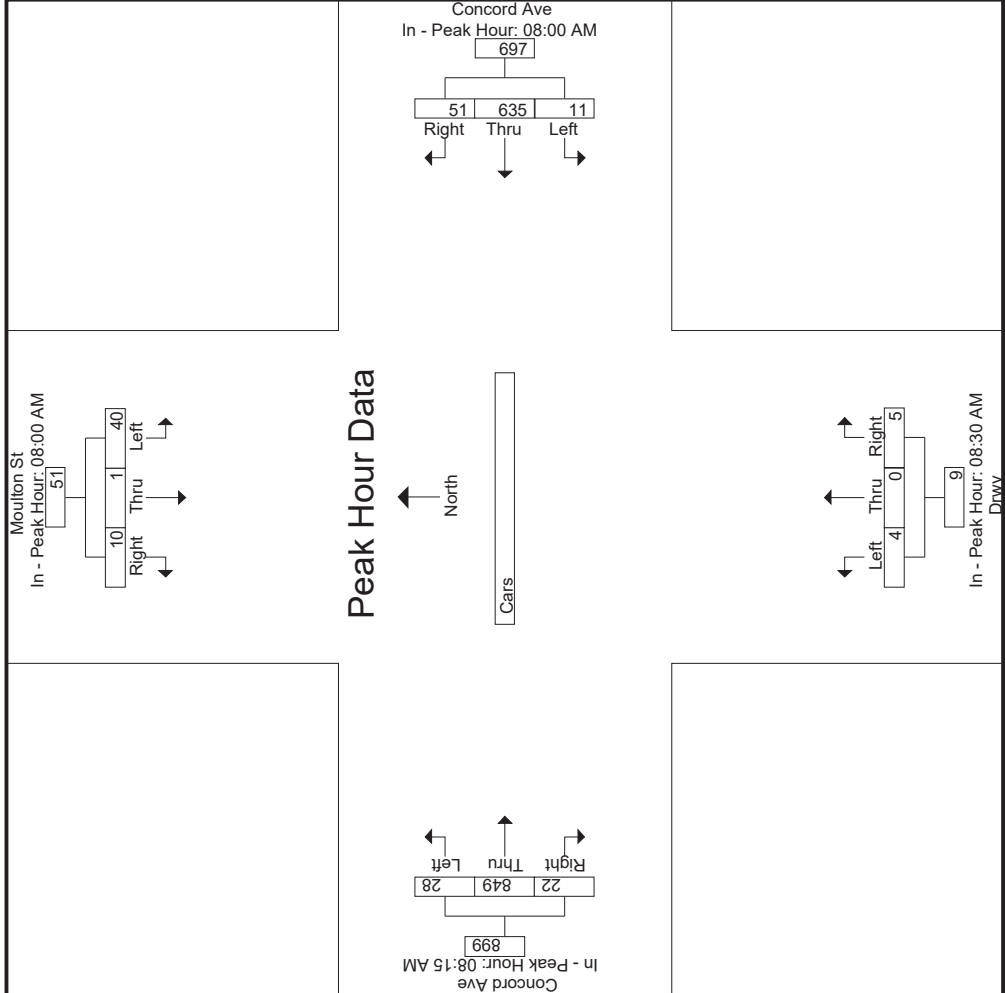
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	08:00 AM			08:30 AM			08:15 AM					
+0 mins.	8	0	4	11	175	0	0	0	5	196	7	208
+15 mins.	6	0	1	10	179	0	0	2	4	233	5	242
+30 mins.	13	0	2	12	166	0	0	1	7	219	4	230
+45 mins.	13	1	3	18	177	4	0	2	12	201	6	219
Total Volume	40	1	10	51	697	4	0	5	28	849	22	899

Accurate Counts
978-664-2565

% App. Total	78.4	2	19.6	1.6	91.1	7.3	44.4	0	55.6	3.1	94.4	2.4
PHF	.769	.250	.625	.750	.917	.708	.973	.000	.625	.583	.911	.786
												.929



Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 9

Groups Printed- Trucks

Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	1	0	0	0	1	0	0	0	0	0	2	0	4
07:45 AM	0	0	0	0	5	0	0	0	0	0	1	0	6
Total	1	0	0	0	6	0	0	0	0	0	3	0	10
08:00 AM	0	0	0	1	7	1	0	0	0	0	3	0	12
08:15 AM	1	0	0	0	2	0	1	0	0	0	2	0	6
08:30 AM	0	0	0	0	2	0	0	0	0	0	3	0	5
08:45 AM	0	0	0	0	3	0	0	0	0	0	6	0	9
Total	1	0	0	1	14	1	1	0	0	0	14	0	32
09:00 AM	1	0	0	0	3	0	0	0	0	0	3	0	7
09:15 AM	1	0	0	0	3	0	0	0	0	0	2	0	6
Grand Total	4	0	0	1	26	1	1	0	0	0	22	0	55
Apprch %	100	0	0	3.6	92.9	3.6	100	0	0	0	100	0	
Total %	7.3	0	0	1.8	47.3	1.8	1.8	0	0	0	40	0	

Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 10

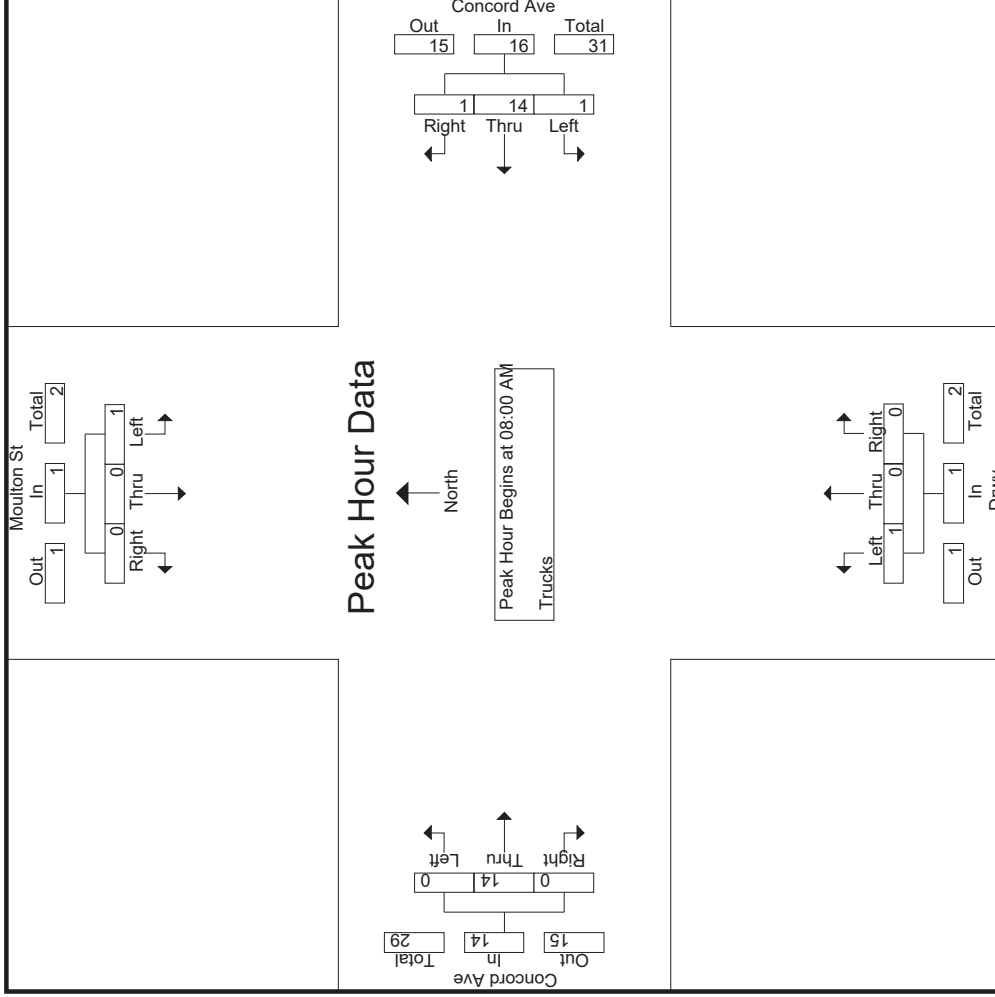
Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West			Int. Total				
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total	App. Total	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	12
08:15 AM	1	0	0	1	2	0	1	0	0	0	0	0	0	0	0	2	6
08:30 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	3	5
08:45 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	6	9	
Total Volume	1	0	0	1	14	1	16	1	0	0	0	1	0	14	0	14	32
% App. Total	100	0	0	6.2	87.5	6.2		100	0	0	0	100	0	100	0		
PHF	.250	.000	.000	.250	.500	.250	.444	.250	.000	.000	.000	.250	.000	.583	.000	.583	.667

Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 11



Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1

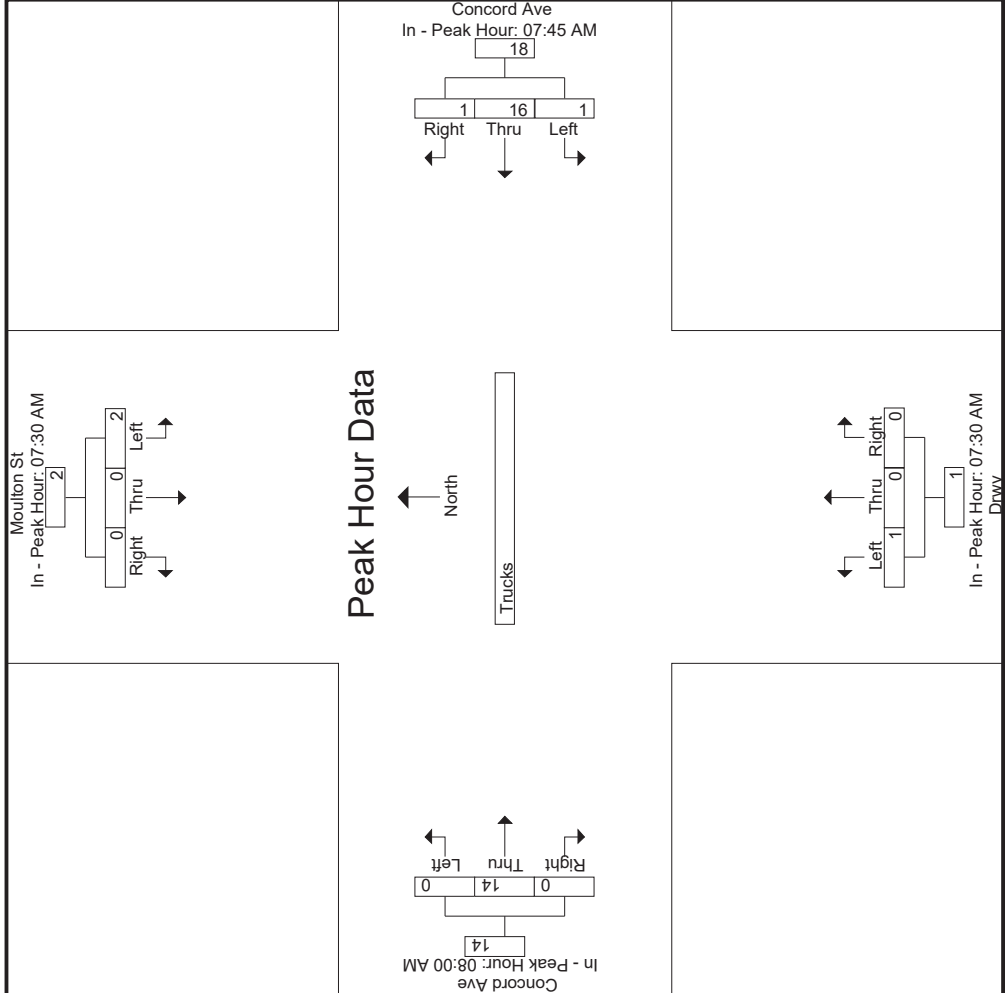
Peak Hour for Each Approach Begins at:

	07:30 AM			07:45 AM			07:30 AM			08:00 AM			
+0 mins.	1	0	0	1	0	5	0	0	5	0	0	0	3
+15 mins.	0	0	0	0	1	7	1	9	0	0	0	0	2
+30 mins.	0	0	0	0	0	2	0	2	0	0	0	0	3
+45 mins.	1	0	0	1	0	2	0	2	0	0	0	0	6
Total Volume	2	0	0	2	1	16	1	18	1	0	0	0	14

Accurate Counts

978-664-2565

	100	0	0	5.6	88.9	5.6	.250	.571	.250	100	0	0	.000	.583	.000	.583	0	.000	.583	.000	.583	
% App. Total																						
PHF	.500	.000	.000	.250	.571	.250	.500	.571	.250	.500	.000	.000	.000	.250	.000	.583	.000	.583	.000	.583	.000	



Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 13

Groups Printed- Bikes Peds

Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
	Peds	Peds	Peds	Peds	Peds	Peds	Peds	Peds	Peds	Peds	Peds	Peds			
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	7	8
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	4	4
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	11	12
08:00 AM	0	0	0	0	4	0	0	0	0	0	0	0	2	9	17
08:15 AM	0	0	0	1	4	1	3	0	0	0	0	0	1	7	19
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	10	13
08:45 AM	0	0	0	0	3	0	1	0	1	1	1	0	1	5	18
Total	0	0	0	1	11	1	5	0	1	1	1	4	0	31	67
09:00 AM	0	0	0	0	3	1	1	0	0	0	0	0	0	8	17
09:15 AM	0	0	0	0	0	1	0	1	0	0	0	2	1	5	15
Grand Total	0	0	0	1	14	3	6	1	1	1	1	7	1	55	111
Approch %	0	0	0	5.6	77.8	16.7		33.3	33.3	33.3			1.8	98.2	
Total %	0	0	0	1.3	18.2	3.9		1.3	1.3	1.3			1.3	71.4	69.4

Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

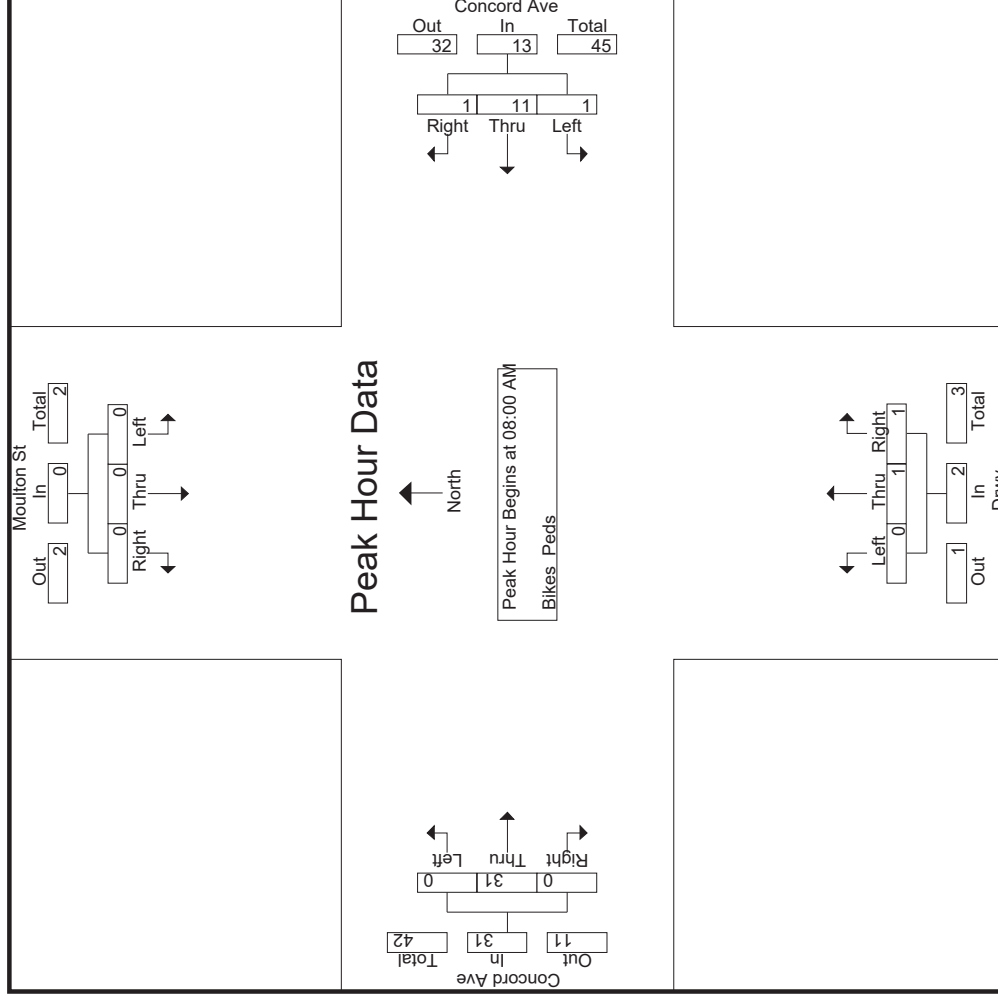
File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 14

Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West			Int. Total			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total	App. Total	App. Total
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 08:00 AM																
08:00 AM	0	0	0	0	4	0	0	0	0	0	0	0	9	0	9	13
08:15 AM	0	0	0	1	4	1	0	0	0	0	0	0	7	0	7	13
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	10	0	10	10
08:45 AM	0	0	0	0	3	0	0	1	1	1	0	0	5	0	5	10
Total Volume	0	0	0	1	11	1	0	1	1	1	0	0	31	0	31	46
% App. Total	0	0	0	7.7	84.6	7.7	0	50	50	0	0	0	100	0	100	46
PHF	.000	.000	.000	.250	.688	.250	.000	.250	.250	.000	.000	.000	.775	.000	.775	.885

Accurate Counts
978-664-2565

N/S Street : Moulton Street / Driveway
E/W Street: Concord Avenue
City/State : Cambridge, MA
Weather : Clear

File Name : 80840004
Site Code : 80840004
Start Date : 4/2/2019
Page No : 15



Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM			08:00 AM			08:30 AM			08:00 AM		
+0 mins.	0	0	0	0	4	0	4	0	0	0	0	9
+15 mins.	0	0	0	1	4	1	6	0	1	1	2	7
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	10
+45 mins.	0	0	0	0	3	0	3	1	0	0	1	5
Total Volume	0	0	0	1	11	1	13	1	1	1	3	31

Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	40	0	13	4	111	2	6	0	4	3	143	3	329
04:45 PM	27	0	8	1	132	1	1	1	7	0	139	3	320
Total	67	0	21	5	243	3	7	1	11	3	282	6	649
05:00 PM	26	0	17	3	110	1	4	0	3	1	145	2	312
05:15 PM	15	0	7	1	140	3	4	0	8	0	117	1	296
05:30 PM	25	0	11	2	160	3	3	0	1	1	134	2	342
05:45 PM	16	0	8	1	99	6	4	0	1	0	126	1	262
Total	82	0	43	7	509	13	15	0	13	2	522	6	1212
06:00 PM	18	0	8	3	129	2	1	0	5	2	163	0	331
06:15 PM	16	0	9	3	158	1	2	0	3	0	119	1	312
Grand Total	183	0	81	18	1039	19	25	1	32	7	1086	13	2504
Apprch %	69.3	0	30.7	1.7	96.6	1.8	43.1	1.7	55.2	0.6	98.2	1.2	
Total %	7.3	0	3.2	0.7	41.5	0.8	1	0	1.3	0.3	43.4	0.5	
Cars	183	0	80	18	1033	19	25	1	32	7	1079	13	2490
% Cars	100	0	98.8	100	99.4	100	100	100	100	100	99.4	100	99.4
Trucks	0	0	1	0	6	0	0	0	0	0	7	0	14
% Trucks	0	0	1.2	0	0.6	0	0	0	0	0	0.6	0	0.6

Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 2

Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West			Int. Total				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total					
04:45 PM	27	0	8	35	1	132	1	134	1	1	7	9	0	139	3	142	320
05:00 PM	26	0	17	43	3	110	1	114	4	0	3	7	1	145	2	148	312
05:15 PM	15	0	7	22	1	140	3	144	4	0	8	12	0	117	1	118	296
05:30 PM	25	0	11	36	2	160	3	165	3	0	1	4	1	134	2	137	342
Total Volume	93	0	43	136	7	542	8	557	12	1	19	32	2	535	8	545	1270
% App. Total	68.4	0	31.6		1.3	97.3	1.4		37.5	3.1	59.4		0.4	98.2	1.5		
PHF	.861	.000	.632	.791	.583	.847	.667	.844	.750	.250	.594	.667	.500	.922	.667	.921	.928
Cars	93	0	43	136	7	538	8	553	12	1	19	32	2	531	8	541	1262
% Cars	100	0	100	100	100	99.3	100	99.3	100	100	100	100	100	99.3	100	99.3	99.4
Trucks	0	0	0	0	0	4	0	4	0	0	0	0	0	4	0	4	8
% Trucks	0	0	0	0	0	0.7	0	0.7	0	0	0	0	0	0.7	0	0.7	0.6

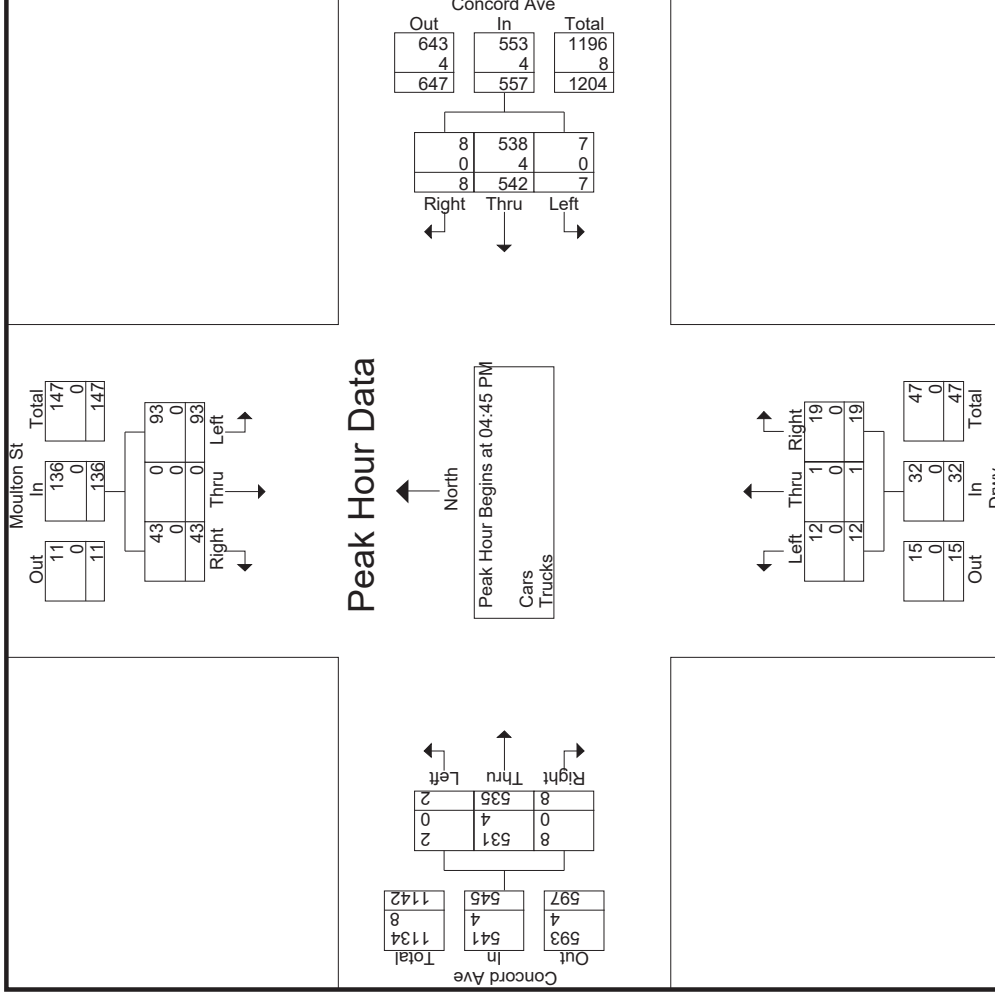
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
 Peak Hour for Entire Intersection Begins at 04:45 PM

Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 3



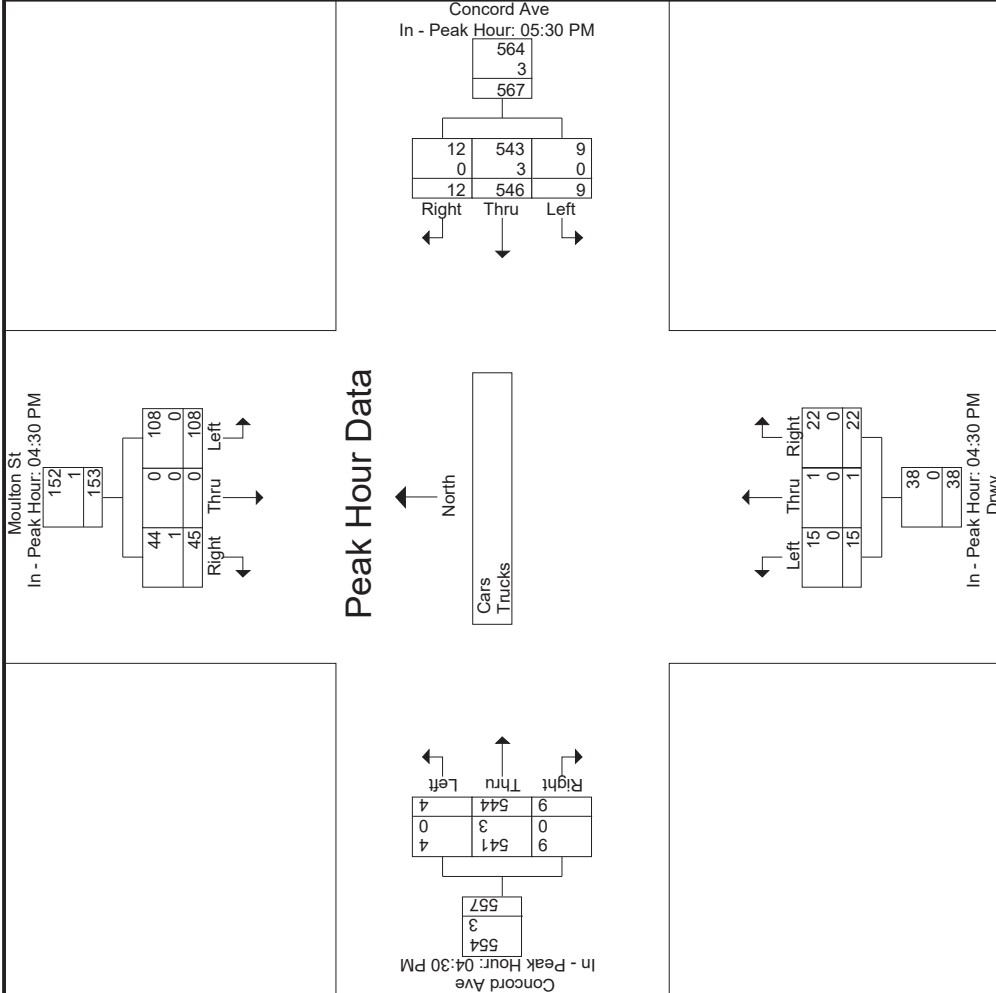
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:30 PM			05:30 PM			04:30 PM			04:30 PM					
+0 mins.	40	0	13	53	2	160	3	165	6	0	4	10	143	3	149
+15 mins.	27	0	8	35	1	99	6	106	1	1	7	9	139	3	142
+30 mins.	26	0	17	43	3	129	2	134	4	0	3	7	145	2	148
+45 mins.	15	0	7	22	3	158	1	162	4	0	8	12	117	1	118
Total Volume	108	0	45	153	9	546	12	567	15	1	22	38	544	9	557

Accurate Counts

978-664-2565

% App. Total	70.6	0	29.4	.675	.000	.662	.722	.750	.853	.500	.859	.625	.250	.688	.792	.333	.97.7	.938	.750	1.6	.935
PHF																					
Cars	108	0	44	152	0	44	152	9	543	12	564	15	1	22	38	4	541	9	554		
% Cars	100	0	97.8	99.3	0	97.8	99.3	100	99.5	100	99.5	100	100	100	100	100	99.4	100	99.5		
Trucks	0	0	1	1	0	1	1	0	3	0	3	0	0	0	0	0	3	0	3		
% Trucks	0	0	2.2	0.7	0	2.2	0.7	0	0.5	0	0.5	0	0	0	0	0.6	0	0	0.5		



Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 5

Groups Printed- Cars

Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	40	0	12	4	111	2	6	0	4	3	142	3	327
04:45 PM	27	0	8	1	131	1	1	1	7	0	138	3	318
Total	67	0	20	5	242	3	7	1	11	3	280	6	645
05:00 PM	26	0	17	3	110	1	4	0	3	1	145	2	312
05:15 PM	15	0	7	1	138	3	4	0	8	0	116	1	293
05:30 PM	25	0	11	2	159	3	3	0	1	1	132	2	339
05:45 PM	16	0	8	1	99	6	4	0	1	0	126	1	262
Total	82	0	43	7	506	13	15	0	13	2	519	6	1206
06:00 PM	18	0	8	3	127	2	1	0	5	2	161	0	327
06:15 PM	16	0	9	3	158	1	2	0	3	0	119	1	312
Grand Total	183	0	80	18	1033	19	25	1	32	7	1079	13	2490
Apprch %	69.6	0	30.4	1.7	96.5	1.8	43.1	1.7	55.2	0.6	98.2	1.2	
Total %	7.3	0	3.2	0.7	41.5	0.8	1	0	1.3	0.3	43.3	0.5	

Accurate Counts
978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 6

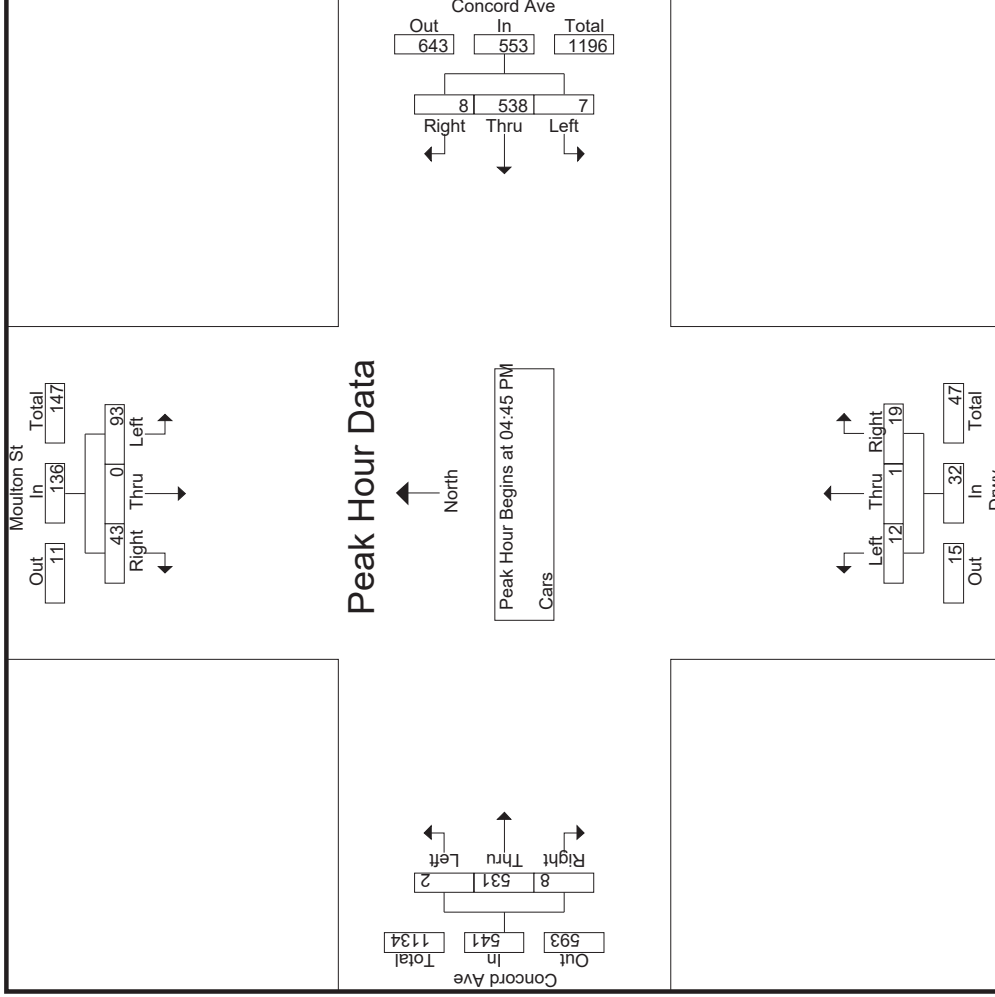
Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West							
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total				
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	27	0	8	35	1	131	1	133	1	1	7	9	0	138	3	141	318
05:00 PM	26	0	17	43	3	110	1	114	4	0	3	7	1	145	2	148	312
05:15 PM	15	0	7	22	1	138	3	142	4	0	8	12	0	116	1	117	293
05:30 PM	25	0	11	36	2	159	3	164	3	0	1	4	1	132	2	135	339
Total Volume	93	0	43	136	7	538	8	553	12	1	19	32	2	531	8	541	1262
% App. Total	68.4	0	31.6		1.3	97.3	1.4		37.5	3.1	59.4		0.4	98.2	1.5		
PHF	.861	.000	.632	.791	.583	.846	.667	.843	.750	.250	.594	.667	.500	.916	.667	.914	.931

Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 7



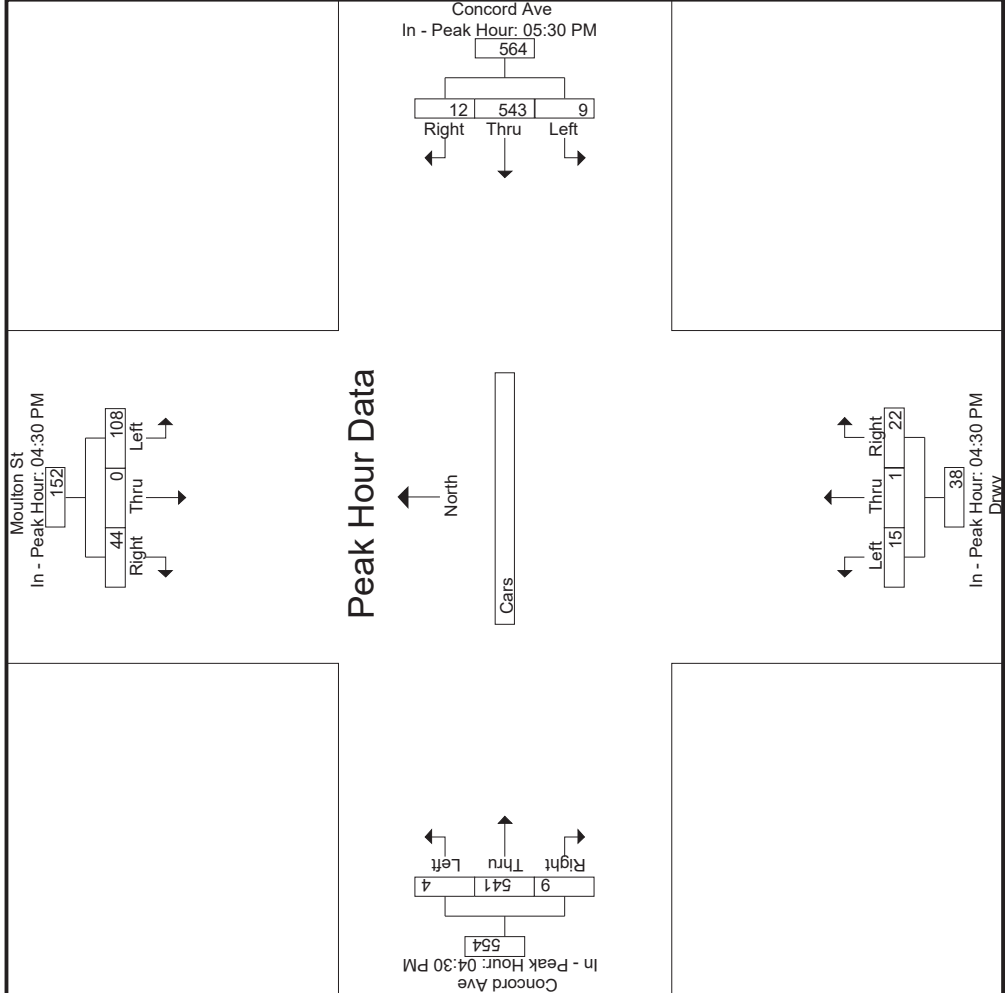
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			05:30 PM			04:30 PM			04:30 PM						
+0 mins.	40	0	12	52	2	159	3	164	6	0	4	10	3	142	3	148
+15 mins.	27	0	8	35	1	99	6	106	1	1	7	9	0	138	3	141
+30 mins.	26	0	17	43	3	127	2	132	4	0	3	7	1	145	2	148
+45 mins.	15	0	7	22	3	158	1	162	4	0	8	12	0	116	1	117
Total Volume	108	0	44	152	9	543	12	564	15	1	22	38	4	541	9	554

Accurate Counts
978-664-2565

% App. Total	71.1	0	28.9	1.6	96.3	2.1	39.5	2.6	57.9	0.7	97.7	1.6
PHF	.675	.000	.647	.731	.854	.500	.860	.250	.688	.333	.933	.750
												.936



Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 9

Groups Printed- Trucks

Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	0	0	1	0	0	0	0	0	0	0	1	0	2
04:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
Total	0	0	1	0	1	0	0	0	0	0	2	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
05:30 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	3	0	0	0	0	0	3	0	6
06:00 PM	0	0	0	0	2	0	0	0	0	0	2	0	4
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	1	0	6	0	0	0	0	0	7	0	14
Apprch %	0	0	100	0	100	0	0	0	0	0	100	0	0
Total %	0	0	7.1	0	42.9	0	0	0	0	0	50	0	0

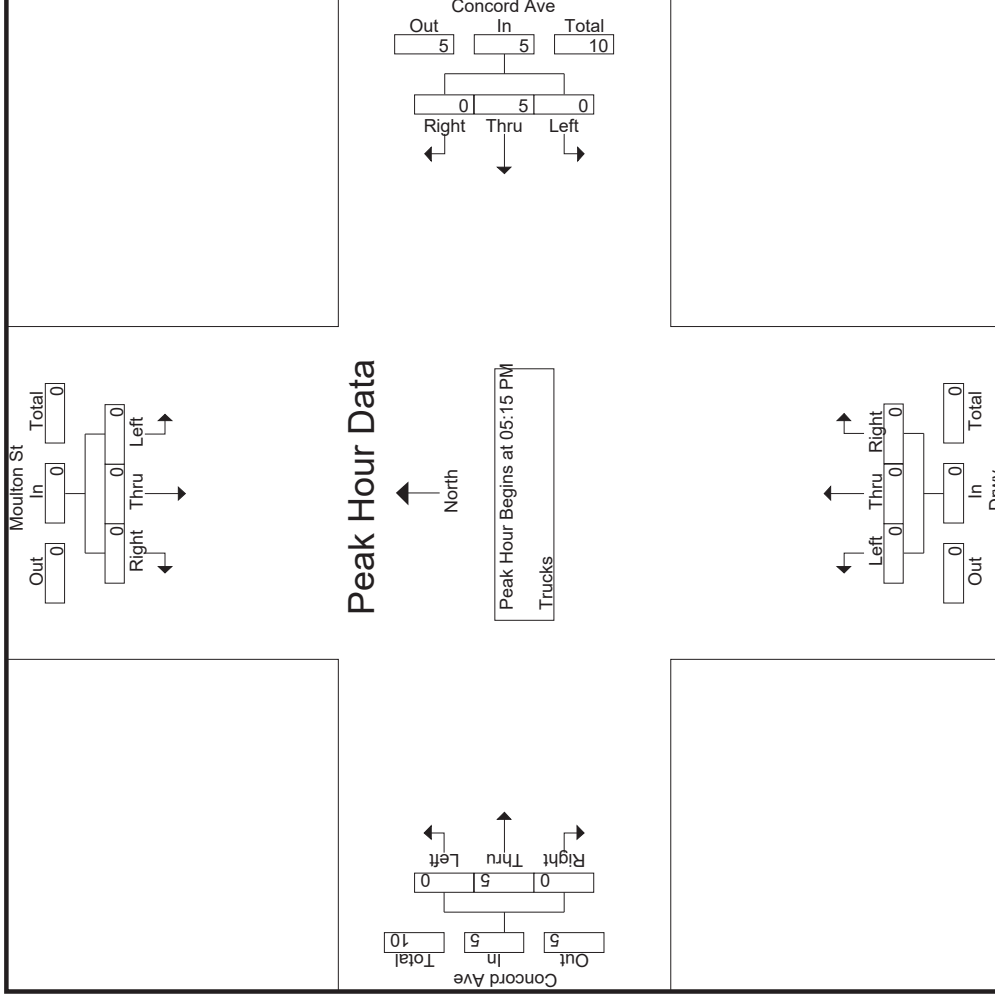
Accurate Counts

978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 10

Start Time	Moulton St From North			Concord Ave From East			Drwy From South			Concord Ave From West			Int. Total	
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total		
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 05:15 PM														
05:15 PM	0	0	0	0	0	2	0	0	0	0	1	0	1	3
05:30 PM	0	0	0	0	0	1	0	0	0	0	2	0	2	3
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00 PM	0	0	0	0	0	2	0	0	0	0	2	0	2	4
Total Volume	0	0	0	0	0	5	0	0	0	0	5	0	5	10
% App. Total	0	0	0	0	0	100	0	0	0	0	100	0	100	100
PHF	.000	.000	.000	.000	.000	.625	.000	.000	.000	.000	.625	.000	.625	.625



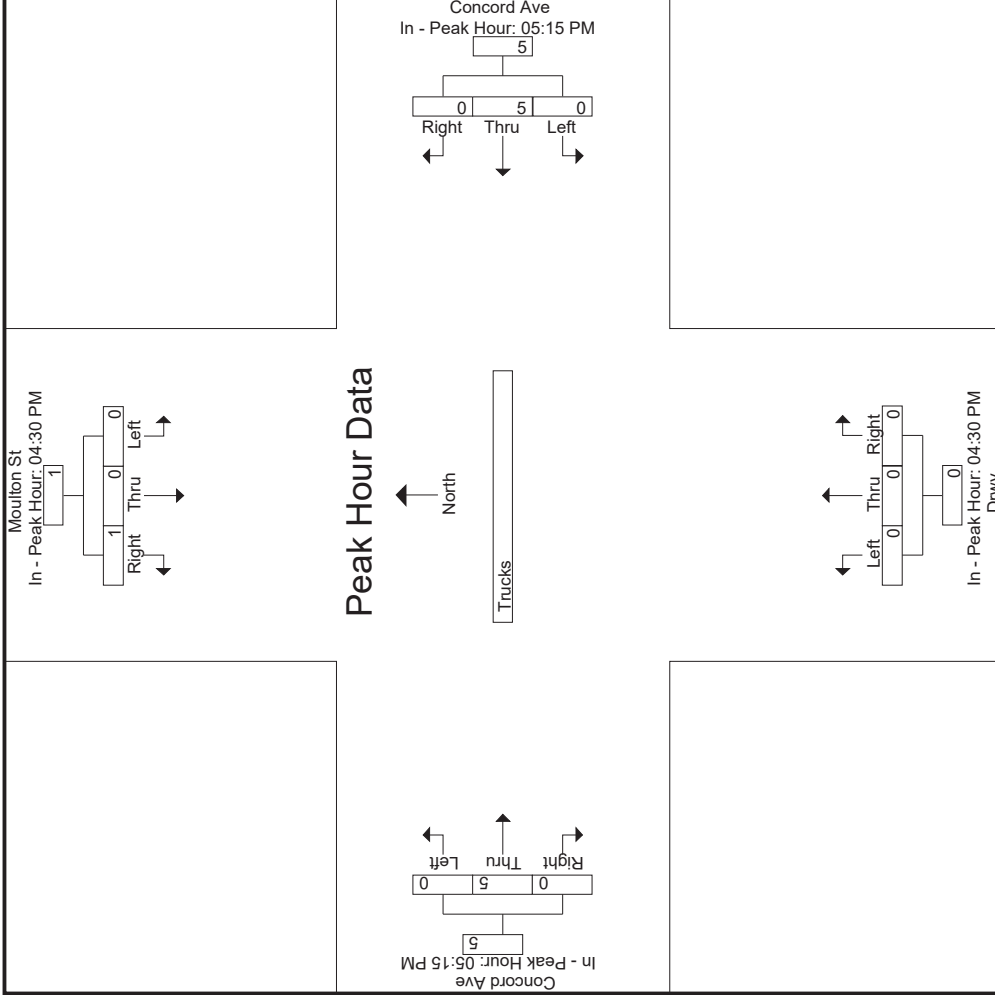
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			05:15 PM			04:30 PM			05:15 PM		
+0 mins.	0	0	1	1	0	0	0	0	2	0	0	0
+15 mins.	0	0	0	0	0	1	0	0	1	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	2	0	0	2	0	0	2
Total Volume	0	0	1	1	0	5	0	0	5	0	0	5

Accurate Counts
978-664-2565

% App. Total	0				100				0				100				0			
	.000				.250				.000				.625				.000			
PHF	.000				.250				.000				.625				.000			
	.000				.250				.000				.625				.000			



Accurate Counts

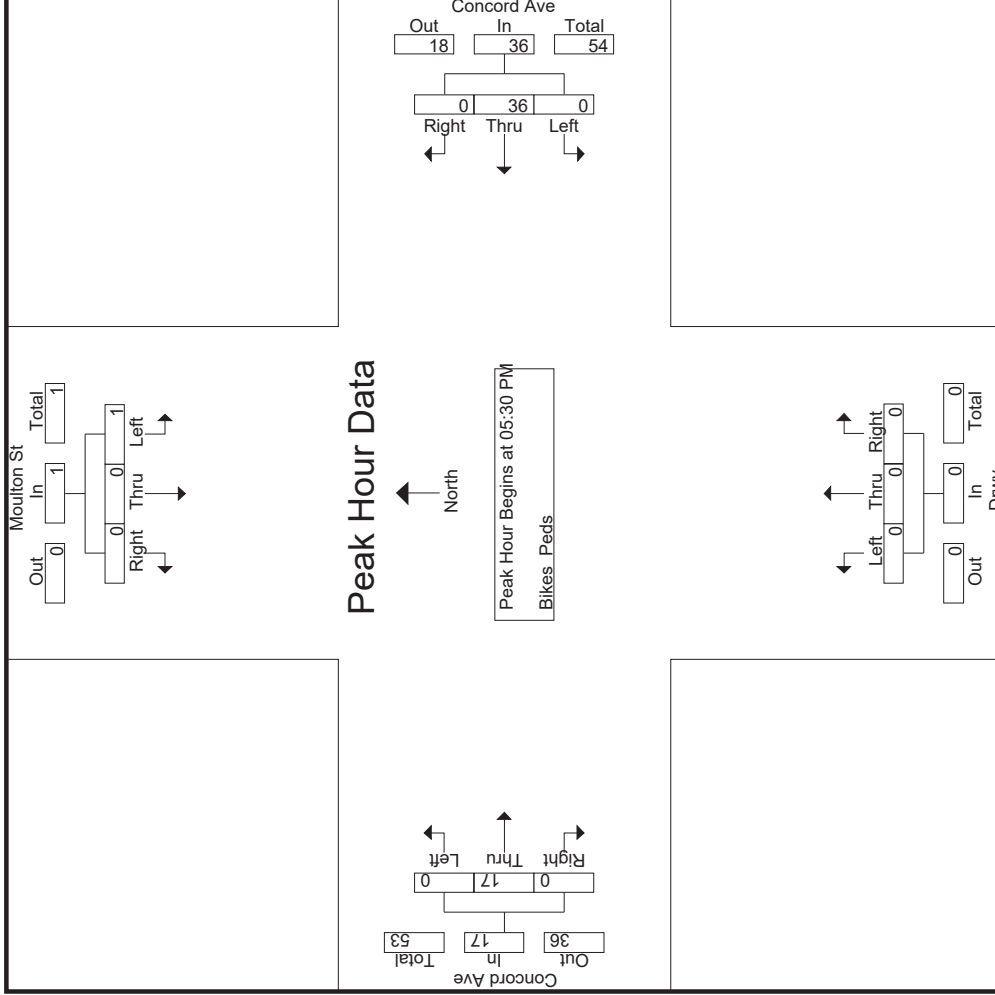
978-664-2565

N/S Street : Moulton Street / Driveway
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840004
 Site Code : 80840004
 Start Date : 4/2/2019
 Page No : 13

Groups Printed- Bikes Peds

Start Time	Moulton St From North						Concord Ave From East						Drwy From South						Concord Ave From West																	
	Left		Thru		Right		Left		Thru		Right		Left		Thru		Right		Left		Thru		Right													
	Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes	Peds	Bikes												
04:30 PM	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	5	8	8	13
04:45 PM	0	0	0	0	0	4	0	3	0	0	0	1	0	0	0	0	0	1	2	2	0	5	0	2	0	5	0	0	11	9	9	20				
Total	0	0	0	0	0	6	0	8	0	0	0	1	0	0	0	0	0	1	4	4	0	8	0	2	0	8	0	0	16	17	17	33				
05:00 PM	1	0	0	0	0	5	0	6	0	0	0	0	0	0	0	0	0	0	4	0	2	0	3	0	2	0	0	12	9	9	21					
05:15 PM	0	0	0	0	0	11	0	6	0	0	0	0	0	0	0	0	0	0	2	0	2	0	1	0	2	0	0	18	8	8	26					
05:30 PM	0	0	0	0	0	12	0	8	0	0	0	0	0	0	0	0	0	0	2	0	4	0	0	0	4	0	0	16	12	12	28					
05:45 PM	0	0	0	0	0	5	0	11	0	0	0	0	0	0	0	0	0	0	4	0	6	0	3	0	6	0	0	13	17	17	30					
Total	1	0	0	0	0	33	0	31	0	0	0	0	0	0	0	0	0	0	12	0	14	0	7	0	14	0	0	59	46	46	105					
06:00 PM	0	0	0	0	0	3	0	8	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	10	8	8	18					
06:15 PM	1	0	0	0	0	2	0	9	0	0	0	0	0	0	0	0	0	0	9	0	7	0	0	0	7	0	0	13	17	17	30					
Grand Total	2	0	0	0	0	44	0	56	0	0	0	1	0	0	0	0	1	29	0	29	0	29	0	9	0	29	0	9	98	88	88	186				
Approch %	100	0	0	0	0		0	100	0	0	0	100	0	0	0	0	100			0	100	0	0	0	100	0	0	52.7	47.3	47.3						
Total %	2.3	0	0	0	0		0	63.6	0	0	0	1.1	0	0	0	0	1.1			0	33	0	0	0	33	0	0	47.3	47.3	47.3						



Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1

Peak Hour for Each Approach Begins at:

	04:30 PM			05:30 PM			04:30 PM			05:30 PM		
+0 mins.	0	0	0	0	0	8	0	0	8	0	0	4
+15 mins.	0	0	0	0	0	11	0	0	1	0	0	6
+30 mins.	1	0	0	0	0	8	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	9	0	0	0	0	0	7
Total Volume	1	0	0	1	0	36	0	0	1	0	0	17

Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 1

Start Time	Fawcett St From North				Concord Ave From East				Concord Ave From West				Int. Total
	Left	Right	Thru	Right	Left	Right	Thru	Right	Left	Right	Thru	Right	
07:30 AM	30	6	124	26	3		192		3		192		381
07:45 AM	15	4	153	40	7		198		7		198		417
Total	45	10	277	66	10		390		10		390		798
08:00 AM	18	6	173	35	2		223		2		223		457
08:15 AM	14	10	175	27	5		198		5		198		429
08:30 AM	24	9	163	48	7		249		7		249		500
08:45 AM	17	6	168	39	8		229		8		229		467
Total	73	31	679	149	22		899		22		899		1853
09:00 AM	24	5	132	56	17		190		17		190		424
09:15 AM	22	8	126	49	20		145		20		145		370
Grand Total	164	54	1214	320	69		1624		69		1624		3445
Approch %	75.2	24.8	79.1	20.9	4.1		95.9		4.1		95.9		
Total %	4.8	1.6	35.2	9.3	2		47.1		2		47.1		
Cars	156	53	1178	310	68		1596		68		1596		3361
% Cars	95.1	98.1	97	96.9	98.6		98.3		98.6		98.3		97.6
Trucks	8	1	36	10	1		28		1		28		84
% Trucks	4.9	1.9	3	3.1	1.4		1.7		1.4		1.7		2.4

Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 2

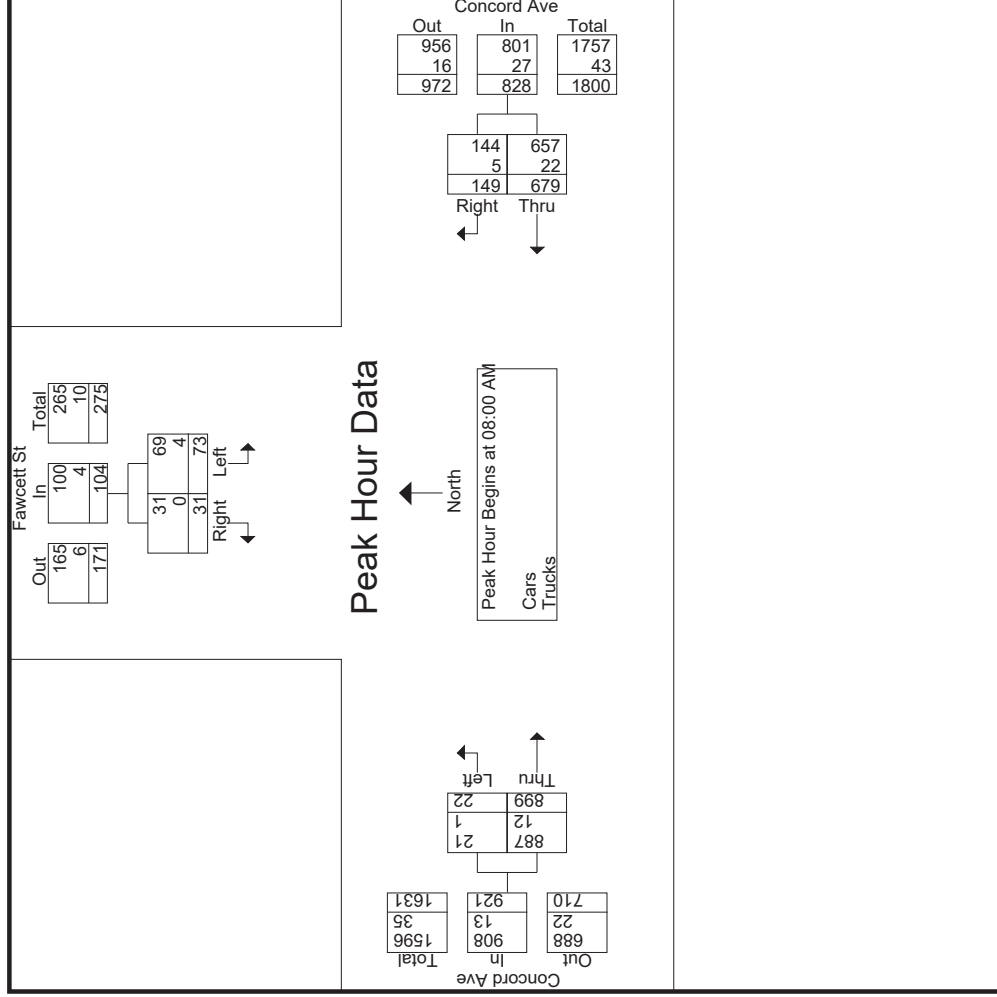
Start Time	Fawcett St From North			Concord Ave From East			Concord Ave From West			
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	18	6	24	173	35	208	2	223	225	457
08:15 AM	14	10	24	175	27	202	5	198	203	429
08:30 AM	24	9	33	163	48	211	7	249	256	500
08:45 AM	17	6	23	168	39	207	8	229	237	467
Total Volume	73	31	104	679	149	828	22	899	921	1853
% App. Total	70.2	29.8		82	18		2.4	97.6		
PHF	.760	.775	.788	.970	.776	.981	.688	.903	.899	.927
Cars	69	31	100	657	144	801	21	887	908	1809
% Cars	94.5	100	96.2	96.8	96.6	96.7	95.5	98.7	98.6	97.6
Trucks	4	0	4	22	5	27	1	12	13	44
% Trucks	5.5	0	3.8	3.2	3.4	3.3	4.5	1.3	1.4	2.4

Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 3

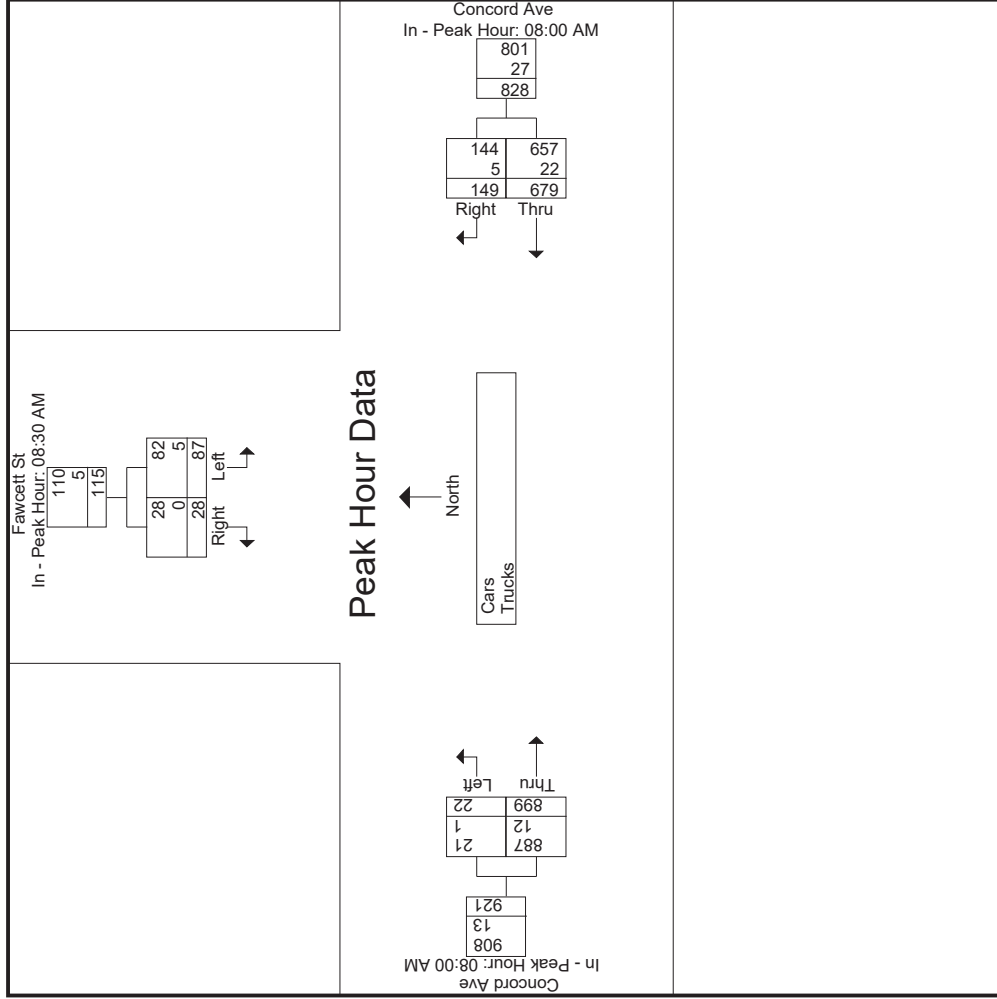


Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	08:30 AM	08:00 AM	08:00 AM	08:00 AM
+0 mins.	24	9	33	208
+15 mins.	17	6	23	202
+30 mins.	24	5	29	211
+45 mins.	22	8	30	207
Total Volume	87	28	115	828
				223
				198
				249
				229
				899
				225
				203
				256
				237
				921

Accurate Counts
978-664-2565

% App. Total	75.7	24.3	82	18	2.4	97.6	.899
PHF	.906	.778	.970	.776	.688	.903	.908
Cars	82	28	657	144	21	887	908
% Cars	94.3	100	96.8	96.6	95.5	98.7	98.6
Trucks	5	0	22	5	1	12	13
% Trucks	5.7	0	3.2	3.4	4.5	1.3	1.4



Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 5

Groups Printed- Cars

Start Time	Fawcett St From North		Concord Ave From East		Concord Ave From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
07:30 AM	29	5	124	25	3	188	374
07:45 AM	15	4	148	39	7	196	409
Total	44	9	272	64	10	384	783
08:00 AM	17	6	164	33	2	220	442
08:15 AM	13	10	172	27	5	194	421
08:30 AM	23	9	157	47	7	248	491
08:45 AM	16	6	164	37	7	225	455
Total	69	31	657	144	21	887	1809
09:00 AM	23	5	127	55	17	185	412
09:15 AM	20	8	122	47	20	140	357
Grand Total	156	53	1178	310	68	1596	3361
Approch %	74.6	25.4	79.2	20.8	4.1	95.9	
Total %	4.6	1.6	35	9.2	2	47.5	

Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 6

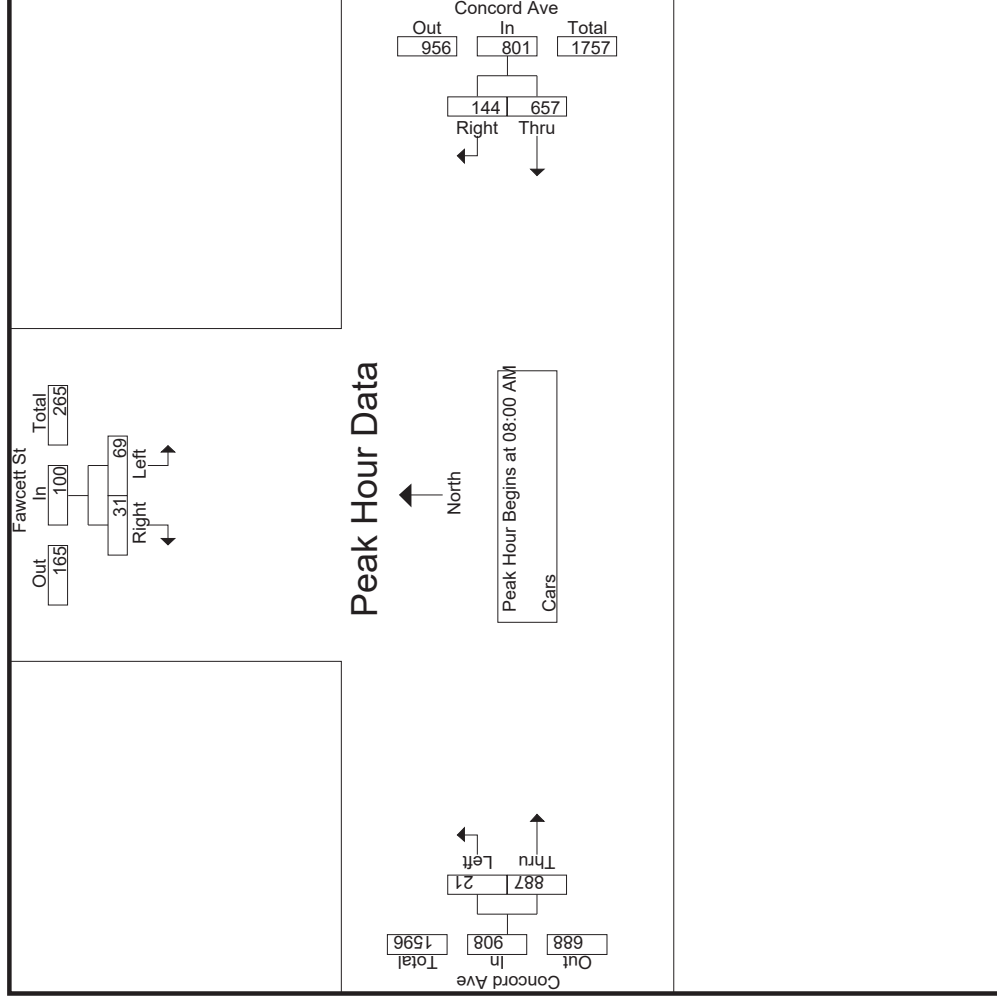
Start Time	Fawcett St From North			Concord Ave From East			Concord Ave From West			
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	17	6	23	164	33	197	2	220	222	442
08:15 AM	13	10	23	172	27	199	5	194	199	421
08:30 AM	23	9	32	157	47	204	7	248	255	491
08:45 AM	16	6	22	164	37	201	7	225	232	455
Total Volume	69	31	100	657	144	801	21	887	908	1809
% App. Total	69	31		82	18		2.3	97.7		
PHF	.750	.775	.781	.955	.766	.982	.750	.894	.890	.921

Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 7

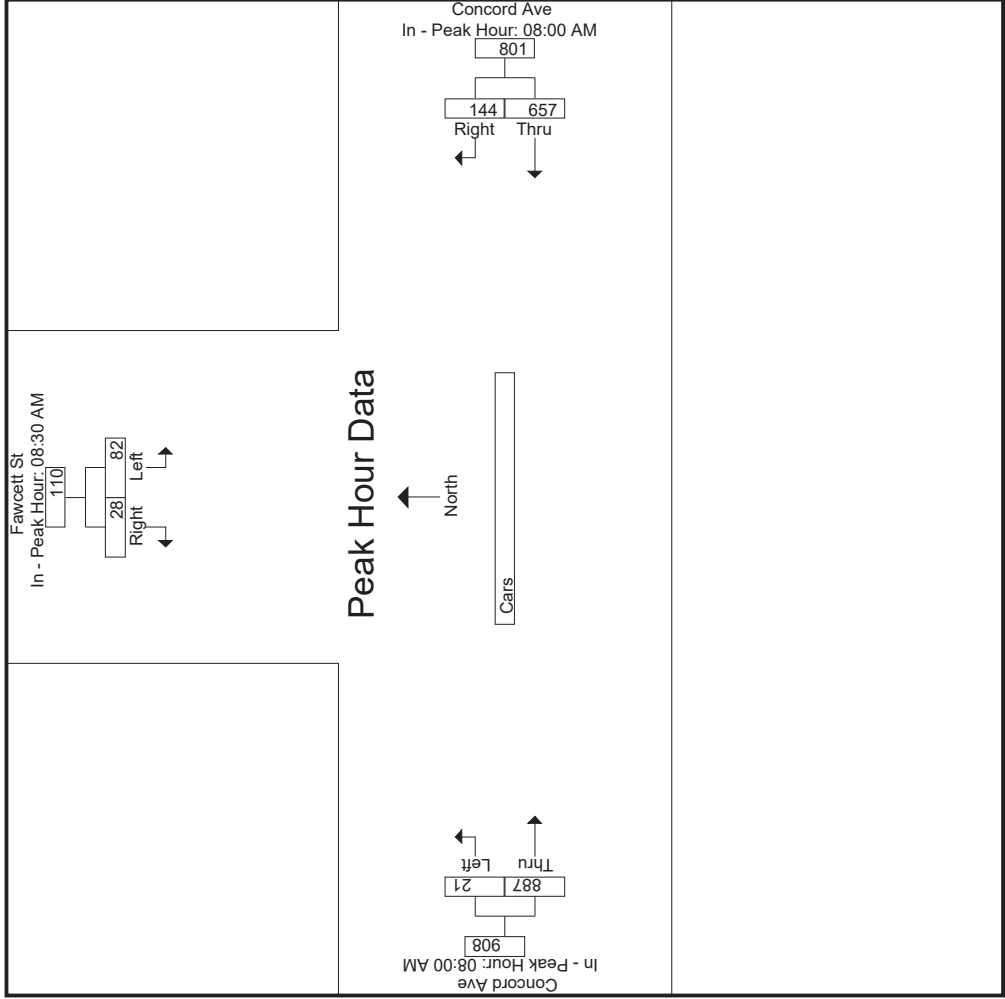


Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	08:30 AM		08:00 AM		08:00 AM	
+0 mins.	23	9	164	33	197	222
+15 mins.	16	6	172	27	199	199
+30 mins.	23	5	157	47	204	255
+45 mins.	20	8	164	37	201	232
Total Volume	82	28	657	144	801	908

Accurate Counts
978-664-2565

% App. Total	74.5	25.5	.859	82	18	2.3	97.7	.890
PHF	.891	.778	.859	.955	.766	.982	.894	.890



Accurate Counts
978-664-2565

N/S Street : Fawcett Street
E/W Street: Concord Avenue
City/State : Cambridge, MA
Weather : Clear

File Name : 80840005
Site Code : 80840005
Start Date : 4/2/2019
Page No : 9

Groups Printed- Trucks

Start Time	Fawcett St From North		Concord Ave From East		Concord Ave From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
07:30 AM	1	1	0	1	0	4	7
07:45 AM	0	0	5	1	0	2	8
Total	1	1	5	2	0	6	15
08:00 AM	1	0	9	2	0	3	15
08:15 AM	1	0	3	0	0	4	8
08:30 AM	1	0	6	1	0	1	9
08:45 AM	1	0	4	2	1	4	12
Total	4	0	22	5	1	12	44
09:00 AM	1	0	5	1	0	5	12
09:15 AM	2	0	4	2	0	5	13
Grand Total	8	1	36	10	1	28	84
Approch %	88.9	11.1	78.3	21.7	3.4	96.6	
Total %	9.5	1.2	42.9	11.9	1.2	33.3	

Accurate Counts

978-664-2565

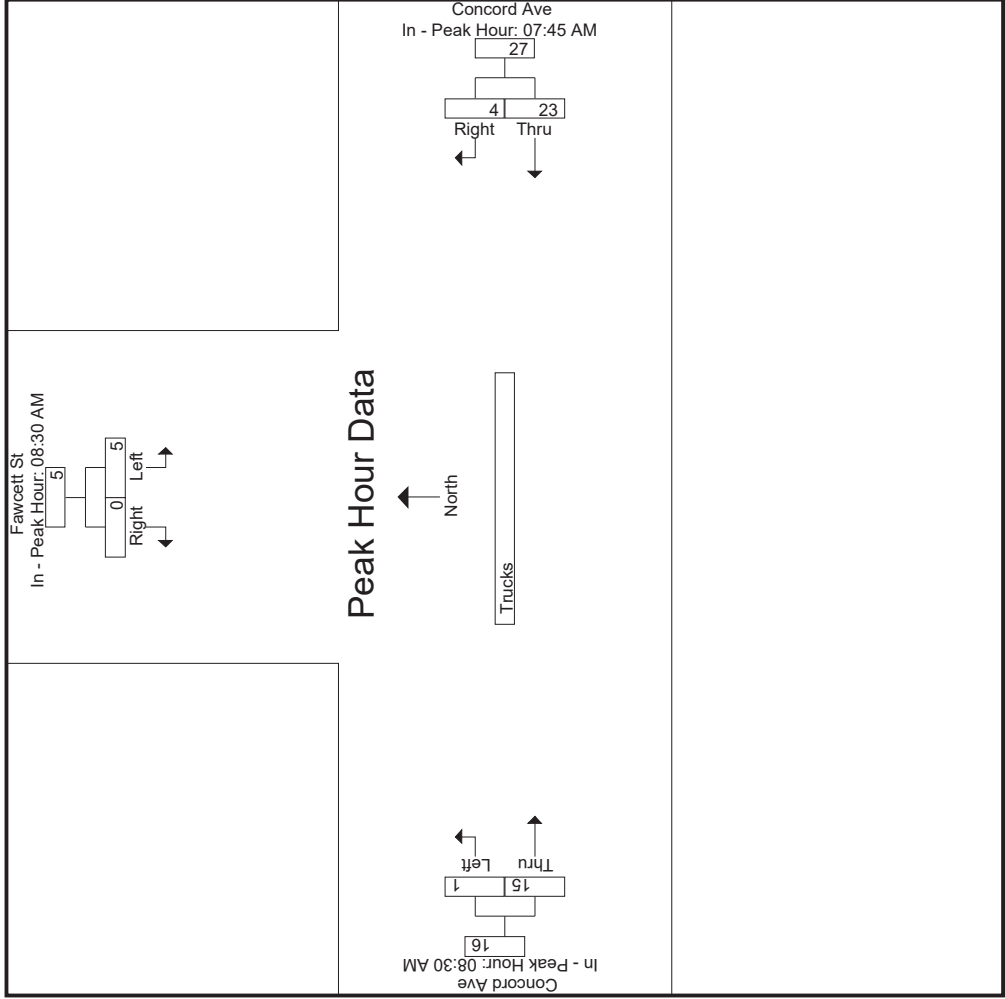
N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 10

Start Time	Fawcett St From North			Concord Ave From East			Concord Ave From West			
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:30 AM										
08:30 AM	1	0	1	6	1	7	0	1	1	9
08:45 AM	1	0	1	4	2	6	1	4	5	12
09:00 AM	1	0	1	5	1	6	0	5	5	12
09:15 AM	2	0	2	4	2	6	0	5	5	13
Total Volume	5	0	5	19	6	25	1	15	16	46
% App. Total	100	0		76	24		6.2	93.8		
PHF	.625	.000	.625	.792	.750	.893	.250	.750	.800	.885

Accurate Counts
978-664-2565

% App. Total	100	0	85.2	14.8	6.2	93.8	.800
PHF	.625	.000	.639	.500	.250	.750	



Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 13

Groups Printed- Bikes Peds

Start Time	Fawcett St From North			Concord Ave From East			Concord Ave From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds			
07:30 AM	0	0	4	1	1	0	0	6	7	11	8	19
07:45 AM	0	0	4	1	0	0	0	6	4	8	7	15
Total	0	0	8	2	1	0	0	12	11	19	15	34
08:00 AM	2	0	1	6	1	0	0	10	4	5	19	24
08:15 AM	0	0	6	7	1	0	0	6	1	7	14	21
08:30 AM	0	0	7	1	1	0	0	11	1	8	13	21
08:45 AM	2	0	24	6	3	0	0	6	4	28	17	45
Total	4	0	38	20	6	0	0	33	10	48	63	111
09:00 AM	0	0	8	4	1	0	0	8	2	10	13	23
09:15 AM	0	0	4	3	0	0	0	5	3	7	8	15
Grand Total	4	0	58	29	8	0	0	58	26	84	99	183
Apprch %	100	0		78.4	21.6		0	100		45.9	54.1	
Total %	4	0		29.3	8.1		0	58.6				

Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 14

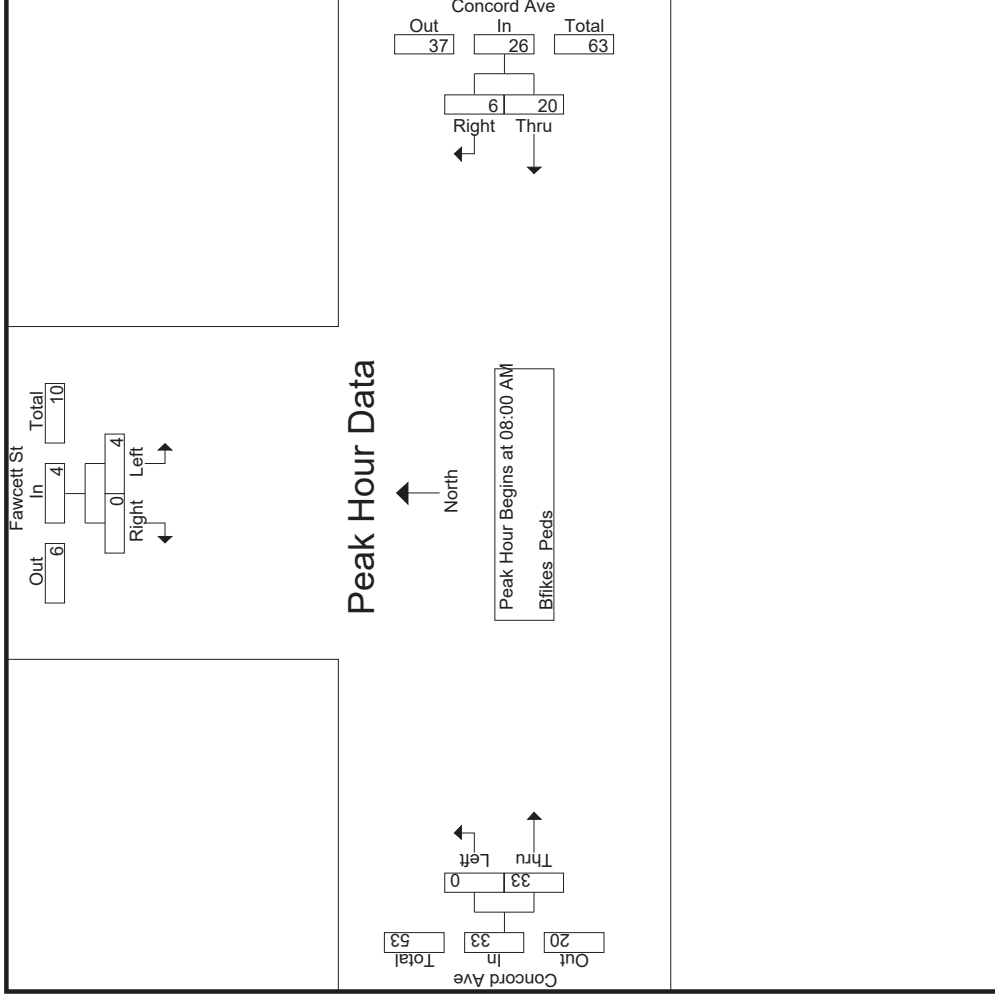
Start Time	Fawcett St From North			Concord Ave From East			Concord Ave From West			
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	2	0	2	6	1	7	0	10	10	19
08:15 AM	0	0	0	7	1	8	0	6	6	14
08:30 AM	0	0	0	1	1	2	0	11	11	13
08:45 AM	2	0	2	6	3	9	0	6	6	17
Total Volume	4	0	4	20	6	26	0	33	33	63
% App. Total	100	0		76.9	23.1		0	100		
PHF	.500	.000	.500	.714	.500	.722	.000	.750	.750	.829

Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 15

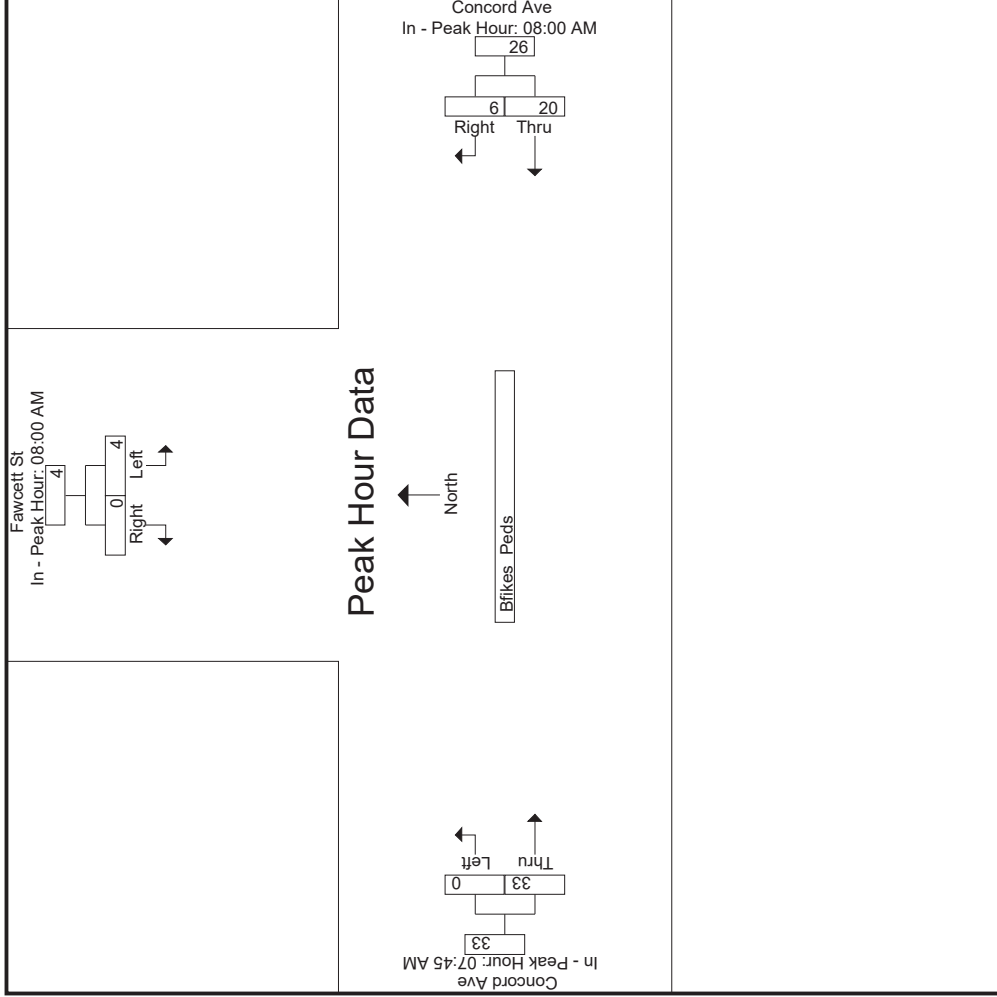


Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	08:00 AM			08:00 AM			07:45 AM		
+0 mins.	2	0	2	6	1	7	0	6	6
+15 mins.	0	0	0	7	1	8	0	10	10
+30 mins.	0	0	0	1	1	2	0	6	6
+45 mins.	2	0	2	6	3	9	0	11	11
Total Volume	4	0	4	20	6	26	0	33	33

Accurate Counts
978-664-2565

% App. Total	100	0	76.9	23.1	0	100
PHF	.500	.000	.714	.500	.722	.750



Accurate Counts
978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 1

Start Time	Fawcett St From North				Concord Ave From East				Concord Ave From West				Int. Total
	Left	Right	Thru	Right	Thru	Right	Thru	Left	Thru	Left	Thru	Int. Total	
04:30 PM	19	10	98	17	180	5	329	180	5	329			
04:45 PM	25	8	119	19	165	6	342	165	6	342			
Total	44	18	217	36	345	11	671	345	11	671			
05:00 PM	24	7	103	19	164	9	326	164	9	326			
05:15 PM	29	8	129	29	140	5	340	140	5	340			
05:30 PM	32	9	142	32	149	2	366	149	2	366			
05:45 PM	23	5	97	30	135	12	302	135	12	302			
Total	108	29	471	110	588	28	1334	588	28	1334			
06:00 PM	18	11	119	15	181	12	356	181	12	356			
06:15 PM	17	10	140	28	137	5	337	137	5	337			
Grand Total	187	68	947	189	1251	56	2698	1251	56	2698			
Approch %	73.3	26.7	83.4	16.6	95.7	4.3		95.7	4.3				
Total %	6.9	2.5	35.1	7	46.4	2.1		46.4	2.1				
Cars	187	68	939	187	1242	56	2679	1242	56	2679			
% Cars	100	100	99.2	98.9	99.3	100	99.3	99.3	100	99.3			
Trucks	0	0	8	2	9	0	19	9	0	19			
% Trucks	0	0	0.8	1.1	0.7	0	0.7	0.7	0	0.7			

Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 2

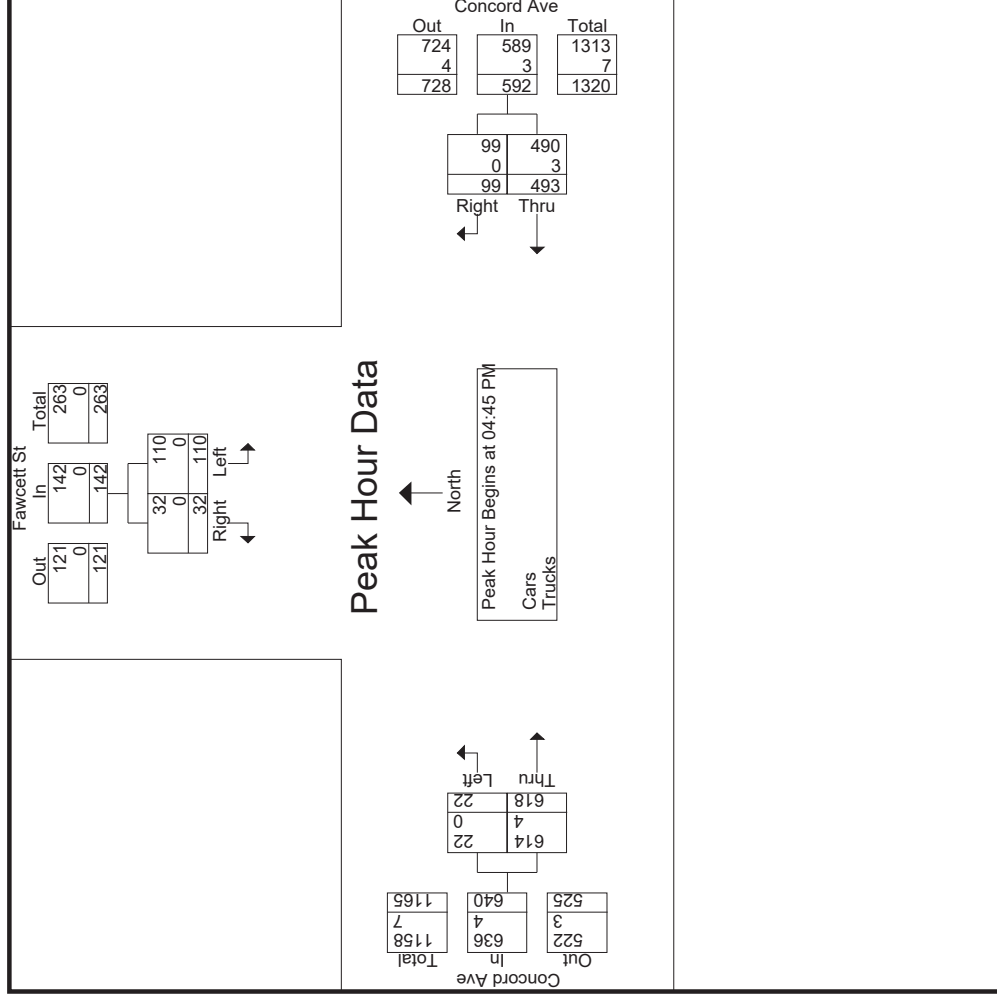
Start Time	Fawcett St From North			Concord Ave From East			Concord Ave From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	25	8	33	119	19	138	6	165	171	342
05:00 PM	24	7	31	103	19	122	9	164	173	326
05:15 PM	29	8	37	129	29	158	5	140	145	340
05:30 PM	32	9	41	142	32	174	2	149	151	366
Total Volume	110	32	142	493	99	592	22	618	640	1374
% App. Total	77.5	22.5		83.3	16.7		3.4	96.6		
PHF	.859	.889	.866	.868	.773	.851	.611	.936	.925	.939
Cars	110	32	142	490	99	589	22	614	636	1367
% Cars	100	100	100	99.4	100	99.5	100	99.4	99.4	99.5
Trucks	0	0	0	3	0	3	0	4	4	7
% Trucks	0	0	0	0.6	0	0.5	0	0.6	0.6	0.5

Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 3

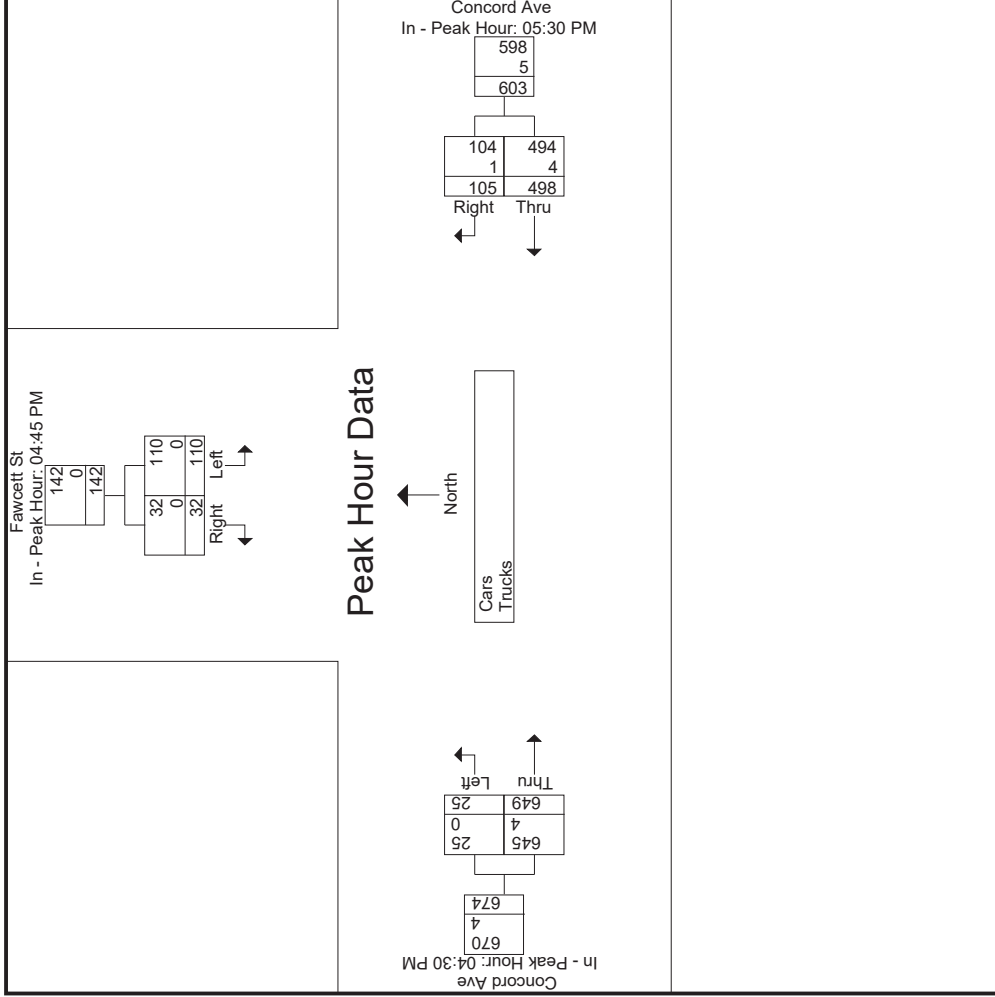


Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM	05:30 PM	04:30 PM	
+0 mins.	25	142	174	185
+15 mins.	24	97	127	171
+30 mins.	29	119	134	173
+45 mins.	32	140	168	145
Total Volume	110	498	603	674

Accurate Counts
978-664-2565

% App. Total	77.5	22.5	82.6	17.4	3.7	96.3
PHF	.859	.889	.877	.820	.694	.901
Cars	110	32	494	104	25	645
% Cars	100	100	99.2	99	100	99.4
Trucks	0	0	4	1	0	4
% Trucks	0	0	0.8	1	0	0.6



Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 5

Groups Printed- Cars

Start Time	Fawcett St From North		Concord Ave From East		Concord Ave From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
04:30 PM	19	10	96	16	5	178	324
04:45 PM	25	8	119	19	6	164	341
Total	44	18	215	35	11	342	665
05:00 PM	24	7	103	19	9	164	326
05:15 PM	29	8	127	29	5	139	337
05:30 PM	32	9	141	32	2	147	363
05:45 PM	23	5	97	30	12	134	301
Total	108	29	468	110	28	584	1327
06:00 PM	18	11	117	15	12	179	352
06:15 PM	17	10	139	27	5	137	335
Grand Total	187	68	939	187	56	1242	2679
Apprch %	73.3	26.7	83.4	16.6	4.3	95.7	
Total %	7	2.5	35.1	7	2.1	46.4	

Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 6

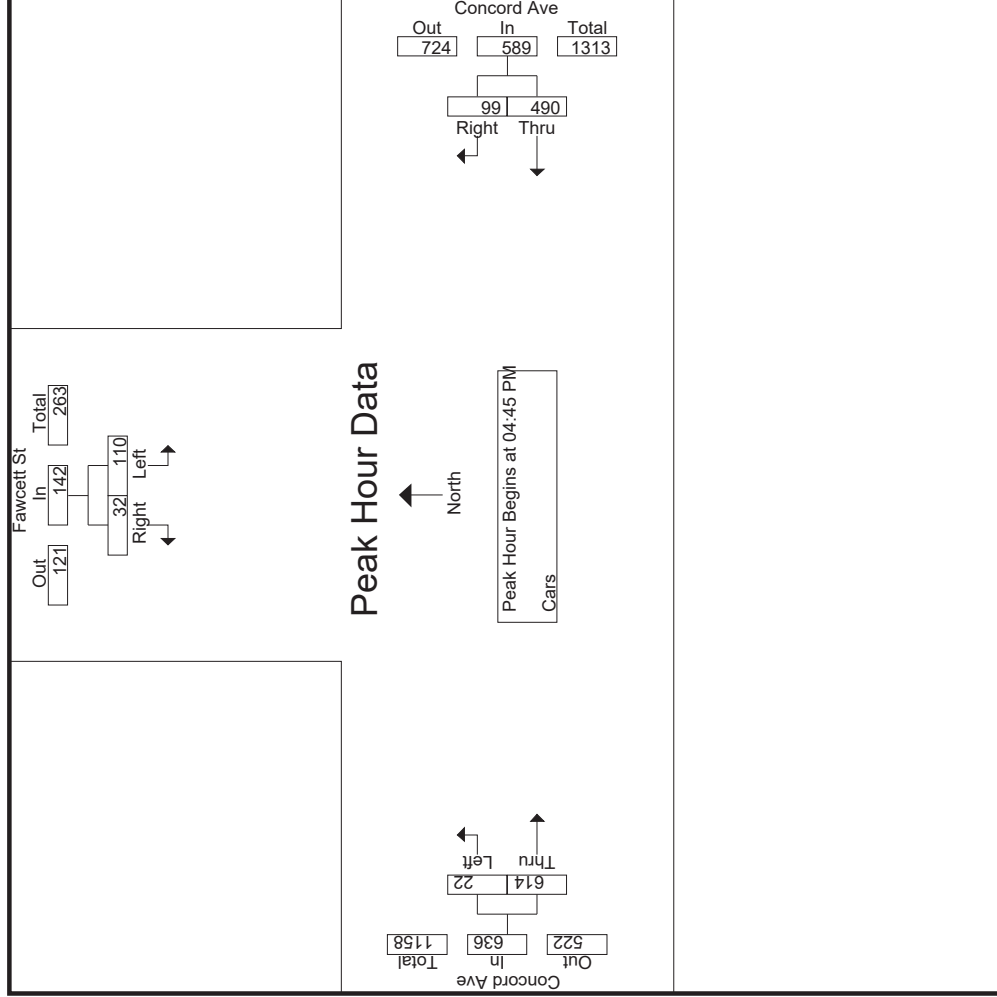
Start Time	Fawcett St From North			Concord Ave From East			Concord Ave From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:45 PM										
04:45 PM	25	8	33	119	19	138	6	164	170	341
05:00 PM	24	7	31	103	19	122	9	164	173	326
05:15 PM	29	8	37	127	29	156	5	139	144	337
05:30 PM	32	9	41	141	32	173	2	147	149	363
Total Volume	110	32	142	490	99	589	22	614	636	1367
% App. Total	77.5	22.5		83.2	16.8		3.5	96.5		
PHF	.859	.889	.866	.869	.773	.851	.611	.936	.919	.941

Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 7

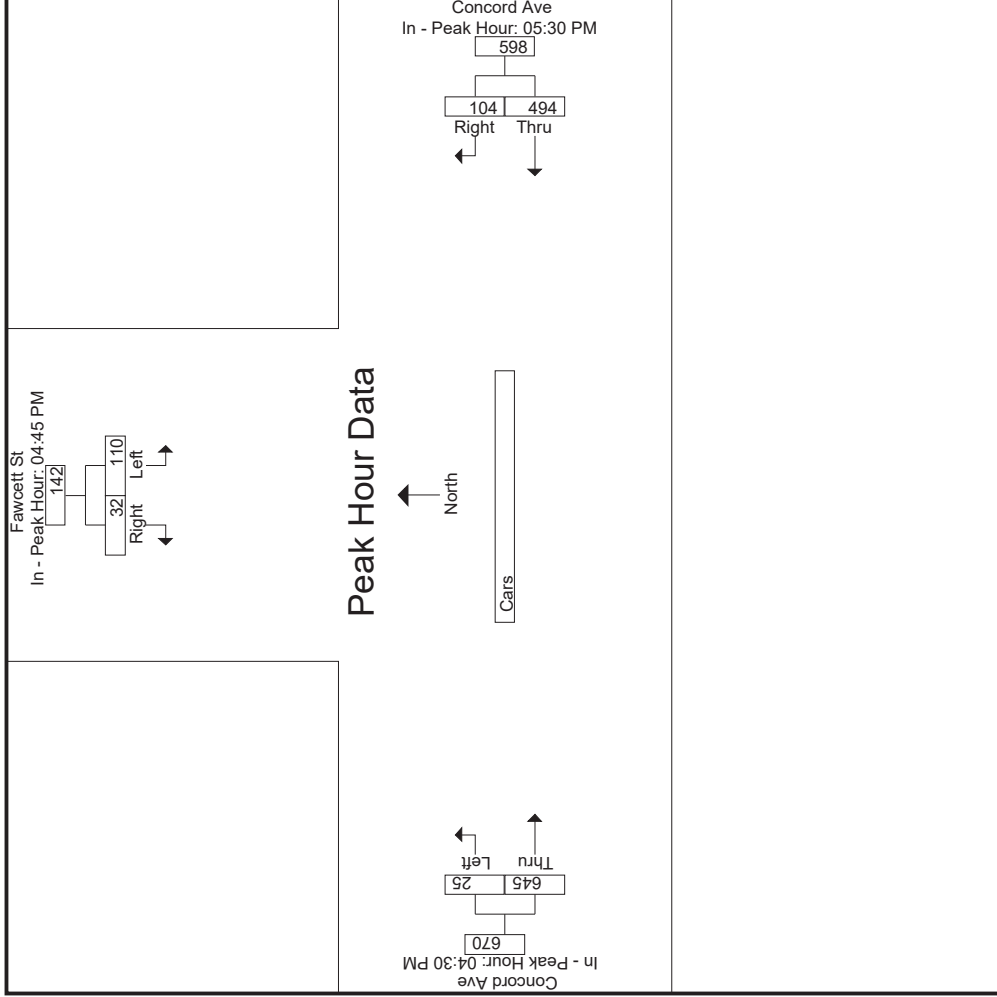


Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM	05:30 PM	04:30 PM	
+0 mins.	25	141	173	5
+15 mins.	24	97	127	6
+30 mins.	29	117	132	9
+45 mins.	32	139	166	5
Total Volume	110	494	598	25
		104	645	
			670	

Accurate Counts
978-664-2565

% App. Total	77.5	22.5	82.6	17.4	3.7	96.3	.915
PHF	.859	.889	.876	.813	.694	.906	



Accurate Counts
978-664-2565

N/S Street : Fawcett Street
E/W Street: Concord Avenue
City/State : Cambridge, MA
Weather : Clear

File Name : 80840005
Site Code : 80840005
Start Date : 4/2/2019
Page No : 9

Groups Printed- Trucks

Start Time	Fawcett St From North		Concord Ave From East		Concord Ave From West		Int. Total
	Left	Right	Thru	Right	Left	Thru	
04:30 PM	0	0	2	1	0	2	5
04:45 PM	0	0	0	0	0	1	1
Total	0	0	2	1	0	3	6
05:00 PM	0	0	0	0	0	0	0
05:15 PM	0	0	2	0	0	1	3
05:30 PM	0	0	1	0	0	2	3
05:45 PM	0	0	0	0	0	1	1
Total	0	0	3	0	0	4	7
06:00 PM	0	0	2	0	0	2	4
06:15 PM	0	0	1	1	0	0	2
Grand Total	0	0	8	2	0	9	19
Apprch %	0	0	80	20	0	100	
Total %	0	0	42.1	10.5	0	47.4	

Accurate Counts
978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

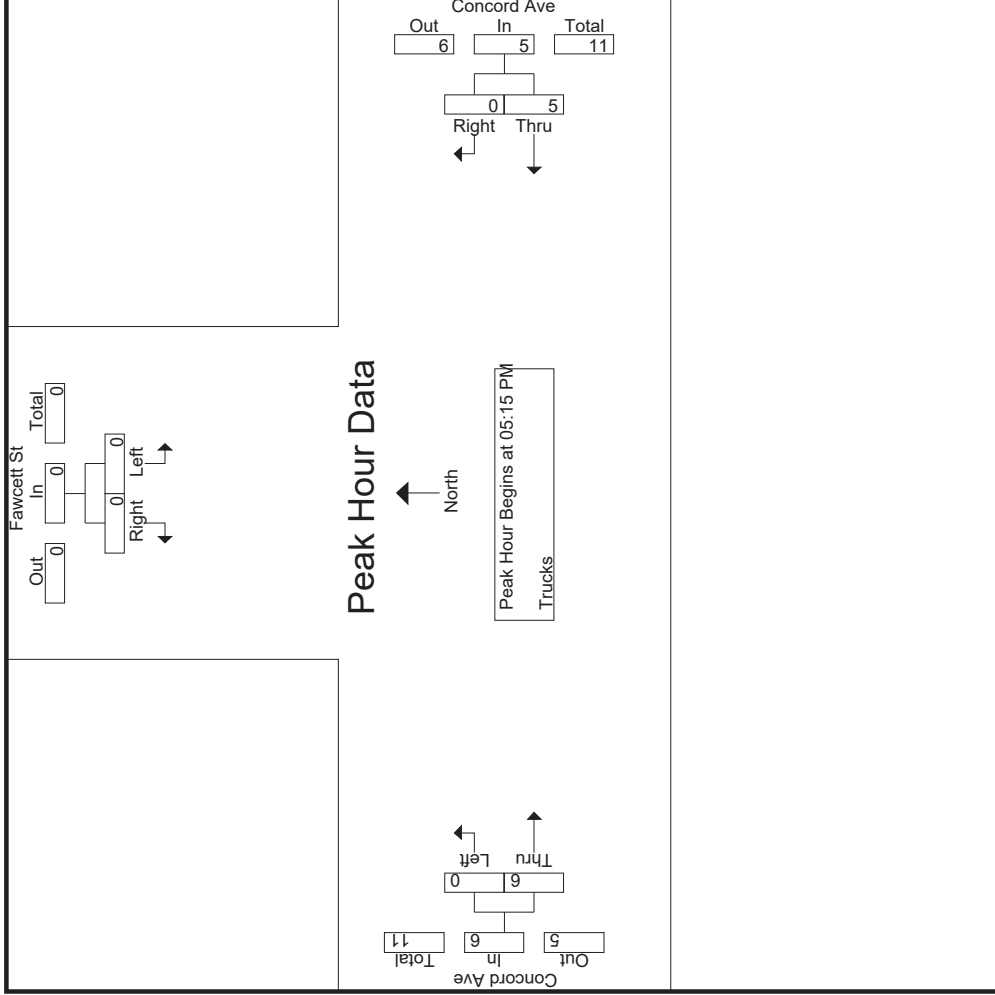
File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 10

Start Time	Fawcett St From North			Concord Ave From East			Concord Ave From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:15 PM										
05:15 PM	0	0	0	2	0	2	0	1	1	3
05:30 PM	0	0	0	1	0	1	0	2	2	3
05:45 PM	0	0	0	0	0	0	0	1	1	1
06:00 PM	0	0	0	2	0	2	0	2	2	4
Total Volume	0	0	0	5	0	5	0	6	6	11
% App. Total	0	0	0	100	0	100	0	100	100	100
PHF	.000	.000	.000	.625	.000	.625	.000	.750	.750	.688

Accurate Counts
978-664-2565

N/S Street : Fawcett Street
E/W Street: Concord Avenue
City/State : Cambridge, MA
Weather : Clear

File Name : 80840005
Site Code : 80840005
Start Date : 4/2/2019
Page No : 11

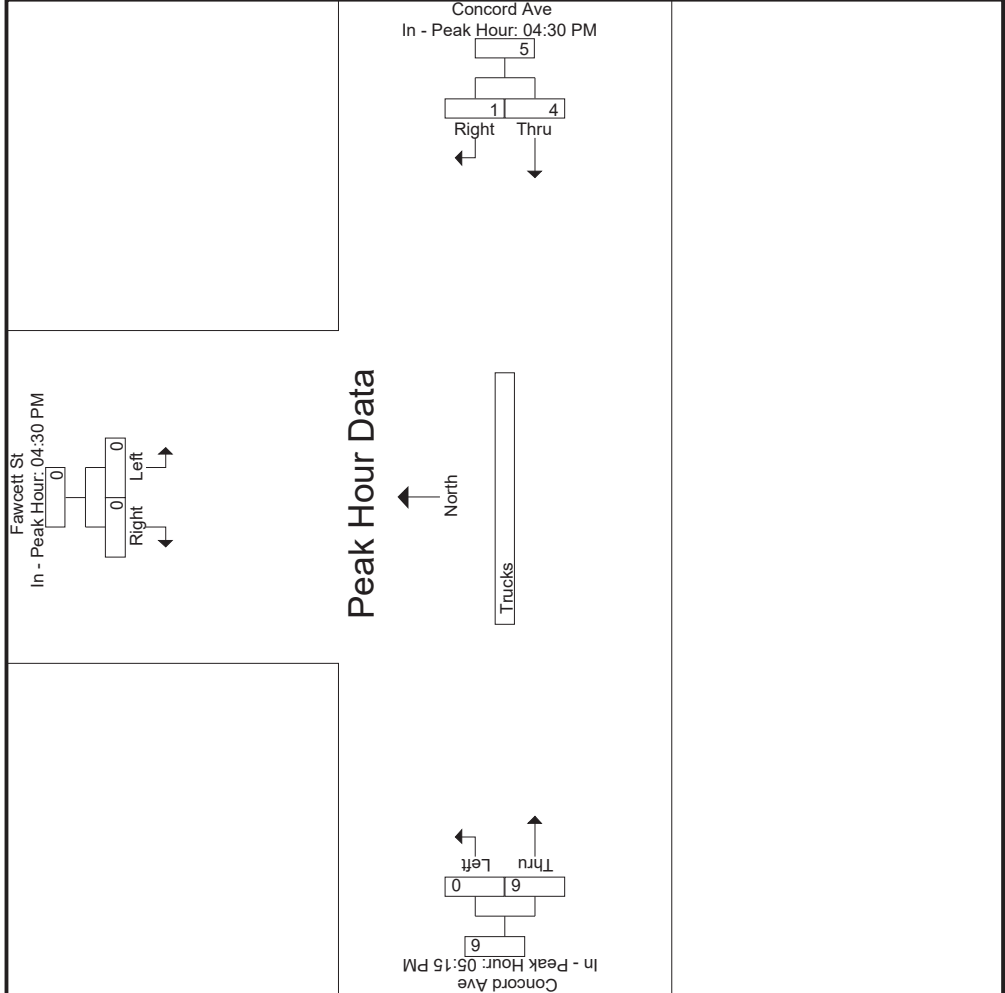


Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			05:15 PM		
+0 mins.	0	0	0	2	1	1
+15 mins.	0	0	0	0	0	2
+30 mins.	0	0	0	0	0	1
+45 mins.	0	0	0	2	0	2
Total Volume	0	0	0	4	1	6

Accurate Counts
978-664-2565

% App. Total	0	0	80	20	100
PHF	.000	.000	.500	.250	.750
	.000	.000	.417	.000	.750



Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 13

Groups Printed- Bikes Peds

Start Time	Fawcett St From North			Concord Ave From East			Concord Ave From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds			
04:30 PM	1	0	7	5	4	0	0	4	5	12	14	26
04:45 PM	0	0	6	3	1	0	0	6	6	12	10	22
Total	1	0	13	8	5	0	0	10	11	24	24	48
05:00 PM	0	0	9	6	2	0	0	2	2	11	10	21
05:15 PM	0	0	17	9	2	0	0	5	4	21	16	37
05:30 PM	2	0	12	8	0	0	0	3	1	13	13	26
05:45 PM	1	0	14	12	3	0	0	6	2	16	22	38
Total	3	0	52	35	7	0	0	16	9	61	61	122
06:00 PM	5	0	8	9	1	0	0	4	0	8	19	27
06:15 PM	2	1	6	9	2	0	0	9	0	6	23	29
Grand Total	11	1	79	61	15	0	0	39	20	99	127	226
Apprch %	91.7	8.3		80.3	19.7		0	100				
Total %	8.7	0.8		48	11.8		0	30.7		43.8	56.2	

Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 14

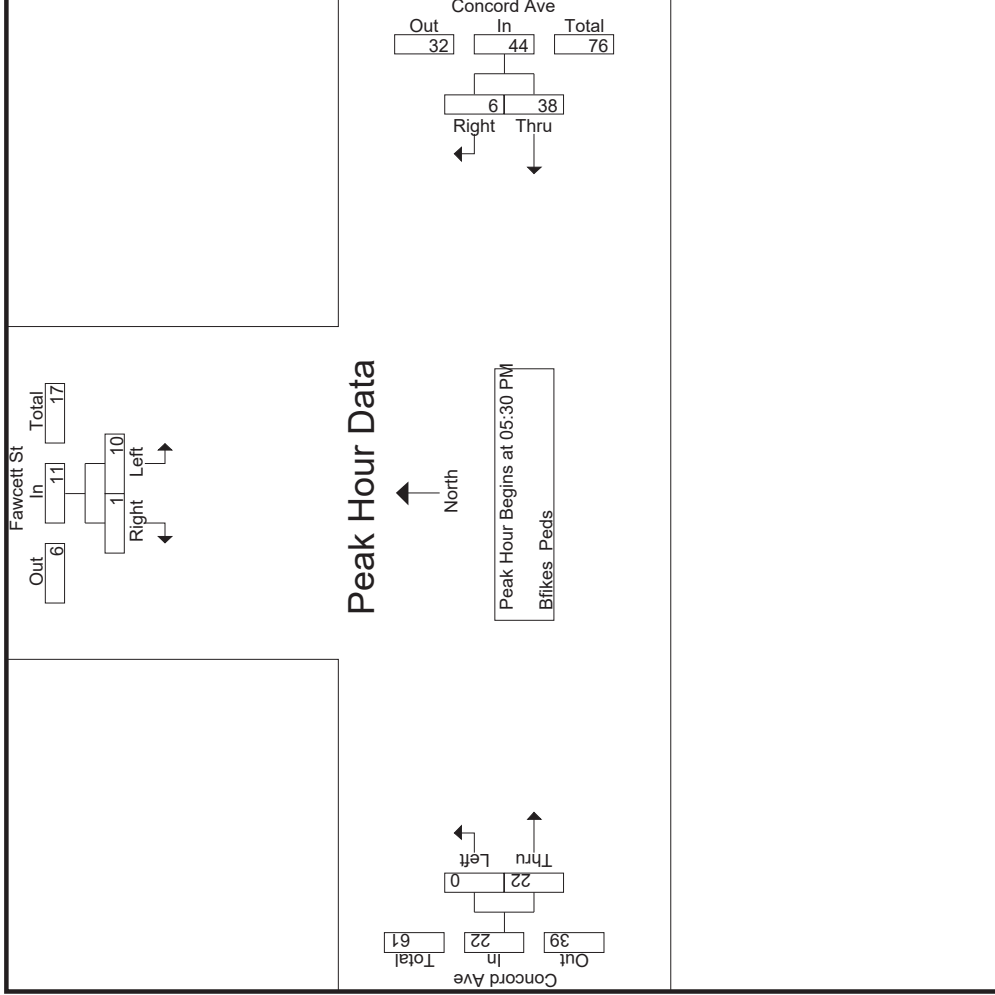
Start Time	Fawcett St From North			Concord Ave From East			Concord Ave From West			Int. Total
	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:30 PM										
05:30 PM	2	0	2	8	0	8	0	3	3	13
05:45 PM	1	0	1	12	3	15	0	6	6	22
06:00 PM	5	0	5	9	1	10	0	4	4	19
06:15 PM	2	1	3	9	2	11	0	9	9	23
Total Volume	10	1	11	38	6	44	0	22	22	77
% App. Total	90.9	9.1		86.4	13.6		0	100		
PHF	.500	.250	.550	.792	.500	.733	.000	.611	.611	.837

Accurate Counts

978-664-2565

N/S Street : Fawcett Street
 E/W Street: Concord Avenue
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840005
 Site Code : 80840005
 Start Date : 4/2/2019
 Page No : 15

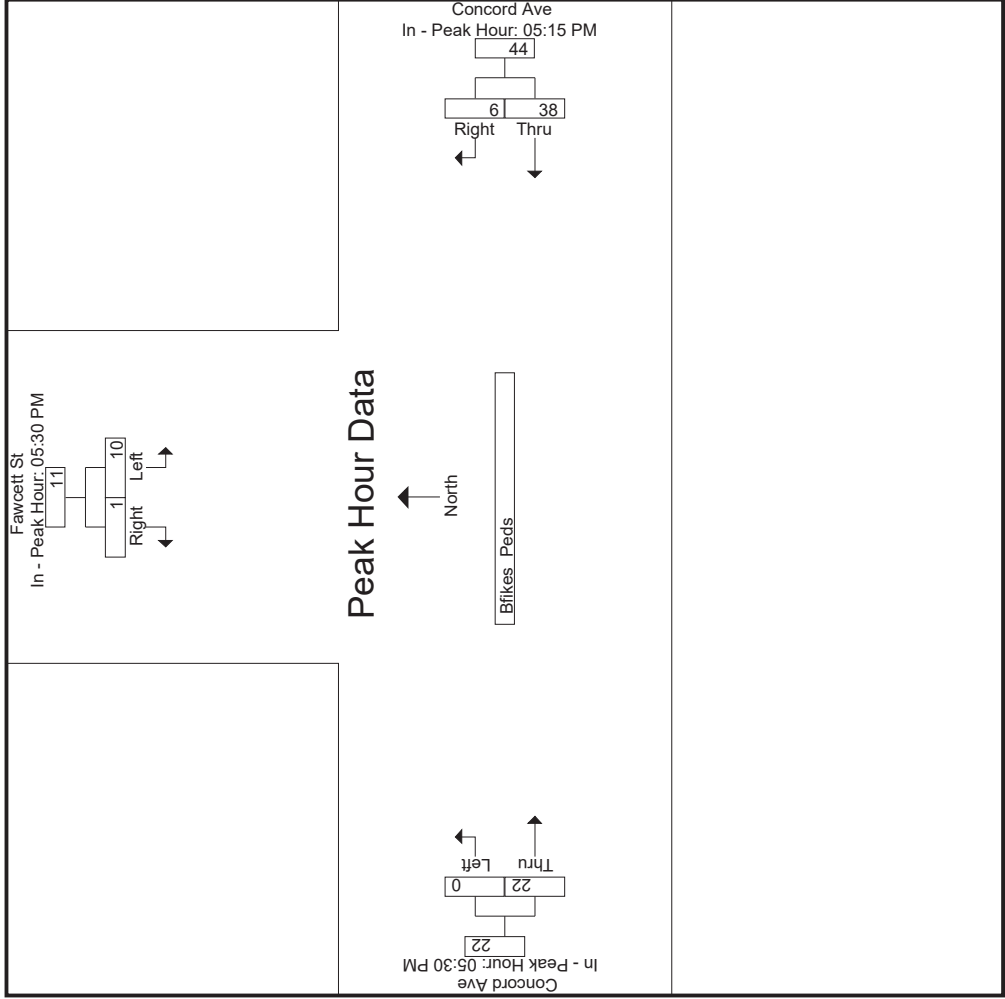


Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:30 PM		05:15 PM		05:30 PM	
+0 mins.	2	0	2	9	2	3
+15 mins.	1	0	1	8	0	6
+30 mins.	5	0	5	12	3	4
+45 mins.	2	1	3	9	1	9
Total Volume	10	1	11	38	6	22

Accurate Counts
978-664-2565

% App. Total	90.9	9.1	.550	86.4	13.6	0	100
PHF	.500	.250	.550	.792	.500	.000	.611
							.611



Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Smith Pl From North			Fawcett St From East			Smith Pl From South			Parking Lot From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	3	8	0	6	4	6	1	8	8	0	0	1	45
07:45 AM	1	2	0	11	1	10	1	9	5	0	1	1	42
Total	4	10	0	17	5	16	2	17	13	0	1	2	87
08:00 AM	2	3	0	7	0	15	0	2	12	1	1	2	45
08:15 AM	4	7	0	7	1	5	1	7	8	0	0	2	42
08:30 AM	4	11	0	9	0	4	0	9	3	0	0	2	42
08:45 AM	3	10	0	7	0	9	0	8	9	0	0	0	46
Total	13	31	0	30	1	33	1	26	32	1	1	6	175
09:00 AM	2	8	0	7	0	6	0	7	8	0	1	0	39
09:15 AM	2	8	0	9	0	3	0	14	2	0	0	0	38
Grand Total	21	57	0	63	6	58	3	64	55	1	3	8	339
Approch %	26.9	73.1	0	49.6	4.7	45.7	2.5	52.5	45.1	8.3	25	66.7	
Total %	6.2	16.8	0	18.6	1.8	17.1	0.9	18.9	16.2	0.3	0.9	2.4	
Cars	19	47	0	61	6	53	2	49	55	1	3	7	303
% Cars	90.5	82.5	0	96.8	100	91.4	66.7	76.6	100	100	100	87.5	89.4
Trucks	2	10	0	2	0	5	1	15	0	0	0	1	36
% Trucks	9.5	17.5	0	3.2	0	8.6	33.3	23.4	0	0	0	12.5	10.6

Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 2

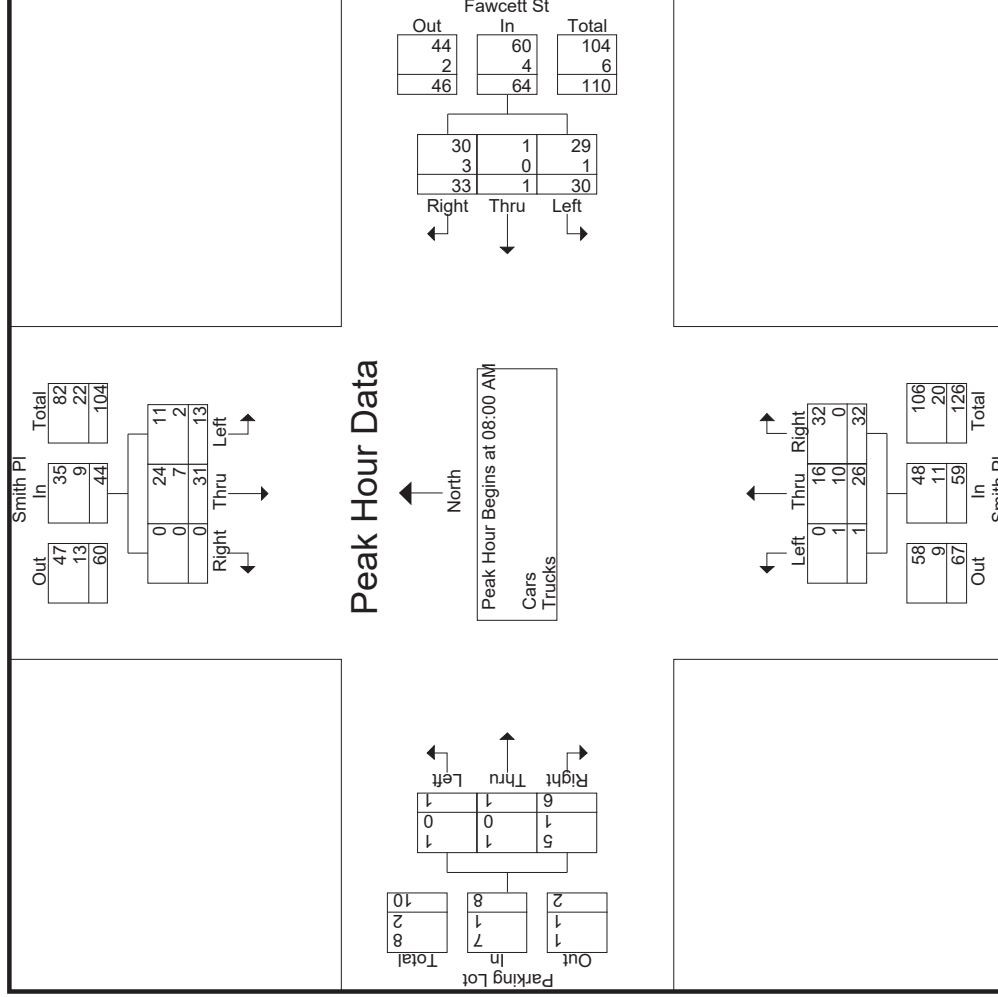
Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			Int. Total				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total					
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	2	3	0	5	7	0	15	22	0	2	12	14	1	1	2	4	45
08:15 AM	4	7	0	11	7	1	5	13	1	7	8	16	0	0	2	2	42
08:30 AM	4	11	0	15	9	0	4	13	0	9	3	12	0	0	2	2	42
08:45 AM	3	10	0	13	7	0	9	16	0	8	9	17	0	0	0	0	46
Total Volume	13	31	0	44	30	1	33	64	1	26	32	59	1	1	6	8	175
% App. Total	29.5	70.5	0		46.9	1.6	51.6		1.7	44.1	54.2		12.5	12.5	75		
PHF	.813	.705	.000	.733	.833	.250	.550	.727	.250	.722	.667	.868	.250	.250	.750	.500	.951
Cars	11	24	0	35	29	1	30	60	0	16	32	48	1	1	5	7	150
% Cars	84.6	77.4	0	79.5	96.7	100	90.9	93.8	0	61.5	100	81.4	100	100	83.3	87.5	85.7
Trucks	2	7	0	9	1	0	3	4	1	10	0	11	0	0	1	1	25
% Trucks	15.4	22.6	0	20.5	3.3	0	9.1	6.3	100	38.5	0	18.6	0	0	16.7	12.5	14.3

Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 3

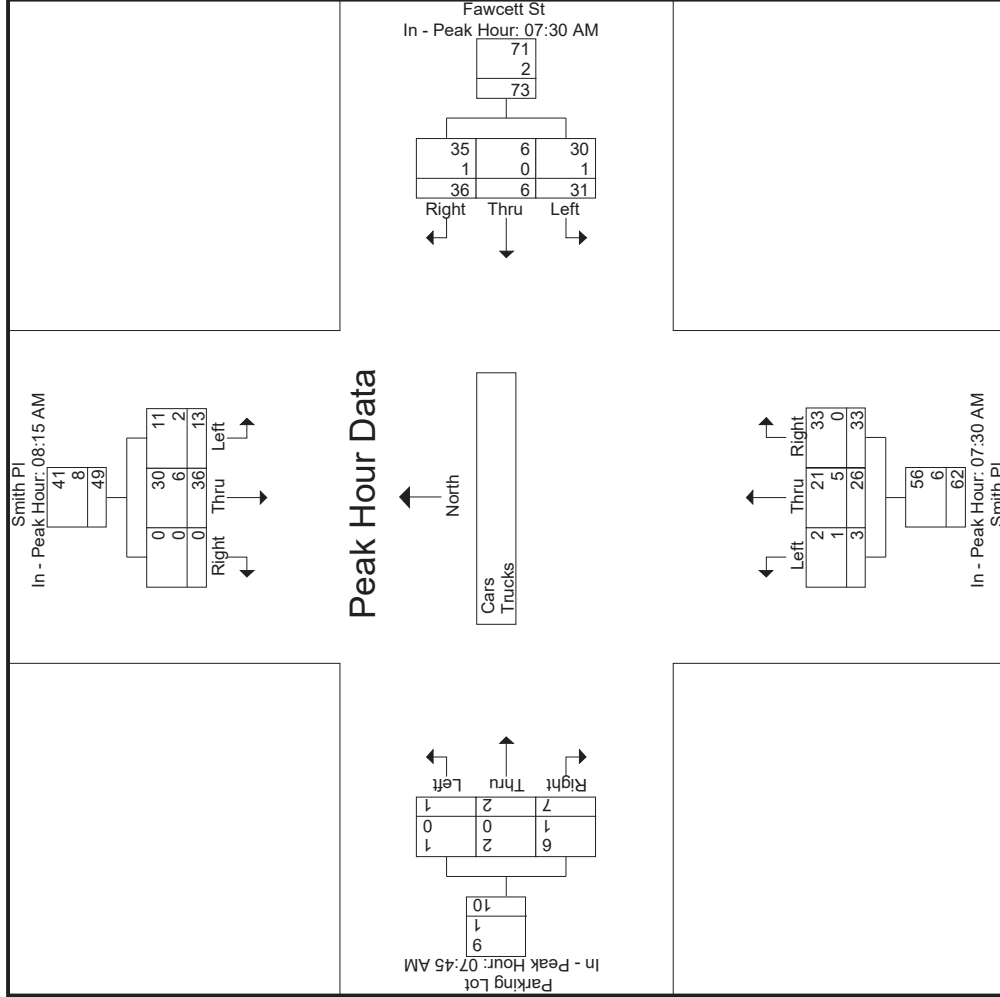


Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM			07:30 AM			07:45 AM					
+0 mins.	4	7	0	11	6	16	1	8	17	0	1	2
+15 mins.	4	11	0	15	11	22	1	9	15	1	2	4
+30 mins.	3	10	0	13	7	22	0	2	14	0	2	2
+45 mins.	2	8	0	10	7	13	1	7	16	0	2	2
Total Volume	13	36	0	49	31	73	3	26	62	1	7	10

Accurate Counts
978-664-2565

	26.5	73.5	0	42.5	8.2	49.3	4.8	41.9	53.2	10	20	70
% App. Total	.813	.818	.000	.817	.375	.600	.830	.722	.688	.250	.500	.875
PHF	11	30	0	41	6	35	71	21	33	1	2	6
Cars	84.6	83.3	0	83.7	100	97.2	97.3	80.8	100	100	100	85.7
% Cars	2	6	0	8	0	1	2	5	0	0	0	1
Trucks	15.4	16.7	0	16.3	0	2.8	2.7	19.2	0	0	0	14.3
% Trucks												



Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 5

Groups Printed- Cars

Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	3	8	0	6	4	6	1	7	8	0	0	1	44
07:45 AM	1	1	0	10	1	9	1	8	5	0	1	1	38
Total	4	9	0	16	5	15	2	15	13	0	1	2	82
08:00 AM	2	1	0	7	0	15	0	1	12	1	1	2	42
08:15 AM	3	5	0	7	1	5	0	5	8	0	0	1	35
08:30 AM	4	9	0	8	0	3	0	5	3	0	0	2	34
08:45 AM	2	9	0	7	0	7	0	5	9	0	0	0	39
Total	11	24	0	29	1	30	0	16	32	1	1	5	150
09:00 AM	2	7	0	7	0	6	0	7	8	0	1	0	38
09:15 AM	2	7	0	9	0	2	0	11	2	0	0	0	33
Grand Total	19	47	0	61	6	53	2	49	55	1	3	7	303
Apprch %	28.8	71.2	0	50.8	5	44.2	1.9	46.2	51.9	9.1	27.3	63.6	
Total %	6.3	15.5	0	20.1	2	17.5	0.7	16.2	18.2	0.3	1	2.3	

Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 6

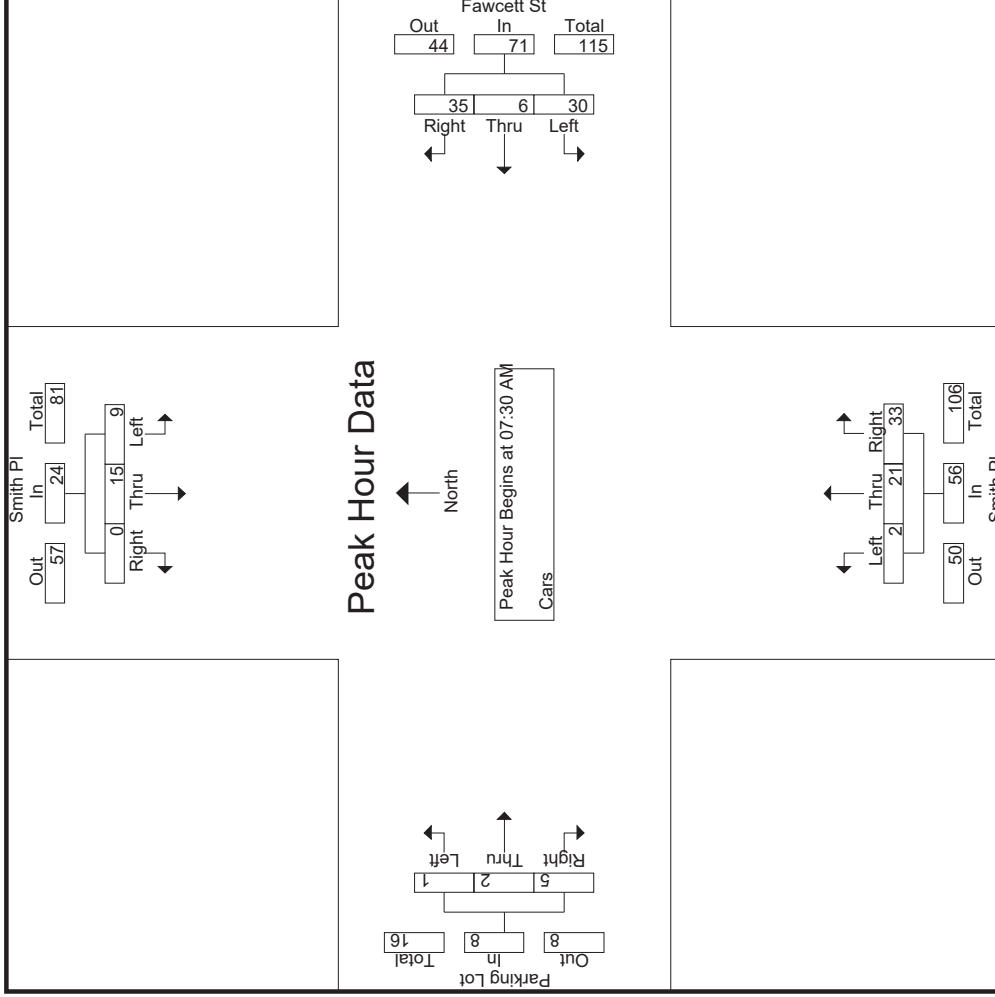
Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:30 AM														
07:30 AM	3	8	0	6	4	6	1	7	8	0	0	1	1	44
07:45 AM	1	1	0	10	1	9	1	8	5	0	1	1	2	38
08:00 AM	2	1	0	7	0	15	0	1	12	1	1	2	4	42
08:15 AM	3	5	0	7	1	5	0	5	8	0	0	1	1	35
Total Volume	9	15	0	30	6	35	2	21	33	1	2	5	8	159
% App. Total	37.5	62.5	0	42.3	8.5	49.3	3.6	37.5	58.9	12.5	25	62.5		
PHF	.750	.469	.000	.750	.375	.583	.500	.656	.688	.250	.500	.625	.500	.903

Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 7

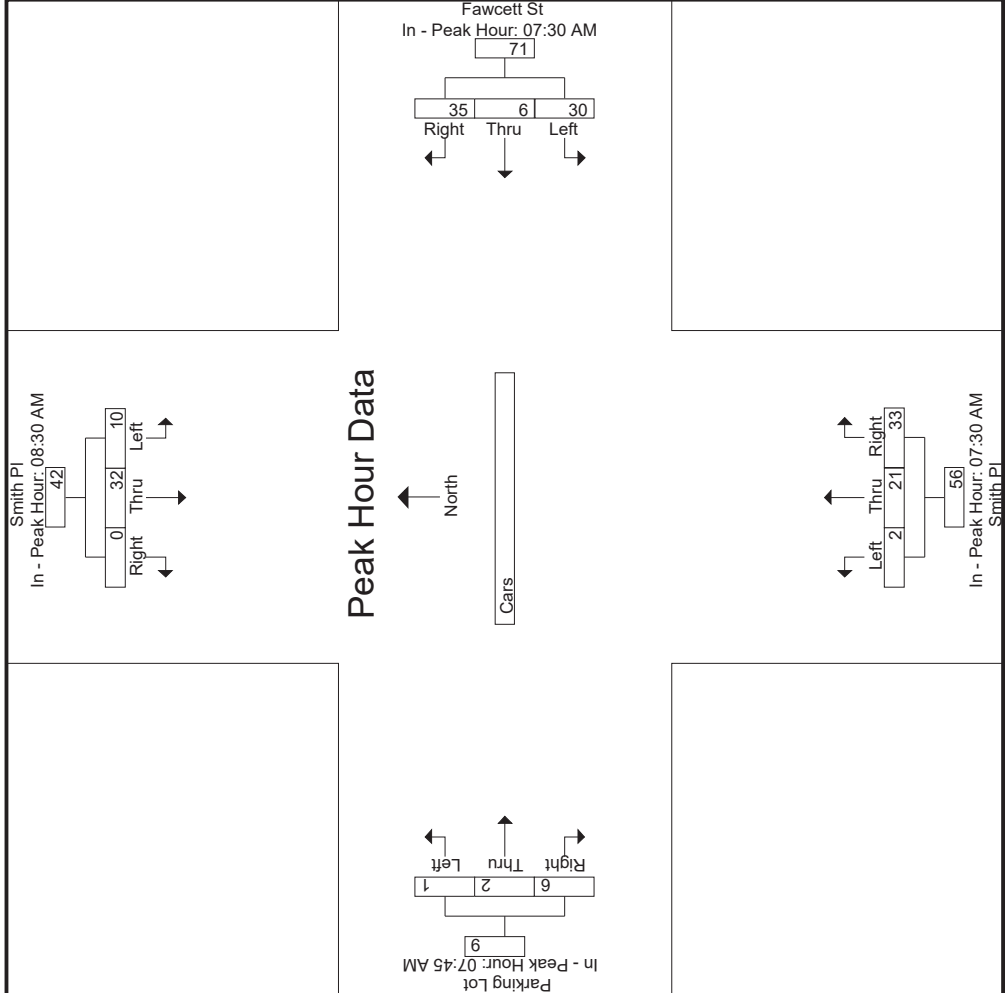


Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM						07:45 AM					
+0 mins.	4	9	0	13	6	6	16	1	8	7	8	2
+15 mins.	2	9	0	11	10	9	14	1	5	8	5	4
+30 mins.	2	7	0	9	7	0	13	0	1	1	12	1
+45 mins.	2	7	0	9	7	5	13	0	5	5	8	2
Total Volume	10	32	0	42	30	35	71	2	21	33	56	9

Accurate Counts
978-664-2565

% App. Total	23.8	76.2	0	42.3	8.5	49.3	3.6	58.9	11.1	22.2	66.7
PHF	.625	.889	.000	.808	.375	.583	.807	.688	.250	.500	.750
											.563



Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 9

Groups Printed- Trucks

Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
07:45 AM	0	1	0	1	0	1	0	1	0	0	0	0	4
Total	0	1	0	1	0	1	0	2	0	0	0	0	5
08:00 AM	0	2	0	0	0	0	0	1	0	0	0	0	3
08:15 AM	1	2	0	0	0	0	1	2	0	0	0	1	7
08:30 AM	0	2	0	1	0	1	0	4	0	0	0	0	8
08:45 AM	1	1	0	0	0	2	0	3	0	0	0	0	7
Total	2	7	0	1	0	3	1	10	0	0	0	1	25
09:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
09:15 AM	0	1	0	0	0	1	0	3	0	0	0	0	5
Grand Total	2	10	0	2	0	5	1	15	0	0	0	1	36
Apprch %	16.7	83.3	0	28.6	0	71.4	6.2	93.8	0	0	0	100	
Total %	5.6	27.8	0	5.6	0	13.9	2.8	41.7	0	0	0	2.8	

Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

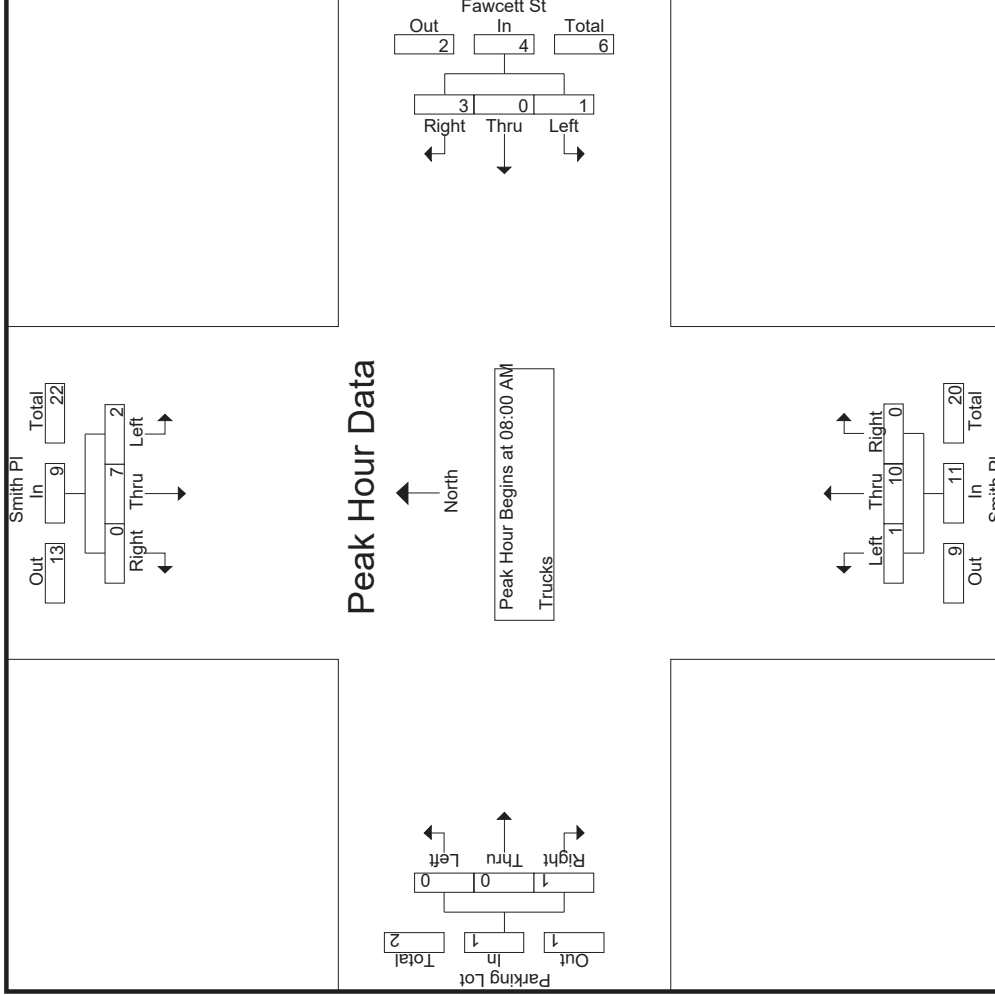
File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 10

Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			Int. Total		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total	App. Total
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1															
Peak Hour for Entire Intersection Begins at 08:00 AM															
08:00 AM	0	2	0	2	0	0	0	0	0	1	0	0	0	0	3
08:15 AM	1	2	0	3	0	0	0	1	2	0	0	0	0	1	7
08:30 AM	0	2	0	2	1	0	1	0	4	0	0	0	0	0	8
08:45 AM	1	1	0	2	0	0	2	0	3	0	0	0	0	0	7
Total Volume	2	7	0	9	1	0	3	4	10	0	0	0	0	1	25
% App. Total	22.2	77.8	0	75	25	0	75	9.1	90.9	0	0	0	0	100	
PHF	.500	.875	.000	.750	.250	.000	.375	.500	.625	.000	.000	.250	.250	.688	.781

Accurate Counts
978-664-2565

N/S Street : Smith Place
E/W Street: Fawcett St / Parking Lot
City/State : Cambridge, MA
Weather : Clear

File Name : 80840009
Site Code : 80840009
Start Date : 4/2/2019
Page No : 11



Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:00 AM			08:30 AM			08:00 AM			07:30 AM		
+0 mins.	0	2	0	2	1	0	1	2	0	1	0	0
+15 mins.	1	2	0	0	2	0	2	2	1	3	0	0
+30 mins.	0	2	0	0	0	0	0	0	0	4	0	0
+45 mins.	1	1	0	0	1	0	1	1	0	3	0	0
Total Volume	2	7	0	9	4	0	5	10	0	11	0	0

Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 13

Groups Printed- Bikes Peds

Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
Total	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	1	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
08:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	1	2	3
Total	0	0	0	0	0	2	0	0	0	2	3	0	4	4	8
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	1	0	1
Grand Total	0	0	0	0	0	2	2	0	0	2	3	0	8	4	12
Approch %	0	0	0	0	0	100		0	0	100		0	66.7		33.3
Total %	0	0	0	0	0	50		0	0	50		0	66.7		33.3

Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

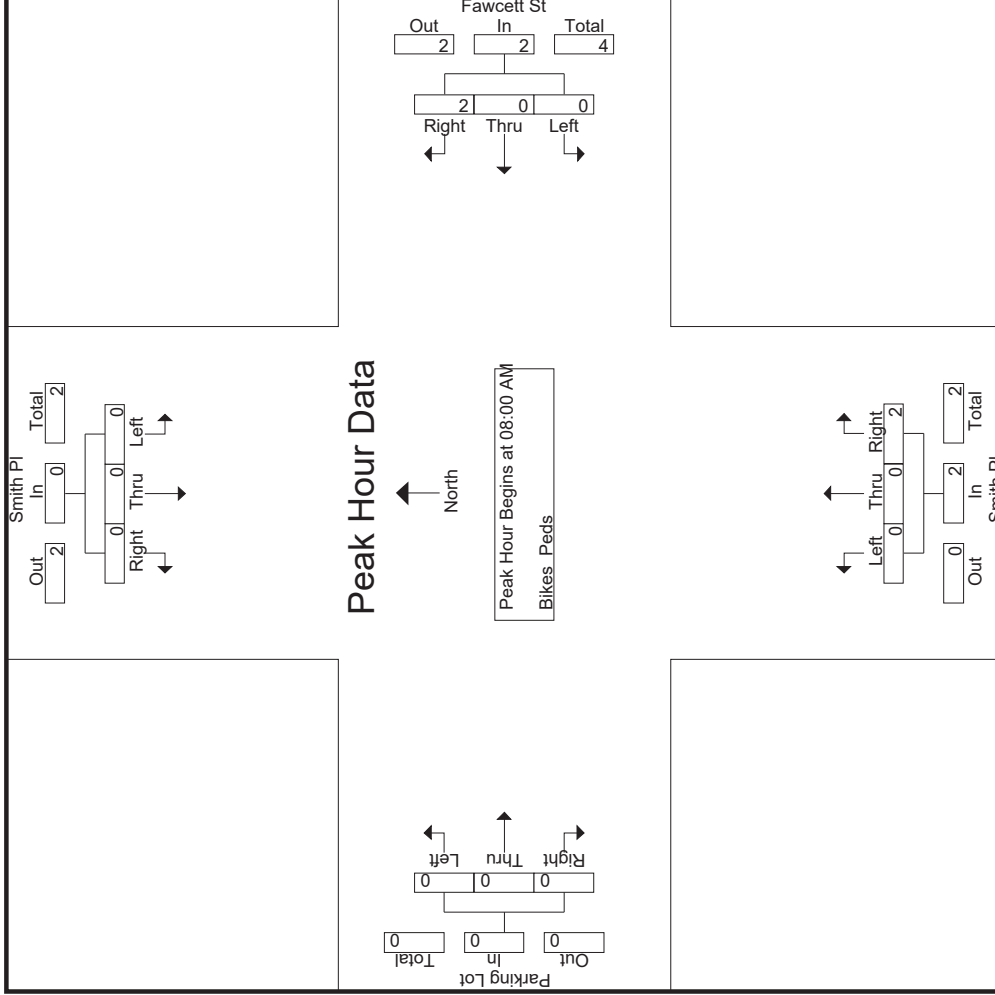
File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 14

Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total
Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 08:00 AM														
08:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	2	0	0	2	0	0	0	0	4
% App. Total	0	0	0	0	0	100	0	0	100	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.250	.000	.000	.500	.000	.000	.000	.000	.500

Accurate Counts
978-664-2565

N/S Street : Smith Place
E/W Street: Fawcett St / Parking Lot
City/State : Cambridge, MA
Weather : Clear

File Name : 80840009
Site Code : 80840009
Start Date : 4/2/2019
Page No : 15



Peak Hour Analysis From 07:30 AM to 09:15 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM	08:00 AM	07:30 AM	07:30 AM
+0 mins.	0	0	0	0
+15 mins.	0	0	0	0
+30 mins.	0	0	0	1
+45 mins.	0	0	2	1
Total Volume	0	0	2	2

Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	3	35	1	5	2	9	6	8	4	0	1	5	79
04:45 PM	4	13	0	5	5	6	12	6	11	0	0	1	63
Total	7	48	1	10	7	15	18	14	15	0	1	6	142
05:00 PM	3	7	0	11	2	8	8	1	4	0	0	2	46
05:15 PM	3	18	0	3	0	3	18	4	2	0	1	6	58
05:30 PM	4	19	0	8	2	5	7	6	3	0	1	2	57
05:45 PM	2	16	0	4	1	5	2	3	2	0	1	2	38
Total	12	60	0	26	5	21	35	14	11	0	3	12	199
06:00 PM	2	19	2	7	0	3	6	6	2	0	0	0	47
06:15 PM	2	9	0	3	4	5	7	4	1	0	0	1	36
Grand Total	23	136	3	46	16	44	66	38	29	0	4	19	424
Approch %	14.2	84	1.9	43.4	15.1	41.5	49.6	28.6	21.8	0	17.4	82.6	
Total %	5.4	32.1	0.7	10.8	3.8	10.4	15.6	9	6.8	0	0.9	4.5	
Cars	22	134	3	46	16	43	66	37	29	0	4	19	419
% Cars	95.7	98.5	100	100	100	97.7	100	97.4	100	0	100	100	98.8
Trucks	1	2	0	0	0	1	0	1	0	0	0	0	5
% Trucks	4.3	1.5	0	0	0	2.3	0	2.6	0	0	0	0	1.2

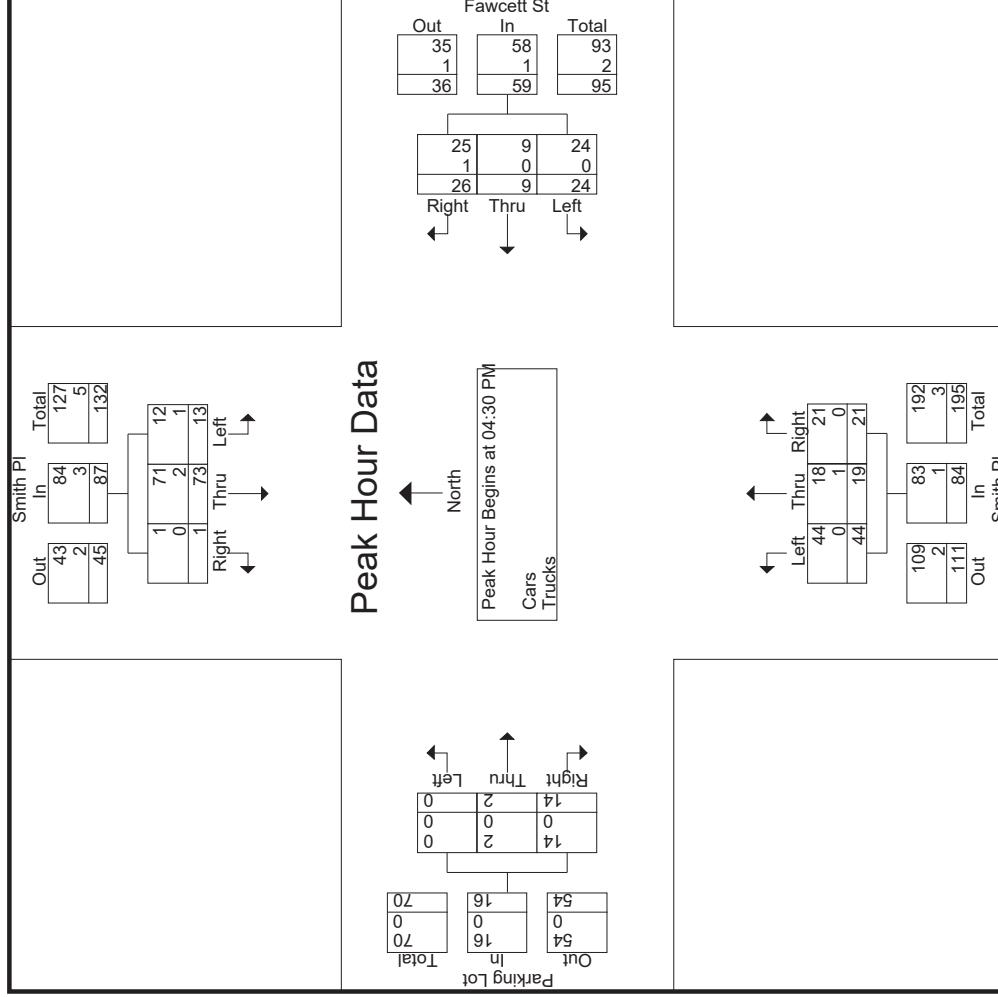
Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 2

Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West				
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:30 PM														
04:30 PM	3	35	1	5	2	9	6	8	4	0	1	5	6	79
04:45 PM	4	13	0	5	5	6	12	6	11	0	0	1	1	63
05:00 PM	3	7	0	11	2	8	8	1	4	0	0	2	2	46
05:15 PM	3	18	0	3	0	3	18	4	2	0	1	6	7	58
Total Volume	13	73	1	24	9	26	44	19	21	0	2	14	16	246
% App. Total	14.9	83.9	1.1	40.7	15.3	44.1	52.4	22.6	25	0	12.5	87.5		
PHF	.813	.521	.250	.545	.450	.722	.611	.594	.477	.000	.500	.583	.571	.778
Cars	12	71	1	24	9	25	44	18	21	0	2	14	16	241
% Cars	92.3	97.3	100	100	100	96.2	100	94.7	100	0	100	100	100	98.0
Trucks	1	2	0	0	0	1	0	1	0	0	0	0	0	5
% Trucks	7.7	2.7	0	0	0	3.8	0	5.3	0	0	0	0	0	2.0

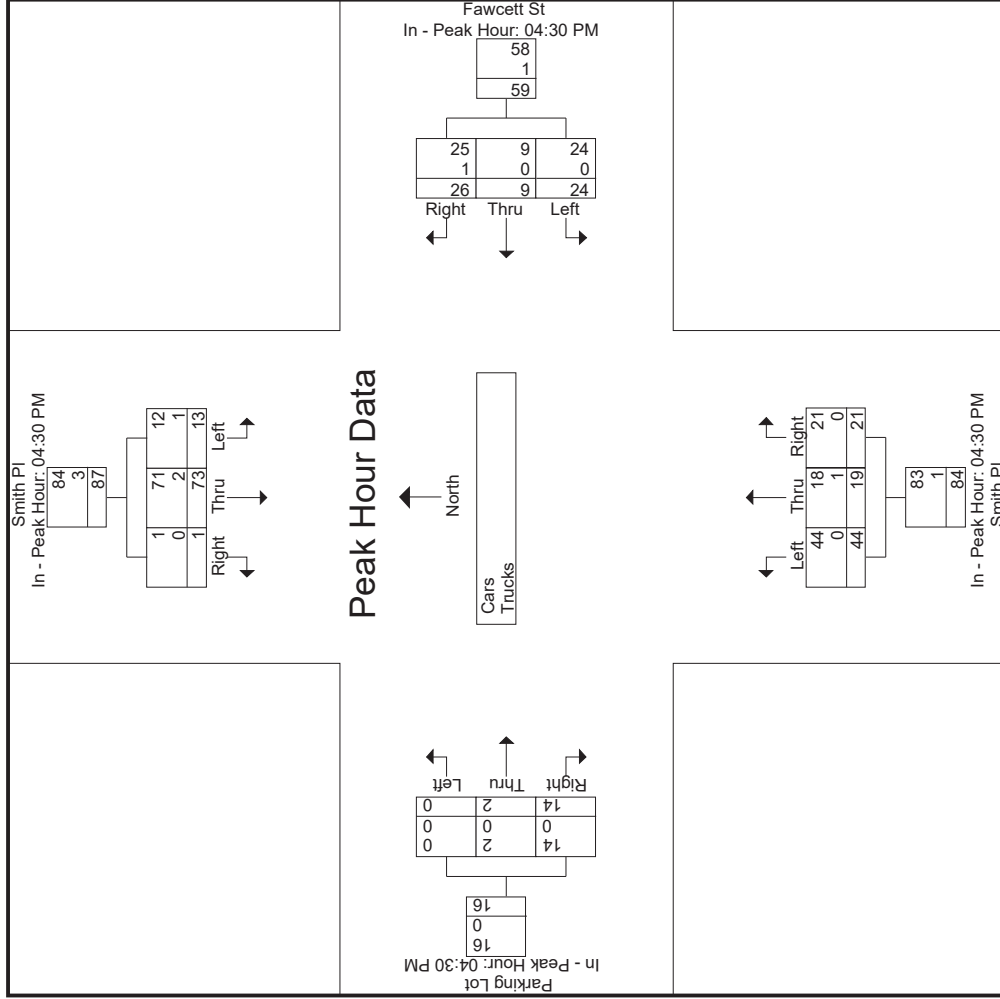


Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM					
+0 mins.	3	35	1	39	2	9	16	6	18	0	5	6
+15 mins.	4	13	0	17	5	6	16	12	6	0	1	1
+30 mins.	3	7	0	10	2	8	21	8	1	4	0	2
+45 mins.	3	18	0	21	0	3	6	18	4	2	0	7
Total Volume	13	73	1	87	9	26	59	44	19	21	2	14

Accurate Counts
978-664-2565

	14.9	83.9	1.1	40.7	15.3	44.1	52.4	22.6	25	0	12.5	87.5
% App. Total	.813	.521	.250	.545	.450	.722	.702	.611	.477	.000	.500	.583
PHF	12	71	1	24	9	25	58	44	21	0	2	14
Cars	92.3	97.3	100	100	100	96.2	98.3	100	100	0	100	100
% Cars	1	2	0	0	0	1	1	0	0	0	0	0
Trucks	7.7	2.7	0	0	0	3.8	1.7	0	0	0	0	0
% Trucks												



Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 5

Groups Printed- Cars

Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	3	34	1	5	2	9	6	7	4	0	1	5	77
04:45 PM	3	12	0	5	5	6	12	6	11	0	0	1	61
Total	6	46	1	10	7	15	18	13	15	0	1	6	138
05:00 PM	3	7	0	11	2	7	8	1	4	0	0	2	45
05:15 PM	3	18	0	3	0	3	18	4	2	0	1	6	58
05:30 PM	4	19	0	8	2	5	7	6	3	0	1	2	57
05:45 PM	2	16	0	4	1	5	2	3	2	0	1	2	38
Total	12	60	0	26	5	20	35	14	11	0	3	12	198
06:00 PM	2	19	2	7	0	3	6	6	2	0	0	0	47
06:15 PM	2	9	0	3	4	5	7	4	1	0	0	1	36
Grand Total	22	134	3	46	16	43	66	37	29	0	4	19	419
Apprch %	13.8	84.3	1.9	43.8	15.2	41	50	28	22	0	17.4	82.6	
Total %	5.3	32	0.7	11	3.8	10.3	15.8	8.8	6.9	0	1	4.5	

Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 6

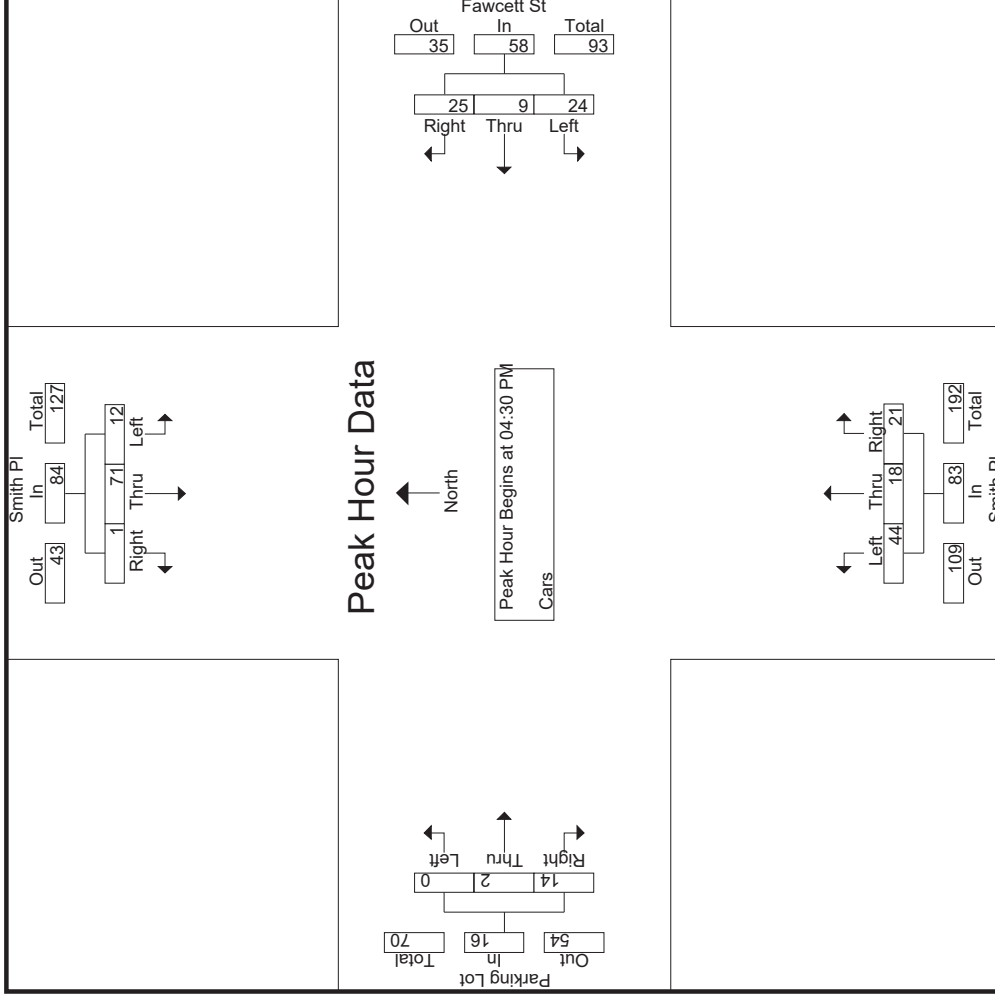
Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			Int. Total				
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total					
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	3	34	1	38	5	2	9	16	6	7	4	17	0	1	5	6	77
04:45 PM	3	12	0	15	5	5	6	16	12	6	11	29	0	0	1	1	61
05:00 PM	3	7	0	10	11	2	7	20	8	1	4	13	0	0	2	2	45
05:15 PM	3	18	0	21	3	0	3	6	18	4	2	24	0	1	6	7	58
Total Volume	12	71	1	84	24	9	25	58	44	18	21	83	0	2	14	16	241
% App. Total	14.3	84.5	1.2		41.4	15.5	43.1		53	21.7	25.3		0	12.5	87.5		
PHF	1.00	.522	.250	.553	.545	.450	.694	.725	.611	.643	.477	.716	.000	.500	.583	.571	.782

Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 7

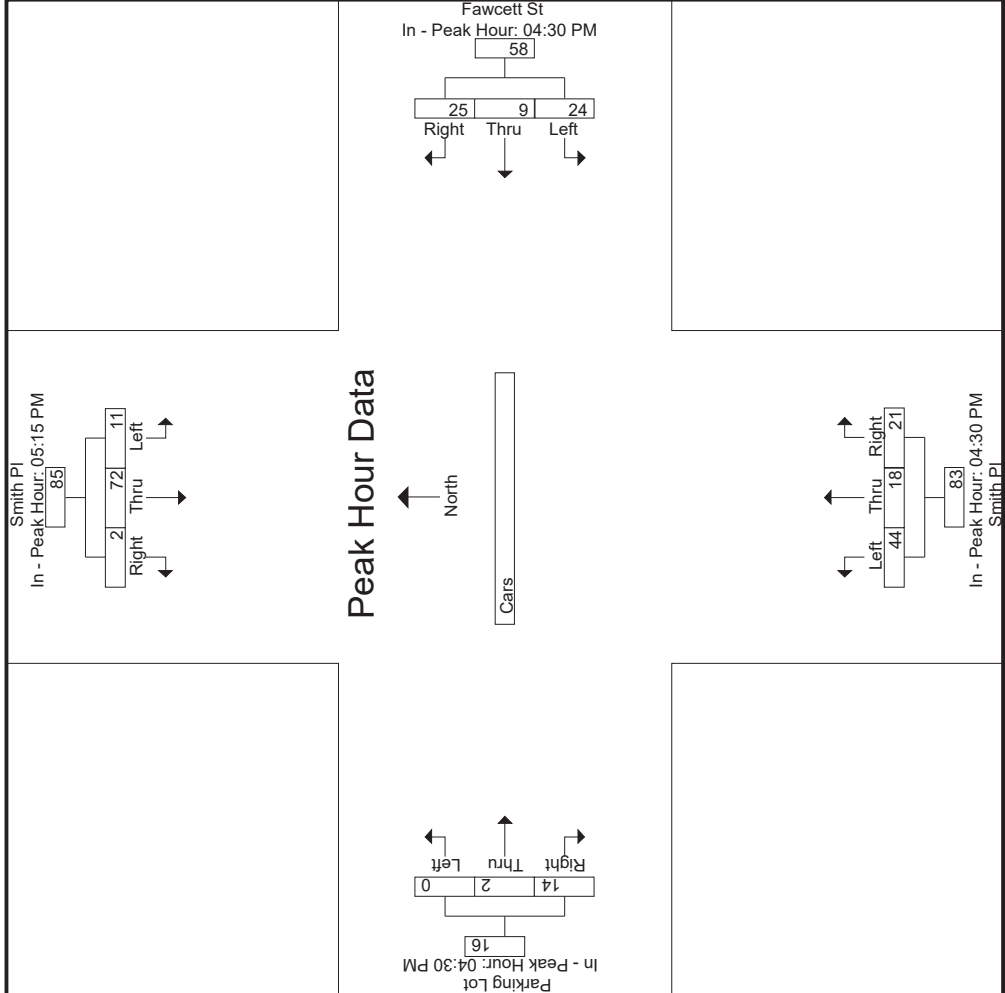


Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	05:15 PM			04:30 PM			04:30 PM			04:30 PM									
+0 mins.	3	18	21	2	5	21	9	25	58	16	6	17	4	7	17	0	1	5	6
+15 mins.	4	19	23	5	5	6	6	6	16	12	6	11	6	6	29	0	0	1	1
+30 mins.	2	16	18	11	2	7	7	7	20	8	1	4	1	4	13	0	0	2	2
+45 mins.	2	19	23	3	0	3	3	3	6	18	4	2	4	2	24	0	1	6	7
Total Volume	11	72	85	24	9	85	25	58	44	44	18	21	21	83	83	0	2	14	16

Accurate Counts
978-664-2565

% App. Total	12.9	84.7	2.4	41.4	15.5	43.1	53	21.7	25.3	0	12.5	87.5
PHF	.688	.947	.250	.545	.450	.694	.725	.643	.477	.000	.500	.583
				.924			.611	.716		.000	.500	.571



Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 9

Groups Printed- Trucks

Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:30 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
04:45 PM	1	1	0	0	0	0	0	0	0	0	0	0	2
Total	1	2	0	0	0	0	0	1	0	0	0	0	4
05:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	0	0	0	0	0	1
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	2	0	0	0	1	0	1	0	0	0	0	5
Apprch %	33.3	66.7	0	0	0	100	0	100	0	0	0	0	0
Total %	20	40	0	0	0	20	0	20	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

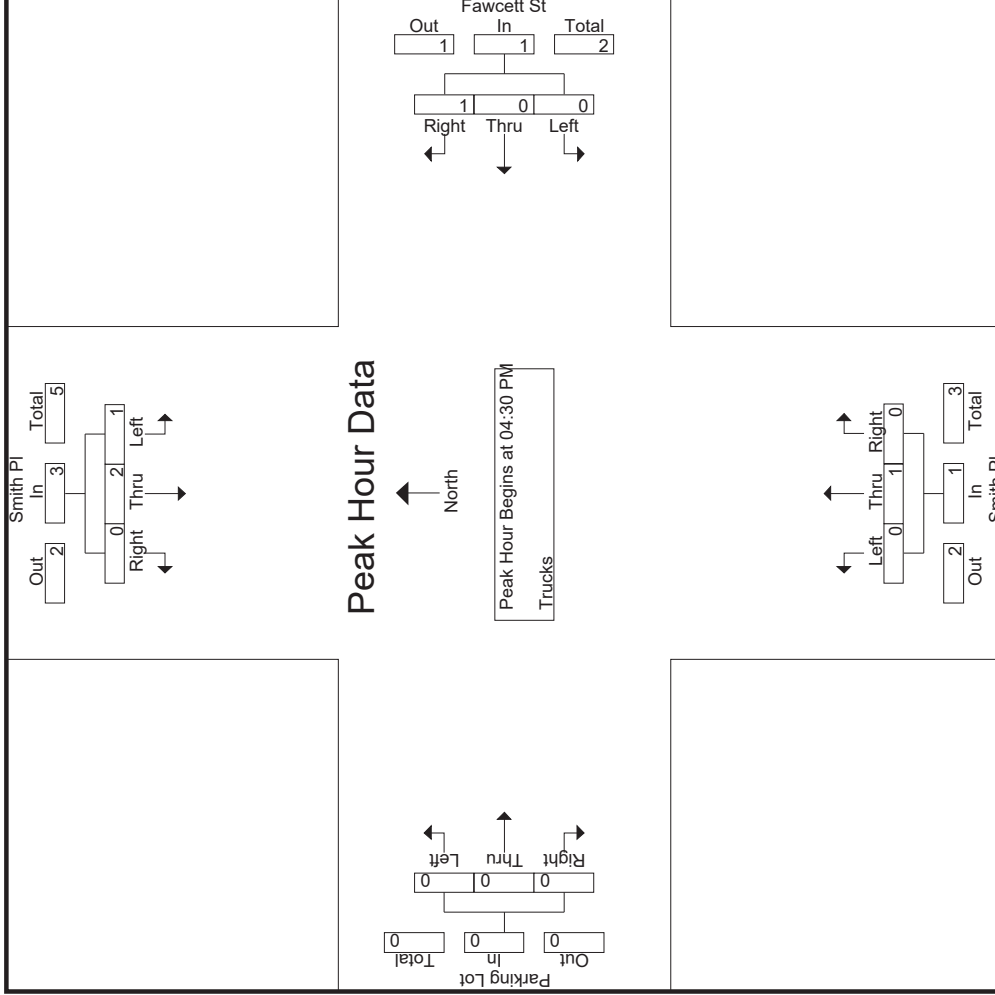
File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 10

Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total	App. Total
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 04:30 PM														
04:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	2
04:45 PM	1	1	0	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	2	0	0	0	1	0	1	1	0	1	0	0	5
% App. Total	33.3	66.7	0	0	0	100	0	100	0	100	0	0	0	0
PHF	.250	.500	.000	.375	.000	.250	.000	.250	.250	.000	.250	.000	.000	.625

Accurate Counts
978-664-2565

N/S Street : Smith Place
E/W Street: Fawcett St / Parking Lot
City/State : Cambridge, MA
Weather : Clear

File Name : 80840009
Site Code : 80840009
Start Date : 4/2/2019
Page No : 11



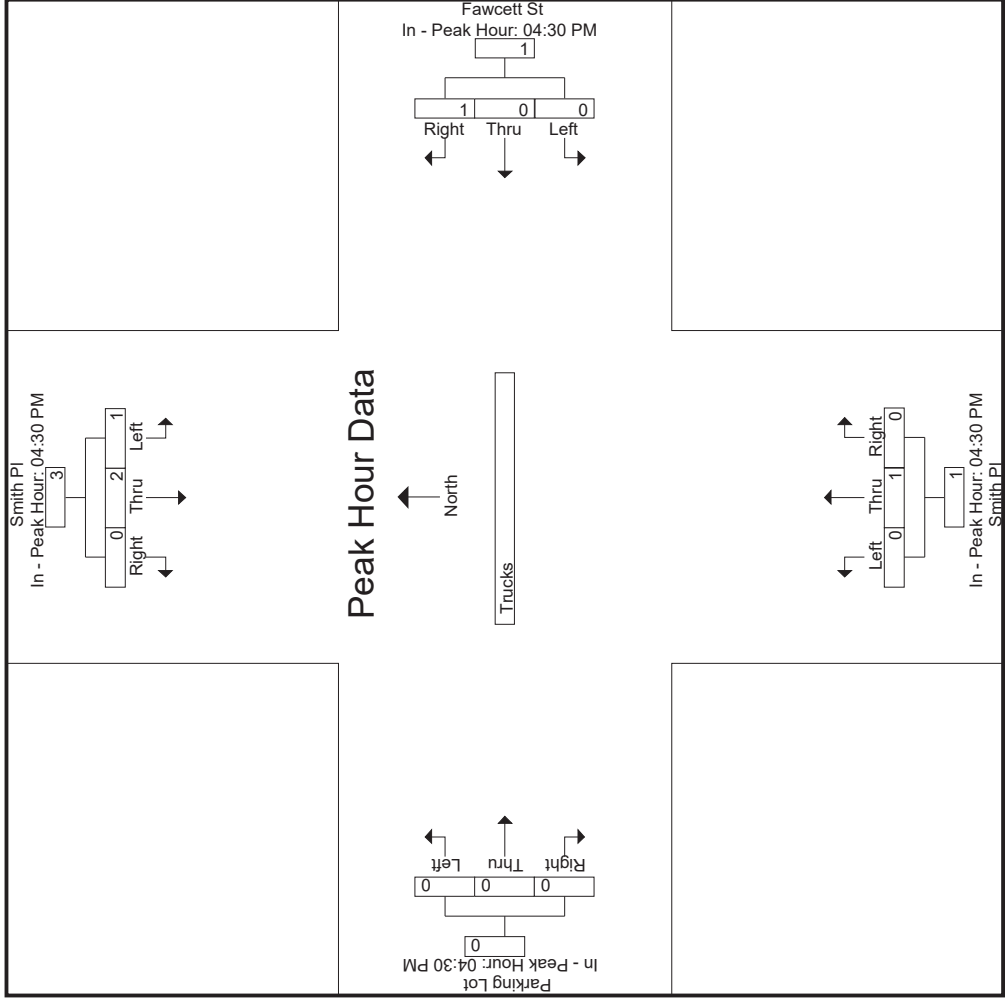
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM				
+0 mins.	0	1	0	1	0	0	0	0	0	0	0
+15 mins.	1	1	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	0	0	1	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	2	0	3	0	1	1	0	1	0	0

Accurate Counts

978-664-2565

% App. Total	PHF	33.3	66.7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		.250	.500	.000	.000	.375	.000	.000	.000	.250	.000	.000	.000	.000	.250	.000	.000	.000



Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 13

Groups Printed- Bikes Peds

Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
	Peds	Peds	Peds	Peds	Peds	Peds	Peds	Peds	Peds	Peds	Peds	Peds			
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
04:45 PM	1	0	0	1	0	0	0	1	0	0	0	0	5	3	8
Total	1	0	0	1	0	0	0	1	0	0	0	0	10	3	13
05:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	8	1	9
05:15 PM	0	0	0	0	0	0	1	1	0	0	0	0	3	2	5
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	13	0	13
05:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	3	2	5
Total	0	0	0	0	1	0	0	1	3	0	0	0	27	5	32
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
06:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	2	1	3
Grand Total	1	0	0	1	0	0	11	5	0	5	0	8	44	9	53
Approch %	100	0	0	50	0	0	16.7	83.3	0	0	0	0	83	17	
Total %	11.1	0	0	11.1	0	0	11.1	55.6	0	0	0	0			

Accurate Counts

978-664-2565

N/S Street : Smith Place
 E/W Street: Fawcett St / Parking Lot
 City/State : Cambridge, MA
 Weather : Clear

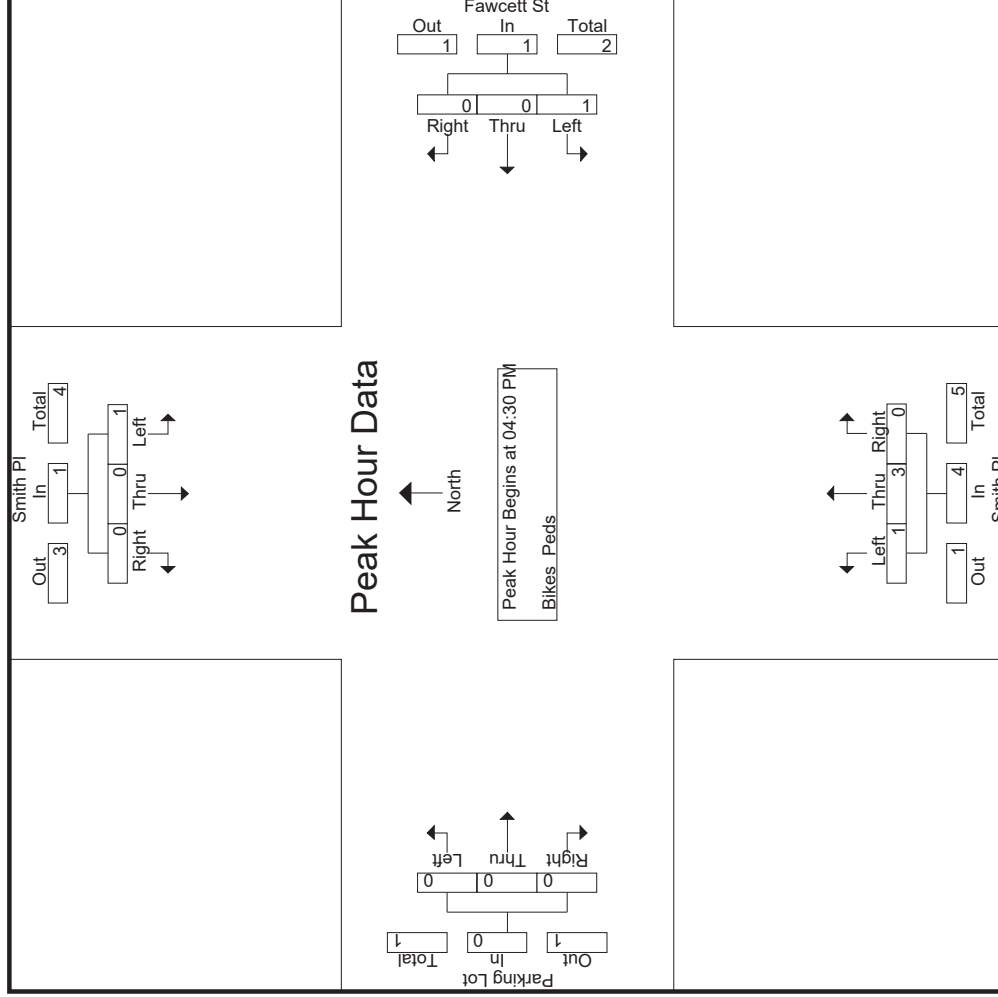
File Name : 80840009
 Site Code : 80840009
 Start Date : 4/2/2019
 Page No : 14

Start Time	Smith PI From North			Fawcett St From East			Smith PI From South			Parking Lot From West			
	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:30 PM													
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	1	0	0	1	1	0	0	1	0	1	0	0	3
05:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	1
05:15 PM	0	0	0	0	0	0	0	0	1	1	0	0	2
Total Volume	1	0	0	1	1	0	0	1	1	3	0	0	4
% App. Total	100	0	0	100	.250	.000	.000	.250	.750	.000	.000	.000	.500
PHF	.250	.000	.000	.250	.250	.000	.000	.250	.750	.000	.000	.000	.500

Accurate Counts
978-664-2565

N/S Street : Smith Place
E/W Street: Fawcett St / Parking Lot
City/State : Cambridge, MA
Weather : Clear

File Name : 80840009
Site Code : 80840009
Start Date : 4/2/2019
Page No : 15



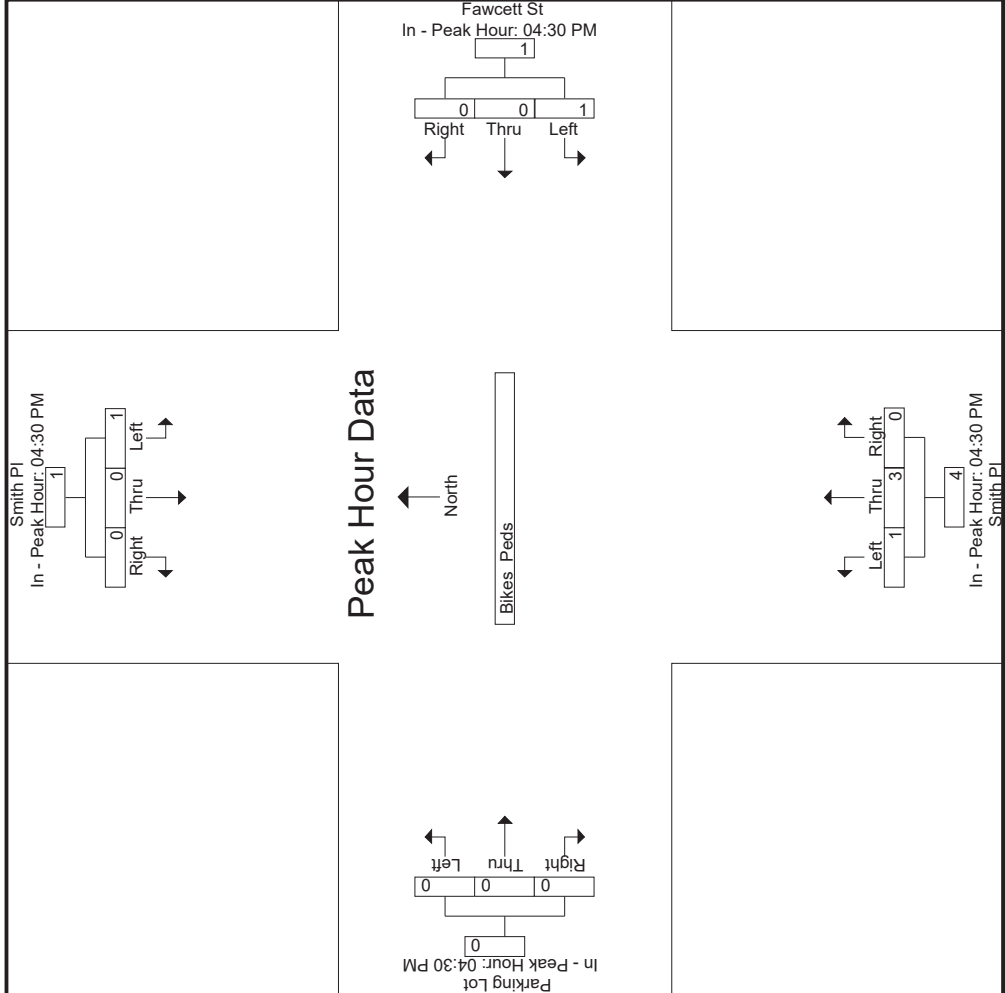
Peak Hour Analysis From 04:30 PM to 06:15 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:30 PM			04:30 PM			04:30 PM				
+0 mins.	0	0	0	0	0	0	0	0	0	0	0
+15 mins.	1	0	0	1	0	0	1	0	0	0	0
+30 mins.	0	0	0	0	0	0	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	1	1	0	0
Total Volume	1	0	0	1	0	0	1	3	0	0	0

Accurate Counts

978-664-2565

% App. Total	100	0	0	0	0	0	0	0	0	0
PHF	100	0	0	0	0	0	0	0	0	0
	.250	.000	.000	.000	.250	.000	.000	.000	.750	.000
										.000



12-Hour Bicycle and Pedestrian Count Data



Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 1

Start Time	Groups Printed- Bikes Street						Int. Total
	North Sidewalk From North			South Sidewalk From South			
	EB	WB		WB	EB		
07:00 AM	0	0		0	3		3
07:15 AM	0	0		0	2		2
07:30 AM	1	0		0	7		8
07:45 AM	0	2		2	6		10
Total	1	2		2	18		23
08:00 AM	0	2		0	8		10
08:15 AM	0	3		1	8		12
08:30 AM	1	1		0	9		11
08:45 AM	0	3		0	5		8
Total	1	9		1	30		41
09:00 AM	0	3		0	7		10
09:15 AM	0	0		0	3		3
09:30 AM	0	1		0	4		5
09:45 AM	0	1		1	2		4
Total	0	5		1	16		22
10:00 AM	0	0		0	4		4
10:15 AM	1	0		1	1		3
10:30 AM	0	0		0	3		3
10:45 AM	0	1		0	1		2
Total	1	1		1	9		12
11:00 AM	0	0		0	0		0
11:15 AM	0	1		1	1		3
11:30 AM	0	0		0	1		1

Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 2

Start Time	Groups Printed- Bikes Street						Int. Total
	North Sidewalk From North		South Sidewalk From South		WB	EB	
	EB	WB	WB	EB			
11:45 AM	1	1	0	0	1	0	2
Total	1	2	0	0	1	2	6
12:00 PM	0	0	0	0	0	4	4
12:15 PM	0	3	0	0	0	2	5
12:30 PM	0	4	0	0	0	0	4
12:45 PM	0	0	0	0	0	2	2
Total	0	7	0	0	0	8	15
01:00 PM	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0
01:45 PM	0	1	0	0	0	0	1
Total	0	1	0	0	0	0	1
02:00 PM	0	3	0	0	1	0	4
02:15 PM	0	0	0	0	0	3	3
02:30 PM	0	2	0	0	0	1	3
02:45 PM	0	3	0	0	0	1	4
Total	0	8	0	0	1	5	14
03:00 PM	0	2	0	0	0	1	3
03:15 PM	0	3	0	0	0	1	4
03:30 PM	0	2	0	0	0	1	3
03:45 PM	0	0	0	0	0	1	1
Total	0	7	0	0	0	4	11
04:00 PM	0	4	0	0	0	2	6
04:15 PM	0	4	0	0	0	4	8

Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 3

Start Time	Groups Printed- Bikes Street						Int. Total
	North Sidewalk From North			South Sidewalk From South			
	EB	WB	Total	WB	EB	Total	
04:30 PM	0	2		1	2	5	
04:45 PM	0	3		0	3	6	
Total	0	13		1	11	25	
05:00 PM	0	4		0	3	7	
05:15 PM	0	4		0	2	6	
05:30 PM	0	6		1	5	12	
05:45 PM	0	16		0	3	19	
Total	0	30		1	13	44	
06:00 PM	0	7		0	0	7	
06:15 PM	0	7		0	7	14	
06:30 PM	0	6		0	1	7	
06:45 PM	0	1		1	1	3	
Total	0	21		1	9	31	
Grand Total	4	106		10	125	245	
Apprch %	3.6	96.4		7.4	92.6		
Total %	1.6	43.3		4.1	51		

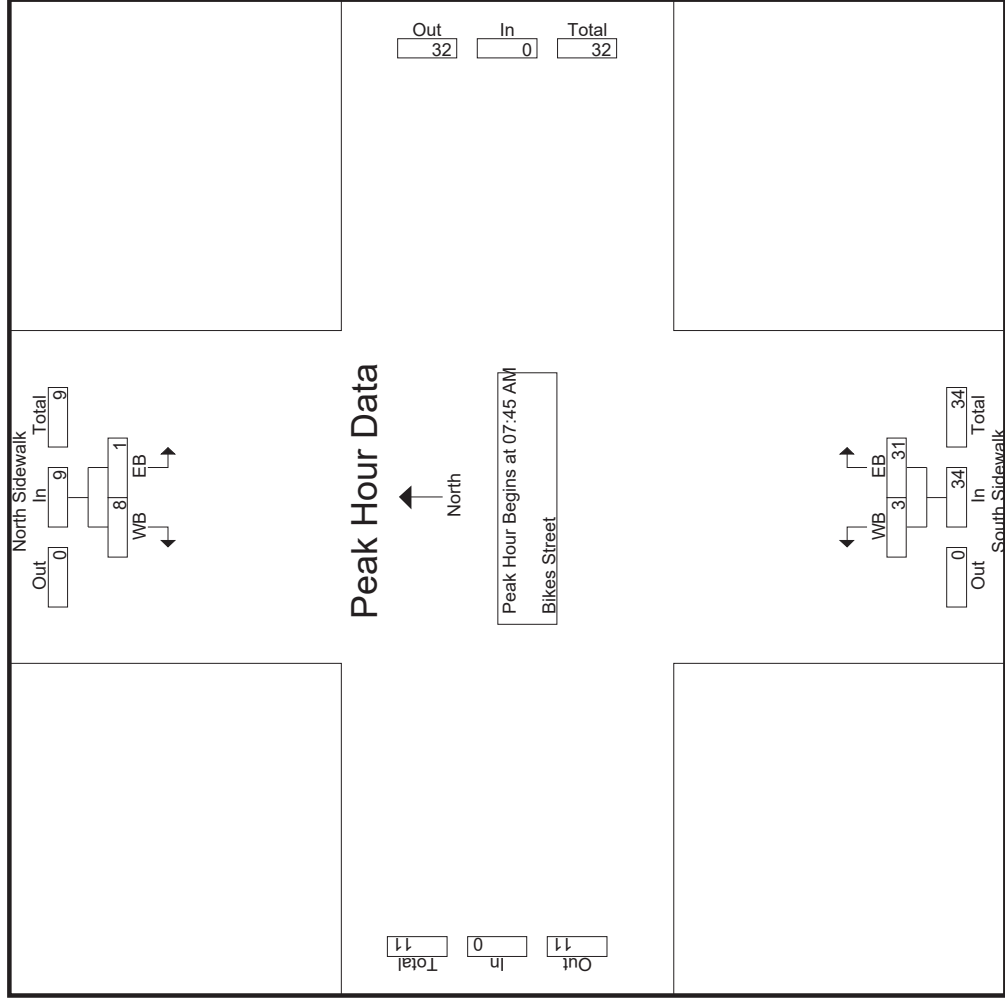
Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

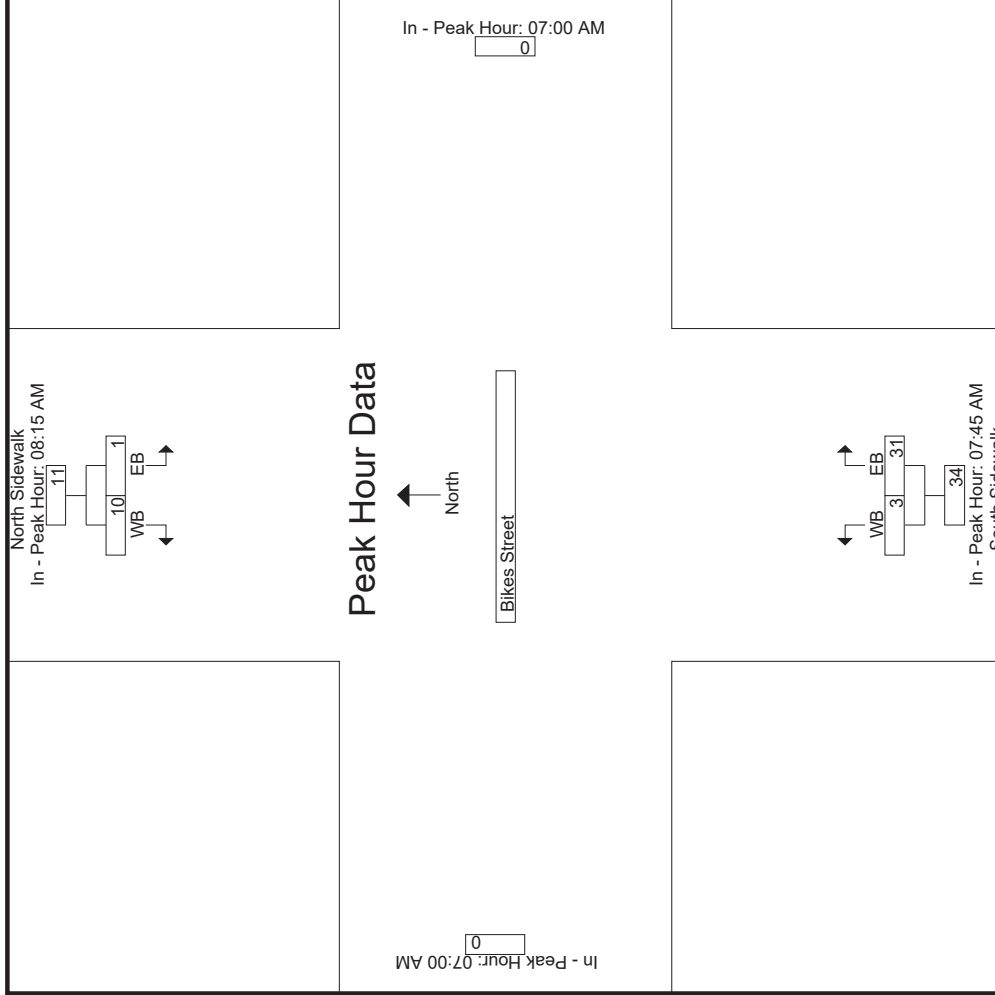
File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 4

Start Time	North Sidewalk From North		App. Total	From East App. Total	South Sidewalk From South			From West App. Total	Int. Total
	EB	WB			WB	EB	App. Total		
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1									
Peak Hour for Entire Intersection Begins at 07:45 AM									
07:45 AM	0	2	2	0	2	6	0	0	10
08:00 AM	0	2	2	0	0	8	0	0	10
08:15 AM	0	3	3	0	1	8	0	0	12
08:30 AM	1	1	2	0	0	9	0	0	11
Total Volume	1	8	9	0	3	31	0	0	43
% App. Total	11.1	88.9			8.8	91.2			
PHF	.250	.667	.750	.000	.375	.861	.000	.944	.896



Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:15 AM	07:00 AM	07:45 AM	07:00 AM
+0 mins.	0	3	0	8
+15 mins.	1	2	0	8
+30 mins.	0	3	1	9
+45 mins.	0	3	0	9
Total Volume	1	11	3	34
% App. Total	9.1	90.9	8.8	91.2
PHF	.250	.833	.375	.861
		.917	.944	.000



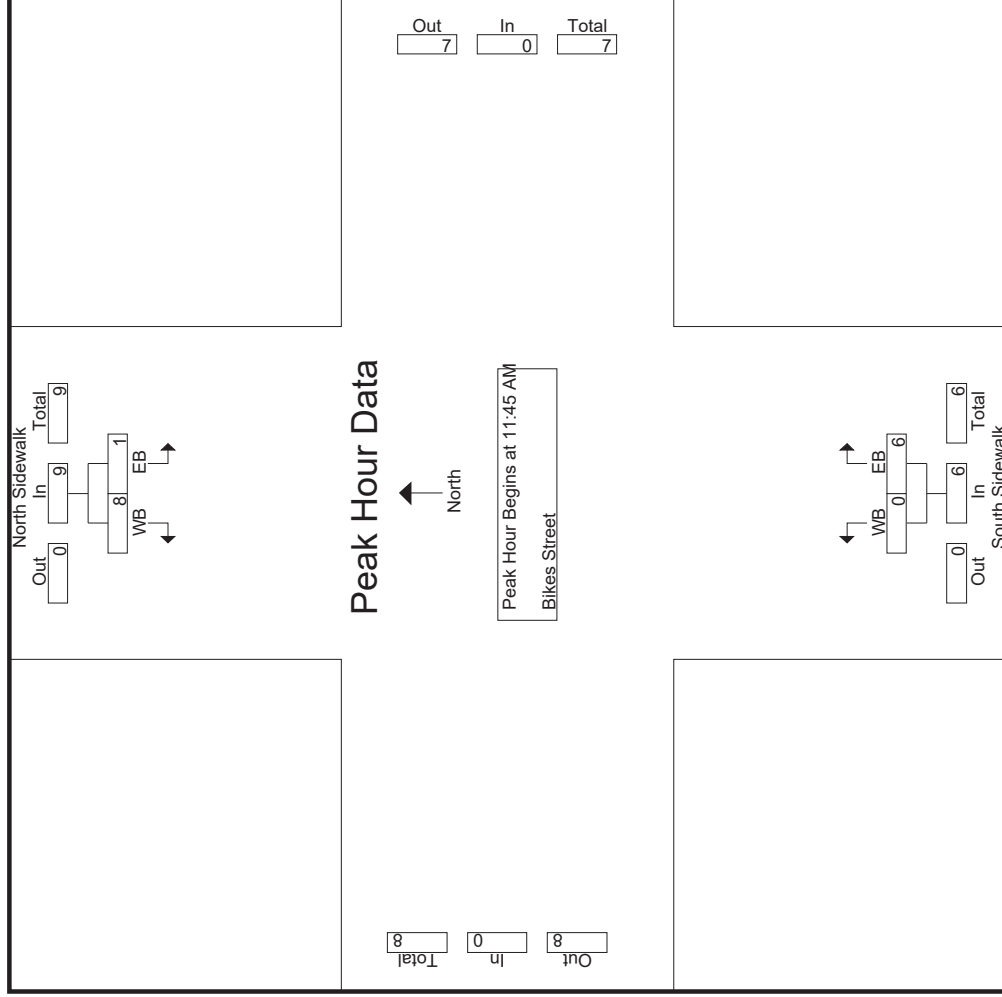
Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

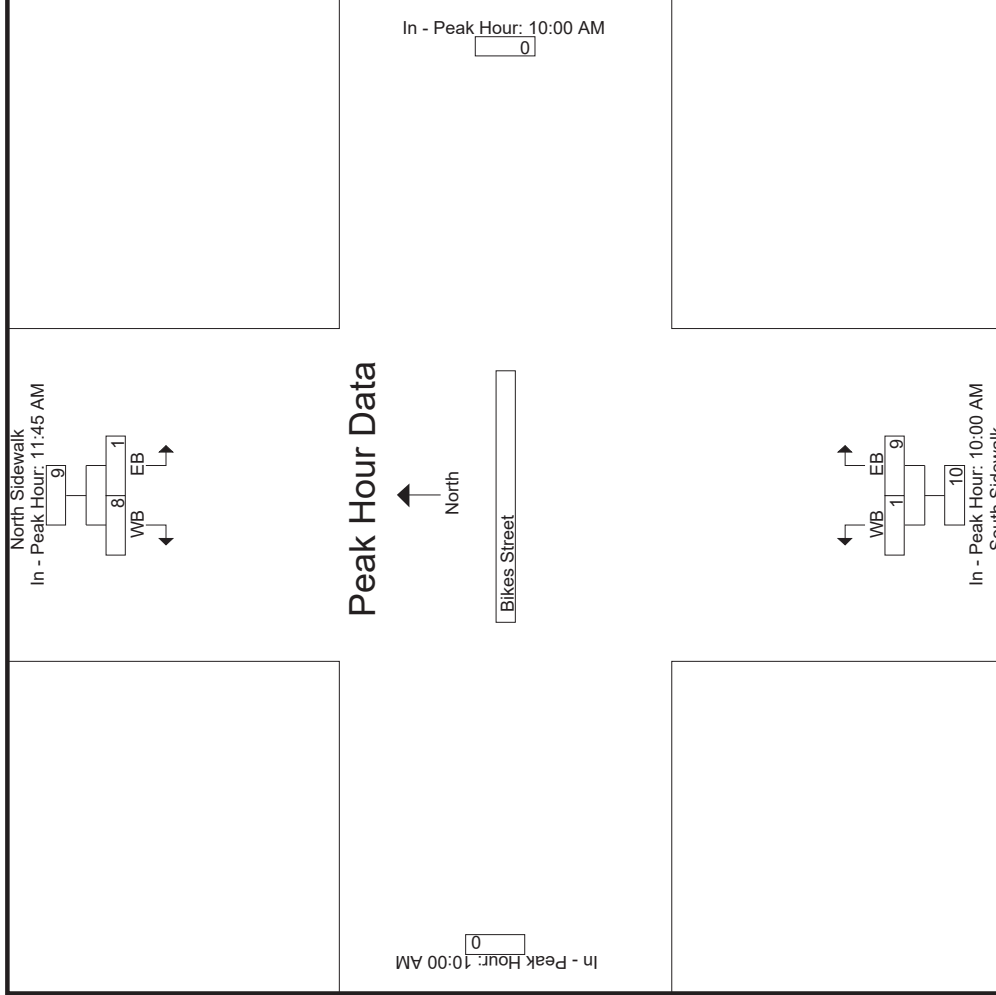
File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 7

Start Time	North Sidewalk From North		From East App. Total	South Sidewalk From South			From West App. Total	Int. Total
	EB	WB		WB	EB	App. Total		
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1								
Peak Hour for Entire Intersection Begins at 11:45 AM								
11:45 AM	1	1	0	0	0	0	0	2
12:00 PM	0	0	0	0	4	0	0	4
12:15 PM	0	3	0	0	2	0	0	5
12:30 PM	0	4	0	0	0	0	0	4
Total Volume	1	8	0	0	6	0	0	15
% App. Total	11.1	88.9	0.000	0.000	100	0.000	0.000	.750
PHF	.250	.500	.000	.000	.375	.000	.000	.750



Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	11:45 AM	10:00 AM	10:00 AM	10:00 AM	10:00 AM
+0 mins.	1	1	2	0	4
+15 mins.	0	0	0	1	2
+30 mins.	0	3	3	0	3
+45 mins.	0	4	4	0	1
Total Volume	1	8	9	1	10
% App. Total	11.1	88.9		10	90
PHF	.250	.500	.563	.250	.563
					.625
					.000



Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

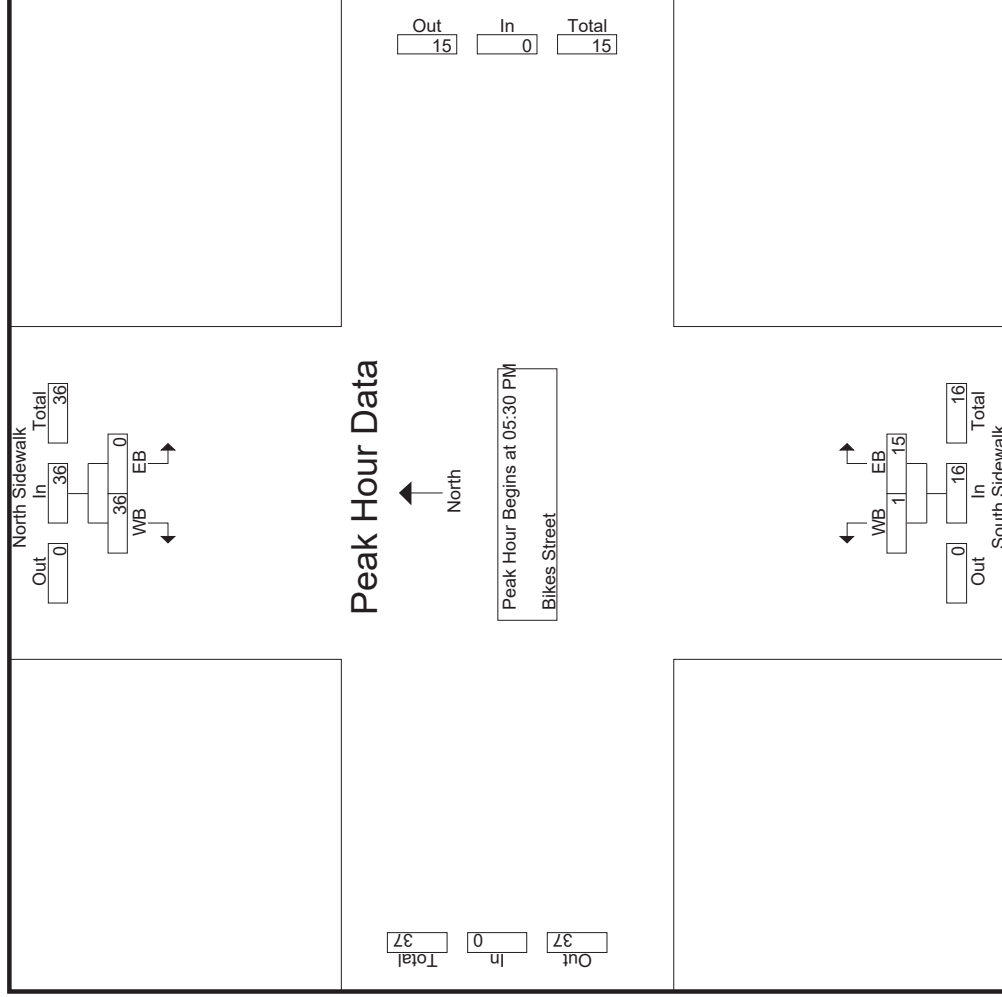
File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 10

Start Time	North Sidewalk From North		From East App. Total	South Sidewalk From South		From West App. Total	Int. Total
	EB	WB		WB	EB		
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1							
Peak Hour for Entire Intersection Begins at 05:30 PM							
05:30 PM	0	6	0	1	5	0	12
05:45 PM	0	16	0	0	3	0	19
06:00 PM	0	7	0	0	0	0	7
06:15 PM	0	7	0	0	7	0	14
Total Volume	0	36	0	1	15	0	52
% App. Total	0	100	0	6.2	93.8	0	
PHF	.000	.563	.000	.250	.536	.000	.684

Accurate Counts
978-664-2565

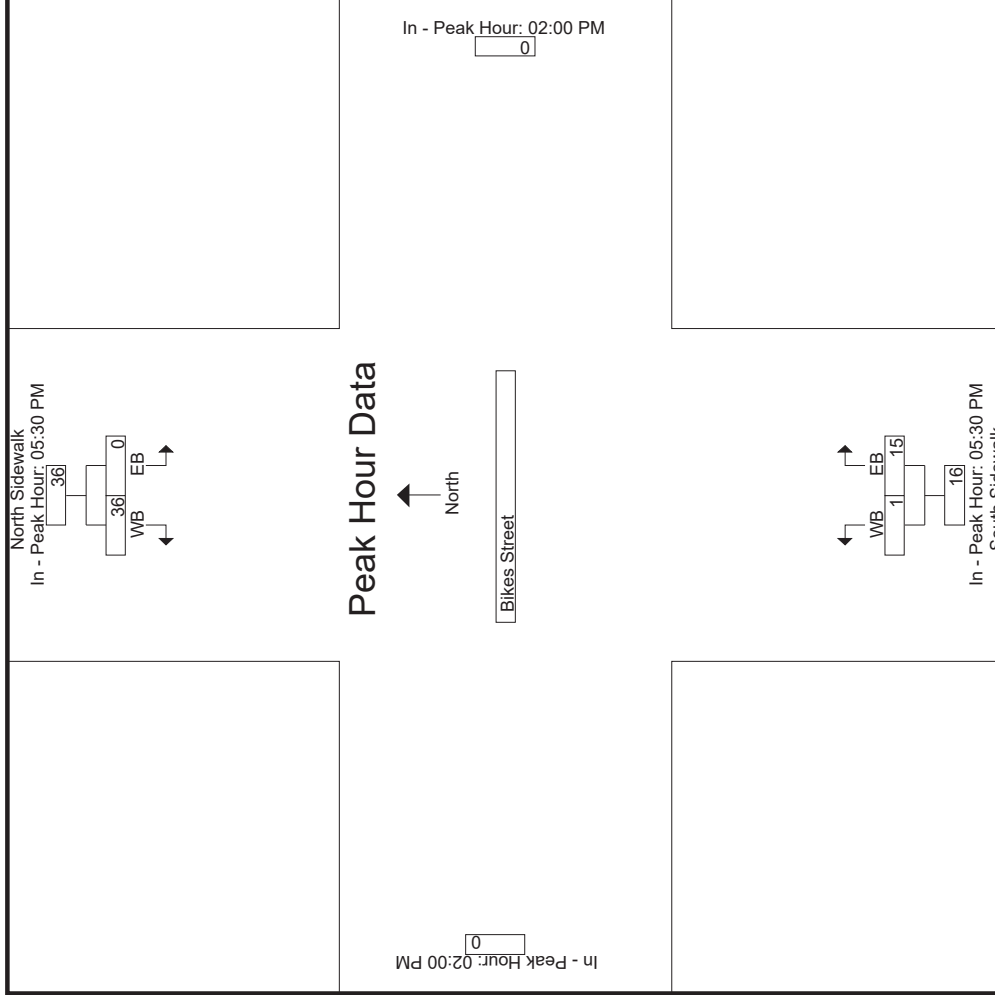
N/S Street : Peds & Bikes at ATR Loc
E/W Street : Concord Ave W of Smith Pl
City/State : Cambridge, MA
Weather : Clear

File Name : 80840010
Site Code : 80840010
Start Date : 4/2/2019
Page No : 11



Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:30 PM	02:00 PM	05:30 PM	02:00 PM
+0 mins.	0	6	0	6
+15 mins.	0	16	0	3
+30 mins.	0	7	0	0
+45 mins.	0	7	0	7
Total Volume	0	36	0	16
% App. Total	0	100	6.2	93.8
PHF	.000	.563	.250	.571
				.000



Accurate Counts
978-664-2565

N/S Street : Peds & Bikes at ATR Loc
E/W Street : Concord Ave W of Smith Pl
City/State : Cambridge, MA
Weather : Clear

File Name : 80840010
Site Code : 80840010
Start Date : 4/2/2019
Page No : 1

Start Time	Groups Printed- Bikes Sidewalk				Int. Total
	North Sidewalk From North		South Sidewalk From South		
	EB	WB	WB	EB	
07:00 AM	0	0	0	0	0
07:15 AM	0	0	0	1	1
07:30 AM	0	0	1	1	2
07:45 AM	0	0	0	0	0
Total	0	0	1	2	3
08:00 AM	0	0	2	0	2
08:15 AM	0	0	0	0	0
08:30 AM	2	0	0	0	2
08:45 AM	0	0	0	0	0
Total	2	0	2	0	4
09:00 AM	0	0	0	1	1
09:15 AM	0	0	0	2	2
09:30 AM	0	0	0	0	0
09:45 AM	0	0	0	0	0
Total	0	0	0	3	3
10:00 AM	0	0	0	0	0
10:15 AM	0	0	0	0	0
10:30 AM	0	0	0	0	0
10:45 AM	0	0	0	0	0
Total	0	0	0	0	0
11:00 AM	0	0	0	0	0
11:15 AM	0	0	0	0	0
11:30 AM	0	0	0	0	0

Accurate Counts
978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 2

Groups Printed- Bikes Sidewalk

Start Time	North Sidewalk From North		South Sidewalk From South		Int. Total
	EB	WB	WB	EB	
11:45 AM	0	0	0	0	0
Total	0	0	0	0	0
12:00 PM	0	0	0	0	0
12:15 PM	0	0	0	0	0
12:30 PM	0	0	0	0	0
12:45 PM	0	0	0	0	0
Total	0	0	0	0	0
01:00 PM	0	0	0	0	0
01:15 PM	0	0	0	0	0
01:30 PM	0	0	0	0	0
01:45 PM	1	0	0	0	1
Total	1	0	0	0	1
02:00 PM	0	0	0	0	0
02:15 PM	0	0	0	0	0
02:30 PM	0	0	0	0	0
02:45 PM	0	0	0	0	0
Total	0	0	0	0	0
03:00 PM	0	0	0	0	0
03:15 PM	0	0	0	0	0
03:30 PM	0	0	0	0	0
03:45 PM	0	0	0	0	0
Total	0	0	0	0	0
04:00 PM	0	0	0	0	0
04:15 PM	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 3

Groups Printed- Bikes Sidewalk

Start Time	North Sidewalk From North		South Sidewalk From South		Int. Total
	EB	WB	WB	EB	
04:30 PM	0	0	0	0	0
04:45 PM	0	0	0	0	0
Total	0	0	0	0	0
05:00 PM	0	1	0	1	2
05:15 PM	0	1	0	1	2
05:30 PM	0	0	2	0	2
05:45 PM	1	0	0	0	1
Total	1	2	2	2	7
06:00 PM	0	0	1	0	1
06:15 PM	0	0	1	0	1
06:30 PM	0	0	0	0	0
06:45 PM	0	0	1	0	1
Total	0	0	3	0	3
Grand Total	4	2	8	7	21
Apprch %	66.7	33.3	53.3	46.7	
Total %	19	9.5	38.1	33.3	

Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 4

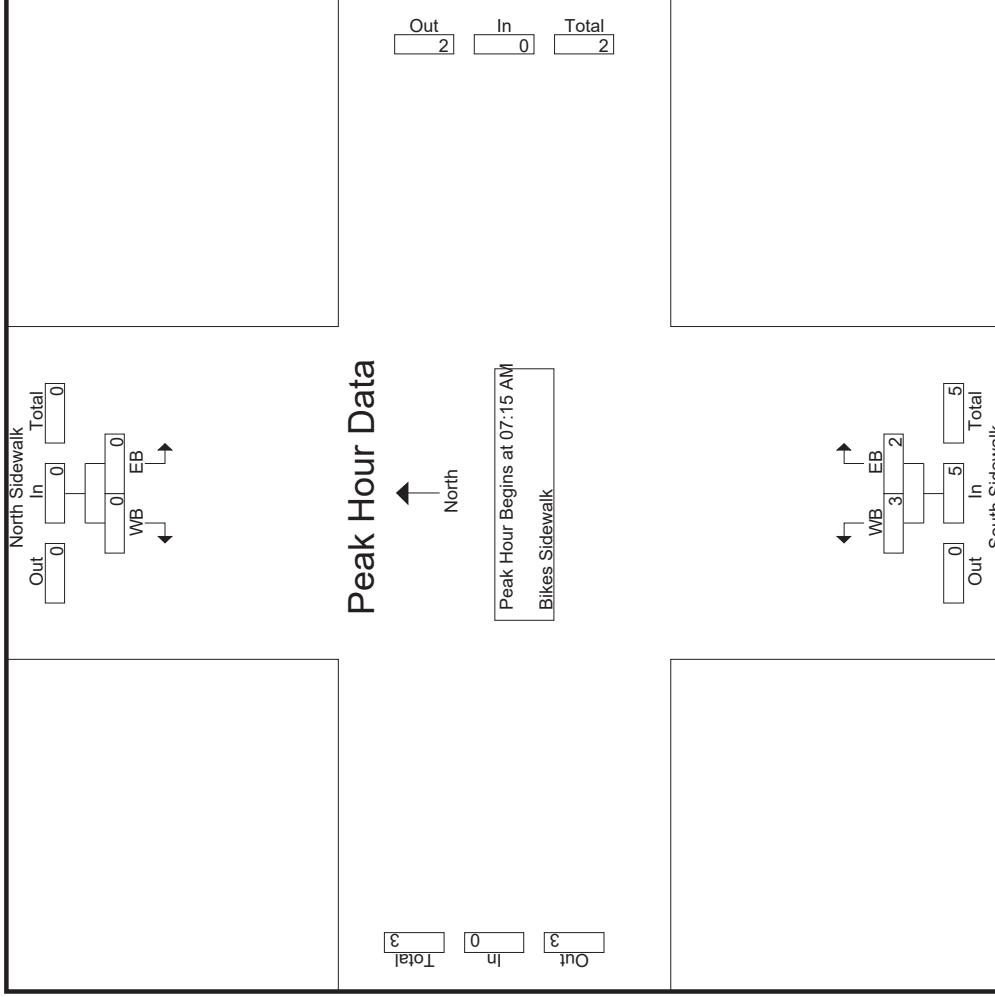
Start Time	North Sidewalk From North		From East		South Sidewalk From South		From West		Int. Total
	EB	WB	App. Total	App. Total	WB	EB	App. Total	App. Total	
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1									
Peak Hour for Entire Intersection Begins at 07:15 AM									
07:15 AM	0	0	0	0	0	1	1	0	1
07:30 AM	0	0	0	0	1	1	2	0	2
07:45 AM	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	2	0	2	0	2
Total Volume	0	0	0	0	3	2	5	0	5
% App. Total	0	0	0	0	60	40			
PHF	.000	.000	.000	.000	.375	.500	.625	.000	.625

Accurate Counts

978-664-2565

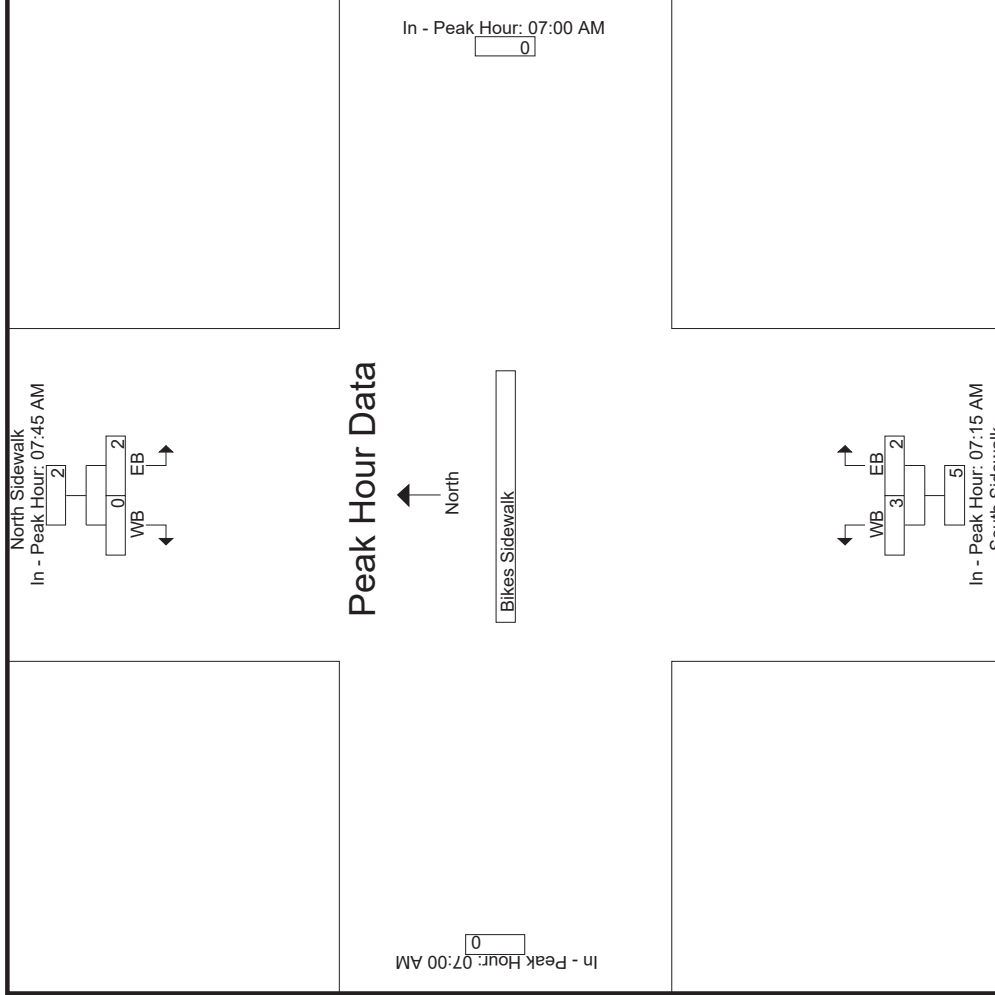
N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 5



Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:45 AM	07:00 AM	07:15 AM	07:00 AM
+0 mins.	0	0	0	0
+15 mins.	0	0	1	2
+30 mins.	0	0	0	0
+45 mins.	2	2	2	2
Total Volume	2	2	3	5
% App. Total	100	0	60	40
PHF	.250	.000	.375	.625
				.000

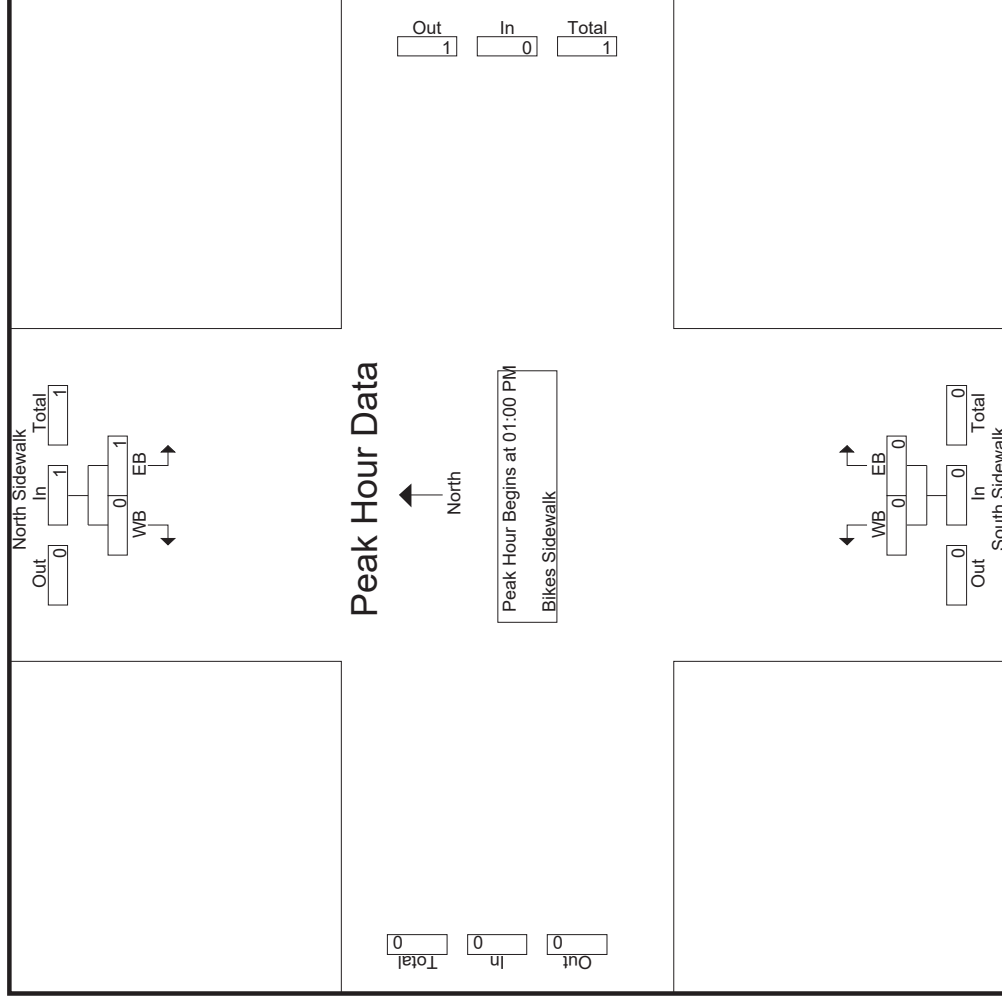


Accurate Counts

978-664-2565

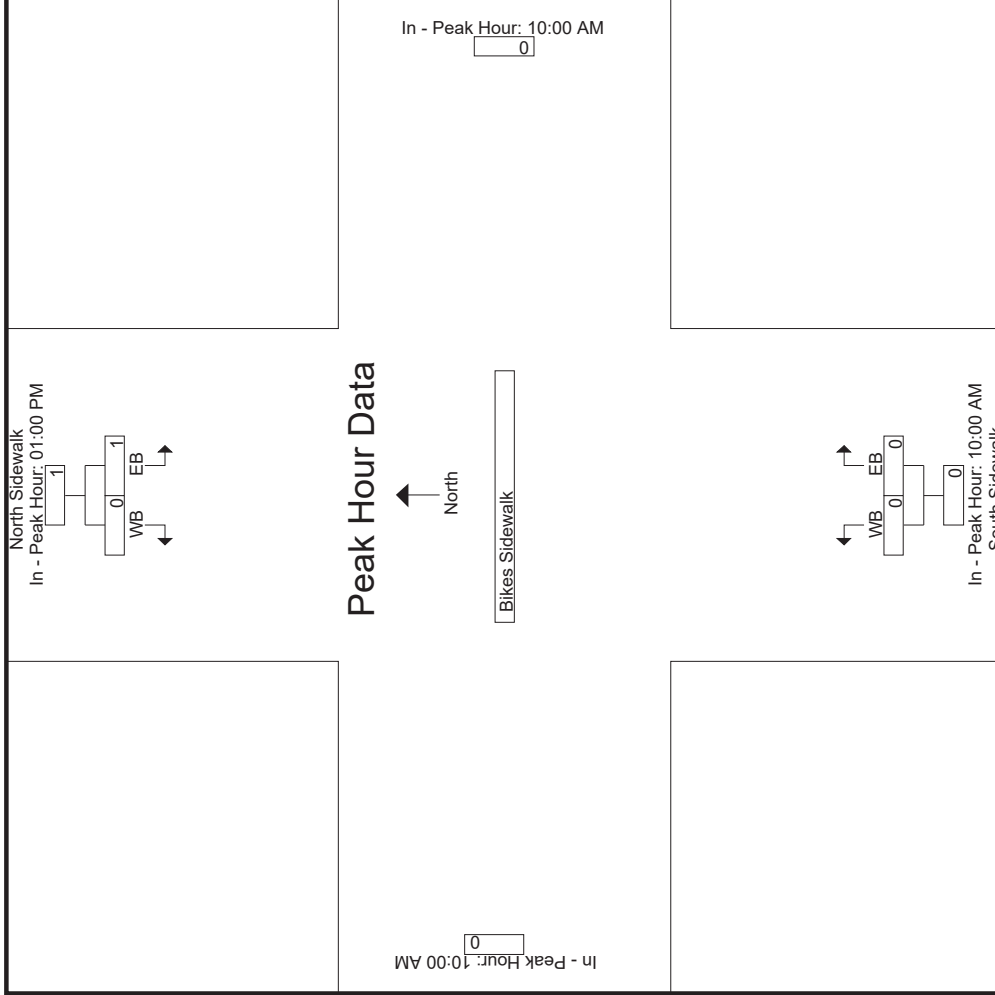
N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 8



Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	01:00 PM	10:00 AM	10:00 AM	10:00 AM
+0 mins.	0	0	0	0
+15 mins.	0	0	0	0
+30 mins.	0	0	0	0
+45 mins.	1	0	0	0
Total Volume	1	0	0	0
% App. Total	100	0	0	0
PHF	.250	.000	.250	.000
			.000	.000
			.000	.000



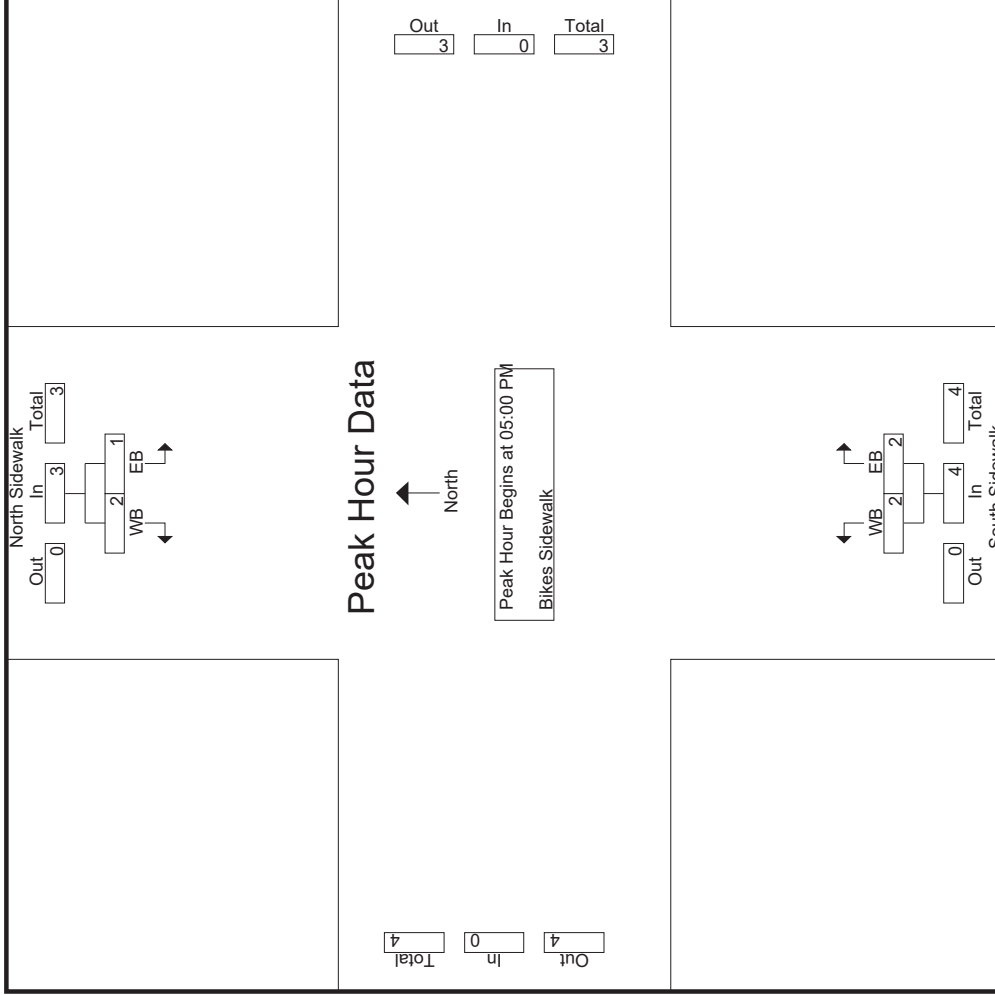
Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

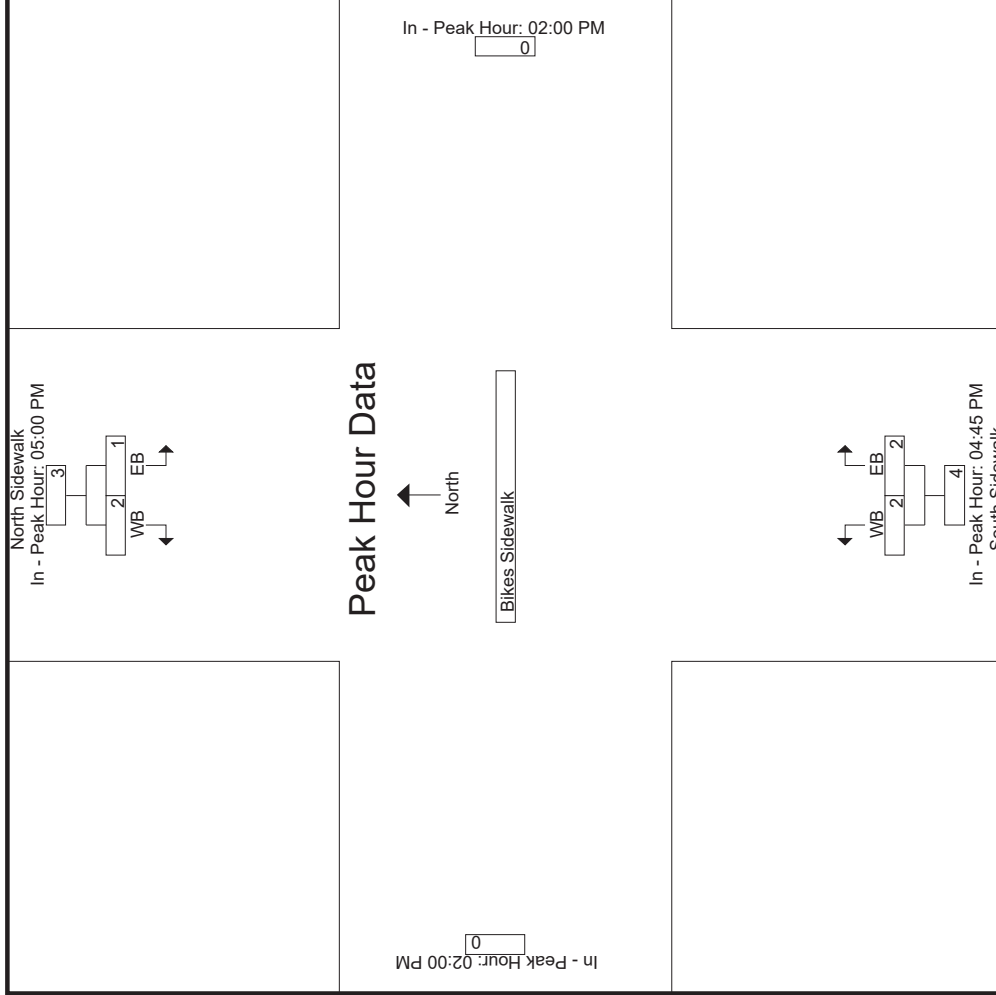
File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 10

Start Time	North Sidewalk From North		From East App. Total	South Sidewalk From South		From West App. Total	Int. Total
	EB	WB		WB	EB		
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1							
Peak Hour for Entire Intersection Begins at 05:00 PM							
05:00 PM	0	1	0	0	1	0	2
05:15 PM	0	1	0	0	1	0	2
05:30 PM	0	0	0	2	0	0	2
05:45 PM	1	0	0	0	0	0	1
Total Volume	1	2	0	2	2	0	7
% App. Total	33.3	66.7	.000	50	50	.000	.875
PHF	.250	.500	.000	.250	.500	.000	.875



Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM	02:00 PM	04:45 PM	02:00 PM
+0 mins.	0	1	0	0
+15 mins.	0	1	0	0
+30 mins.	0	0	0	0
+45 mins.	1	0	2	0
Total Volume	1	2	2	4
% App. Total	33.3	66.7	50	50
PHF	.250	.500	.250	.500
		.750		.000



Accurate Counts
978-664-2565

N/S Street : Peds & Bikes at ATR Loc
E/W Street : Concord Ave W of Smith Pl
City/State : Cambridge, MA
Weather : Clear

File Name : 80840010
Site Code : 80840010
Start Date : 4/2/2019
Page No : 1

Start Time	Groups Printed- Peds Street						Int. Total
	North Sidewalk From North			South Sidewalk From South			
	EB	WB	WB	WB	EB	EB	
07:00 AM	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	0	0	1
07:30 AM	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0
Total	0	1	1	0	0	0	1
08:00 AM	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	0
08:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
09:00 AM	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0
11:30 AM	0	1	1	0	0	0	1

Accurate Counts
978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 2

Groups Printed- Peds Street

Start Time	North Sidewalk From North		South Sidewalk From South		Int. Total
	EB	WB	WB	EB	
11:45 AM	0	0	0	0	0
Total	0	1	0	0	1
12:00 PM	0	0	0	0	0
12:15 PM	0	0	0	0	0
12:30 PM	0	0	0	0	0
12:45 PM	0	0	0	0	0
Total	0	0	0	0	0
01:00 PM	0	0	0	0	0
01:15 PM	0	0	0	0	0
01:30 PM	0	0	0	0	0
01:45 PM	0	0	0	0	0
Total	0	0	0	0	0
02:00 PM	0	0	0	0	0
02:15 PM	0	0	0	0	0
02:30 PM	0	0	0	0	0
02:45 PM	0	0	0	0	0
Total	0	0	0	0	0
03:00 PM	0	0	0	0	0
03:15 PM	0	0	0	0	0
03:30 PM	0	0	0	0	0
03:45 PM	0	0	0	0	0
Total	0	0	0	0	0
04:00 PM	0	0	0	0	0
04:15 PM	0	0	0	0	0

Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 3

Groups Printed- Peds Street

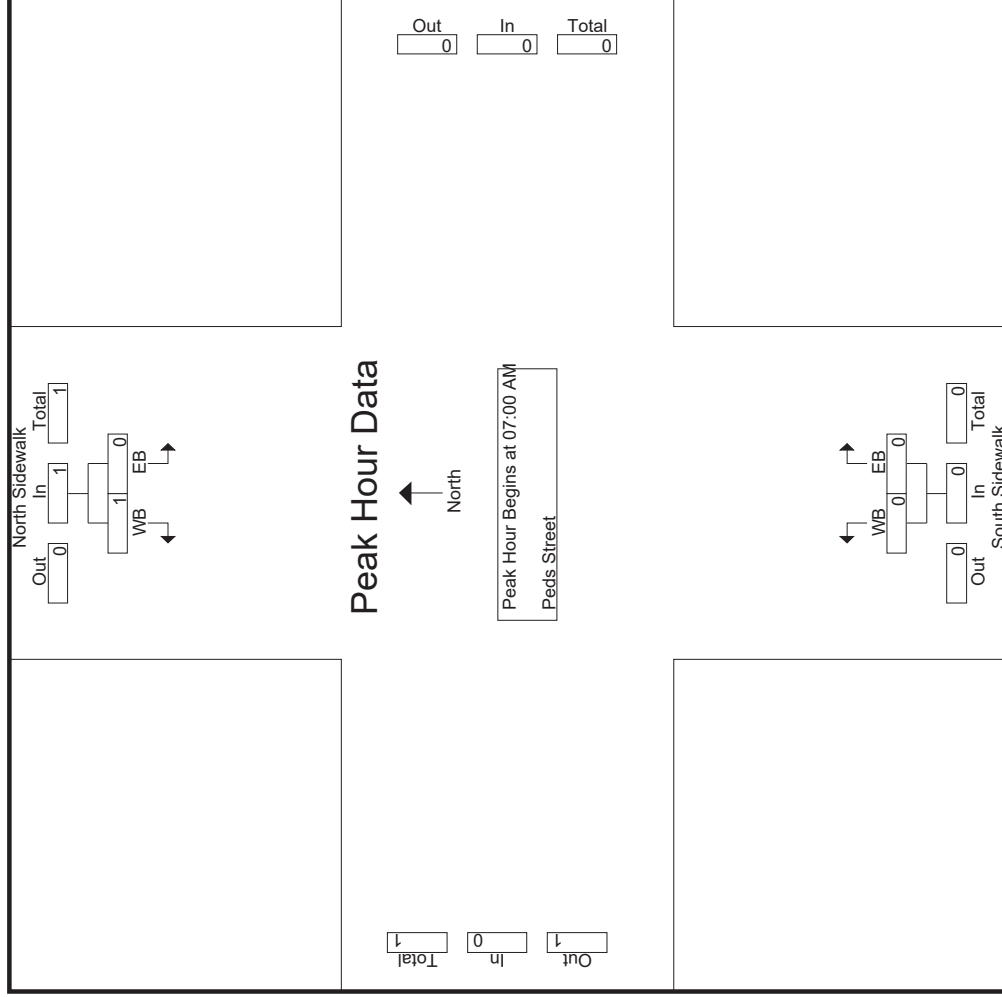
Start Time	North Sidewalk From North		South Sidewalk From South		Int. Total
	EB	WB	WB	EB	
04:30 PM	0	0	0	0	0
04:45 PM	0	0	0	0	0
Total	0	0	0	0	0
05:00 PM	0	0	0	0	0
05:15 PM	0	1	1	0	2
05:30 PM	0	0	0	0	0
05:45 PM	1	0	0	0	1
Total	1	1	1	0	3
06:00 PM	0	0	1	0	1
06:15 PM	0	0	0	0	0
06:30 PM	0	0	0	0	0
06:45 PM	0	0	0	0	0
Total	0	0	1	0	1
Grand Total	1	3	2	0	6
Apprch %	25	75	100	0	0
Total %	16.7	50	33.3	0	0

Accurate Counts
978-664-2565

N/S Street : Peds & Bikes at ATR Loc
E/W Street : Concord Ave W of Smith Pl
City/State : Cambridge, MA
Weather : Clear

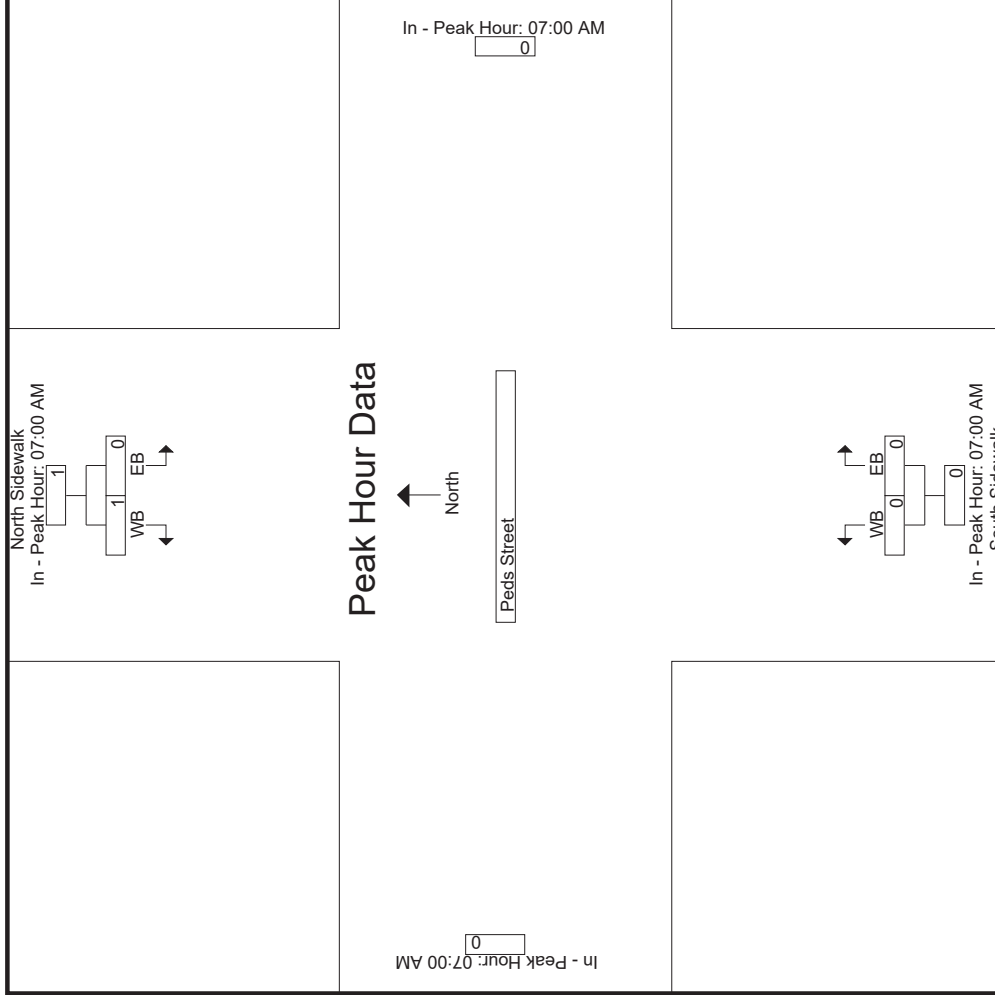
File Name : 80840010
Site Code : 80840010
Start Date : 4/2/2019
Page No : 4

Start Time	North Sidewalk From North		From East App. Total	South Sidewalk From South		From West App. Total	Int. Total
	EB	WB		WB	EB		
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1							
Peak Hour for Entire Intersection Begins at 07:00 AM							
07:00 AM	0	0	0	0	0	0	0
07:15 AM	0	1	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0
Total Volume	0	1	0	0	0	0	1
% App. Total	0	100	0	0	0	0	1
PHF	.000	.250	.000	.000	.000	.000	.250



Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM	07:00 AM	07:00 AM	07:00 AM	07:00 AM
+0 mins.	0	0	0	0	0
+15 mins.	0	1	0	0	0
+30 mins.	0	0	0	0	0
+45 mins.	0	0	0	0	0
Total Volume	0	1	0	0	0
% App. Total	0	100	0	0	0
PHF	.000	.250	.000	.000	.000



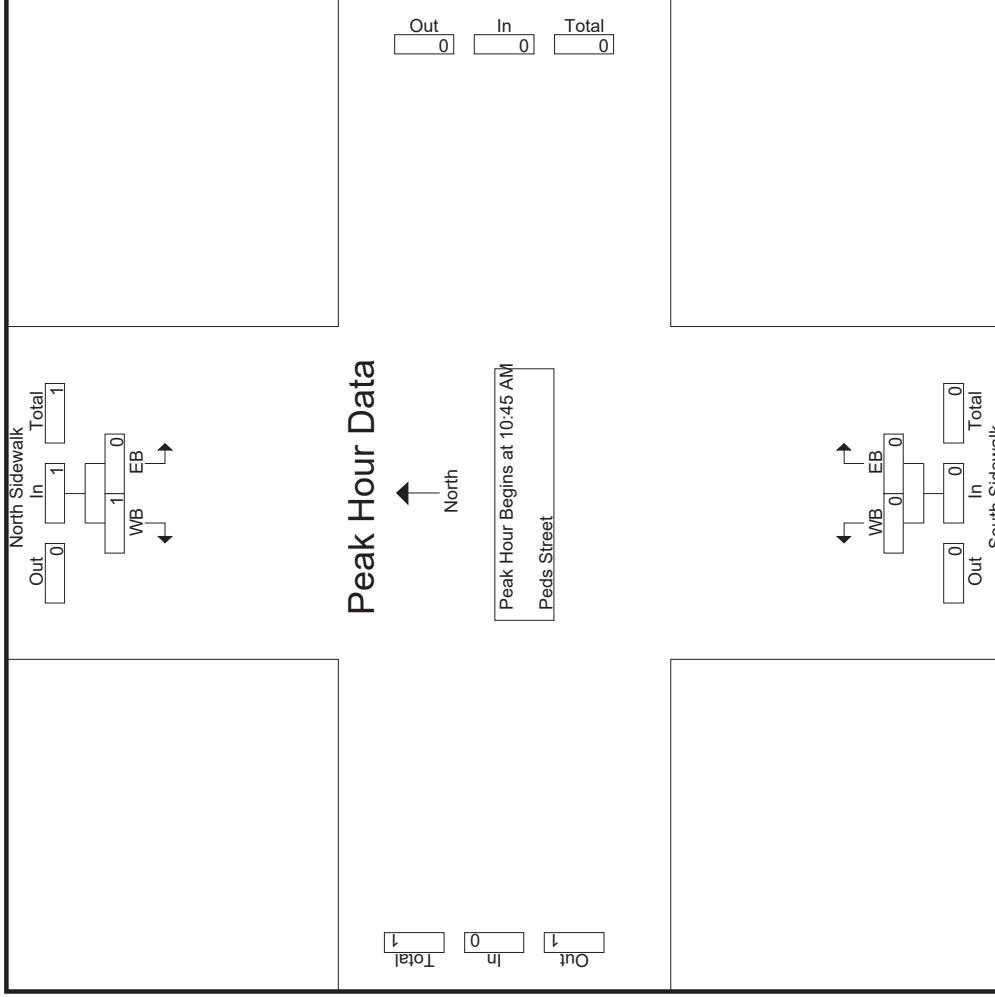
Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

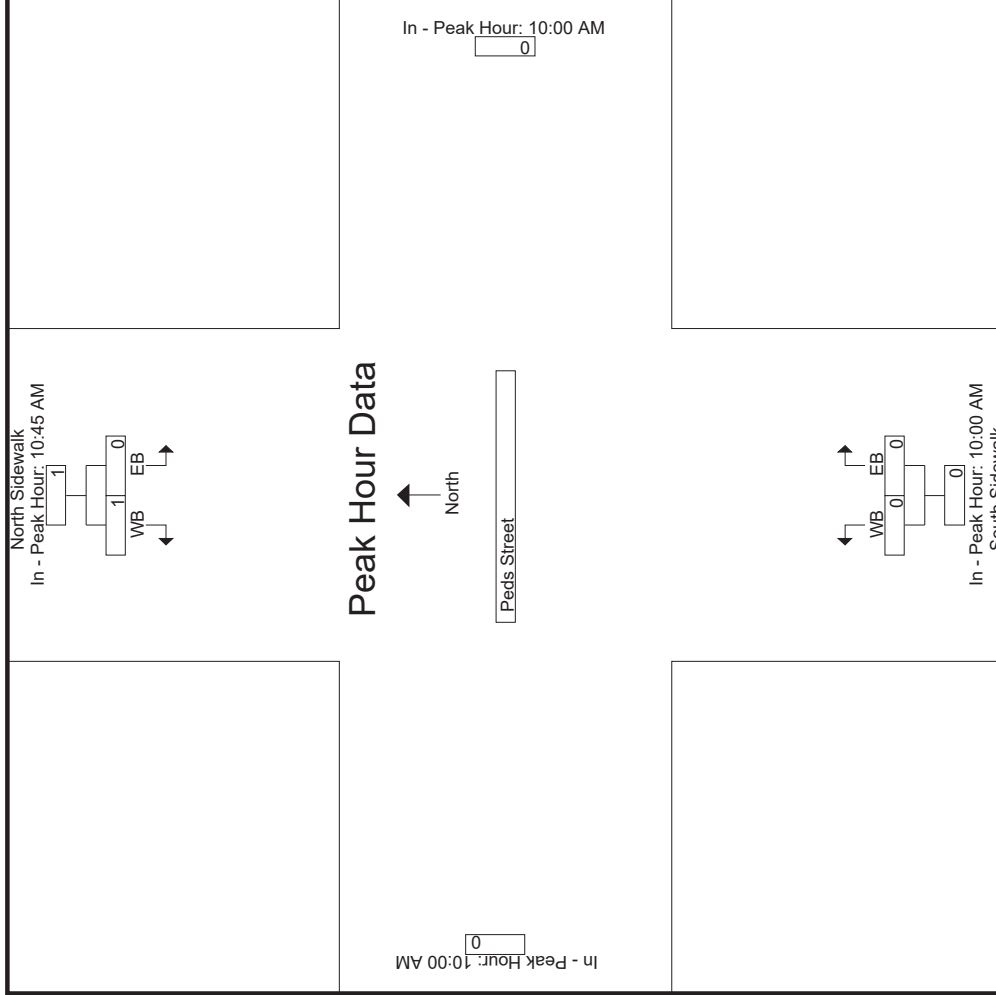
File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 7

Start Time	North Sidewalk From North		From East App. Total	South Sidewalk From South		From West App. Total	Int. Total
	EB	WB		WB	EB		
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1							
Peak Hour for Entire Intersection Begins at 10:45 AM							
10:45 AM	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0
11:30 AM	0	1	0	0	0	0	1
Total Volume	0	1	0	0	0	0	1
% App. Total	0	100	0	0	0	0	0
PHF	.000	.250	.000	.000	.000	.000	.250



Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	10:45 AM	10:00 AM	10:00 AM	10:00 AM	10:00 AM
+0 mins.	0	0	0	0	0
+15 mins.	0	0	0	0	0
+30 mins.	0	0	0	0	0
+45 mins.	0	1	0	0	0
Total Volume	0	1	0	0	0
% App. Total	0	100	0	0	0
PHF	.000	.250	.000	.000	.000



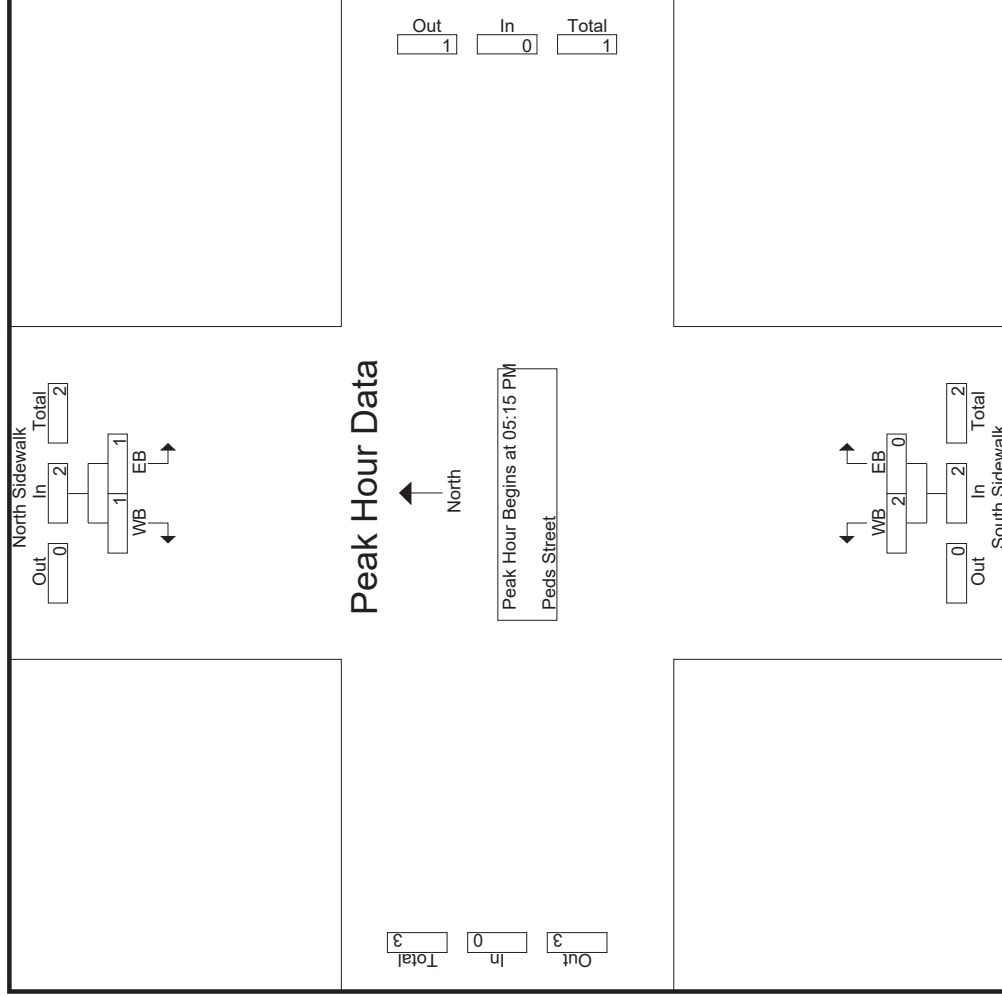
Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

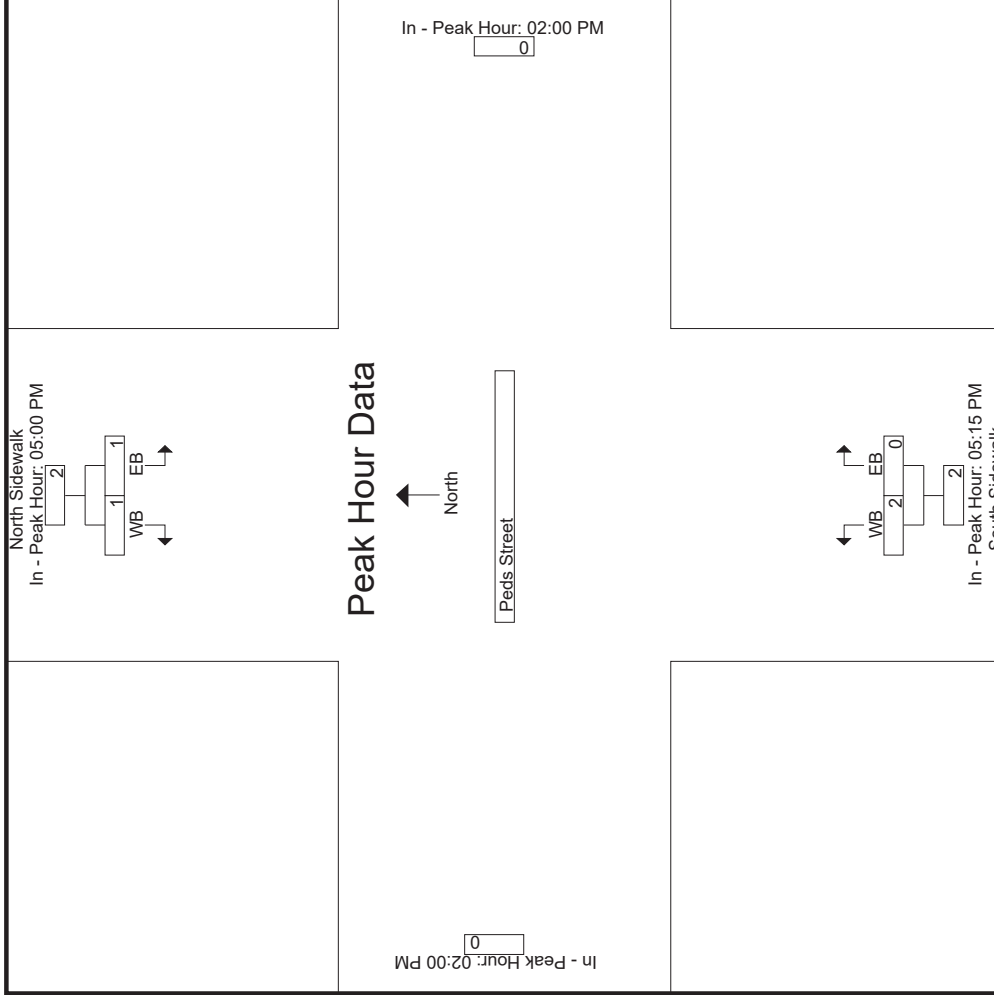
File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 10

Start Time	North Sidewalk From North		From East App. Total	South Sidewalk From South		From West App. Total	Int. Total
	EB	WB		WB	EB		
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1							
Peak Hour for Entire Intersection Begins at 05:15 PM							
05:15 PM	0	1	0	1	0	0	2
05:30 PM	0	0	0	0	0	0	0
05:45 PM	1	0	0	0	0	0	1
06:00 PM	0	0	0	1	0	1	1
Total Volume	1	1	0	2	0	2	4
% App. Total	50	50	0	100	0	50	100
PHF	.250	.250	.000	.500	.000	.500	.500



Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM	02:00 PM	05:15 PM	02:00 PM
+0 mins.	0	0	1	0
+15 mins.	0	1	0	0
+30 mins.	0	0	0	0
+45 mins.	1	0	1	0
Total Volume	1	1	2	0
% App. Total	50	50	100	0
PHF	.250	.250	.500	.000



Accurate Counts
978-664-2565

N/S Street : Peds & Bikes at ATR Loc
E/W Street : Concord Ave W of Smith Pl
City/State : Cambridge, MA
Weather : Clear

File Name : 80840010
Site Code : 80840010
Start Date : 4/2/2019
Page No : 1

Start Time	Groups Printed- Peds Sidewalk						Int. Total
	North Sidewalk From North			South Sidewalk From South			
	EB	WB		WB	EB		
07:00 AM	1	3		2	1		7
07:15 AM	0	1		0	3		4
07:30 AM	0	2		0	3		5
07:45 AM	1	4		3	1		9
Total	2	10		5	8		25
08:00 AM	0	1		4	1		6
08:15 AM	1	3		1	1		6
08:30 AM	5	1		0	1		7
08:45 AM	1	4		1	4		10
Total	7	9		6	7		29
09:00 AM	2	5		0	1		8
09:15 AM	4	3		1	1		9
09:30 AM	3	4		2	0		9
09:45 AM	1	2		2	1		6
Total	10	14		5	3		32
10:00 AM	2	2		3	4		11
10:15 AM	0	2		4	2		8
10:30 AM	0	5		0	0		5
10:45 AM	0	1		3	1		5
Total	2	10		10	7		29
11:00 AM	6	0		1	2		9
11:15 AM	4	2		1	2		9
11:30 AM	2	3		1	1		7

Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 2

Start Time	Groups Printed- Peds Sidewalk						Int. Total
	North Sidewalk From North			South Sidewalk From South			
	EB	WB	Total	WB	EB	Total	
11:45 AM	3	1	4	1	0	1	5
Total	15	6	21	4	5	9	30
12:00 PM	6	4	10	0	4	4	14
12:15 PM	6	5	11	0	1	1	12
12:30 PM	10	9	19	2	4	6	25
12:45 PM	3	8	11	0	0	0	11
Total	25	26	51	2	9	11	62
01:00 PM	2	7	9	2	2	4	13
01:15 PM	8	4	12	2	0	2	14
01:30 PM	3	3	6	0	2	2	8
01:45 PM	4	3	7	1	2	3	10
Total	17	17	34	5	6	11	45
02:00 PM	2	2	4	0	2	2	6
02:15 PM	7	6	13	2	2	4	17
02:30 PM	1	0	1	0	1	1	2
02:45 PM	1	7	8	2	2	4	12
Total	11	15	26	4	7	11	37
03:00 PM	2	3	5	0	2	2	7
03:15 PM	0	2	2	0	5	5	7
03:30 PM	3	2	5	1	2	3	8
03:45 PM	4	1	5	1	0	1	6
Total	9	8	17	2	9	11	28
04:00 PM	3	1	4	2	1	3	7
04:15 PM	5	3	8	2	1	3	11

Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 3

Groups Printed- Peds Sidewalk

Start Time	North Sidewalk From North		South Sidewalk From South		Int. Total
	EB	WB	WB	EB	
04:30 PM	2	6	4	1	13
04:45 PM	10	1	1	1	13
Total	20	11	9	4	44
05:00 PM	2	4	3	2	11
05:15 PM	3	4	1	1	9
05:30 PM	3	2	3	1	9
05:45 PM	5	4	0	1	10
Total	13	14	7	5	39
06:00 PM	4	5	0	0	9
06:15 PM	4	2	4	1	11
06:30 PM	3	1	0	2	6
06:45 PM	1	2	1	0	4
Total	12	10	5	3	30
Grand Total	143	150	64	73	430
Apprch %	48.8	51.2	46.7	53.3	
Total %	33.3	34.9	14.9	17	

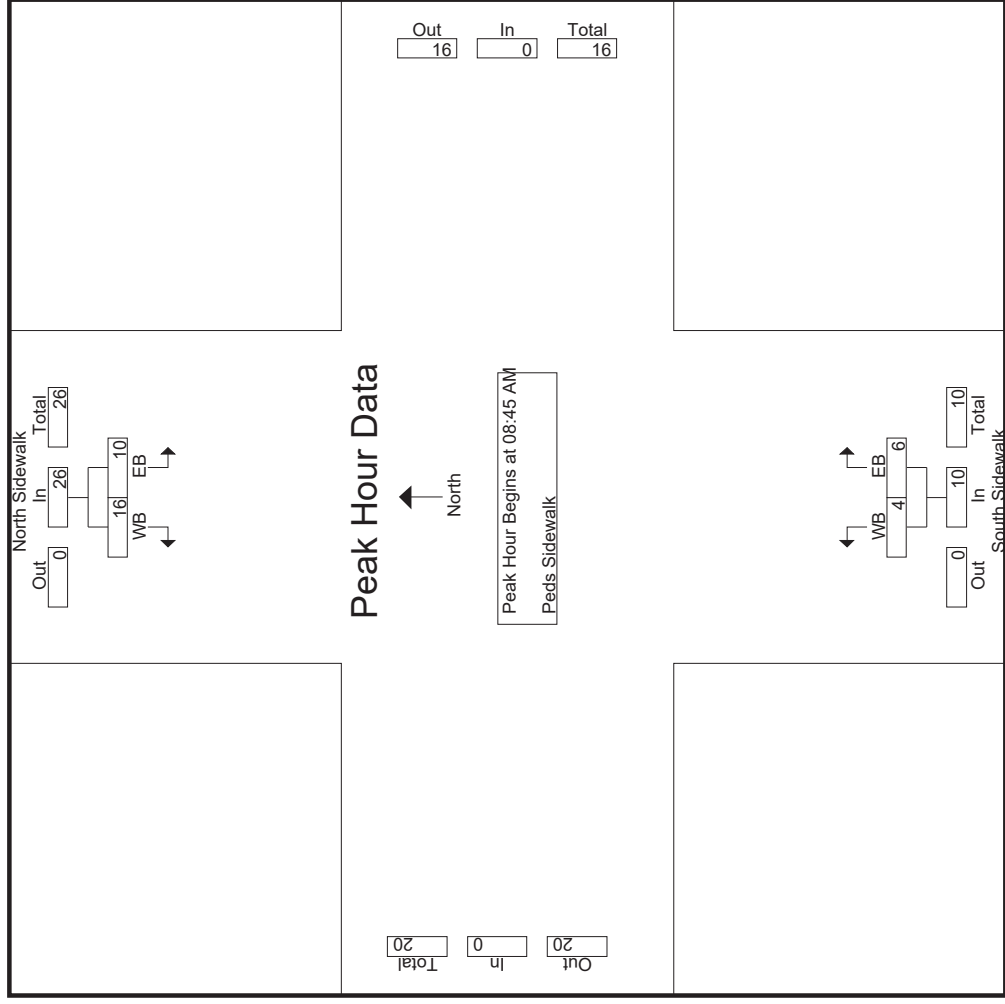
Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

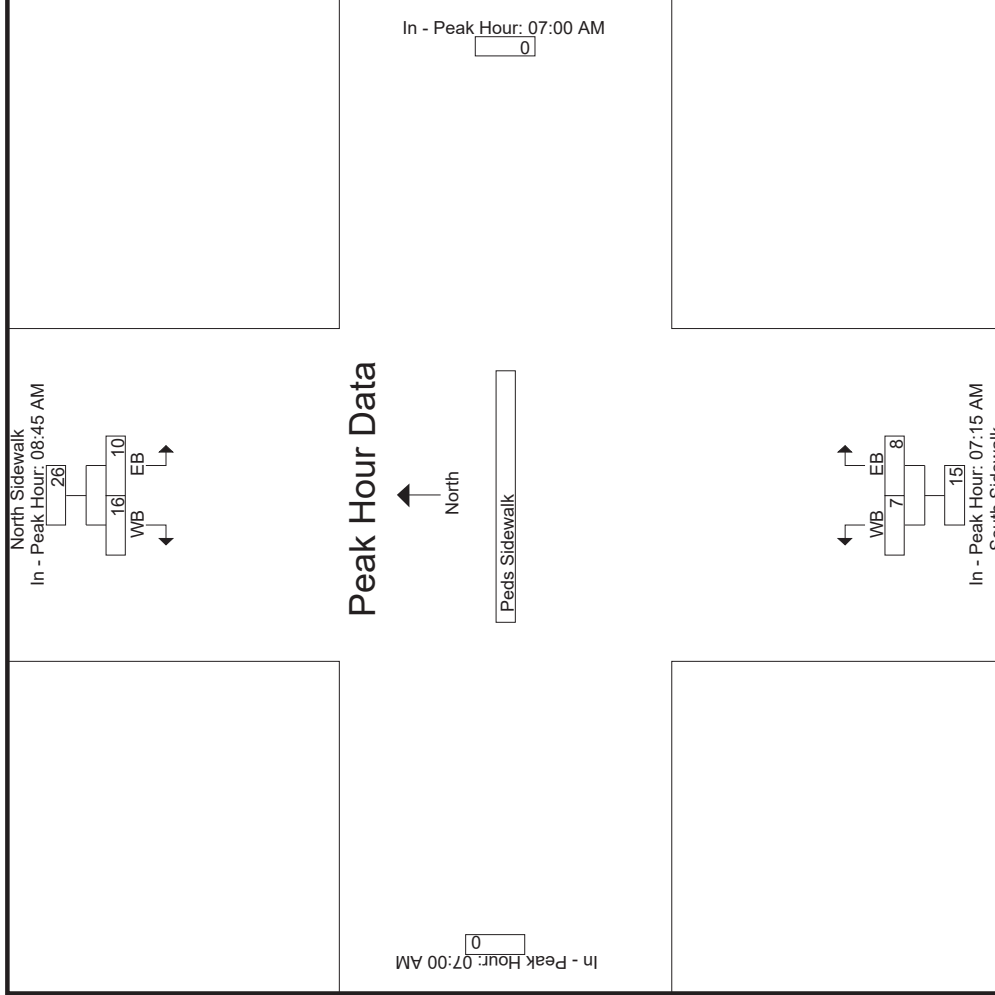
File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 4

Start Time	North Sidewalk From North		From East		South Sidewalk From South			From West		Int. Total
	EB	WB	App. Total	App. Total	WB	EB	App. Total	App. Total		
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:45 AM										
08:45 AM	1	4	5	0	1	4	5	0	0	10
09:00 AM	2	5	7	0	0	1	1	0	0	8
09:15 AM	4	3	7	0	1	1	2	0	0	9
09:30 AM	3	4	7	0	2	0	2	0	0	9
Total Volume	10	16	26	0	4	6	10	0	0	36
% App. Total	38.5	61.5			40	60				
PHF	.625	.800	.929	.000	.500	.375	.500	.000	.000	.900



Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	08:45 AM	07:00 AM	07:15 AM	07:00 AM
+0 mins.	1	4	5	0
+15 mins.	2	5	7	0
+30 mins.	4	3	7	0
+45 mins.	3	4	7	0
Total Volume	10	16	26	0
% App. Total	38.5	61.5	53.3	0
PHF	.625	.800	.667	.000



Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 7

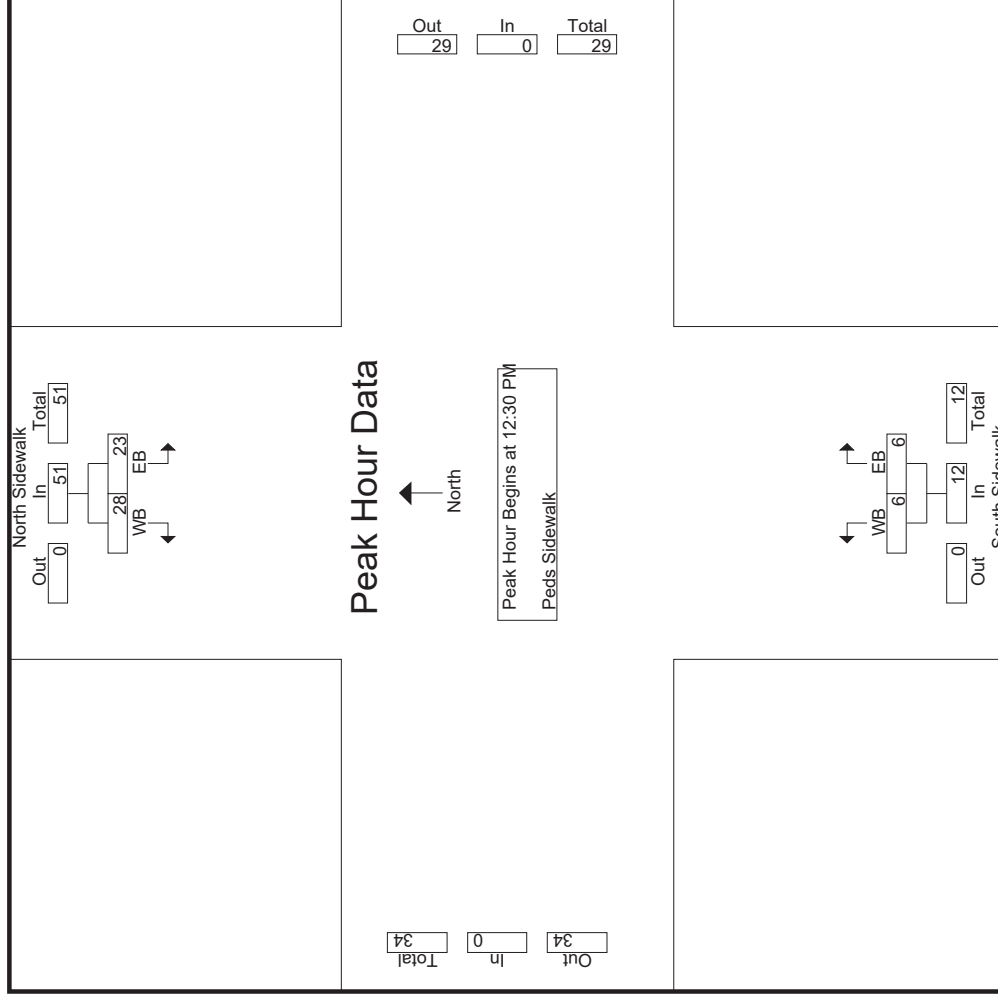
Start Time	North Sidewalk From North		From East App. Total	South Sidewalk From South		From West App. Total	Int. Total
	EB	WB		WB	EB		
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1							
Peak Hour for Entire Intersection Begins at 12:30 PM							
12:30 PM	10	9	0	2	4	0	25
12:45 PM	3	8	0	0	0	0	11
01:00 PM	2	7	0	2	2	0	13
01:15 PM	8	4	0	2	0	0	14
Total Volume	23	28	0	6	6	0	63
% App. Total	45.1	54.9	50	50	50	50	
PHF	.575	.778	.000	.750	.375	.000	.630

Accurate Counts

978-664-2565

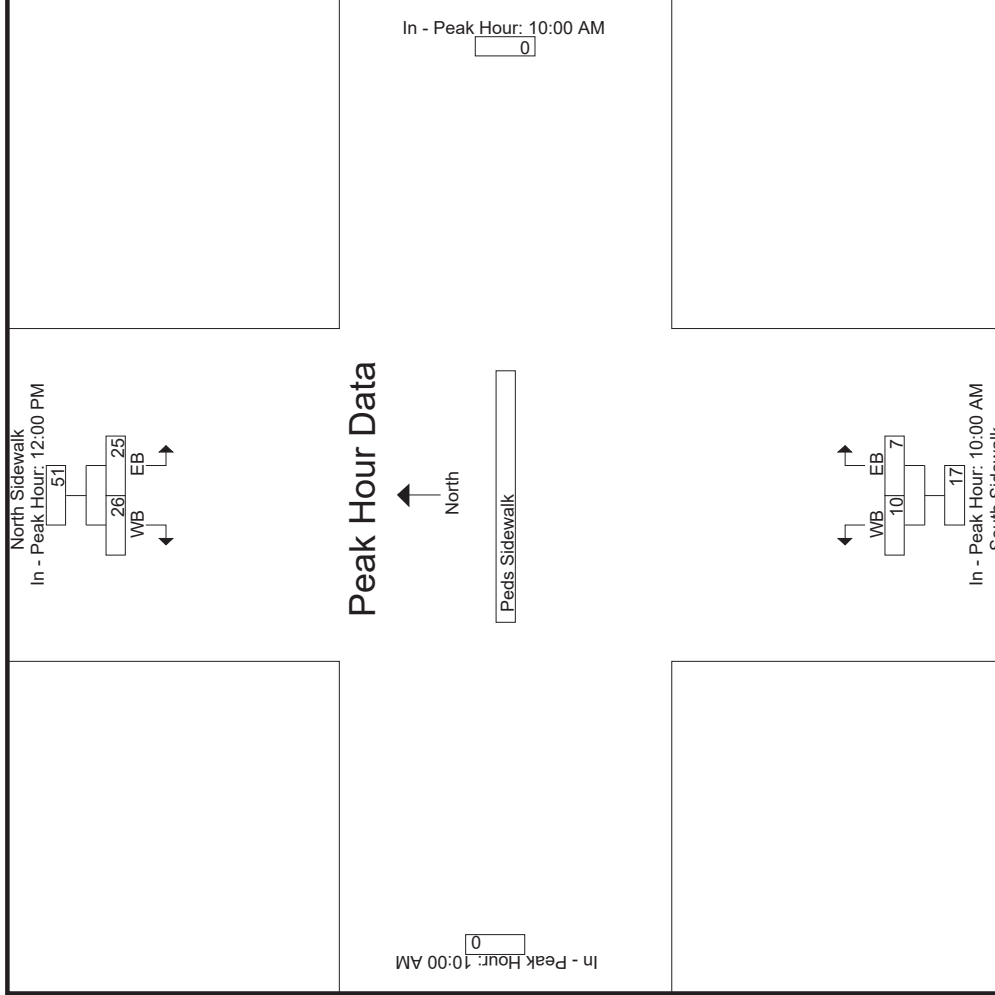
N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 8



Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	12:00 PM	10:00 AM	10:00 AM	10:00 AM	10:00 AM
+0 mins.	6	4	10	0	7
+15 mins.	6	5	11	0	6
+30 mins.	10	9	19	0	0
+45 mins.	3	8	11	0	4
Total Volume	25	26	51	10	17
% App. Total	49	51	58.8	41.2	
PHF	.625	.722	.671	.625	.607
			.000	.438	.000



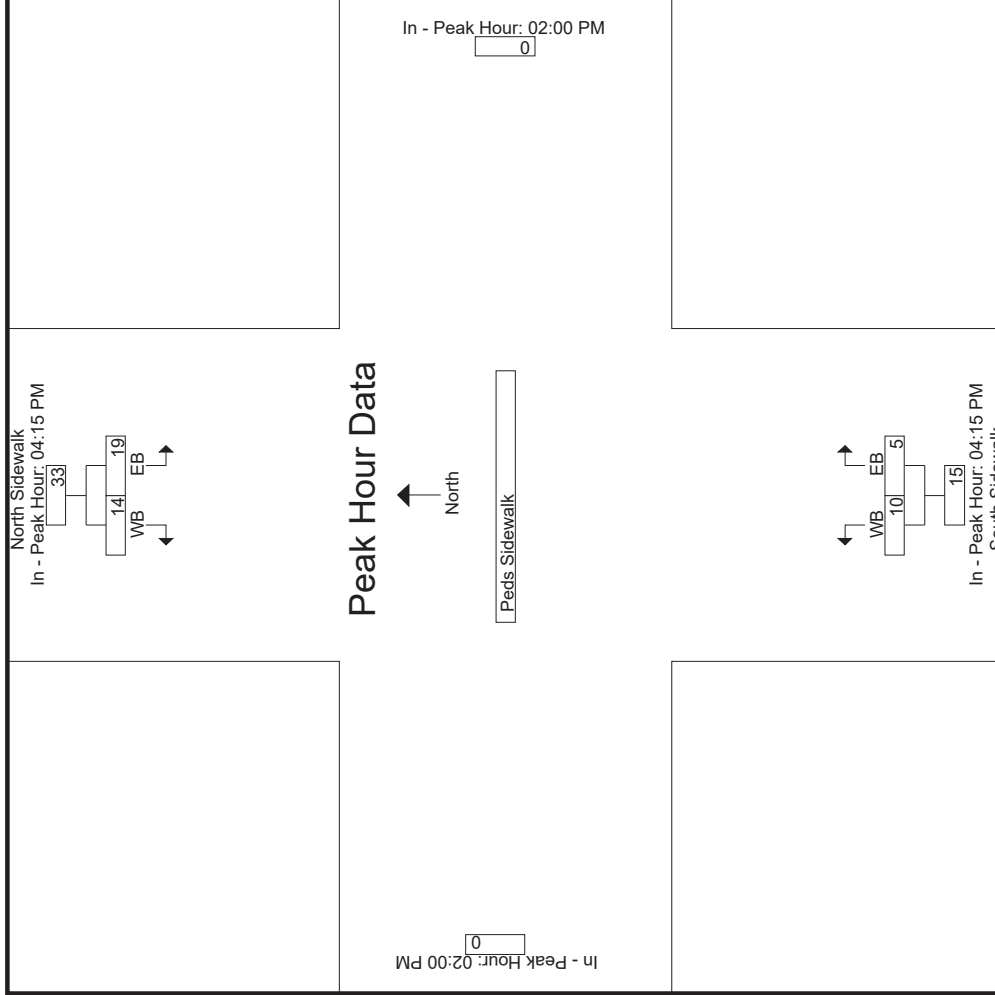
Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Concord Ave W of Smith Pl
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840010
 Site Code : 80840010
 Start Date : 4/2/2019
 Page No : 10

Start Time	North Sidewalk From North		From East App. Total	South Sidewalk From South		From West App. Total	Int. Total
	EB	WB		WB	EB		
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1							
Peak Hour for Entire Intersection Begins at 04:15 PM							
04:15 PM	5	3	0	2	1	0	11
04:30 PM	2	6	0	4	1	0	13
04:45 PM	10	1	0	1	1	0	13
05:00 PM	2	4	0	3	2	0	11
Total Volume	19	14	0	10	5	0	48
% App. Total	57.6	42.4		66.7	33.3		
PHF	.475	.583	.000	.625	.625	.000	.923



Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Smith Place N of Concord Av
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840011
 Site Code : 80840011
 Start Date : 4/2/2019
 Page No : 2

Groups Printed- Bikes

Start Time	Xing Street From North		EB	East Side From East		West Side From West		Int. Total
	WB	WB		SB	NB	NB	SB	
11:45 AM	0	0	0	0	1	0	0	1
Total	0	0	0	0	1	0	0	1
12:00 PM	0	0	0	0	1	0	0	1
12:15 PM	0	0	0	0	0	0	1	1
12:30 PM	0	0	0	0	0	0	0	0
12:45 PM	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	1	2
01:00 PM	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	1	0	0	1
01:30 PM	0	0	0	0	0	0	1	1
01:45 PM	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	1	2
02:00 PM	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	1	0	0	1
02:30 PM	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	0	1
03:00 PM	0	0	0	0	0	0	1	1
03:15 PM	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	2	0	2
03:45 PM	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	2	1	3
04:00 PM	0	0	0	0	0	0	0	0
04:15 PM	0	0	0	0	0	1	0	1

Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Smith Place N of Concord Av
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840011
 Site Code : 80840011
 Start Date : 4/2/2019
 Page No : 3

Groups Printed- Bikes

Start Time	Xing Street From North		EB	East Side From East		West Side From West		Int. Total
	WB	WB		SB	NB	NB	SB	
04:30 PM	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1
05:00 PM	0	0	0	0	1	0	1	2
05:15 PM	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	2	2
Total	0	0	0	0	1	0	3	4
06:00 PM	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	7	3	7	17
Apprch %	0	0	0	0	100	30	70	
Total %	0	0	0	0	41.2	17.6	41.2	

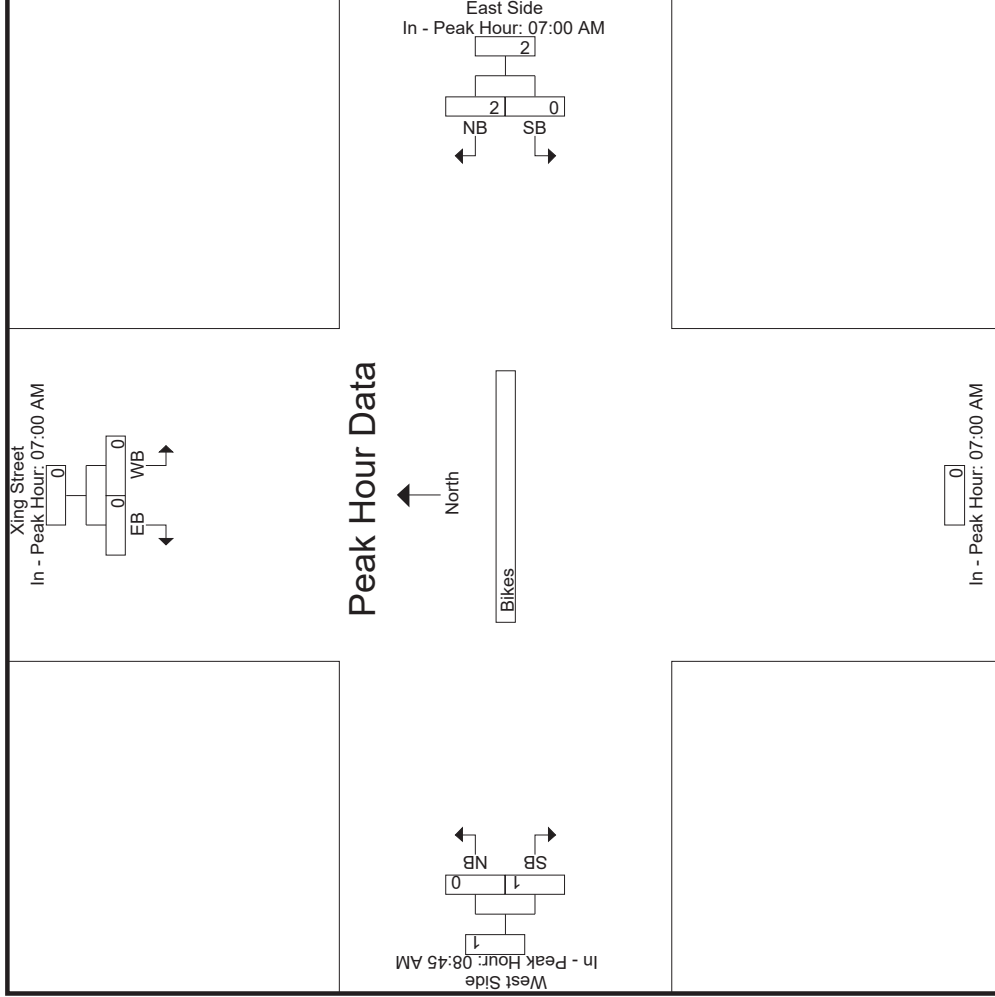
Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Smith Place N of Concord Av
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840011
 Site Code : 80840011
 Start Date : 4/2/2019
 Page No : 4

Start Time	Xing Street From North		East Side From East		From South		West Side From West		Int. Total
	WB	EB	SB	NB	App. Total	App. Total	NB	SB		App. Total
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1									
Peak Hour for Entire Intersection Begins at 07:00 AM									
07:00 AM	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	2	2	0	0	0	2
07:30 AM	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	2	2	0	0	0	2
% App. Total	0	0	0	100	0	0	0	0	0
PHF	.000	.000	.000	.250	.250	.000	.000	.000	.250



Accurate Counts
978-664-2565

N/S Street : Peds & Bikes at ATR Loc
E/W Street : Smith Place N of Concord Av
City/State : Cambridge, MA
Weather : Clear

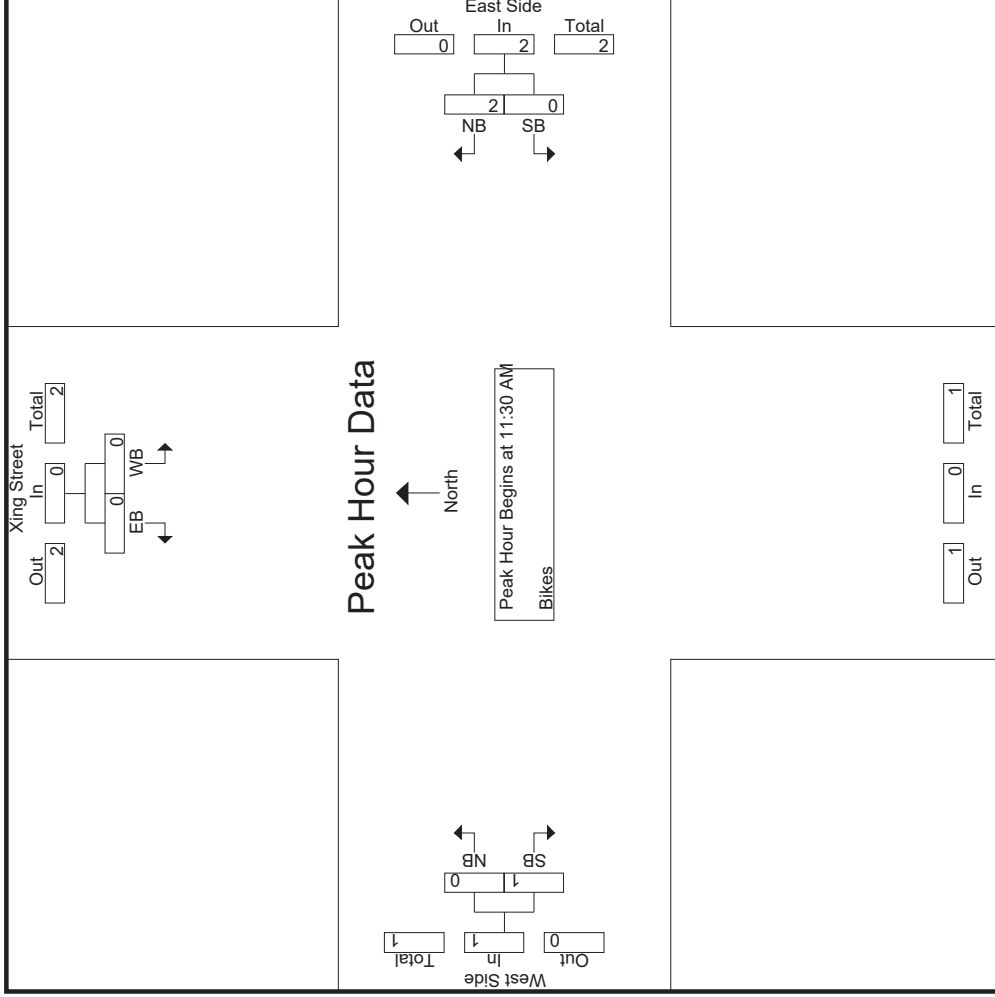
File Name : 80840011
Site Code : 80840011
Start Date : 4/2/2019
Page No : 7

Start Time	Xing Street From North		East Side From East		From South		West Side From West		App. Total	Int. Total
	WB	EB	SB	NB	App. Total	NB	SB	App. Total		
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 11:30 AM										
11:30 AM	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	1	1	0	0	0	0	1
12:00 PM	0	0	0	1	1	0	0	0	0	1
12:15 PM	0	0	0	0	0	0	0	1	1	1
Total Volume	0	0	0	2	2	0	0	1	1	3
% App. Total	0	0	0	100	0	0	0	100	0	0
PHF	.000	.000	.000	.500	.500	.000	.000	.250	.250	.750

Accurate Counts
978-664-2565

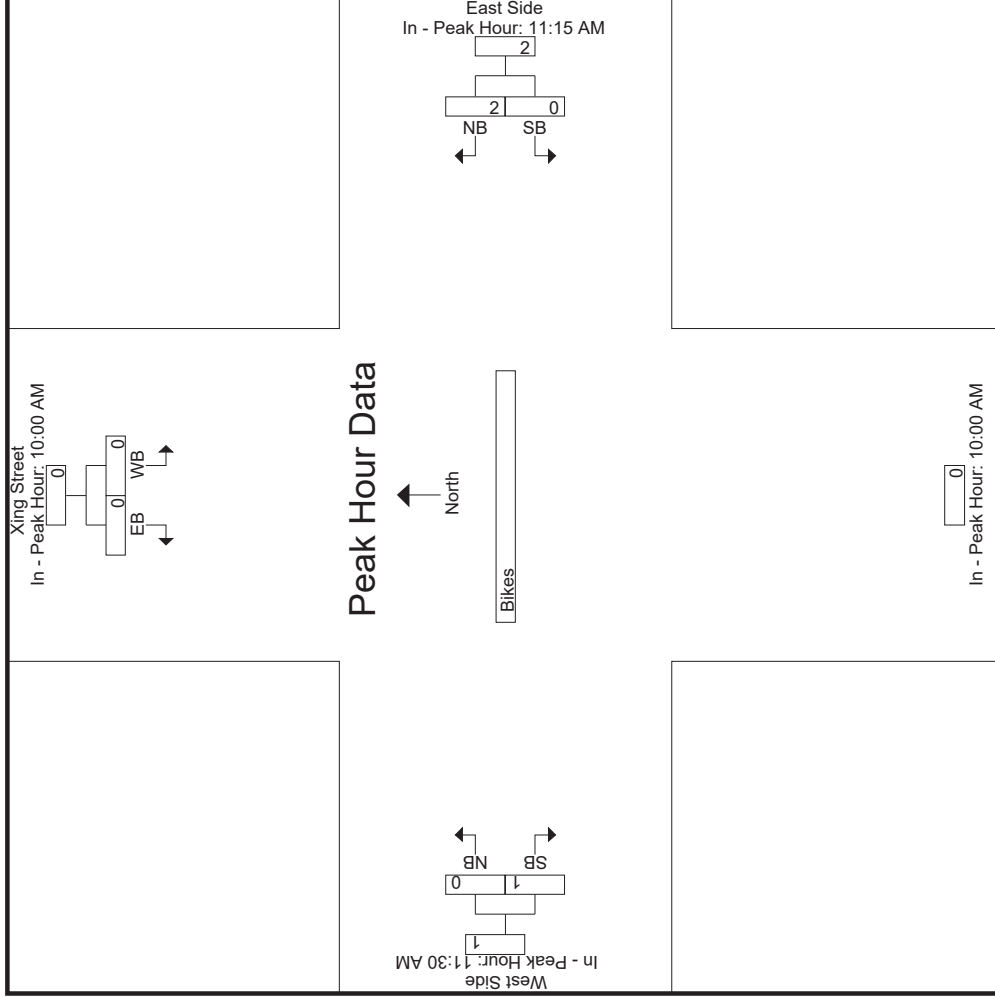
N/S Street : Peds & Bikes at ATR Loc
E/W Street : Smith Place N of Concord Av
City/State : Cambridge, MA
Weather : Clear

File Name : 80840011
Site Code : 80840011
Start Date : 4/2/2019
Page No : 8



Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	10:00 AM	11:15 AM	11:30 AM	10:00 AM	11:30 AM
+0 mins.	0	0	0	0	0
+15 mins.	0	0	0	0	0
+30 mins.	0	0	1	0	0
+45 mins.	0	0	1	0	1
Total Volume	0	0	2	0	1
% App. Total	0	0	100	0	100
PHF	.000	.000	.500	.000	.250



Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Smith Place N of Concord Av
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840011
 Site Code : 80840011
 Start Date : 4/2/2019
 Page No : 10

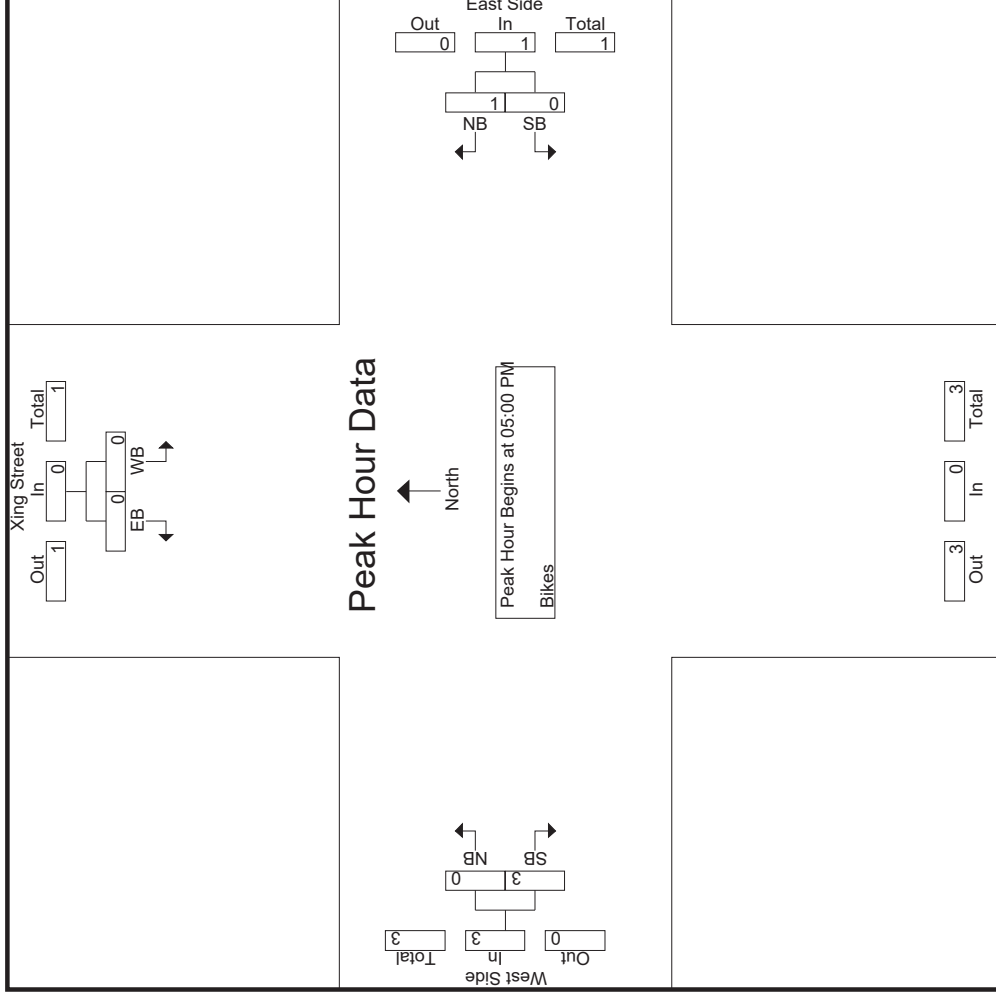
Start Time	Xing Street From North		East Side From East		From South		West Side From West		App. Total	Int. Total
	WB	EB	SB	NB	App. Total	NB	SB	App. Total		
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:00 PM										
05:00 PM	0	0	0	1	1	0	0	1	1	2
05:15 PM	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	2	2	2
Total Volume	0	0	0	1	1	0	0	3	3	4
% App. Total	0	0	0	100	100	0	0	100	0	0
PHF	.000	.000	.000	.250	.250	.000	.000	.375	.375	.500

Accurate Counts

978-664-2565

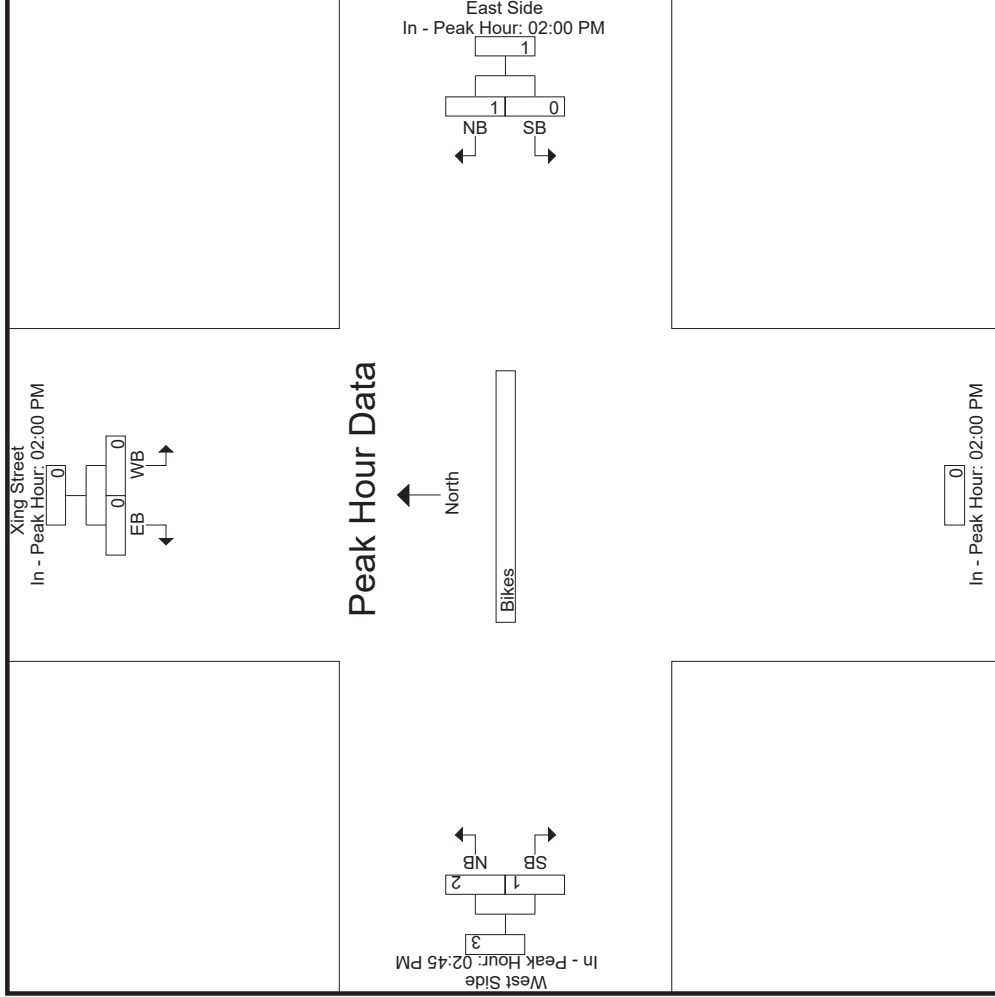
N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Smith Place N of Concord Av
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840011
 Site Code : 80840011
 Start Date : 4/2/2019
 Page No : 11



Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	02:00 PM	02:00 PM	02:00 PM	02:00 PM	02:45 PM	02:45 PM
+0 mins.	0	0	0	0	0	0
+15 mins.	0	0	1	1	0	1
+30 mins.	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	2
Total Volume	0	0	1	1	2	3
% App. Total	0	0	100	66.7	33.3	
PHF	.000	.000	.250	.250	.250	.375



Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Smith Place N of Concord Av
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840011
 Site Code : 80840011
 Start Date : 4/2/2019
 Page No : 1

Start Time	Groups Printed- Peds									
	Xing Street From North		East Side From East		West Side From West					
	WB	EB	SB	NB	SB	NB	NB	SB	Int. Total	
07:00 AM	0	1	0	1	2	1	0	0	0	5
07:15 AM	0	0	0	0	0	0	0	0	0	0
07:30 AM	2	0	0	1	1	2	0	0	2	5
07:45 AM	2	0	0	3	3	0	0	0	0	5
Total	4	1	0	5	2	3	0	0	0	15
08:00 AM	0	2	0	0	1	0	0	0	0	3
08:15 AM	1	1	0	0	0	0	0	0	0	2
08:30 AM	0	0	0	1	0	0	0	0	0	1
08:45 AM	0	1	0	0	1	0	0	0	0	2
Total	1	4	0	1	2	0	0	0	0	8
09:00 AM	0	1	4	4	0	0	0	0	0	9
09:15 AM	0	0	0	3	0	0	0	0	0	3
09:30 AM	0	0	4	0	0	0	0	0	0	4
09:45 AM	0	0	0	0	0	0	0	0	0	0
Total	0	1	8	7	0	0	0	0	0	16
10:00 AM	1	1	0	5	0	0	0	0	0	7
10:15 AM	0	0	0	0	0	0	0	0	0	0
10:30 AM	1	0	1	0	0	0	0	0	0	2
10:45 AM	0	0	0	2	0	0	0	0	0	2
Total	2	1	1	7	0	0	0	0	0	11
11:00 AM	0	1	0	0	1	2	0	1	0	4
11:15 AM	1	0	0	0	0	1	0	1	1	3
11:30 AM	0	1	1	0	0	0	0	0	0	2

Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Smith Place N of Concord Av
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840011
 Site Code : 80840011
 Start Date : 4/2/2019
 Page No : 2

Groups Printed- Peds

Start Time	Xing Street From North		EB	East Side From East		West Side From West		Int. Total
	WB	SB		SB	NB	NB	SB	
11:45 AM	0	1	0	1	0	1	0	2
Total	1	2	0	2	0	3	3	11
12:00 PM	0	0	0	1	2	0	0	3
12:15 PM	0	0	0	1	3	0	0	4
12:30 PM	0	0	0	3	1	0	1	5
12:45 PM	1	2	1	2	2	0	1	7
Total	1	7	1	8	8	0	2	19
01:00 PM	1	0	0	0	1	0	2	4
01:15 PM	0	0	1	1	1	0	1	3
01:30 PM	1	0	0	0	0	1	0	2
01:45 PM	0	1	0	1	1	0	0	2
Total	2	1	1	3	3	1	3	11
02:00 PM	1	0	0	0	0	0	0	1
02:15 PM	1	0	0	1	2	0	0	4
02:30 PM	0	0	0	0	0	0	0	0
02:45 PM	2	1	1	0	1	0	0	4
Total	4	1	1	3	3	0	0	9
03:00 PM	0	0	0	0	2	1	0	3
03:15 PM	0	0	0	1	1	0	2	4
03:30 PM	0	1	1	1	0	1	2	5
03:45 PM	1	1	1	0	0	0	3	5
Total	1	2	2	3	3	2	7	17
04:00 PM	0	0	0	1	0	0	0	1
04:15 PM	0	0	0	0	0	5	1	6

Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Smith Place N of Concord Av
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840011
 Site Code : 80840011
 Start Date : 4/2/2019
 Page No : 3

Groups Printed- Peds

Start Time	Xing Street From North		EB	East Side From East		West Side From West		Int. Total
	WB	WB		SB	NB	NB	SB	
04:30 PM	1	1	1	1	0	1	5	
04:45 PM	1	0	0	2	1	0	4	
Total	2	1	1	4	1	2	16	
05:00 PM	0	0	0	1	1	2	4	
05:15 PM	0	0	0	1	2	0	3	
05:30 PM	0	0	0	3	2	0	5	
05:45 PM	0	0	0	1	0	2	5	
Total	0	0	0	6	4	4	17	
06:00 PM	0	0	0	0	2	1	5	
06:15 PM	2	0	0	1	3	0	8	
06:30 PM	1	1	1	0	3	0	7	
06:45 PM	0	0	0	1	0	0	1	
Total	3	1	1	2	8	1	21	
Grand Total	21	16	16	34	50	25	171	
Approch %	56.8	43.2	43.2	40.5	59.5	50	50	
Total %	12.3	9.4	9.4	19.9	29.2	14.6	14.6	

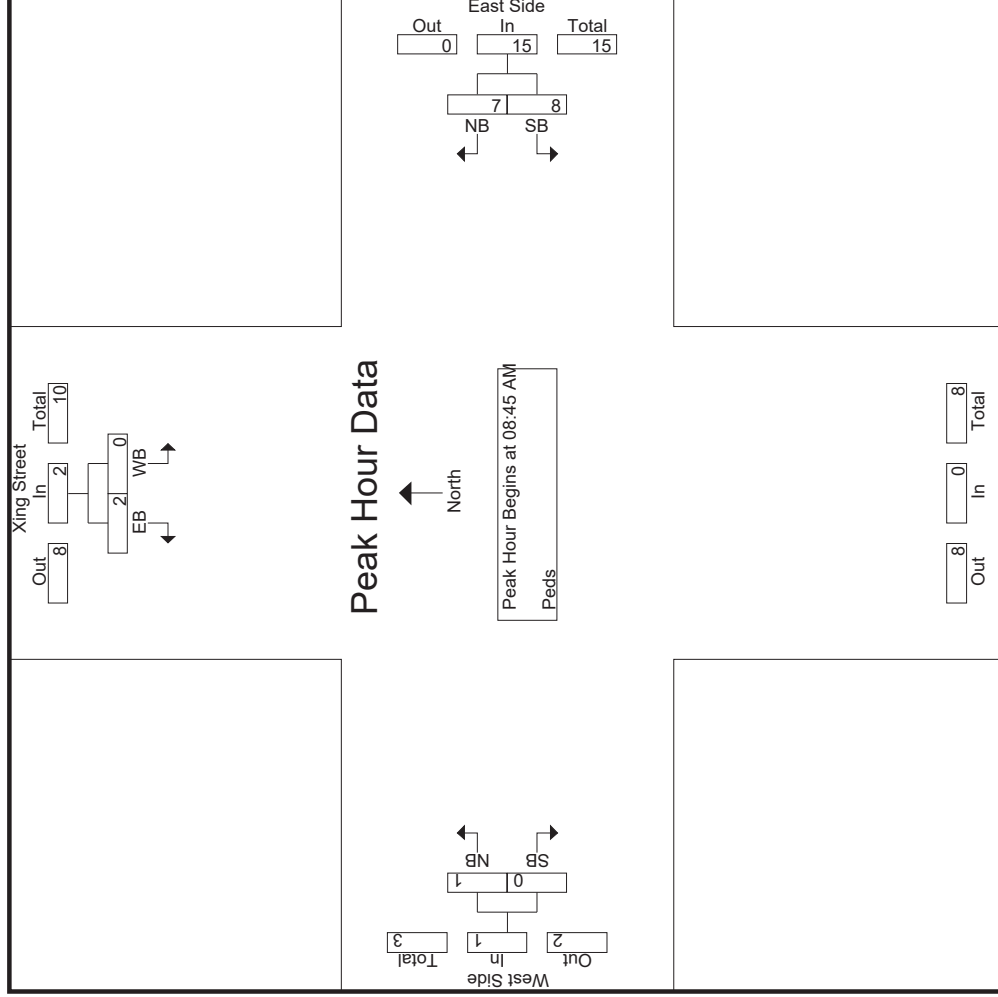
Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Smith Place N of Concord Av
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840011
 Site Code : 80840011
 Start Date : 4/2/2019
 Page No : 4

Start Time	Xing Street From North		East Side From East		From South		West Side From West		App. Total	Int. Total
	WB	EB	SB	NB	App. Total	NB	SB	App. Total		
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:45 AM										
08:45 AM	0	1	0	0	0	0	1	0	1	2
09:00 AM	0	1	4	4	8	0	0	0	0	9
09:15 AM	0	0	0	3	3	0	0	0	0	3
09:30 AM	0	0	4	0	4	0	0	0	0	4
Total Volume	0	2	8	7	15	0	1	0	1	18
% App. Total	0	100	53.3	46.7		100		0		
PHF	.000	.500	.500	.438	.469	.000	.250	.000	.250	.500



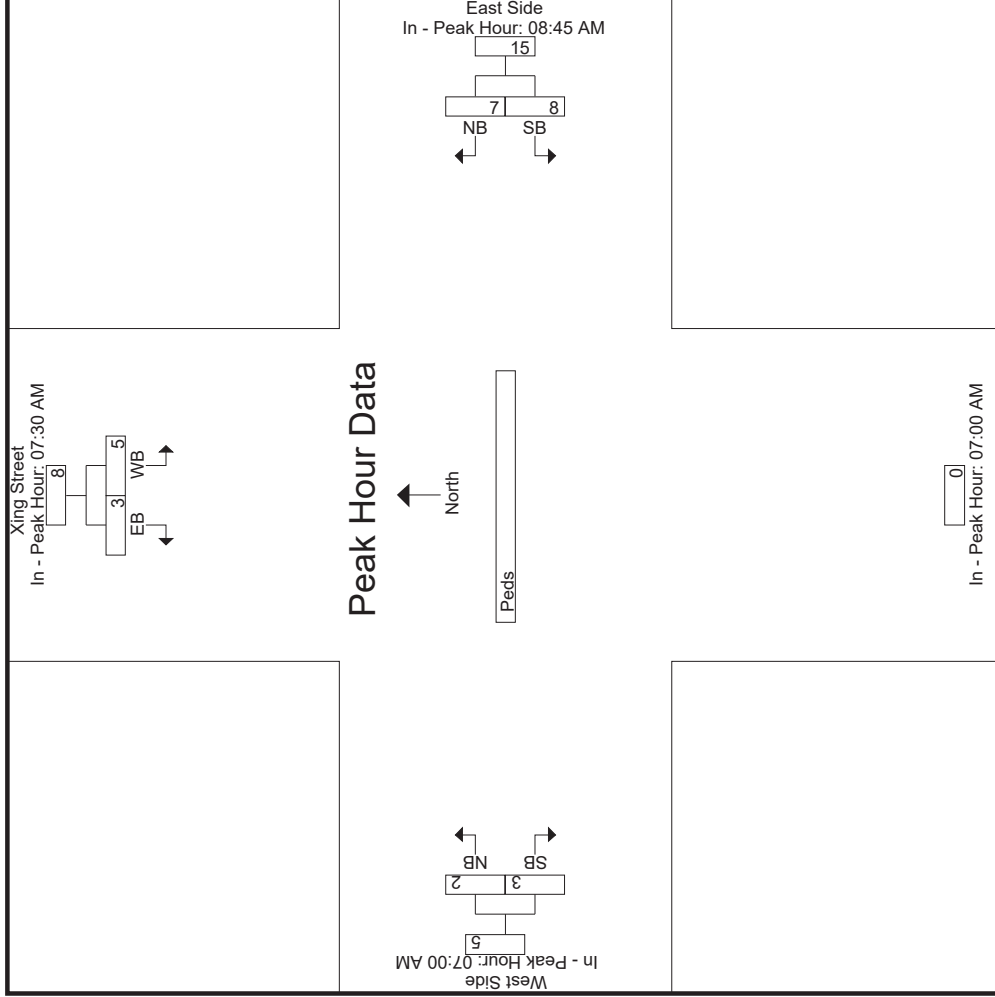
Peak Hour Analysis From 07:00 AM to 09:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:30 AM	08:45 AM	07:00 AM	07:00 AM
+0 mins.	2	0	0	0
+15 mins.	2	4	8	0
+30 mins.	0	0	3	0
+45 mins.	1	4	4	0
Total Volume	5	8	15	0
% App. Total	62.5	53.3	46.7	40
PHF	.625	.500	.438	.250
				60
				.375
				.417

Accurate Counts
978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Smith Place N of Concord Av
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840011
 Site Code : 80840011
 Start Date : 4/2/2019
 Page No : 6



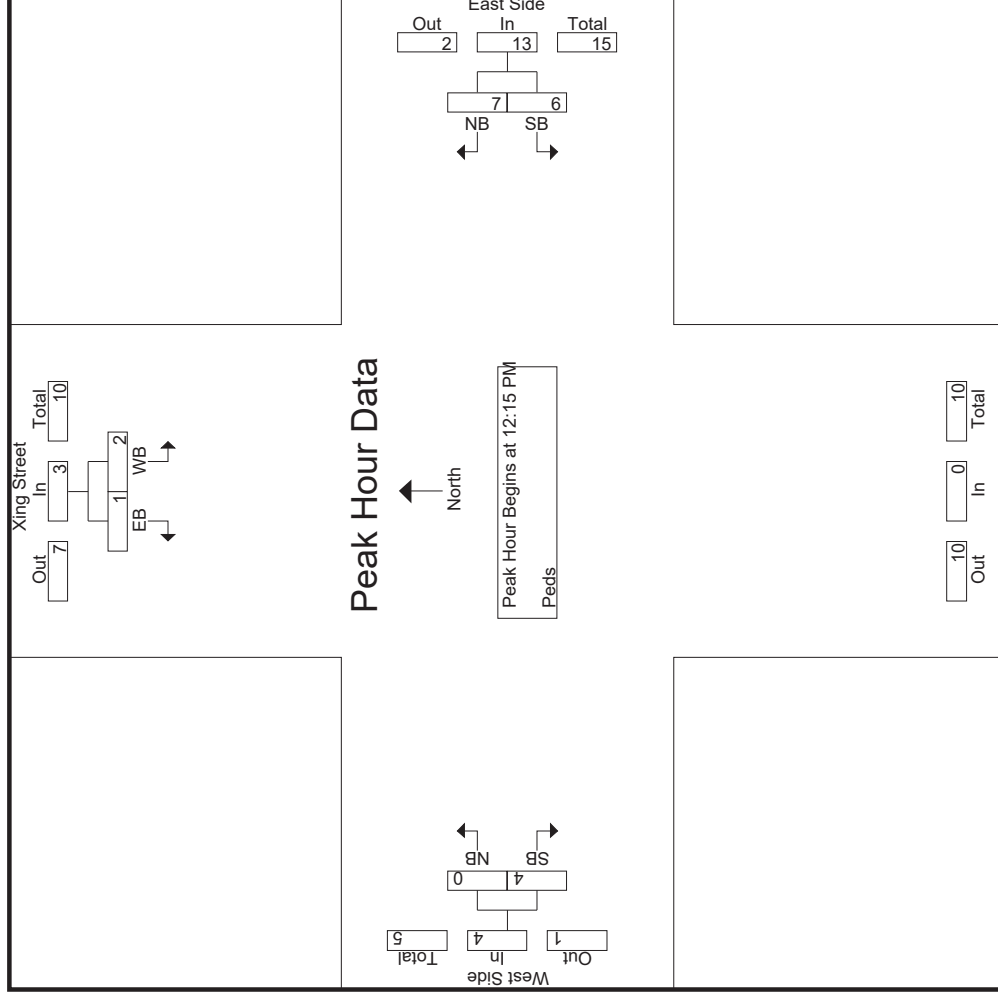
Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Smith Place N of Concord Av
 City/State : Cambridge, MA
 Weather : Clear

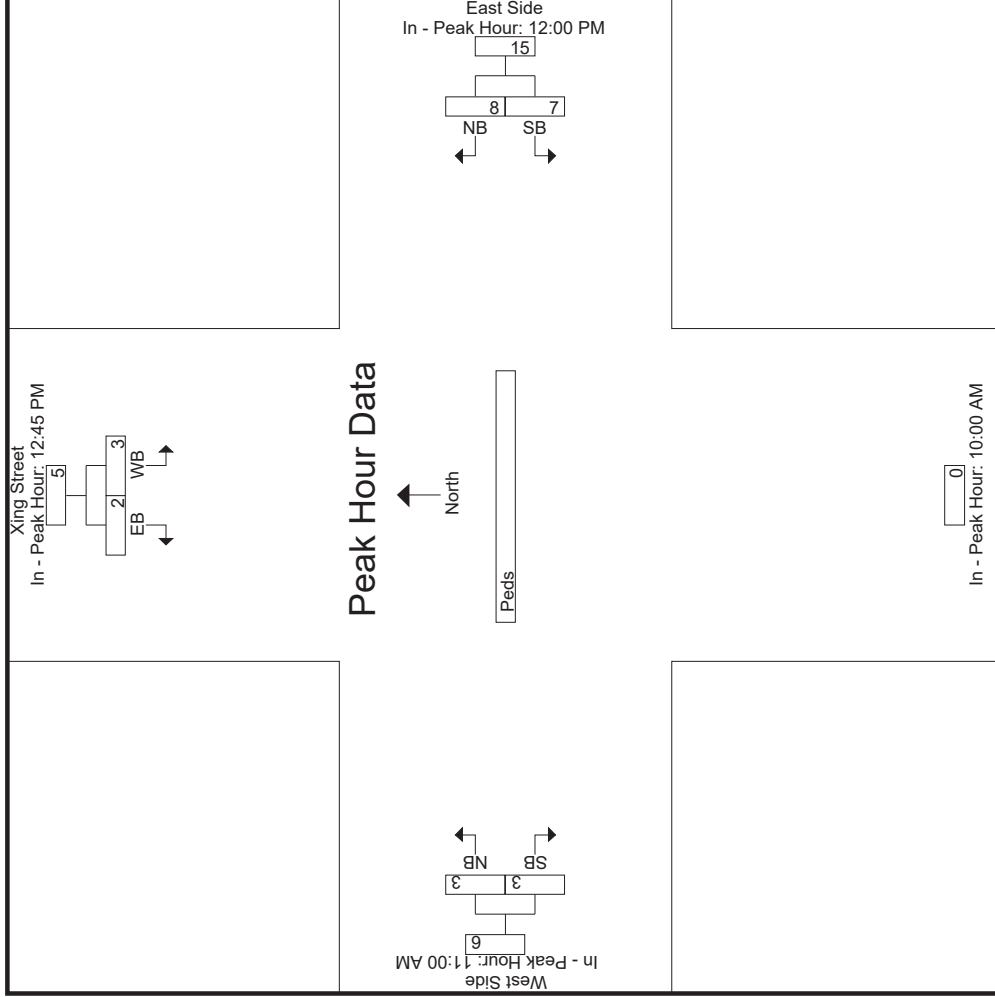
File Name : 80840011
 Site Code : 80840011
 Start Date : 4/2/2019
 Page No : 7

Start Time	Xing Street From North		East Side From East		From South		West Side From West		App. Total	Int. Total
	WB	EB	SB	NB	App. Total	NB	SB	App. Total		
Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 12:15 PM										
12:15 PM	0	0	1	3	4	0	0	0	0	4
12:30 PM	0	0	3	1	4	0	0	1	1	5
12:45 PM	1	1	2	2	4	0	0	1	1	7
01:00 PM	1	0	0	1	1	0	0	2	2	4
Total Volume	2	1	6	7	13	0	0	4	4	20
% App. Total	66.7	33.3	46.2	53.8		0	0	100		
PHF	.500	.250	.500	.583	.813	.000	.000	.500	.500	.714



Peak Hour Analysis From 10:00 AM to 01:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	12:45 PM	12:00 PM	10:00 AM	11:00 AM	
+0 mins.	1	2	3	1	3
+15 mins.	1	1	4	1	2
+30 mins.	0	3	4	0	0
+45 mins.	1	1	4	0	1
Total Volume	3	7	15	3	6
% App. Total	.750	.583	.938	.750	.500
PHF	.750	.625	.938	.750	.500



Accurate Counts

978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Smith Place N of Concord Av
 City/State : Cambridge, MA
 Weather : Clear

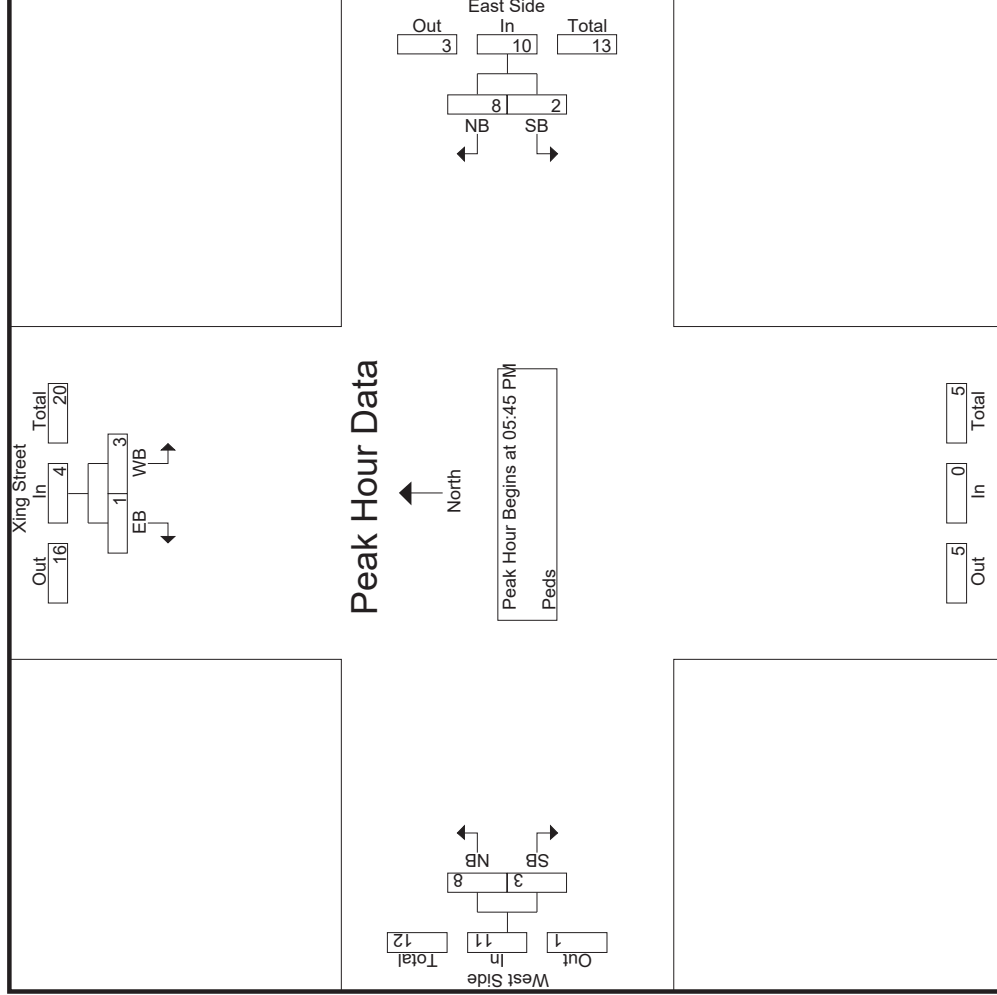
File Name : 80840011
 Site Code : 80840011
 Start Date : 4/2/2019
 Page No : 10

Start Time	Xing Street From North		East Side From East		From South		West Side From West		App. Total	Int. Total
	WB	EB	SB	NB	App. Total	NB	SB	App. Total		
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 05:45 PM										
05:45 PM	0	0	1	0	1	0	2	2	4	5
06:00 PM	0	0	0	2	2	0	2	1	3	5
06:15 PM	2	0	1	3	4	0	2	0	2	8
06:30 PM	1	1	0	3	3	0	2	0	2	7
Total Volume	3	1	2	8	10	0	8	3	11	25
% App. Total	.75	.25	.20	.80			72.7	27.3		
PHF	.375	.250	.500	.667	.625	.000	1.00	.375	.688	.781

Accurate Counts
978-664-2565

N/S Street : Peds & Bikes at ATR Loc
E/W Street : Smith Place N of Concord Av
City/State : Cambridge, MA
Weather : Clear

File Name : 80840011
Site Code : 80840011
Start Date : 4/2/2019
Page No : 11



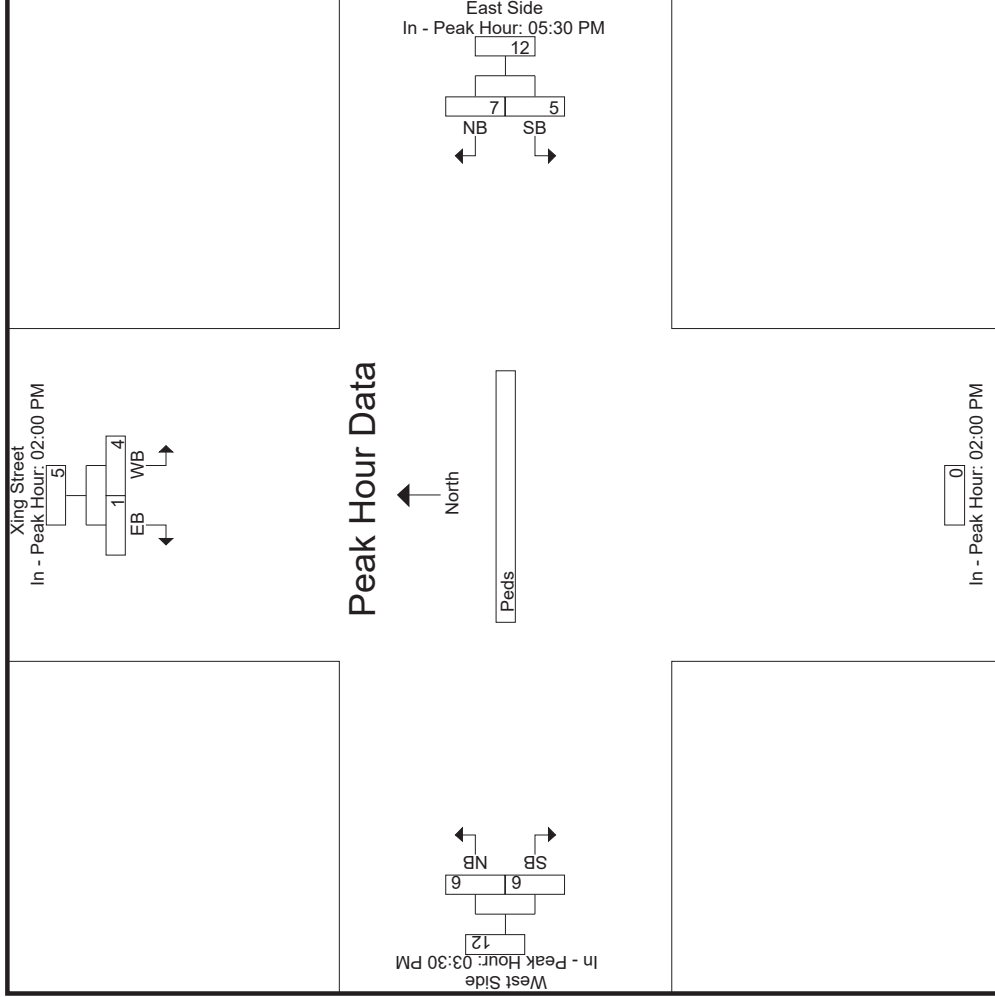
Peak Hour Analysis From 02:00 PM to 06:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	02:00 PM	05:30 PM	02:00 PM	03:30 PM
+0 mins.	1	0	1	3
+15 mins.	1	0	1	3
+30 mins.	0	0	0	0
+45 mins.	2	1	3	5
Total Volume	4	1	5	6
% App. Total	80	20	41.7	58.3
PHF	.500	.250	.417	.583
			.600	.300
			.000	.500
			.500	.500

Accurate Counts
978-664-2565

N/S Street : Peds & Bikes at ATR Loc
 E/W Street : Smith Place N of Concord Av
 City/State : Cambridge, MA
 Weather : Clear

File Name : 80840011
 Site Code : 80840011
 Start Date : 4/2/2019
 Page No : 12



Vehicle Queue Count Data



Time	Concord Avenue		Concord Avenue		WB RT	WB RT	WB RT	WB RT	WB RT
	eB LT/TH	eB TH/RT	wB L	wB T					
7:30 AM	4	9	3	3	1	1	1	1	1
7:33	7	9	5	3	0	3	1	1	1
7:35	7	5	4	0	0	3	0	0	0
7:37	6	9	6	1	4	4	1	1	1
7:39	6	5	5	2	3	3	0	0	0
7:41	5	6	3	4	3	4	3	3	3
7:43	6	4	0	4	5	4	5	5	5
7:46	6	6	0	4	6	6	6	6	6
7:49	7	9	4	0	8	7	7	7	7
7:51	6	3	8	0	6	6	6	6	6
7:53	8	9	6	0	1	1	1	1	1
7:55	6	8	4	9	0	4	4	4	4
7:57	3	6	5	2	4	4	4	4	4
7:59	5	7	8	0	2	2	2	2	2
8:01	7	5	4	2	0	0	0	0	0
8:04	6	10	3	2	4	4	4	4	4
8:06	9	7	8	0	2	2	2	2	2
8:09	6	6	4	2	3	3	3	3	3
8:13	7	9	4	6	4	4	4	4	4
8:15	9	8	6	4	2	2	2	2	2
8:17	1	3	8	1	1	1	1	1	1
8:20	2	4	9	4	2	2	2	2	2
8:22	7	6	6	2	1	1	1	1	1
8:25	2	8	8	2	1	1	1	1	1
8:27	5	6	4	6	1	1	1	1	1
8:29	6	6	3	3	1	1	1	1	1
8:31	2	4	8	2	5	4	4	4	4
8:33	3	6	4	3	2	2	2	2	2
8:36	7	6	1	6	1	1	1	1	1
8:38	6	6	6	6	5	5	5	5	5
8:41	2	4	8	2	1	1	1	1	1
8:43	3	5	6	1	4	4	4	4	4
8:45	5	7	6	4	3	3	3	3	3
8:47	2	2	7	4	6	6	6	6	6
8:50	6	6	6	6	0	0	0	0	0
8:52	2	3	6	2	4	4	4	4	4
8:54	2	2	6	4	4	4	4	4	4
8:57	4	6	6	5	3	3	3	3	3
9:04	3	3	7	8	4	3	3	3	3
9:06	1	4	9	0	2	2	2	2	2
9:07	0	1	9	0	3	5	2	2	2
9:09	0	5	4	6	2	6	2	2	2
9:13	2	3	3	4	1	1	1	1	1
9:17	0	8	9	0	9	1	1	1	1
9:20	0	2	9	1	6	1	1	1	1
9:23	0	4	0	0	4	4	4	4	4
9:26	0	6	3	6	3	3	3	3	3
9:29	1	1	2	5	0	0	0	0	0
Average 8-9	4.32	5.64	5.26	3.78	2.48	2.48	2.48	2.48	2.48
Max	9	10	9	8	6	6	6	6	6

Time	Blanchard Road		Blanchard Road		NB RT	NB RT	NB RT	NB RT	NB RT
	NB LT/TH	NB TH/RT	wB L	wB T					
7:31 AM	13	0	3	3	1	1	1	1	1
7:33	10	3	5	3	0	3	0	0	0
7:35	9	0	4	0	0	3	0	0	0
7:37	15	1	6	1	4	4	1	1	1
7:39	15	0	5	2	3	3	0	0	0
7:42	13	3	3	4	3	4	3	3	3
7:45	14	0	0	4	5	4	5	5	5
7:46	16	0	0	4	6	6	6	6	6
7:49	17	0	8	7	7	7	7	7	7
7:51	12	0	8	0	6	6	6	6	6
7:53	16	0	6	0	1	1	1	1	1
7:56	11	4	4	9	0	4	4	4	4
7:58	12	0	5	2	4	4	4	4	4
8:02	4	3	7	3	2	2	2	2	2
8:04	3	0	4	2	0	0	0	0	0
8:09	11	0	3	2	4	4	4	4	4
8:11	6	0	8	0	2	2	2	2	2
8:13	7	2	4	2	3	3	3	3	3
8:18	10	0	4	6	4	4	4	4	4
8:20	15	0	6	4	2	2	2	2	2
8:22	10	0	7	3	1	1	1	1	1
8:24	11	1	9	4	2	2	2	2	2
8:27	5	2	6	2	1	1	1	1	1
8:29	8	0	8	2	1	1	1	1	1
8:34	2	1	8	2	1	1	1	1	1
8:36	9	0	4	6	1	1	1	1	1
8:38	3	0	5	4	4	4	4	4	4
8:40	8	1	4	3	2	2	2	2	2
8:42	7	2	6	6	0	0	0	0	0
8:44	8	1	7	4	6	6	6	6	6
8:45	12	0	6	6	5	5	5	5	5
8:47	8	0	8	2	1	1	1	1	1
8:52	4	0	6	1	4	4	4	4	4
8:54	11	0	6	4	3	3	3	3	3
8:56	8	1	7	4	6	6	6	6	6
8:59	8	0	6	6	0	0	0	0	0
9:01	4	0	6	2	4	4	4	4	4
9:03	15	0	6	4	4	4	4	4	4
9:05	10	1	6	5	3	3	3	3	3
9:08	9	2	7	8	4	3	3	3	3
9:10	3	0	9	0	2	2	2	2	2
9:14	2	0	3	3	2	2	2	2	2
9:18	3	0	4	3	5	2	2	2	2
9:26	9	0	4	6	2	6	2	2	2
9:28	2	0	3	4	1	1	1	1	1
Average 8-9	7.73	0.59	5.26	3.78	2.48	2.48	2.48	2.48	2.48
Max	15	3	9	8	6	6	6	6	6

Time	Blanchard Road		Blanchard Road		SB LT/TH/RT	SB LT/TH/RT	SB LT/TH/RT	SB LT/TH/RT	SB LT/TH/RT
	NB LT/TH	NB TH/RT	wB L	wB T					
7:31 AM	10	1	7	3	1	1	1	1	1
7:33	10	3	5	3	0	3	0	0	0
7:35	10	0	4	0	0	3	0	0	0
7:37	10	1	6	1	4	4	1	1	1
7:40	8	0	5	2	3	3	0	0	0
7:42	13	3	3	4	3	4	3	3	3
7:44	8	0	0	4	5	4	5	5	5
7:46	10	0	0	4	6	6	6	6	6
7:48	10	1	8	7	7	7	7	7	7
7:51	9	0	8	0	6	6	6	6	6
7:53	7	0	6	0	1	1	1	1	1
7:55	8	0	4	9	0	4	4	4	4
7:57	7	0	5	2	4	4	4	4	4
7:59	6	0	8	0	2	2	2	2	2
8:02	6	0	4	2	0	0	0	0	0
8:04	8	1	3	2	4	4	4	4	4
8:10	9	1	8	0	2	2	2	2	2
8:14	8	0	4	2	3	3	3	3	3
8:16	8	0	4	2	3	3	3	3	3
8:18	7	0	4	6	4	4	4	4	4
8:20	10	0	6	4	2	2	2	2	2
8:23	9	1	7	3	1	1	1	1	1
8:26	6	0	9	4	2	2	2	2	2
8:29	8	1	6	2	1	1	1	1	1
8:31	7	0	8	2	1	1	1	1	1
8:33	6	0	4	6	1	1	1	1	1
8:35	8	0	5	4	4	4	4	4	4
8:38	10	0	6	4	3	3	3	3	3
8:40	10	0	6	4	3	3	3	3	3
8:42	8	0	7	4	6	6	6	6	6
8:44	11	0	6	6	0	0	0	0	0
8:47	5	0	6	2	4	4	4	4	4
8:49	9	0	6	4	4	4	4	4	4
8:51	8	0	6	5	3	3	3	3	3
8:53	9	0	7	8	4	3	3	3	3
8:55	8	0	9	0	2	2	2	2	2
8:58	12	0	3	3	2	2	2	2	2
9:00	12	0	4	3	5	2	2	2	2
9:02	10	0	4	6	2	6	2	2	2
9:04	10	0	9	0	9	1	1	1	1
9:06	8	0	0	9	1	1	1	1	1
9:08	9	0	0	6	1	1	1	1	1
9:10	9	0	0	0	4	4	4	4	4
9:12	10	0	3	6	3	3	3	3	3
9:14	7	0	2	5	0	0	0	0	0
9:16	10	0	0	6	1	1	1	1	1
9:18	10	0	6	6	3	3	3	3	3
9:20	10	0	2	6	3	3	3	3	3
9:22	8	0	3	1	4	4	4	4	4
9:24	11	0	9	3	1	1	1	1	1
9:25	13	0	5	0	0	0	0	0	0
9:27	11	0	2	5	0	0	0	0	0
9:29	8	0	0	6	1	1	1	1	1
Average 8-9	8.15	8	5.26	3.78	2.48	2.48	2.48	2.48	2.48
Max	11	1	9	8	6	6	6	6	6

Time	Griswold Street		SB LT/TH/RT	SB LT/TH/RT
	NB LT/TH	NB TH/RT		
7:31 AM	1	1	1	1
7:35	0	0	0	0
7:37	1	1	1	1
7:40	1	1	1	1
7:43	0	0	0	0
7:47	0	0	0	0
7:50	0	0	0	0
7:52	0	0	0	0
7:54	1	1	1	1
7:56	1	1	1	1
8:00	1	1	1	1
8:02	0	0	0	0
8:04	0	0	0	0
8:06	0	0	0	0
8:08	1	1	1	1
8:10	1	1	1	1
8:14	1	1	1	1
8:16	0	0	0	0
8:18	1	1	1	1
8:20	0	0	0	0
8:23	1	1	1	1
8:26	0	0	0	0
8:29	1	1	1	1
8:31	0	0	0	0
8:33	0	0	0	0
8:35	0	0	0	0
8:38	0	0	0	0
8:40	0	0	0	0
8:42	0	0	0	0
8:44	0	0	0	0
8:47	1	1	1	1
8:				

Time	Concord Avenue			
	eB LT/TH	eB TH/RT	wB T	wB R
4:31 PM	3	4	3	3
4:35	5	3	4	6
4:39	5	6	4	4
4:42	4	4	4	6
4:47	3	2	8	4
4:51	6	1	8	3
4:54	6	2	4	2
4:56	0	7	4	2
4:59	4	5	3	1
5:02	3	2	4	4
5:08	4	7	3	2
5:10	6	2	4	4
5:12	8	3	6	2
5:16	3	5	8	4
5:21	6	4	6	2
5:23	6	4	8	4
5:27	4	3	4	2
5:30	1	4	7	4
5:32	7	1	4	2
5:34	6	1	4	4
5:37	6	4	5	6
5:39	9	2	4	8
5:41	2	4	10	5
5:43	2	4	10	5
5:45	4	1	9	4
5:48	2	2	8	5
5:50	4	3	6	4
5:52	8	3	11	6
5:54	5	2	10	5
5:57	4	1	6	4
5:59	5	2	12	5
6:01	5	2	12	8
6:03	0	1	9	5
6:07	2	4	3	1
6:09	0	5	4	2
6:10	2	1	4	2
6:12	2	1	6	3
6:14	1	0	5	7
6:16	1	0	3	4
6:18	1	0	7	6
6:20	4	0	9	5
6:22	3	1	5	4
6:24	4	0	9	4
6:26	6	0	8	3
6:28	4	2	6	4
6:30	1	5	7	3
Average 4:45/5:45	4.6	3.15		
Max	9	7		

Time	Concord Avenue			
	wB L	wB T	wB R	
4:31 PM	3	2	1	
4:35	4	6	3	
4:37	4	4	3	
4:39	3	4	6	
4:41	6	8	4	
4:43	5	8	3	
4:46	8	4	2	
4:49	6	4	2	
4:51	4	3	1	
4:54	3	1	4	
4:56	5	3	2	
4:59	3	2	4	
5:01	3	6	2	
5:04	3	8	4	
5:08	5	6	2	
5:11	5	4	2	
5:15	6	7	4	
5:18	2	4	2	
5:20	2	1	4	
5:23	1	5	6	
5:25	4	1	8	
5:29	6	8	6	
5:30	4	10	5	
5:32	6	9	4	
5:34	8	8	5	
5:36	4	6	4	
5:39	8	11	6	
5:41	6	10	5	
5:43	6	6	4	
5:48	6	12	5	
5:53	8	12	8	
5:54	7	9	5	
5:57	9	3	1	
5:59	4	2	3	
6:00	4	2	4	
6:01	6	3	9	
6:03	5	7	4	
6:06	3	4	0	
6:08	5	7	6	
6:10	7	9	5	
6:12	9	5	4	
6:15	9	4	3	
6:17	8	3	4	
6:19	6	4	4	
6:21	7	3	1	
6:24	4	7	2	
6:26	6	9	4	
6:28	9	5	3	
6:30	5	5	3	
Average 4:45/5:45	4.75	5.63	3.83	
Max	8	11	8	

Time	Blanchard Road	
	NB LT/TH	NB RT
4:31 PM	15	0
4:32	14	0
4:34	10	0
4:36	13	2
4:38	16	0
4:40	10	0
4:42	17	0
4:44	15	0
4:46	16	0
4:48	15	0
4:51	17	0
4:53	14	0
4:55	15	0
4:57	16	0
5:00	17	0
5:02	17	0
5:04	15	0
5:06	16	2
5:09	18	0
5:11	14	0
5:13	15	0
5:16	13	0
5:18	14	1
5:20	13	0
5:22	4	0
5:24	4	1
5:27	9	0
5:29	7	1
5:31	0	0
5:33	7	2
5:35	9	0
5:38	11	3
5:40	8	2
5:43	10	0
5:45	3	1
5:47	15	0
5:49	15	0
5:52	14	1
5:54	6	1
5:56	12	0
6:00	8	0
6:02	16	0
6:04	15	0
6:06	12	0
6:08	10	0
6:10	9	0
6:12	6	0
6:14	4	0
6:17	4	0
6:19	5	0
6:22	8	0
6:24	4	0
6:27	6	0
Average 4:45/5:45	12.08	0.46
Max	18	3

Time	Blanchard Road	
	SB LT/TH/RT	
4:31 PM	7	
4:33	10	
4:35	9	
4:37	7	
4:39	9	
4:40	10	
4:44	9	
4:46	12	
4:51	10	
4:53	8	
4:55	7	
4:58	4	
5:00	10	
5:02	9	
5:04	11	
5:07	7	
5:09	12	
5:11	10	
5:13	6	
5:16	8	
5:19	7	
5:21	5	
5:23	5	
5:25	10	
5:30	9	
5:31	8	
5:34	2	
5:36	8	
5:38	9	
5:41	8	
5:43	7	
5:45	10	
5:47	5	
5:49	8	
5:51	8	
5:53	6	
5:58	10	
6:00	5	
6:02	4	
6:04	3	
6:06	10	
6:08	10	
6:09	8	
6:11	6	
6:13	6	
6:15	4	
6:18	6	
6:20	10	
6:21	4	
6:23	7	
6:25	4	
6:27	2	
6:29	4	
Average 4:45/5:45	7.96	
Max	12	

Time	Griswold Street	
	SB LT/TH/RT	
4:30 PM	1	
4:32	0	
4:34	0	
4:36	0	
4:38	1	
4:40	1	
4:42	0	
4:44	0	
4:46	0	
4:48	0	
4:50	0	
4:52	0	
4:55	0	
4:57	0	
4:59	0	
5:01	0	
5:02	1	
5:04	0	
5:06	0	
5:08	0	
5:11	1	
5:13	0	
5:15	1	
5:17	0	
5:19	0	
5:20	1	
5:22	0	
5:24	0	
5:26	0	
5:28	0	
5:30	1	
5:32	0	
5:34	0	
5:36	0	
5:40	0	
5:42	0	
5:44	1	
5:48	0	
5:50	1	
5:53	1	
5:58	0	
6:00	0	
6:02	1	
6:04	1	
6:06	0	
6:08	1	
6:01	0	
6:03	0	
6:07	0	
6:10	0	
6:13	0	
6:16	0	
6:19	0	
6:21	0	
6:23	1	
6:25	0	
6:27	0	
6:30	0	
Average 4:45/5:45	0.21	
Max	1	

Time	Concord Avenue	
	EB LT/TH	EB TH/RT
	2	1
7:30	9	5
7:32	9	5
7:35	7	4
7:38	10	6
7:41	10	8
7:44	7	5
7:46	9	7
7:48	10	6
7:50	7	4
7:52	6	5
7:54	8	5
7:56	9	5
7:59	7	3
8:02	13	10
8:04	8	3
8:06	11	4
8:08	8	3
8:10	8	9
8:13	9	5
8:17	7	2
8:17	4	1
8:20	4	2
8:22	9	7
8:24	8	2
8:26	8	5
8:29	5	6
8:31	3	7
8:33	6	3
8:36	8	5
8:38	6	0
8:40	8	2
8:43	5	2
8:45	6	4
8:51	3	1
8:53	2	2
8:56	6	4
8:58	3	3
9:01	5	1
9:03	3	3
9:05	5	3
9:07	1	0
9:09	7	0
9:11	4	4
9:13	3	3
9:15	3	2
9:17	8	1
9:18	5	2
9:21	2	0
9:22	4	2
9:24	3	0
9:26	6	0
9:28	5	2
9:30	2	2
Average 8-9	6.58	3.83
Max	13	10

Time	Concord Avenue	
	WB LT/TH/RT	1
	7:31	2
7:33	2	
7:35	1	
7:38	2	
7:40	1	
7:41	2	
7:42	2	
7:44	2	
7:46	2	
7:47	3	
7:49	1	
7:51	1	
7:52	2	
7:54	3	
7:55	0	
7:57	0	
7:58	1	
8:00	0	
8:01	1	
8:02	2	
8:03	4	
8:04	2	
8:06	1	
8:07	1	
8:08	1	
8:10	2	
8:12	0	
8:14	0	
8:14	0	
8:16	4	
8:17	1	
8:18	2	
8:19	2	
8:21	2	
8:23	3	
8:25	1	
8:26	0	
8:28	2	
8:30	1	
8:34	2	
8:36	2	
8:38	2	
8:39	0	
8:40	4	
8:42	2	
8:43	6	
8:45	2	
8:48	1	
8:50	2	
8:52	2	
8:53	2	
8:55	3	
8:56	1	
8:57	0	
8:58	1	
8:59	1	
9:01	0	
9:03	2	
9:05	1	
9:07	1	
9:09	0	
9:12	2	
9:13	3	
9:15	1	
9:16	3	
9:17	3	
9:20	1	
9:21	1	
9:24	1	
9:26	2	
9:27	1	
9:28	1	
9:29	1	
Average 8-9	1.67	
Max	6	

Time	Moulton Street	
	NB LT/TH/RT	1
	7:30 AM	0
7:34	0	
7:39	0	
7:42	0	
7:44	0	
7:48	0	
7:52	0	
7:56	0	
7:58	0	
8:00	0	
8:02	1	
8:04	0	
8:06	0	
8:08	1	
8:10	0	
8:12	0	
8:14	0	
8:16	1	
8:18	0	
8:20	0	
8:22	0	
8:25	1	
8:23	0	
8:25	1	
8:28	0	
8:30	0	
8:32	0	
8:34	0	
8:36	0	
8:38	0	
8:40	0	
8:43	0	
8:46	0	
8:49	0	
8:51	0	
8:53	0	
8:56	1	
8:58	0	
9:02	0	
9:04	0	
9:06	0	
9:08	1	
9:10	0	
9:12	0	
9:14	0	
9:17	0	
9:20	0	
9:22	0	
9:24	1	
9:26	1	
9:27	1	
9:29	0	
9:30	0	
Average 8-9	0.21	
Max	1	

Time	Moulton Street	
	SB LT/TH/RT	1
	7:30	1
7:32	1	
7:38	3	
7:39	2	
7:40	4	
7:41	1	
7:42	1	
7:43	1	
7:47	1	
7:48	1	
7:51	1	
7:53	1	
7:55	1	
7:57	0	
7:59	1	
8:00	1	
8:01	1	
8:03	1	
8:05	1	
8:06	1	
8:07	1	
8:09	3	
8:11	0	
8:14	1	
8:15	2	
8:17	1	
8:18	1	
8:20	0	
8:22	0	
8:26	1	
8:29	1	
8:30	1	
8:31	1	
8:33	1	
8:35	1	
8:37	1	
8:38	1	
8:40	6	
8:43	1	
8:45	1	
8:47	0	
8:50	0	
8:52	3	
8:53	1	
8:54	3	
8:56	2	
8:57	1	
8:59	1	
9:01	0	
9:03	2	
9:05	0	
9:06	1	
9:08	1	
9:11	1	
9:13	1	
9:16	0	
9:17	2	
9:20	2	
9:22	1	
9:24	1	
9:26	0	
9:29	1	
9:30	0	
Average 8-9	1.24	
Max	6	

Time	Concord Avenue	
	EB LT/TH	EB TH/RT
	2	1
4:31	3	4
4:33	1	8
4:35	7	6
4:37	3	5
4:40	7	3
4:42	4	4
4:46	6	4
4:47	4	2
4:49	2	8
4:51	6	1
4:53	8	4
4:55	1	10
4:58	5	5
4:59	8	4
5:02	3	5
5:04	2	4
5:07	5	7
5:09	9	7
5:11	8	1
5:13	4	5
5:16	3	5
5:18	4	3
5:20	6	3
5:22	8	3
5:25	9	3
5:27	6	4
5:29	4	0
5:31	8	1
5:34	5	2
5:36	6	3
5:38	6	2
5:40	2	6
5:43	3	0
5:45	4	1
5:47	2	2
5:49	4	3
5:51	6	2
5:54	6	3
5:56	4	0
5:58	3	1
6:00	4	2
6:02	0	0
6:04	3	0
6:06	5	4
6:08	2	1
6:10	2	0
6:12	2	0
6:14	1	0
6:16	1	0
6:18	1	0
6:20	4	0
6:22	2	1
6:24	4	0
6:25	5	0
6:27	3	2
6:29	1	5
Average 4:45/5:45	5.22	3.78
Max	9	10

Time	Concord Avenue	
	WB LT/TH/RT	
	1	
4:31 PM	6	
4:33	7	
4:34	7	
4:36	8	
4:37	5	
4:39	9	
4:40	2	
4:42	5	
4:44	3	
4:46	5	
4:48	9	
4:50	2	
4:52	7	
4:53	6	
4:54	3	
4:55	7	
4:47	4	
4:59	8	
5:00	2	
5:01	3	
5:02	2	
5:04	8	
5:06	9	
5:07	5	
5:08	2	
5:09	2	
5:10	2	
5:11	4	
5:12	4	
5:13	1	
5:15	1	
5:17	4	
5:18	1	
5:19	2	
5:20	10	
5:22	12	
5:24	10	
5:26	6	
5:26	3	
5:27	3	
5:29	4	
5:31	7	
5:32	4	
5:33	6	
5:35	2	
5:37	4	
5:38	5	
5:39	6	
5:41	6	
5:42	5	
5:43	8	
5:44	2	
5:45	1	
5:47	3	
5:49	9	
5:51	7	
5:53	5	
5:54	6	
5:55	8	
5:58	6	
6:00	6	
6:01	4	
6:03	7	
6:05	4	
6:06	9	
6:07	8	
6:08	5	
6:09	2	
6:10	4	
6:11	6	
6:13	11	
6:15	2	
6:16	2	
6:17	5	
6:18	8	
6:19	2	
6:20	1	
6:21	8	
6:24	8	
6:26	3	
6:28	6	
Average 4:45/5:45	4.79	
Max	12	

Time	Moulton Street	
	NB LT/TH/RT	
	1	
4:34 PM	2	
4:36	0	
4:38	2	
4:41	2	
4:44	2	
4:47	0	
4:50	0	
4:53	1	
4:57	0	
5:02	0	
5:04	1	
5:06	2	
5:08	0	
5:09	1	
5:10	1	
5:15	1	
5:17	0	
5:19	0	
5:21	0	
5:23	0	
5:25	3	
5:29	1	
5:31	0	
5:34	1	
5:36	0	
5:38	0	
5:40	0	
5:42	0	
5:44	1	
5:46	0	
5:48	0	
5:50	0	
5:52	0	
5:54	1	
5:56	1	
5:57	2	
5:59	0	
6:01	0	
6:03	0	
6:06	0	
6:08	0	
6:10	0	
6:12	0	
6:13	1	
6:15	1	
6:17	0	
6:19	1	
6:21	2	
6:23	0	
6:25	1	
6:27	0	
6:30	0	
Average 4:45/5:45	0.54	
Max	3	

Time	Moulton Street	
	SB LT/TH/RT	
	1	
4:31 PM	1	
4:33	2	
4:35	2	
4:36	5	
4:41	4	
4:44	2	
4:47	1	
4:50	4	
4:52	2	
4:53	1	
4:55	3	
4:57	0	
4:59	2	
5:03	2	
5:05	3	
5:07	3	
5:08	4	
5:09	2	
5:12	3	
5:15	1	
5:18	1	
5:20	0	
5:22	2	
5:27	1	
5:32	4	
5:33	1	
5:35	2	
5:42	3	
5:46	1	
5:48	1	
5:51	3	
5:54	0	
5:57	3	
6:01	2	
6:03	1	
6:05	0	
6:07	3	
6:08	3	
6:12	2	
6:13	2	
6:14	2	
6:14	2	
6:15	2	
6:18	1	
6:21	2	
6:23	2	
6:26	4	
6:27	0	
6:28	0	
6:30	0	
Average 4:45/5:45	2.05	
Max	4	

PUBLIC AND PRIVATE TRANSIT DATA



MOBILE SHUTTLE TRACKER

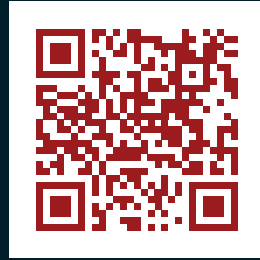


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Ride Systems

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- > Access the schedule on your phone.



Track the Shuttle Online
AlewifeConnect.com

Alewife Station Shuttle Schedule



Shuttle Stops:

Alewife Station	45 Moulton St	733 Concord Ave
110 Fawcett St	75 Moulton St	MBTA Bus Stop at Smith Pl
110 Fawcett St	10 Wilson Rd	80 Fawcett St
10 Moulton St	767C Concord Ave	

AlewifeTMA

AlewifeTMA.org



QUESTIONS & FEEDBACK

Director@AlewifeTMA.org

Alewife TMA managed by
TransAction Associates
TransActionAssoc.com

Shuttles operated by
TransAction Corporate Shuttles
tcs shuttles.com | 781.895.1100

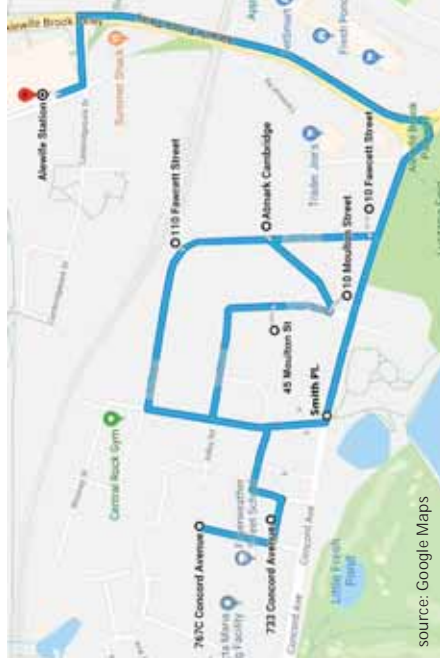
Updated as of June 23, 2020

AlewifeTMA

AlewifeTMA.org



Shuttle Route



source: Google Maps

Morning Commute

Passengers boarding at Alewife Station, please tell the driver which of the below stops is your final destination.

PICKUP ONLY MBTA Smith PI	PICKUP ONLY 80 Fawcett St	Alewife Station
6:43	6:45	7:00
7:09	7:10	7:30
7:39	7:40	8:00
8:09	8:10	8:30
8:39	8:40	9:00
9:09	9:10	9:30
9:39	9:40	10:00
10:09	10:10	10:20*

10 Fawcett St 75 Moulton St MBTA Bus Stop at Smith PI
 110 Fawcett St 10 Wilson Rd 80 Fawcett St
 10 Moulton St 767C Concord Ave
 45 Moulton St 733 Concord Ave

*dropoff only

No shuttle service on weekends and the following Holidays:

- New Year's Day
- President's Day
- Memorial Day
- 4th of July
- Labor Day
- Thanksgiving (and the day after)
- Christmas Day



Afternoon Commute

DROPOFF ONLY 80 Fawcett St	MBTA Smith PI	767C Concord Ave	733 Concord Ave	10 Wilson Rd	75 Moulton St	45 Moulton St	10 Moulton St	PICKUP ONLY 80 Fawcett St	10 Fawcett St	Alewife Station
--	--	3:00	3:00	3:01	3:01	3:02	3:04	3:08	3:09	3:30
3:40	3:41	3:42	3:42	3:43	3:43	3:44	3:46	3:50	3:51	4:02
4:12	4:13	4:14	4:14	4:15	4:15	4:16	4:18	4:22	4:23	4:34
4:44	4:45	4:46	4:46	4:47	4:47	4:48	4:50	4:54	4:55	5:06
5:16	5:17	5:18	5:18	5:19	5:19	5:20	5:22	5:26	5:27	5:38
5:48	5:49	5:50	5:50	5:51	5:51	5:52	5:54	5:58	5:59	6:10
6:20	6:21	6:22	6:22	6:23	6:23	6:24	6:26	6:30	6:31	6:42
7:02	7:03	7:04	7:04	7:05	7:05	7:06	7:08	7:12	7:13	7:24



Shuttle is accessible for all persons

Managed by:
AlewifeTMA

AlewifeTMA.org

Operated by:



TCSshuttles.com | 781.895.1100

Rider Guide
 Finch passengers connect to the shuttle at the MBTA bus stops at Smith PI.

AM pickup: on the opposite side of Concord Ave from Finch (heading in the direction of Alewife Station).
 PM stop: same side of the road as Burger King.

Morning Commute: Shuttle Pickups & Stops

In the morning, the Shuttle typically travels directly from Finch (MBTA Bus Stop at Smith PI) and Atmark Apartments (80 Fawcett St) to Alewife Station.

Call 781-895-1100 to request an AM pickup from another stop location to go to Alewife Station.

Afternoon Commute: 110 Fawcett is Upon Request Only, Call 781-895-1100.

Shuttle is not able to wait for late riders. Please be outside 5 minutes before listed time.
 All scheduled times are approximate due to traffic and weather conditions in the area.

Hour	Month Ridership	Month % by hour	Daily Ridership	Month % by hour
7 AM to 8 AM	304	18%	14	19%
8 AM to 9 AM	535	32%	24	32%
9 AM to 10 AM	242	15%	11	15%
10 AM to 11 AM	93	6%	4	5%
3 PM to 4 PM	84	5%	4	5%
4 PM to 5 PM	165	10%	8	11%
5 PM to 6 PM	155	9%	7	9%
6 PM to 7 PM	74	4%	3	4%
Total	1652		75	

		767 Con/Fay	733 Concord	75 Moulton	45 Moulton	10 Moulton	110 Fawcett	10 Fawcett	Atmark
Month Ridership by stop	% hour distribution	46	99	54	59	46	1	142	1205
Daily Ridership by stop		2	5	2	3	2	1	6	55
Hour									
7 AM to 8 AM	0.19	1	1	1	1	1	0	1	10
8 AM to 9 AM	0.32	1	2	1	1	1	1	2	18
9 AM to 10 AM	0.15	0	1	0	1	0	0	1	8
10 AM to 11 AM	0.06	0	0	0	0	0	0	0	3
3 PM to 4 PM	0.05	0	0	0	0	0	0	0	3
4 PM to 5 PM	0.1	0	1	0	0	0	0	1	6
5 PM to 6 PM	0.09	0	0	0	0	0	0	1	5
6 PM to 7 PM	0.04	0	0	0	0	0	0	0	2
Total	1	2	5	2	3	2	1	6	55

in

out

The capacity of the bus is 18 and we operated 22 days in January.

The data shows the number of shuttle boardings per-stop and time-frame for the month of Jan 2020

Route	Day of the Week	Direction	Total Ons	Total Offs	Total	Total Trips
Route 62	WKDY	IB	683.2	688.5		25
Route 62	WKDY	OB	629.3	648.3		23
			1,312.5	1,336.8	1,324.6	

Route	Day of the Week	Direction	Total Ons	Total Offs	Total	Total Trips
Route 67	WKDY	IB	344.7	462.8		23
Route 67	WKDY	OB	316.8	216.9		23
			661.5	679.7	670.6	

Route	Day of the Week	Direction	Total Ons	Total Offs	Total	Total Trips
Route 74	WKDY	IB	340.4	341.2		23
Route 74	WKDY	OB	389.8	388.8		24
			730.2	730.0	730.1	

Route	Day of the Week	Direction	Total Ons	Total Offs	Total	Total Trips
Route 76	WKDY	IB	459.7	535.1		23
Route 76	WKDY	OB	535.9	499.5		22
			995.6	1,034.6	1,015.1	

Route	Day of the Week	Direction	Total Ons	Total Offs	Total	Total Trips
Route 78	WKDY	IB	625.3	623.9		33
Route 78	WKDY	OB	664.1	670.4		33
			1,289.4	1,294.3	1,291.9	

Route	Day of the Week	Direction	Total Ons	Total Offs	Total	Total Trips
Route 79	WKDY	IB	561.8	562.1		31
Route 79	WKDY	OB	588.6	595.7		29
			1,150.4	1,157.8	1,154.1	

Route	Day of the Week	Direction	Total Ons	Total Offs	Total	Total Trips
Route 84	WKDY	IB	215.6	226.0		11
Route 84	WKDY	OB	165.8	165.6		11
			381.4	391.6	386.5	

Route	Day of the Week	Direction	Total Ons	Total Offs	Total	Total Trips
Route 350	WKDY	IB	768.5	767.3		29
Route 350	WKDY	OB	782.0	813.3		28
			1,550.5	1,580.6	1,565.5	

Route	Day of the Week	Direction	Total Ons	Total Offs	Total	Total Trips
Route 351	WKDY	IB	81.9	86.3		4
Route 351	WKDY	OB	96.9	100.7		4
			178.8	187.0	182.9	

Service/Schedule Change

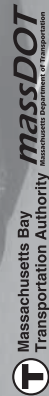
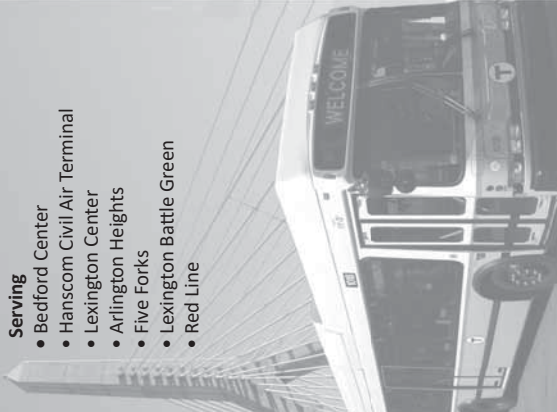
62/76

Effective August 30, 2020

**62/76 Bedford VA Hospital-
Lincoln Lab-Alewife Sta.**

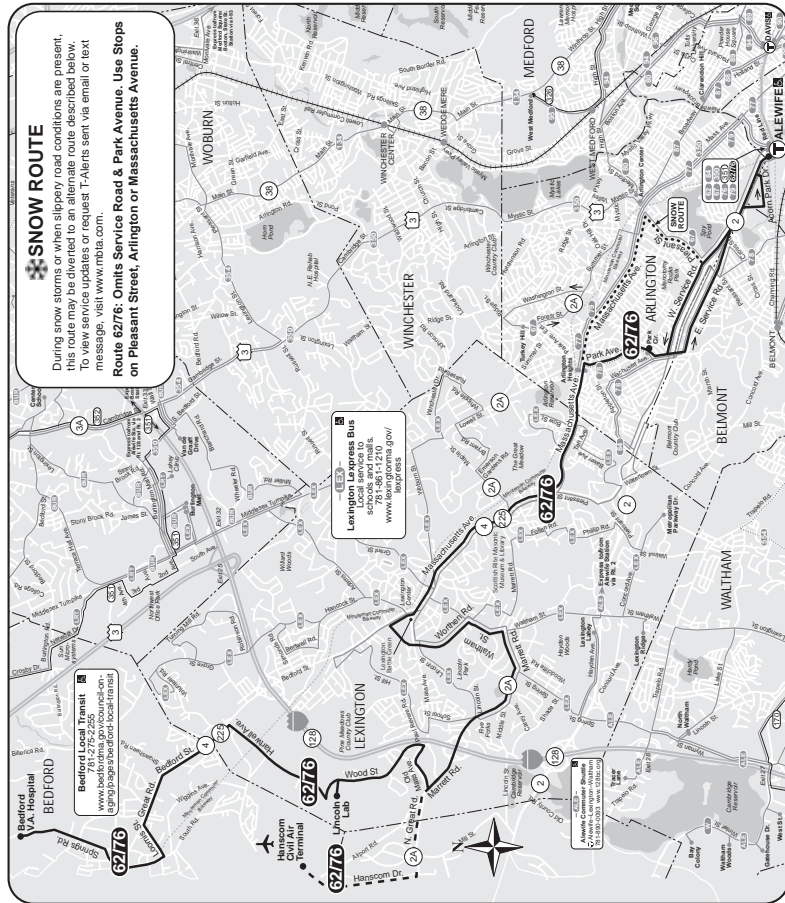
Serving

- Bedford Center
- Hanscom Civil Air Terminal
- Lexington Center
- Arlington Heights
- Five Forks
- Lexington Battle Green
- Red Line



MassDOT
Massachusetts Department of Transportation
Information 617-222-3200 • 1-800-392-6100
(TTY) 617-222-5146 • www.mbta.com

Route 62/76 Bedford VA Hospital - Lincoln Lab - Alewife Station



62/76

Weekday

62/76

Saturday

Inbound				Outbound			
Leave Hospital	Arrive Center Terminal	Lv/Arrive Center	Arrive Station	Leave Station	Arrive Center Terminal	Arrive Hospital	Arrive Hospital
6:00A	.....	6:25A	6:41A	5:00A	5:16A	5:28A	5:46A
7:00	.....	7:26	7:46	6:00	6:16	6:28	6:46
8:05	.....	8:31	8:51	6:30	6:46	6:58	7:19
8:35	.....	9:01	9:21	7:00	7:22	7:36	7:57
9:05	.....	9:31	9:51	7:30	7:52	8:06	8:27
10:00	.....	10:26	10:46	8:00	8:22	8:36	8:57
11:00	11:18	11:33	11:50	9:00	9:22	9:34	9:53
12:00N	12:18P	12:33P	12:50P	10:00	10:18	.....	10:41
1:00	1:18	1:33	1:50	11:00	11:18	.....	11:41
2:00	2:18	2:33	2:50	12:00N	12:18P	.....	12:41P
3:00	3:18	3:33	3:50	1:00	1:18	.....	1:41
4:00	4:18	4:33	4:50	2:00	2:18	.....	2:41
5:00	5:18	5:34	5:52	3:00	3:18	.....	3:41
5:30	5:48	6:04	6:22	4:00	4:18	.....	4:43
6:00	6:18	6:34	6:52	5:00	5:21	.....	5:16
6:30	6:48	7:04	7:22	6:00	6:21	.....	6:46
7:00	.....	7:26	7:43	7:00	7:18	.....	7:43
7:30	.....	7:53	8:08	8:00	8:18	.....	8:37
8:00	.....	8:23	8:38	9:00	9:18	.....	9:37
9:00	.....	9:23	9:38				
10:00	.....	10:23	10:38				

No service on Sunday

All buses are accessible to persons with disabilities

Fare	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	\$1.70	\$1.70	\$2.40	\$2.40
CharlieTicket	\$2.00	\$2.00	\$2.90	\$4.90
Cash-on-Board	\$2.00	\$4.00	\$2.90	\$4.90
Student/Youth*	\$0.85	\$0.85	\$1.10	\$1.10
Senior/TAP**	\$0.85	\$0.85	\$1.10	\$1.10

**Route 62/76
Bedford VA
Hospital-
Lincoln Lab-
Alewife Station**

**Routes 62 & 76 operate as a combined route.
For schedules, alerts and updates, visit:
mbta.com/schedules/62
mbta.com/schedules/76**

VALID PASSES: LinkPass (\$50.00/mo.); Local Bus (\$5/mo.); Student/Youth LinkPass (\$2.00/mo.); Senior/TAP Unkiss (\$30/mo.); and express bus, commuter rail, and boat passes.
* Requires Student CharlieCard or Youth CharlieCard. Student CharlieCards are available to students through participating middle schools and high schools. Youth CharlieCards are available to youth through participating middle schools and high schools. Youth CharlieCards are available to youth through participating middle schools and high schools. Youth CharlieCards are available to youth through participating middle schools and high schools. Youth CharlieCards are available to youth through participating middle schools and high schools.
** Requires Senior/TAP CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

Fall 2020 & Winter 2021 Holidays
9/7/20, Sunday; 10/12/20 & 11/11/20, Weekday
11/26/20, 12/25/20, & 1/1/21; Sun; 1/18/21 & 2/15/21; Sat

Route 62

Inbound			Outbound		
	Seq - StopID - Stop Name	99 - 141 - ALEWIFE STATION BUSWAY		Seq - StopID - Stop Name	1 - 141 - ALEWIFE STATION BUSWAY
06:24 (62.4)(B109) [60] {FA19}	On	0	05:47 (62.4)(B109) [60] {FA19}	On	1.3
	Off	44.7		Off	0
	Load	0.1		Load	1.3
06:50 (62.8)(B176) [38] {FA19}	On	0	06:10 (62.3)(B007) [57] {FA19}	On	9.9
	Off	33		Off	0
	Load	0.1		Load	9.9
06:52 (62.3)(B007) [58] {FA19}	On	0	06:40 (62.3)(B001) [36] {FA19}	On	16.9
	Off	50.6		Off	0
	Load	0		Load	16.9
07:20 (62.3)(B001) [34] {FA19}	On	0	07:10 (62.3)(B005) [67] {FA19}	On	14.4
	Off	47.9		Off	0
	Load	0.5		Load	14.4
07:30 (62.8)(B002) [7] {FA19}	On	0	07:45 (62.3)(B007) [57] {FA19}	On	19.4
	Off	51.6		Off	0
	Load	0		Load	19.4
07:50 (62.8)(B003) [31] {FA19}	On	0	08:15 (62.3)(B001) [34] {FA19}	On	21.2
	Off	45.4		Off	0
	Load	0		Load	21.7
07:55 (62.3)(B005) [66] {FA19}	On	0	09:00 (62.3)(B004) [48] {FA19}	On	17
	Off	49.9		Off	0
	Load	0.1		Load	17
08:32 (62.3)(B007) [57] {FA19}	On	0	09:55 (62.3)(B061) [7] {FA19}	On	15.4
	Off	30.1		Off	0
	Load	0.1		Load	18.6
09:05 (62.3)(B001) [35] {FA19}	On	0	10:55 (62.3)(B057) [7] {FA19}	On	12
	Off	23.1		Off	0
	Load	0.6		Load	12
09:45 (62.3)(B004) [48] {FA19}	On	0	11:55 (62.3)(B004) [44] {FA19}	On	10.9
	Off	21.5		Off	0
	Load	0		Load	10.9
10:45 (62.3)(B061) [7] {FA19}	On	0	12:55 (62.3)(B061) [9] {FA19}	On	10.1
	Off	15		Off	0
	Load	0		Load	10.9
11:45 (62.3)(B057) [7] {FA19}	On	0	13:55 (62.3)(B057) [8] {FA19}	On	13
	Off	13.6		Off	0
	Load	0		Load	13
12:45 (62.3)(B004) [45] {FA19}	On	0	15:00 (62.3)(B004) [33] {FA19}	On	22.3
	Off	15.3		Off	0
	Load	0		Load	22.3
13:45 (62.3)(B061) [9] {FA19}	On	0	15:40 (62.3)(B057) [9] {FA19}	On	21.1
	Off	17.8		Off	0
	Load	0		Load	21.1

14:45 (62.3)(B057) [9] {FA19}	On	0
	Off	16.2
	Load	0
15:50 (62.3)(B004) [30] {FA19}	On	0
	Off	24.4
	Load	0.1
16:35 (62.3)(B057) [8] {FA19}	On	0
	Off	22.3
	Load	0
17:05 (62.3)(B006) [31] {FA19}	On	0
	Off	16.7
	Load	0.3
17:47 (62.8)(B060) [23] {FA19}	On	0
	Off	4.3
	Load	0
17:55 (62.3)(B004) [22] {FA19}	On	0
	Off	13
	Load	0
18:25 (62.3)(B158) [25] {FA19}	On	0
	Off	5.5
	Load	0
18:44 (62.3)(B058) [30] {FA19}	On	0
	Off	4.3
	Load	0.1
19:15 (62.3)(B156) [12] {FA19}	On	0
	Off	7.4
	Load	0
19:55 (62.4)(B059) [30] {FA19}	On	0
	Off	3.4
	Load	0.1
20:40 (62.4)(B061) [21] {FA19}	On	0
	Off	5.9
	Load	0.6

16:10 (62.3)(B006) [30] {FA19}	On	19.5
	Off	0
	Load	19.5
16:50 (62.3)(B004) [22] {FA19}	On	47.2
	Off	0
	Load	47.3
17:15 (62.8)(B060) [24] {FA19}	On	34.4
	Off	0
	Load	36.8
17:25 (62.3)(B158) [23] {FA19}	On	40.4
	Off	0
	Load	40.4
17:47 (62.3)(B058) [31] {FA19}	On	50.3
	Off	0
	Load	50.3
17:59 (62.8)(B183) [31] {FA19}	On	35.1
	Off	0
	Load	35.1
18:20 (62.3)(B156) [12] {FA19}	On	43.3
	Off	0
	Load	46.6
19:10 (62.4)(B059) [29] {FA19}	On	29.8
	Off	0
	Load	33.2
20:05 (62.4)(B061) [19] {FA19}	On	16.4
	Off	0
	Load	16.4

Route 62

Inbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	0	0	0
Off	0	83.6	194.8	30.1
Total	0	83.6	194.8	30.1

	3-4PM	4-5PM	5-6PM	6-7 PM
On	0	0	0	0
Off	24.4	22.3	34	5.5
Total	24.4	22.3	34	5.5

Outbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	1.3	26.8	33.8	21.2
Off	0	0	0	0
Total	1.3	26.8	33.8	21.2

	3-4PM	4-5PM	5-6PM	6-7 PM
On	43.4	66.7	160.2	43.3
Off	0	0	0	0
Total	43.4	66.7	160.2	43.3

AM	1.3	110.4	228.6	51.3
PM	67.8	89	194.2	48.8

Route 76

Inbound			Outbound		
	Seq - StopID - Stop Name	54 - 141 - ALEWIFE STATION BUSWAY		Seq - StopID - Stop Name	1 - 141 - ALEWIFE STATION BUSWAY
06:00 (76.3)(B169) [47] {FA19}	On	0	06:05 (76.3)(B056) [64] {FA19}	On	17.3
	Off	35.5		Off	0
	Load	1		Load	17.3
06:40 (76.3)(B056) [64] {FA19}	On	0	06:20 (76.3)(B057) [5] {FA19}	On	12.6
	Off	44.7		Off	0
	Load	0		Load	12.6
07:00 (76.3)(B057) [5] {FA19}	On	0	07:00 (76.3)(B061) [7] {FA19}	On	17.6
	Off	52.8		Off	0
	Load	0		Load	17.6
07:35 (76.3)(B061) [7] {FA19}	On	0	07:30 (76.3)(B056) [62] {FA19}	On	19.7
	Off	37.3		Off	0
	Load	0		Load	19.7
08:05 (76.3)(B056) [61] {FA19}	On	0	08:00 (76.3)(B057) [5] {FA19}	On	33
	Off	40.1		Off	0
	Load	0		Load	33
08:41 (76.3)(B057) [5] {FA19}	On	0	08:30 (76.3)(B061) [7] {FA19}	On	23.7
	Off	20		Off	0
	Load	0		Load	23.7
09:11 (76.3)(B061) [7] {FA19}	On	0	09:30 (76.3)(B057) [5] {FA19}	On	21
	Off	17.7		Off	0
	Load	3.1		Load	21
10:11 (76.3)(B057) [5] {FA19}	On	0	10:30 (76.3)(B004) [45] {FA19}	On	12.1
	Off	20.8		Off	0
	Load	0		Load	12.1
11:11 (76.3)(B004) [44] {FA19}	On	0	11:30 (76.3)(B061) [8] {FA19}	On	8
	Off	13.8		Off	0
	Load	0		Load	8
12:11 (76.3)(B061) [9] {FA19}	On	0	12:30 (76.0)(B057) [7] {FA19}	On	9.6
	Off	10.3		Off	0
	Load	0.8		Load	9.6
13:18 (76.0)(B057) [7] {FA19}	On	0	13:30 (76.0)(B004) [36] {FA19}	On	15.8
	Off	12.6		Off	0
	Load	0		Load	15.8
14:20 (76.0)(B004) [37] {FA19}	On	0	14:30 (76.0)(B006) [31] {FA19}	On	16
	Off	21.1		Off	0
	Load	0.1		Load	16
15:23 (76.0)(B006) [31] {FA19}	On	0	15:30 (76.0)(B177) [27] {FA19}	On	21.7
	Off	21.7		Off	0.1
	Load	0		Load	21.7
16:33 (76.0)(B177) [29] {FA19}	On	0	16:05 (76.0)(B058) [37] {FA19}	On	23.1
	Off	31.5		Off	0
	Load	0		Load	23.1

17:05	On	0
(76.0)(B058) [35]	Off	22.1
{FA19}	Load	0
17:40	On	0
(76.0)(B184) [2]	Off	7.5
{FA19}	Load	16.5
18:10	On	0
(76.0)(B061) [17]	Off	15.4
{FA19}	Load	0
18:36	On	0
(76.0)(B059) [29]	Off	13.3
{FA19}	Load	3.4
19:03	On	0
(76.0)(B060) [24]	Off	8.3
{FA19}	Load	0
19:35	On	0
(76.0)(B061) [17]	Off	8.6
{FA19}	Load	0
20:05	On	0
(76.4)(B057) [7]	Off	4.1
{FA19}	Load	0
21:05	On	0
(76.4)(B057) [8]	Off	6.3
{FA19}	Load	0
22:15	On	0
(76.0)(B057) [8]	Off	8.1
{FA19}	Load	0

16:35	On	22.5
(76.0)(B184) [2]	Off	0
{FA19}	Load	22.5
17:05	On	43.4
(76.0)(B061) [16]	Off	0
{FA19}	Load	43.4
17:37	On	52
(76.0)(B059) [28]	Off	0
{FA19}	Load	52
18:10	On	39.2
(76.0)(B060) [23]	Off	0
{FA19}	Load	39.2
18:45	On	38.4
(76.0)(B061) [18]	Off	0
{FA19}	Load	38.4
19:35	On	13.6
(76.4)(B057) [8]	Off	0
{FA19}	Load	13.6
20:35	On	6.4
(76.4)(B057) [8]	Off	0
{FA19}	Load	6.4
21:35	On	8.7
(76.0)(B057) [7]	Off	0
{FA19}	Load	8.7

Route 76

Inbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	0	0	0
Off	1	80.2	90.1	60.1
Total	1	80.2	90.1	60.1

	3-4PM	4-5PM	5-6PM	6-7 PM
On	0	0	0	0
Off	21.7	31.5	29.6	28.7
Total	21.7	31.5	29.6	28.7

Outbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	29.9	37.3	56.7
Off	1	0	0	0
Total	1	29.9	37.3	56.7

	3-4PM	4-5PM	5-6PM	6-7 PM
On	21.7	45.6	95.4	77.6
Off	0.1	0	0	0
Total	21.8	45.6	95.4	77.6

AM	2	110.1	127.4	116.8
PM	43.5	77.1	125	106.3

Schedule Change

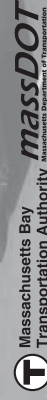
67•79

Effective August 30, 2020

67 Turkey Hill-Alewife Station
79 Arlington Heights-Alewife Station

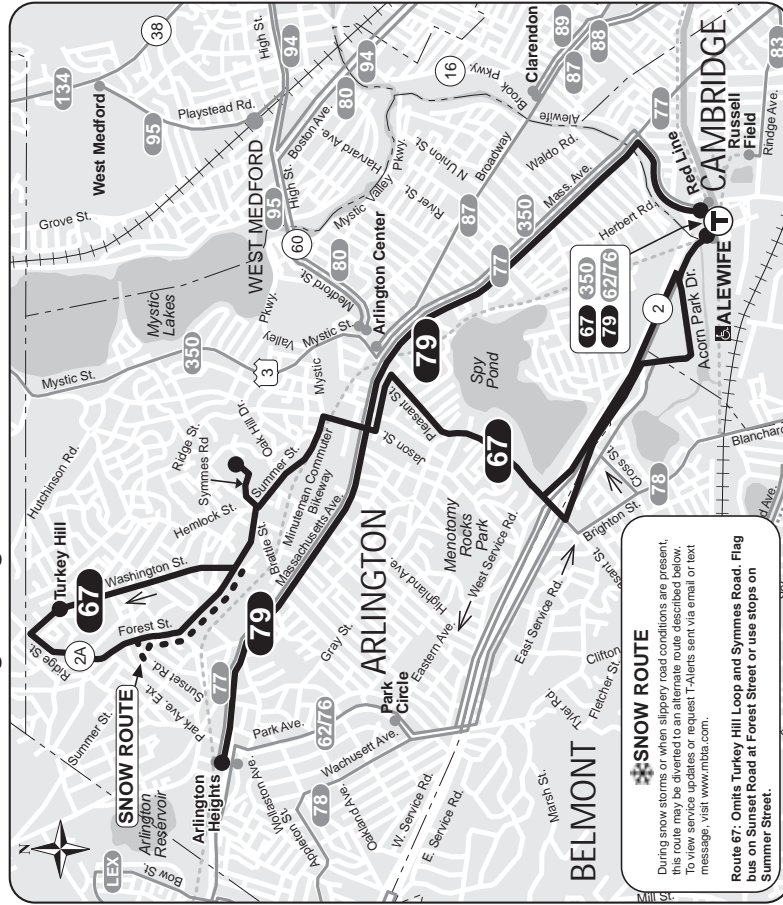
Serving

- Arlington High School
- Arlington Town Hall
- Arlington Center
- Red Line



Massachusetts Bay
Transportation Authority
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Route 67 Turkey Hill - Alewife Station Route 79 Arlington Heights - Alewife Station



67

Weekday

Inbound

Leave Turkey Hill	Arrive Arlington Center	Arrive Alewife Station	Leave Alewife Station	Arrive Arlington Center	Arrive Turkey Hill
6:18A	6:23A	6:32A	5:53A	6:00A	6:15A
6:52	6:57	7:07	6:26	6:33	6:48
7:22	7:29	7:43	6:59	7:06	7:21
7:49	7:56	8:10	7:24	7:31	7:47
8:17	8:24	8:39	7:53	8:00	8:16
8:45	8:50	9:03	8:23	8:30	8:44
9:12	9:17	9:27	8:49	8:56	9:10
10:02	10:07	10:17	9:39	9:46	10:00
10:52	10:57	11:07	10:29	10:36	10:50
11:42	11:47	11:56	11:19	11:26	11:40
12:32P	12:37P	12:46P	12:09P	12:16P	12:30P
1:22	1:27	1:36	12:59	1:06	1:20
2:12	2:17	2:26	1:48	1:55	2:10
3:02	3:07	3:16	2:38	2:47	3:02
3:52	3:57	4:06	3:27	3:36	3:51
4:42	4:47	4:56	4:17	4:26	4:41
5:10	5:16	5:26	4:44	4:55	5:10
5:37	5:43	5:53	5:11	5:22	5:37
6:05	6:11	6:21	5:38	5:49	6:04
6:32	6:36	6:45	6:05	6:16	6:31
6:57	7:01	7:10	6:33	6:41	6:56
7:37	7:41	7:49	7:15	7:23	7:37
8:20	8:24	8:32	7:58	8:05	8:18

Service Note: Route 67

Serves Symmes Road **OUTBOUND ONLY**.

Route 67

Turkey Hill-Alewife Station

79

Weekday

Inbound

Leave Arlington Heights	Arrive Arlington Center	Arrive Alewife Station	Leave Alewife Station	Arrive Arlington Center	Arrive Arlington Heights
6:35A	6:41A	6:55A	7:02A	7:09A	7:19A
7:00	7:06	7:20	7:30	7:38	7:52
7:30	7:39	7:59	8:10	8:16	8:26
8:00	8:06	8:24	8:35	8:41	8:51
8:30	8:36	8:54	9:30	9:36	9:46
9:00	9:05	9:20			
9:50	9:55	10:06			
2:20P	2:26P	2:39P	2:45	2:52	3:05
S 3:05	3:11	3:25	3:30	3:37	3:48
S 3:15	3:21	3:34	3:50	3:57	4:09
S 3:25	3:30	3:39	4:10	4:22	4:34
S 3:40	3:46	3:59	4:50	5:02	5:14
4:00	4:06	4:19	5:10	5:24	5:36
4:20	4:26	4:39	5:30	5:44	5:56
4:40	4:46	4:59	5:50	6:03	6:14
5:00	5:06	5:20	6:15	6:27	6:38
5:20	5:26	5:40	6:35	6:47	6:58
5:45	5:51	6:05	7:05	7:13	7:24
6:05	6:11	6:25			
6:45	6:51	7:02			

s - Leaves from Massachusetts Avenue at Appleton Street and does NOT run during school vacation

Route 79

Arlington Heights-Alewife Station

No service on weekends.

All buses are accessible to persons with disabilities



Fare	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	\$1.70	\$1.70	\$2.40	\$2.40
CharlieTicket	\$2.00	\$2.00	\$2.90	\$4.90
Cash-on-Board	\$2.00	\$4.00	\$2.90	\$4.90
Student/Youth*	\$0.85	\$0.85	\$1.10	\$1.10
Senior/TAP**	\$0.85	\$0.85	\$1.10	\$1.10

VALID PASSES: LinkPass (\$50.00/mo.); Local Bus (\$55/mo.); *Student/Youth LinkPass (\$25/mo.); **Senior/TAP LinkPass (\$50/mo.); and Express bus, commuter rail, and boat passes.
FREE FARES: Children 11 and under ride free when accompanied by an adult; Blind Access; CharlieCard holders ride free and if using a guide, the guide rides free. Reduced fares are available for students through participating middle schools and high schools. Youth CharlieCards are available through community partners in the Boston metro area. Visit www.mbta.com/youthpass for details.
 *Senior CharlieCard, available to Medicare cardholders, seniors 65+, and persons with disabilities.

Fall 2020 & Winter 2021 Holidays
 9/7/20; Sunday; 10/12/20 & 11/1/20; Weekday
 11/26/20, 12/25/20, & 1/1/21; Sun; 1/18/21 & 2/15/21 Sat

Route 67

Inbound			Outbound		
	Seq - StopID - Stop Name	23 - 141 - ALEWIFE STATION BUSWAY		Seq - StopID - Stop Name	1 - 141 - ALEWIFE STATION BUSWAY
06:18 (67.4)(B001) [37] {FA19}	On	0	05:53 (67.4)(B001) [35] {FA19}	On	1.8
	Off	28.3		Off	0
	Load	0.1		Load	1.8
06:52 (67.4)(B018) [7] {FA19}	On	0	06:26 (67.4)(B018) [7] {FA19}	On	4.6
	Off	50.3		Off	0
	Load	0		Load	4.6
07:22 (67.4)(B021) [23] {FA19}	On	0	06:59 (67.4)(B021) [21] {FA19}	On	4.2
	Off	51.9		Off	0
	Load	0		Load	4.2
07:48 (67.4)(B019) [54] {FA19}	On	0	07:24 (67.4)(B019) [54] {FA19}	On	6.3
	Off	51		Off	0
	Load	0		Load	6.3
08:17 (67.4)(B021) [23] {FA19}	On	0	07:53 (67.4)(B021) [23] {FA19}	On	3.8
	Off	35.1		Off	0
	Load	0		Load	3.8
08:46 (67.4)(B019) [54] {FA19}	On	0	08:23 (67.4)(B019) [54] {FA19}	On	1.7
	Off	25.7		Off	0
	Load	0		Load	1.7
09:10 (67.4)(B021) [23] {FA19}	On	0	08:49 (67.4)(B021) [23] {FA19}	On	3.4
	Off	19.9		Off	0
	Load	0		Load	3.4
10:00 (67.4)(B021) [22] {FA19}	On	0	09:39 (67.4)(B021) [22] {FA19}	On	2
	Off	14		Off	0
	Load	0		Load	2
10:50 (67.4)(B021) [22] {FA19}	On	0	10:29 (67.4)(B021) [22] {FA19}	On	3.3
	Off	8.8		Off	0
	Load	0		Load	3.3
11:40 (67.4)(B021) [20] {FA19}	On	0	11:19 (67.4)(B021) [20] {FA19}	On	4.2
	Off	7.2		Off	0
	Load	0		Load	4.2
12:30 (67.4)(B021) [21] {FA19}	On	0	12:09 (67.4)(B021) [21] {FA19}	On	4.2
	Off	7.3		Off	0
	Load	0		Load	4.2
13:20 (67.4)(B021) [21] {FA19}	On	0	12:59 (67.4)(B021) [21] {FA19}	On	4.1
	Off	7.2		Off	0
	Load	0		Load	4.1
14:10 (67.4)(B021) [23] {FA19}	On	0	13:48 (67.4)(B021) [23] {FA19}	On	9.2
	Off	7		Off	0
	Load	0.4		Load	9.2
15:00 (67.4)(B061) [7] {FA19}	On	0	14:38 (67.4)(B061) [7] {FA19}	On	5.3
	Off	5.3		Off	0
	Load	0		Load	5.3

15:50 (67.4)(B061) [6] {FA19}	On	0
	Off	4
	Load	0
16:40 (67.4)(B061) [7] {FA19}	On	0
	Off	4.4
	Load	0
17:08 (67.4)(B174) [16] {FA19}	On	0
	Off	7.4
	Load	0
17:35 (67.4)(B020) [20] {FA19}	On	0
	Off	7.8
	Load	0
18:03 (67.4)(B174) [15] {FA19}	On	0
	Off	5.3
	Load	0
18:31 (67.4)(B020) [14] {FA19}	On	0
	Off	3.9
	Load	0.1
18:56 (67.4)(B174) [9] {FA19}	On	0
	Off	2.4
	Load	0
19:35 (67.4)(B174) [8] {FA19}	On	0
	Off	3
	Load	0
20:18 (67.4)(B174) [10] {FA19}	On	0
	Off	2
	Load	0.2

15:27 (67.4)(B061) [7] {FA19}	On	3.1
	Off	0
	Load	3.1
16:17 (67.4)(B061) [8] {FA19}	On	11.4
	Off	0
	Load	11.4
16:44 (67.4)(B174) [16] {FA19}	On	26.8
	Off	0
	Load	26.8
17:11 (67.4)(B020) [19] {FA19}	On	25.5
	Off	0
	Load	25.5
17:38 (67.4)(B174) [16] {FA19}	On	32.8
	Off	0
	Load	32.8
18:05 (67.4)(B020) [17] {FA19}	On	28
	Off	0
	Load	28
18:33 (67.4)(B174) [14] {FA19}	On	18.7
	Off	0
	Load	18.7
19:15 (67.4)(B174) [13] {FA19}	On	12.4
	Off	0.2
	Load	12.4
19:58 (67.4)(B174) [15] {FA19}	On	7.7
	Off	0
	Load	7.7

Route 67

Inbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	0	0	0
Off	1	78.6	102.9	60.8
Total	1	78.6	102.9	60.8

	3-4PM	4-5PM	5-6PM	6-7 PM
On	0	0	0	0
Off	9.3	4.4	15.2	11.6
Total	9.3	4.4	15.2	11.6

Outbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	1.8	8.8	10.1	5.1
Off	0	0	0	0
Total	1.8	8.8	10.1	5.1

	3-4PM	4-5PM	5-6PM	6-7 PM
On	3.1	38.2	58.3	46.7
Off	0	0	0	0
Total	3.1	38.2	58.3	46.7

AM	2.8	87.4	113	65.9
PM	12.4	42.6	73.5	58.3

Route 79

Inbound			Outbound		
	Seq - StopID - Stop Name	21 - 141 - ALEWIFE STATION BUSWAY		Seq - StopID - Stop Name	1 - 141 - ALEWIFE STATION BUSWAY
06:35	On	0	07:02	On	2.8
(79.0)(B09	Off	20.4	(79.0)(B09	Off	0
3) [31]	Load	0.1	3) [31]	Load	2.8
{FA19}			{FA19}		
07:00	On	0	07:30	On	5.8
(79.0)(B09	Off	34	(79.0)(B09	Off	0
4) [4]	Load	0	4) [4]	Load	5.8
{FA19}			{FA19}		
07:30	On	0	08:10	On	3.7
(79.0)(B09	Off	40.5	(79.0)(B09	Off	0
3) [30]	Load	0	3) [30]	Load	3.7
{FA19}			{FA19}		
08:00	On	0	08:35	On	4.5
(79.0)(B09	Off	28.8	(79.0)(B09	Off	0
4) [4]	Load	0	4) [4]	Load	4.5
{FA19}			{FA19}		
08:30	On	0	09:30	On	4.5
(79.0)(B09	Off	32	(79.0)(B09	Off	0
3) [31]	Load	0	4) [4]	Load	4.5
{FA19}			{FA19}		
09:00	On	0	10:15	On	4.3
(79.0)(B09	Off	18.5	(79.0)(B09	Off	0
4) [4]	Load	0	4) [4]	Load	4.3
{FA19}			{FA19}		
09:50	On	0	11:00	On	3.5
(79.0)(B09	Off	8	(79.0)(B09	Off	0
4) [4]	Load	0	4) [4]	Load	3.5
{FA19}			{FA19}		
10:35	On	0	11:45	On	4.5
(79.0)(B09	Off	7.3	(79.0)(B09	Off	0
4) [4]	Load	0	4) [4]	Load	4.5
{FA19}			{FA19}		
11:20	On	0	12:30	On	5.8
(79.0)(B09	Off	8.8	(79.0)(B09	Off	0
4) [4]	Load	0	4) [6]	Load	5.8
{FA19}			{FA19}		
12:05	On	0	13:15	On	4.3
(79.0)(B09	Off	9.7	(79.0)(B09	Off	0
4) [3]	Load	0	4) [7]	Load	4.3
{FA19}			{FA19}		
12:50	On	0	14:00	On	4.4
(79.0)(B09	Off	6.8	(79.0)(B09	Off	0
4) [6]	Load	0	4) [6]	Load	6
{FA19}			{FA19}		
13:35	On	0	14:30	On	6.1
(79.0)(B09	Off	5.5	(79.0)(B02	Off	0
4) [6]	Load	0	1) [25]	Load	6.3
{FA19}			{FA19}		
14:20	On	0	14:50	On	5.7
(79.0)(B09	Off	8.2	(79.0)(B09	Off	0
5) [20]	Load	0	5) [20]	Load	5.7
{FA19}			{FA19}		
14:35	On	0	15:10	On	11.7
(79.1)(B09	Off	6	(79.0)(B09	Off	0
4) [6]	Load	0	6) [55]	Load	11.7
{FA19}			{FA19}		

14:45	On	0
(79.1)(B09	Off	6.7
6) [52]	Load	0
{FA19}		
14:55	On	0
(79.1)(B09	Off	5.2
7) [21]	Load	0
{FA19}		
15:00	On	0
(79.0)(B02	Off	5.1
1) [25]	Load	0
{FA19}		
15:20	On	0
(79.0)(B09	Off	8.9
5) [20]	Load	0
{FA19}		
15:40	On	0
(79.0)(B09	Off	7.4
6) [53]	Load	0
{FA19}		
16:00	On	0
(79.0)(B02	Off	9
1) [24]	Load	0
{FA19}		
16:20	On	0
(79.0)(B09	Off	6.2
5) [20]	Load	0
{FA19}		
16:40	On	0
(79.0)(B09	Off	9.8
6) [53]	Load	0
{FA19}		
17:00	On	0
(79.0)(B02	Off	7.2
1) [25]	Load	0
{FA19}		
17:20	On	0
(79.0)(B09	Off	7.3
5) [21]	Load	0
{FA19}		
17:47	On	0
(79.0)(B09	Off	6.2
6) [49]	Load	0
{FA19}		
18:05	On	0
(79.0)(B02	Off	5.3
1) [25]	Load	0
{FA19}		
18:45	On	0
(79.0)(B09	Off	2.7
6) [48]	Load	0.1
{FA19}		
19:30	On	0
(79.0)(B09	Off	2.4
6) [47]	Load	0
{FA19}		
20:10	On	0
(79.0)(B09	Off	1.7
6) [48]	Load	0.1
{FA19}		
20:50	On	0
(79.0)(B09	Off	2.8
6) [50]	Load	0
{FA19}		
21:30	On	0
(79.0)(B09	Off	3
6) [50]	Load	0
{FA19}		

15:30	On	8.5
(79.0)(B02	Off	0
1) [24]	Load	8.5
{FA19}		
15:50	On	16.1
(79.0)(B09	Off	0
5) [20]	Load	16.1
{FA19}		
16:10	On	14.1
(79.0)(B09	Off	0
6) [54]	Load	14.1
{FA19}		
16:30	On	22.4
(79.0)(B02	Off	0
1) [25]	Load	22.4
{FA19}		
16:50	On	17.6
(79.0)(B09	Off	0
5) [21]	Load	17.6
{FA19}		
17:10	On	26.6
(79.0)(B09	Off	0
6) [48]	Load	26.6
{FA19}		
17:30	On	27.9
(79.0)(B02	Off	0
1) [23]	Load	29.3
{FA19}		
17:50	On	30.3
(79.0)(B09	Off	0
5) [21]	Load	30.3
{FA19}		
18:15	On	28.3
(79.0)(B09	Off	0
6) [48]	Load	28.3
{FA19}		
18:35	On	20.2
(79.0)(B02	Off	0
1) [26]	Load	21
{FA19}		
19:05	On	18.1
(79.0)(B09	Off	0
6) [47]	Load	18.1
{FA19}		
19:50	On	11.6
(79.0)(B09	Off	0
6) [47]	Load	11.6
{FA19}		
20:30	On	6.1
(79.0)(B09	Off	0
6) [50]	Load	6.3
{FA19}		
21:10	On	6.9
(79.0)(B09	Off	0
6) [49]	Load	7.1
{FA19}		
21:50	On	3.7
(79.0)(B09	Off	0
6) [49]	Load	3.7
{FA19}		

Route 79

Inbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	0	0	0
Off	1	20.4	74.5	60.8
Total	1	20.4	74.5	60.8

	3-4PM	4-5PM	5-6PM	6-7 PM
On	0	0	0	0
Off	21.4	25	20.7	8
Total	21.4	25	20.7	8

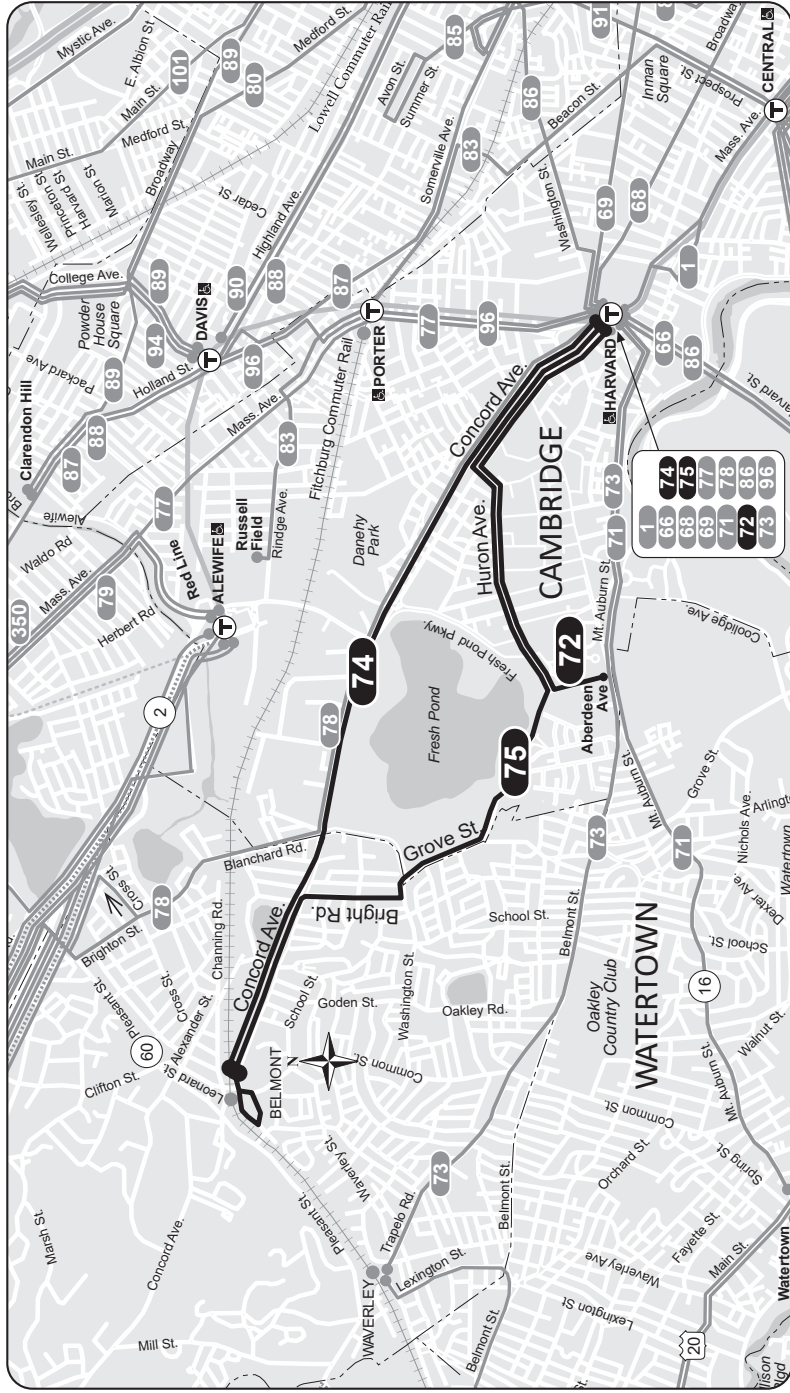
Outbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	0	8.6	8.2
Off	0	1	0	0
Total	0	1	8.6	8.2

	3-4PM	4-5PM	5-6PM	6-7 PM
On	36.3	54.1	84.8	48.5
Off	0	0	0	0
Total	36.3	54.1	84.8	48.5

AM	1	21.4	83.1	69
PM	57.7	79.1	105.5	56.5

Route 72 Aberdeen Ave - Harvard Station
Route 74 Belmont Center - Harvard Station via Concord Ave
Route 75 Belmont Center - Harvard Station via Huron Ave



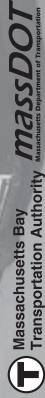
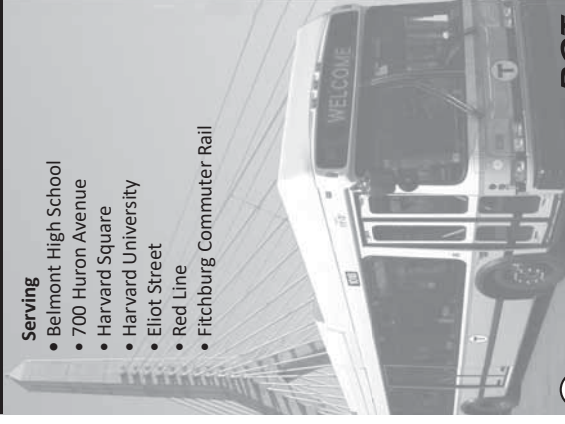
72.74.75

Effective August 30, 2020

- 72** Aberdeen Ave - Harvard Station
- 74** Belmont Ctr - Harvard Sta. via Concord Ave
- 75** Belmont Ctr - Harvard Sta. via Huron Ave

Serving

- Belmont High School
- 700 Huron Avenue
- Harvard Square
- Harvard University
- Eliot Street
- Red Line
- Fitchburg Commuter Rail



Massachusetts Bay Transportation Authority
massDOT
 Massachusetts Department of Transportation
 Information 617-222-3200 • 1-800-392-6100
 (TTY) 617-222-5146 • www.mbta.com

Route 74

Inbound			Outbound		
	Seq - StopID - Stop Name	16 - 2150 - CONCORD AVE OPP SMITH PL		Seq - StopID - Stop Name	16 - 2185 - CONCORD AVE @ SMITH PL
05:20 (74.13)(B051) [30] {FA19}	On	0	05:45 (74.13)(B051) [31] {FA19}	On	0
	Off	0		Off	0.7
	Load	5.2		Load	7
05:45 (74.13)(B046) [1] {SU19}	On	0	06:09 (74.13)(B046) [1] {SU19}	On	0
	Off	0		Off	1
	Load	0		Load	6
06:30 (74.13)(B046) [1] {SU19}	On	0	06:35 (74.13)(B051) [31] {FA19}	On	0.2
	Off	0		Off	4.3
	Load	11		Load	8.5
07:33 (74.13)(B046) [1] {SU19}	On	0	07:35 (74.13)(B046) [1] <07:40> |74.0| {SP19}	On	0
	Off	0		Off	1
	Load	30		Load	11
07:51 (74.13)(B051) [31] {FA19}	On	0.1	08:10 (74.13)(B046) [1] {SU19}	On	0
	Off	0		Off	2
	Load	18.4		Load	3
08:41 (74.13)(B046) [1] {SU19}	On	0	08:46 (74.13)(B054) [1] {FA19}	On	0
	Off	0		Off	1
	Load	21		Load	9
09:51 (74.13)(B046) [1] {SU19}	On	0	09:20 (74.13)(B046) [1] {SU19}	On	0
	Off	0		Off	0
	Load	25		Load	13
11:01 (74.13)(B043) [1] <11:05> |74.0| {SP19}	On	0	10:25 (74.13)(B043) [1] |74.0| {SP19}	On	0
	Off	1		Off	0
	Load	12		Load	4
12:11 (74.13)(B043) [1] <12:15> |74.0| {SP19}	On	0	11:35 (74.13)(B043) [1] |74.0| {SP19}	On	0
	Off	0		Off	0
	Load	7		Load	8
13:21 (74.13)(B052) [1] {FA19}	On	0	12:45 (74.13)(B052) [1] {FA19}	On	0
	Off	0		Off	0
	Load	8		Load	6
14:31 (74.13)(B052) [1] {FA19}	On	0	13:55 (74.13)(B052) [1] {FA19}	On	0
	Off	0		Off	2
	Load	8		Load	11
15:38 (74.13)(B043) [1] <15:40> |74.0| {SP19}	On	3	15:05 (74.13)(B043) [1] |74.0| {SP19}	On	0
	Off	0		Off	3
	Load	18		Load	7
16:48 (74.13)(B043) [1] <16:50> |74.0| {SP19}	On	1	16:13 (74.13)(B043) [1] <16:10> |74.0| {SP19}	On	0
	Off	0		Off	0
	Load	10		Load	8
17:38 (74.13)(B050) [16] <17:40> |74.0| {WI19}	On	0.5	16:35 (74.13)(B055) [1] {FA19}	On	0
	Off	0.1		Off	1
	Load	6.8		Load	16

18:28 (74.13)(B055) [1] {FA19}	On	0
	Off	0
	Load	6
19:38 (74.13)(B055) [1] {FA19}	On	0
	Off	0
	Load	5
20:12 (74.13)(B066) [1] <20:05> |74.0| {WI20}	On	2
	Off	0
	Load	2
21:07 (74.13)(B047) [1] {SP18}	On	0
	Off	0
	Load	6
21:53 (74.13)(B047) [2] {SP18}	On	1
	Off	0
	Load	7.5
22:42 (74.13)(B053) [2] {FA19}	On	3.5
	Off	0
	Load	5
23:28 (74.13)(B053) [2] {FA19}	On	0
	Off	0
	Load	1.5
24:10 (74.13)(B053) [2] {FA19}	On	0
	Off	0
	Load	1.5
24:50 (74.13)(B053) [2] {FA19}	On	0
	Off	0
	Load	0

17:25 (74.13)(B043) [1 ] |74.0| {SP19}	On	1
	Off	0
	Load	31
18:15 (74.13)(B050) [16] |74.0| {WI19}	On	0.1
	Off	0.4
	Load	16.7
18:40 (74.13)(B043) [1 ] |74.0| {SP19}	On	0
	Off	0
	Load	19
19:41 (74.13)(B043) [1] <19:40> |74.0| {SP19}	On	0
	Off	0
	Load	4
20:41 (74.13)(B047) [1] {SP18}	On	0
	Off	0
	Load	7
21:30 (74.13)(B043) [1] <21:35> |74.0| {SP19}	On	0
	Off	0
	Load	4
23:05 (74.13)(B053) [2] {FA19}	On	0
	Off	0
	Load	4.5
23:48 (74.13)(B053) [2] {FA19}	On	0
	Off	0
	Load	1.5
24:30 (74.13)(B053) [2] {FA19}	On	0
	Off	0
	Load	2.5
25:10 (74.13)(B045) [1 ] |74.0| {SP19}	On	0
	Off	0
	Load	2

Route 74

Inbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	0	0.1	0
Off	0	0	0	0
Total	0	0	0.1	0

	3-4PM	4-5PM	5-6PM	6-7 PM
On	3	1	0.5	0
Off	0	0	0.1	0
Total	0.7	5.5	1	3

Outbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	0.2	0	0
Off	0.7	5.3	1	3
Total	3	1	1	0.5

	3-4PM	4-5PM	5-6PM	6-7 PM
On	0	0	1	0.1
Off	3	1	0	0.4
Total	3	1	1	0.5

AM	3	1	1.1	0.5
PM	3.7	6.5	2	3.5

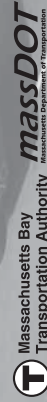
Service/Schedule Change

78•84

Effective August 30, 2020

78 Arlmont Village-Harvard Station
84 Arlmont Village-Alewife Station

- Serving
- Park Circle
 - Harvard University
 - Eliot Street
 - Red Line

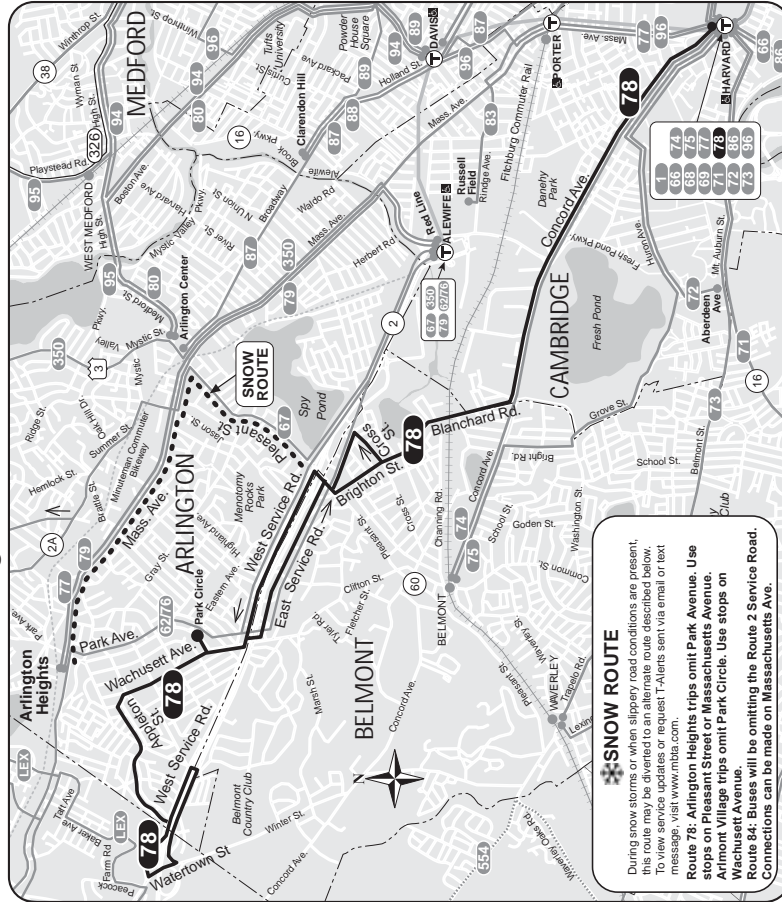


Massachusetts Bay Transportation Authority

massDOT
 Massachusetts Department of Transportation

Information 617-222-3200 • 1-800-392-6100
 (TTY) 617-222-5146 • www.mbta.com

Route 78 Arlmont Village - Harvard Station
Route 84 Arlmont Village - Alewife Station



78			Weekday			Saturday			Sunday				
Inbound			Outbound			Inbound			Outbound				
Leave Arlmont Village	Arrive Pleasant Street	Leave Harvard Square	Arrive Harvard Square	Leave Harvard Square	Arrive Pleasant Street	Leave Arlmont Village	Arrive Pleasant Street	Leave Harvard Square	Arrive Harvard Square	Leave Harvard Square	Arrive Pleasant Street	Leave Harvard Square	Arrive Arlmont Village
5:35A	5:42A	6:01A	5:57A	6:17A	6:17A	6:55A	7:03A	7:17A	6:25A	6:38A	6:49A	6:40A	6:33A
6:00	6:07	6:26	6:05	6:31	6:31	7:50	7:58	8:15	7:20	7:33	7:44	7:35	7:28
6:25	6:32	6:53	6:30	6:42	6:42	8:50	8:58	9:18	8:20	8:33	8:44	8:35	8:28
6:48	6:55	7:20	7:00	7:16	7:16	9:50	9:58	10:18	9:20	9:33	9:44	9:35	9:28
7:08	7:15	7:42	7:27	7:45	7:45	10:50	10:58	11:18	10:20	10:34	10:47	10:35	10:31
7:35	7:42	8:09	7:52	8:10	8:10	11:52	12:00N	12:20P	11:20	11:34	11:47	11:35	11:31
8:05	8:12	8:38	8:20	8:38	8:38	12:56P	1:04	1:24	12:24P	12:38P	12:51P	12:37P	12:35P
8:31	8:38	9:02	8:50	9:06	9:06	1:59	2:07	2:27	1:28	1:42	1:56	1:39	1:36
9:03	9:10	9:33	9:15	9:29	9:29	3:00	3:08	3:28	2:29	2:43	2:57	2:41	2:38
9:28	9:35	9:55	9:48	10:02	10:14	4:01	4:08	4:28	3:30	3:44	3:58	3:43	3:39
9:46	9:53	10:13	10:18	10:32	10:44	5:01	5:08	5:28	4:30	4:44	4:58	4:44	4:38
10:19	10:26	10:46	10:51	11:05	11:17	6:01	6:08	6:28	5:30	5:44	5:58	5:45	5:39
10:49	10:56	11:16	11:21	11:35	11:47	7:01	7:08	7:25	6:30	6:44	6:58	6:45	6:39
11:22	11:29	11:49	11:54	12:08P	12:20P	8:01	8:08	8:25	7:30	7:44	7:58	7:45	7:36
11:52	11:59	12:19P	12:24P	12:38	12:50	9:00	9:07	9:24	8:30	8:42	8:55	8:45	8:35
12:25P	12:32P	12:52	12:57	1:11	1:23	10:00	10:05	10:21	9:30	9:42	9:55	9:45	9:35
12:55	1:02	1:22	1:27	1:41	1:53	11:05	11:10	11:26	10:30	10:42	10:55	10:45	10:35
1:28	1:35	1:55	2:00	2:14	2:26	12:05A	12:10A	12:26A	11:30	11:42	11:52	11:45	11:35
1:58	2:05	2:25	2:30	2:48	3:02				12:35A	12:47A	12:57A	12:40A	12:35A
2:31	2:37	2:58	3:10	3:30	3:45								
3:07	3:13	3:34	3:45	4:07	4:24								
3:51	3:57	4:18	4:15	4:38	4:55								
4:36	4:42	5:03	4:45	5:08	5:25								
5:05	5:11	5:33	5:15	5:39	5:56								
5:35	5:41	6:03	5:45	6:04	6:21								
6:05	6:11	6:32	6:15	6:30	6:47								
6:30	6:36	6:56	6:47	7:02	7:19								
6:55	7:01	7:21	7:25	7:40	7:57								
7:25	7:31	7:51	7:55	8:09	8:20								
8:03	8:09	8:29	8:20	8:34	8:45								
8:26	8:32	8:52	8:50	9:04	9:15								
9:05	9:11	9:31	9:34	9:48	9:59								
10:05	10:11	10:29	10:33	10:46	10:57								
11:04	11:10	11:28	11:33	11:46	11:57								
12:02A	12:08A	12:26A	12:30A	12:43A	12:54A								

Route 84 service may be limited or suspended.
For schedules, alerts and updates, visit:
mbta.com/schedules/84

Fare	Local Bus	Bus + Bus	Rapid Transit	Bus + Rapid Transit
CharlieCard	\$1.70	\$1.70	\$2.40	\$2.40
Charlie Ticket	\$2.00	\$2.00	\$2.90	\$4.90
Cash-on-Board	\$2.00	\$4.00	\$2.90	\$4.90
Student/Youth**	\$0.85	\$0.85	\$1.10	\$1.10

VALID PASSES: LinePass (\$50.00/mo.); Local Bus (\$5/mo.); *Student/Youth/LinePass (\$30.00/mo.); **Senior/TAP LinePass (\$30/mo.); and express bus, commuter rail, and FREE FARES: Children 11 and under ride free when accompanied by an adult; Blind * Requires Student CharlieCard or Youth CharlieCard. ** Student CharlieCards are available through community partners in the Boston metro area. Visit www.mbta.com/youthpass for details. ** Senior/Youth/LinePass, and accessible to Medicare cardholders, seniors 65+, and persons with disabilities.

Harvard Busway construction note:
Harvard Bus Tunnel will be undergoing renovations. Inbound service will not serve Harvard Station Busway during this time. Passengers wishing to access Harvard Station are advised to disembark at the temporary bus stop located on Brattle St @ Palmer St. Outbound service is unaffected, and will continue to board passengers in the Harvard Station Busway.

Fall 2020 & Winter 2021 Holidays
9/7/20: Sunday, 10/12/20 & 11/1/20: Weekday
11/28/20, 12/25/20, & 1/1/21: Sun; 1/16/21 & 2/15/21: Sat

All buses are accessible to persons with disabilities

a- From Arlington Heights, does NOT serve Arlington Village
b- To Arlington Heights, does NOT serve Arlington Village

Route 78

Inbound			Outbound		
	Seq - StopID - Stop Name	40 - 2150 - CONCORD AVE OPP SMITH PL		Seq - StopID - Stop Name	16 - 2185 - CONCORD AVE @ SMITH PL
05:42 (78.13)(B088) [2] {FA19}	On	0	05:55 (78.13)(B090) [2] {FA19}	On	0
	Off	0		Off	0
	Load	11		Load	4
06:07 (78.13)(B089) [7] {FA19}	On	0	06:17 (78.13)(B088) [2] {FA19}	On	0
	Off	0		Off	7.5
	Load	10.9		Load	0
06:27 (78.13)(B090) [2] {FA19}	On	0	06:40 (78.14)(B089) [7] {FA19}	On	0
	Off	0		Off	2.7
	Load	23		Load	7.7
06:52 (78.13)(B078) [1] <06:55>	On	0	07:05 (78.14)(B090) [2] {FA19}	On	0
	Off	0		Off	3.5
	Load	23		Load	9.5
07:10 (78.14)(B089) [7] {FA19}	On	0	07:35 (78.14)(B088) [2] {FA19}	On	0
	Off	0		Off	2
	Load	16.9		Load	15
07:34 (78.14)(B090) [2] {FA19}	On	0	08:01 (78.14)(B089) [7] {FA19}	On	0.1
	Off	0		Off	2
	Load	12		Load	6.4
08:08 (78.14)(B088) [3] {FA19}	On	0.3	08:25 (78.13)(B090) [2] {FA19}	On	0
	Off	0		Off	1
	Load	25.3		Load	8.5
08:37 (78.14)(B089) [7] {FA19}	On	0	09:04 (78.13)(B088) [3] {FA19}	On	0
	Off	0		Off	0.3
	Load	17.4		Load	5.3
09:01 (78.13)(B090) [2] {FA19}	On	0	09:43 (78.13)(B090) [3] {FA19}	On	0
	Off	0		Off	1.3
	Load	21		Load	8
09:39 (78.13)(B088) [1] {FA19}	On	1	10:21 (78.13)(B088) [2] {FA19}	On	0
	Off	0		Off	2
	Load	20		Load	5
10:17 (78.13)(B090) [2] {FA19}	On	3	10:58 (78.13)(B090) [3] {FA19}	On	0
	Off	0		Off	0.7
	Load	13		Load	3
10:55 (78.13)(B088) [2] {FA19}	On	1.5	11:35 (78.13)(B088) [2] {FA19}	On	0
	Off	0		Off	0.5
	Load	10		Load	9
11:33 (78.13)(B090) [3] {FA19}	On	0.3	12:12 (78.13)(B090) [3] {FA19}	On	0
	Off	0		Off	0.3
	Load	7.3		Load	7.3
12:11 (78.13)(B088) [2] {FA19}	On	0.5	12:49 (78.13)(B088) [2] {FA19}	On	0
	Off	0		Off	1
	Load	4		Load	11

12:49	On	0
(78.13)(B0	Off	0
90) [3]		
{FA19}	Load	6.7
13:27	On	0
(78.13)(B0	Off	0
88) [2]		
{FA19}	Load	4.5
14:05	On	2.3
(78.13)(B0	Off	0
90) [7]		
{FA19}	Load	8.4
14:43	On	0.7
(78.13)(B0	Off	0
88) [3]		
{FA19}	Load	3.7
15:21	On	4.5
(78.13)(B0	Off	0.3
90) [6]		
{FA19}	Load	14.7
15:59	On	2.7
(78.13)(B0	Off	0
88) [3]		
{FA19}	Load	12
16:36	On	2.4
(78.14)(B0	Off	0.3
90) [7]		
{FA19}	Load	10.6
17:01	On	1.8
(78.14)(B0	Off	0
91) [9]		
{FA19}	Load	10.9
17:25	On	2.3
(78.14)(B0	Off	0
88) [3]		
{FA19}	Load	8.7
18:00	On	1
(78.14)(B0	Off	0
90) [8]		
{FA19}	Load	7.4
18:18	On	1.2
(78.13)(B0	Off	0
06) [31]		
{FA19}	Load	7.3
18:25	On	0.3
(78.14)(B0	Off	0.1
91) [12]		
{FA19}	Load	2.9
18:49	On	0.3
(78.14)(B0	Off	0
88) [3]		
{FA19}	Load	1.7
19:15	On	1.2
(78.13)(B0	Off	0
90) [5]		
{FA19}	Load	4.2
20:02	On	1.8
(78.13)(B0	Off	0
88) [4]		
{FA19}	Load	4.3
21:02	On	4.5
(78.13)(B0	Off	0
88) [4]		
{FA19}	Load	6.3
22:02	On	2
(78.13)(B0	Off	0
88) [1]		
{FA19}	Load	5
23:02	On	1.3
(78.13)(B0	Off	0
92) [10]		
{FA19}	Load	2
24:02	On	0
(78.13)(B0	Off	0
92) [7]		
{FA19}	Load	0.7

13:26	On	0
(78.13)(B0	Off	0.6
90) [5]		
{FA19}	Load	11.8
14:03	On	0
(78.13)(B0	Off	1
88) [4]		
{FA19}	Load	11.3
14:41	On	0
(78.13)(B0	Off	2
90) [7]		
{FA19}	Load	12.4
15:19	On	0
(78.13)(B0	Off	1
88) [3]		
{FA19}	Load	15
15:59	On	0
(78.14)(B0	Off	2
90) [5]		
{FA19}	Load	15.4
16:21	On	0.2
(78.14)(B0	Off	0.2
91) [6]		
{FA19}	Load	11.8
16:44	On	2
(78.14)(B0	Off	0.7
88) [3]		
{FA19}	Load	14
17:15	On	0
(78.14)(B0	Off	1
90) [7]		
{FA19}	Load	23.4
17:41	On	0.2
(78.14)(B0	Off	0.2
91) [11]		
{FA19}	Load	19.9
18:08	On	0
(78.14)(B0	Off	0.7
88) [3]		
{FA19}	Load	26
18:36	On	0
(78.13)(B0	Off	0.1
90) [9]		
{FA19}	Load	18.8
18:57	On	0.1
(78.13)(B0	Off	0.3
91) [11]		
{FA19}	Load	13
19:25	On	0
(78.13)(B0	Off	0
88) [3]		
{FA19}	Load	8.3
19:55	On	0
(78.13)(B0	Off	0
47) [16]		
{FA19}	Load	11.8
20:30	On	0
(78.13)(B0	Off	0
88) [4]		
{FA19}	Load	5.8
21:30	On	0.2
(78.13)(B0	Off	0
88) [5]		
{FA19}	Load	12.2
22:30	On	0
(78.13)(B0	Off	0
92) [12]		
{FA19}	Load	9.3
23:30	On	0
(78.13)(B0	Off	0
92) [11]		
{FA19}	Load	2.7
24:30	On	0
(78.13)(B0	Off	0
92) [10]		
{FA19}	Load	1.7

Route 78

Inbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	0	0	0.3
Off	0	0	0	0
Total	0	0	0	0.3

	3-4PM	4-5PM	5-6PM	6-7 PM
On	7.2	2.4	4.1	2.8
Off	0.3	0.3	0	0.1
Total	7.5	2.7	4.1	2.9

Outbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	0	0	0.1
Off	0	10.2	5.5	3
Total	0	10.2	5.5	3.1

	3-4PM	4-5PM	5-6PM	6-7 PM
On	0	2.2	0.2	0.1
Off	3	0.9	1.2	1.1
Total	3	3.1	1.4	1.2

AM	0	10.2	5.5	3.4
PM	10.5	5.8	5.5	4.1

Route 84

Inbound			Outbound		
	Seq - StopID - Stop Name	25 - 141 - ALEWIFE STATION BUSWAY		Seq - StopID - Stop Name	1 - 141 - ALEWIFE STATION BUSWAY
06:42 (84.2)(B061) [8] {FA19}	On	0	07:04 (84.2)(B109) [58] {FA19}	On	3
	Off	30.4		Off	0
	Load	0		Load	3
07:14 (84.2)(B109) [58] {FA19}	On	0	07:36 (84.2)(B109) [58] {FA19}	On	1.3
	Off	32.5		Off	0
	Load	0		Load	1.3
07:45 (84.2)(B109) [58] {FA19}	On	0	08:08 (84.2)(B109) [57] {FA19}	On	1.2
	Off	37.8		Off	0
	Load	0		Load	1.2
08:17 (84.2)(B109) [58] {FA19}	On	0	08:39 (84.2)(B109) [56] {FA19}	On	1.9
	Off	36.5		Off	0
	Load	0		Load	1.9
08:48 (84.2)(B109) [56] {FA19}	On	0	15:58 (84.1)(B059) [31] {FA19}	On	12.5
	Off	17.3		Off	0
	Load	0		Load	12.5
16:10 (84.1)(B059) [31] {FA19}	On	0	16:30 (84.1)(B059) [31] {FA19}	On	16.9
	Off	2.9		Off	0
	Load	2.1		Load	16.9
16:42 (84.1)(B059) [31] {FA19}	On	0	17:00 (84.1)(B059) [31] {FA19}	On	23.5
	Off	3		Off	0
	Load	3.5		Load	23.5
17:12 (84.1)(B059) [18] {FA19}	On	0	17:25 (84.1)(B183) [34] {FA19}	On	29
	Off	3.7		Off	0
	Load	0		Load	29
17:38 (84.1)(B183) [33] {FA19}	On	0	17:45 (84.1)(B156) [9] {FA19}	On	36.8
	Off	3.8		Off	0
	Load	4.6		Load	36.8
17:58 (84.1)(B156) [9] {FA19}	On	0	18:05 (84.2)(B006) [30] {FA19}	On	22.6
	Off	0.8		Off	0
	Load	12.1		Load	22.6
18:47 (84.1)(B004) [18] {FA19}	On	0	18:35 (84.1)(B004) [23] {FA19}	On	14.4
	Off	1		Off	0
	Load	1.4		Load	14.4

Route 84

Inbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	0	0	0
Off	1	30.4	70.3	53.8
Total	1	30.4	70.3	53.8

	3-4PM	4-5PM	5-6PM	6-7 PM
On	0	0	0	0
Off	1	5.9	8.3	1
Total	1	5.9	8.3	1

Outbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	0	4.3	3.1
Off	0	0	0	0
Total	0	0	4.3	3.1

	3-4PM	4-5PM	5-6PM	6-7 PM
On	12.5	16.9	89.3	37
Off	0	0	0	0
Total	12.5	16.9	89.3	37

AM	1	30.4	74.6	56.9
PM	13.5	22.8	97.6	38

Service/Schedule Change

350•351

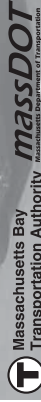
Effective August 30, 2020

350 North Burlington-Alewife Station

351 Bedford Woods Dr - Alewife Station

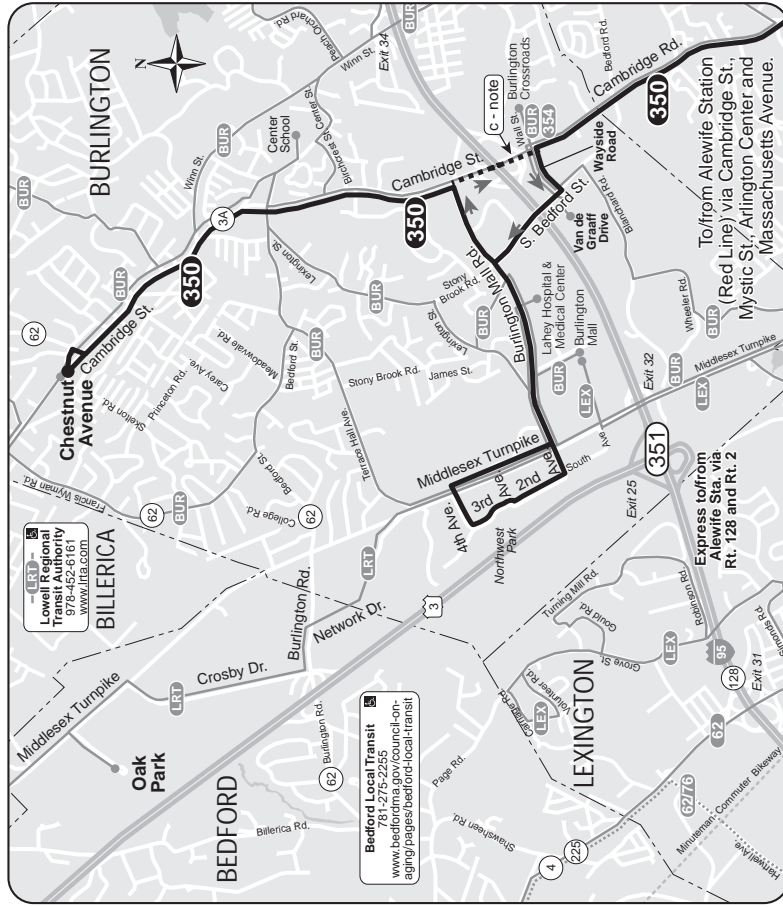
Serving

- Burlington Mall
- Oak Park
- Northwest Park
- Red Line
- Lahey Hospital & Medical Center
- Four Corners
- Arlington Center



Massachusetts Bay Transportation Authority
Information 617-222-3200 • 1-800-392-6100
(TTY) 617-222-5146 • www.mbta.com

Route 350 North Burlington - Alewife Station Route 351 Bedford Woods Dr - Alewife Station



Lowell Regional Transit Authority
www.lra.com

Bedford Local Transit
781-275-2255
www.bedfordma.gov/council-ordinating/pages/bedford-local-transit

To/from Alewife Station (Red Line) via Cambridge St, Mystic St, Arlington Center and Massachusetts Avenue.

Express to/from Alewife Sta. via Rt. 128 and Rt. 2

Route 350

Inbound			Outbound		
	Seq - StopID - Stop Name	67 - 141 - ALEWIFE STATION BUSWAY		Seq - StopID - Stop Name	1 - 141 - ALEWIFE STATION BUSWAY
06:04 (350.4)(B004) [50] {FA19}	On	0	06:20 (350.7)(B174) [9] {SP19}	On	20
	Off	32.7		Off	0
	Load	0		Load	20
06:36 (350.4)(B019) [54] {FA19}	On	0	06:42 (350.7)(B169) [48] {FA19}	On	19
	Off	37.7		Off	0
	Load	0		Load	19
06:55 (350.4)(B179) [66] {FA19}	On	0	06:58 (350.7)(B004) [50] {FA19}	On	19.5
	Off	41.2		Off	0
	Load	0		Load	19.5
07:15 (350.4)(B174) [10] {SP19}	On	0	07:22 (350.7)(B176) [36] {FA19}	On	18.6
	Off	41.5		Off	0
	Load	0		Load	18.6
07:35 (350.4)(B169) [49] {FA19}	On	0	07:46 (350.5)(B179) [66] {FA19}	On	25.3
	Off	30.3		Off	0
	Load	0		Load	25.3
07:55 (350.4)(B004) [50] {FA19}	On	0	08:15 (350.5)(B174) [9] {SP19}	On	30.1
	Off	33.6		Off	0
	Load	0		Load	30.1
08:20 (350.5)(B176) [37] {FA19}	On	0	08:50 (350.3)(B005) [63] {FA19}	On	19.5
	Off	24.3		Off	0
	Load	0		Load	19.5
08:50 (350.5)(B179) [66] {FA19}	On	0	09:20 (350.5)(B007) [55] {FA19}	On	30.5
	Off	16.6		Off	0
	Load	0		Load	30.5
09:20 (350.5)(B174) [9] {SP19}	On	0	10:15 (350.5)(B174) [14] {FA19}	On	11.9
	Off	16.1		Off	0
	Load	0.1		Load	11.9
10:20 (350.5)(B007) [62] {FA19}	On	0	11:15 (350.5)(B007) [55] {FA19}	On	12.4
	Off	15.3		Off	0
	Load	0.1		Load	12.5
11:20 (350.5)(B174) [14] {FA19}	On	0	12:15 (350.5)(B174) [18] {FA19}	On	12.4
	Off	15.3		Off	0
	Load	0.1		Load	12.4
12:20 (350.5)(B183) [44] {FA19}	On	0	13:15 (350.5)(B183) [46] {FA19}	On	17.8
	Off	14.6		Off	0
	Load	0		Load	18.3
13:20 (350.5)(B174) [18] {FA19}	On	0	14:20 (350.5)(B174) [18] {FA19}	On	22.5
	Off	13.1		Off	0
	Load	0		Load	22.5
14:20 (350.5)(B183) [45] {FA19}	On	0	14:50 (350.5)(B187) [27] {FA19}	On	10.9
	Off	24.6		Off	0
	Load	0.4		Load	10.9

15:20	On	0
(350.5)(B1 82) [58] {FA19}	Off	40.9
	Load	0
15:45	On	0
(350.5)(B1 74) [17] {FA19}	Off	25.7
	Load	0
16:20	On	0
(350.5)(B1 83) [35] {FA19}	Off	33.9
	Load	0.1
17:05	On	0
(350.5)(B1 81) [14] {FA19}	Off	28
	Load	0
17:25	On	0
(350.5)(B1 82) [58] {FA19}	Off	12.1
	Load	0.1
17:40	On	0
(350.5)(B1 85) [4] {FA19}	Off	9.8
	Load	0.5
18:00	On	0
(350.5)(B1 75) [53] {FA19}	Off	9.1
	Load	0.2
18:20	On	0
(350.5)(B1 77) [35] {FA19}	Off	8.2
	Load	0.1
18:40	On	0
(350.5)(B0 57) [7] {FA19}	Off	5
	Load	0
19:00	On	0
(350.5)(B1 60) [17] {FA19}	Off	7.6
	Load	0.2
19:25	On	0
(350.5)(B1 84) [2] {FA19}	Off	7.5
	Load	0
19:50	On	0
(350.5)(B1 85) [6] {FA19}	Off	5.8
	Load	0
20:20	On	0
(350.5)(B1 77) [36] {FA19}	Off	7.1
	Load	0.2
21:20	On	0
(350.5)(B1 78) [12] {FA19}	Off	17.9
	Load	0
22:20	On	0
(350.5)(B1 80) [10] {FA19}	Off	9.3
	Load	0

15:20	On	15.5
(350.5)(B1 83) [32] {FA19}	Off	0
	Load	15.5
16:00	On	17.9
(350.5)(B1 81) [13] {FA19}	Off	0
	Load	17.9
16:20	On	19
(350.5)(B1 82) [55] {FA19}	Off	0
	Load	19
16:40	On	27.5
(350.4)(B1 85) [4] {FA19}	Off	0
	Load	27.5
17:00	On	37.1
(350.4)(B1 75) [54] {FA19}	Off	0
	Load	37.6
17:20	On	26.1
(350.4)(B1 77) [33] {FA19}	Off	0
	Load	27.6
17:40	On	29.6
(350.4)(B0 57) [5] {FA19}	Off	0
	Load	29.6
18:05	On	32.6
(350.4)(B1 60) [16] {FA19}	Off	0
	Load	35.2
18:25	On	16.5
(350.5)(B1 84) [2] {FA19}	Off	0
	Load	33
18:50	On	24
(350.5)(B1 85) [5] {FA19}	Off	0
	Load	24
19:20	On	15.6
(350.5)(B1 77) [34] {FA19}	Off	0
	Load	15.6
20:20	On	13.3
(350.5)(B1 78) [12] {FA19}	Off	0
	Load	13.3
21:20	On	6.7
(350.5)(B1 80) [10] {FA19}	Off	0
	Load	6.7
22:20	On	8.3
(350.4)(B1 78) [9] {FA19}	Off	0
	Load	8.3

Route 350

Inbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	0	0	0
Off	0	111.6	105.4	40.9
Total	0	111.6	105.4	40.9

	3-4PM	4-5PM	5-6PM	6-7 PM
On	0	0	0	0
Off	66.6	33.9	-6.1	4.1
Total	66.6	33.9	-6.1	4.1

Outbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	58.5	43.9	49.6
Off	1	0	0	0
Total	1	58.5	43.9	49.6

	3-4PM	4-5PM	5-6PM	6-7 PM
On	15.5	64.4	92.8	73.1
Off	0	0	0	0
Total	15.5	64.4	92.8	73.1

AM	1	170.1	149.3	90.5
PM	82.1	98.3	86.7	77.2

Route 351

Inbound			Outbound		
	Seq - StopID - Stop Name	24 - 141 - ALEWIFE STATION BUSWAY		Seq - StopID - Stop Name	1 - 141 - ALEWIFE STATION BUSWAY
15:35	On	0	06:15	On	14.1
(351.3)(B1	Off	22	(351.3)(B1	Off	0
86) [37]	Load	0	88) [30]	Load	14.1
{FA19}			{FA19}		
16:35	On	0	07:00	On	15
(351.3)(B1	Off	32.7	(351.3)(B1	Off	0
87) [26]	Load	0	89) [6]	Load	15
{FA19}			{FA19}		
17:25	On	0	07:55	On	36.2
(351.3)(B1	Off	19.5	(351.3)(B1	Off	0
86) [37]	Load	0	88) [29]	Load	36.2
{FA19}			{FA19}		
18:20	On	0	08:45	On	28.8
(351.3)(B1	Off	7.7	(351.3)(B1	Off	0
87) [29]	Load	0	89) [13]	Load	28.8
{FA19}			{FA19}		

Route 351

Inbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	0	0	0
Off	0	0	0	0
Total	0	0	0	0

	3-4PM	4-5PM	5-6PM	6-7 PM
On	0	0	19.5	0
Off	22	32.7	0	7.7
Total	22	32.7	19.5	7.7

Outbound

	5-6 AM	6-7AM	7-8AM	8-9AM
On	0	14.1	51.2	28.8
Off	1	0	0	0
Total	1	14.1	51.2	28.8

	3-4PM	4-5PM	5-6PM	6-7 PM
On	0	0	0	
Off	0	0	0	
Total	0	0	0	0

AM	1	14.1	51.2	28.8
PM	22	32.7	19.5	7.7

Rapid Transit Line	Weekday			Saturday			Sunday		
	First Trip	Peak	Off Peak	First Trip	Arriving Every	Last Trip	First Trip	Arriving Every	Last Trip
Red Line									
Alewife Braintree	5:24 AM 5:08 AM	9 mins	12-16 mins	5:24 AM 5:09 AM	12-16 mins	12:20 AM 12:17 AM	6:08 AM 6:00 AM	12-16 mins	12:20 AM 12:17 AM
Alewife Ashmont	5:16 AM	9 mins	12-16 mins	5:16 AM	12-16 mins	w 12:27 AM w 12:30 AM	6:00 AM	12-16 mins	w 12:27 AM w 12:30 AM
"W" Ashmont Mattapan	5:17 AM 5:05 AM	5 mins	8-12 Day 26 Late	5:15 AM 5:05 AM	8-12 Day 26 Early/Late	w 1:05 AM 12:53 AM	6:03 AM 5:51 AM	8-12 Day 26 Early/Late	w 1:05 AM 12:53 AM
Blue Line									
Wonderland	5:13 AM	5 mins	9-13 mins	5:25 AM	9-13 mins	12:28 AM	5:58 AM	9-13 mins	12:28 AM
Orient Heights	5:14 AM	5 mins	9-13 mins	5:13 AM	9-13 mins	12:33 AM	6:03 AM	9-13 mins	12:33 AM
Bowdoin	5:30 AM	5 mins	9-13 mins	5:29 AM	9-13 mins	w 1:00 AM	6:21 AM	9-13 mins	w 1:00 AM
Orange Line									
Oak Grove	5:16 AM	6 mins	9-11 mins	5:16 AM	9-11 mins	w 12:30 AM	6:00 AM	9-11 mins	w 12:30 AM
Forest Hills	5:16 AM	6 mins	9-11 mins	5:16 AM	9-11 mins	w 12:28 AM	6:00 AM	9-11 mins	w 12:28 AM
Green Line*									
B Boston College Park Street	5:01 AM 5:45 AM	5-6 mins	7-9 mins	4:45 AM ² 5:40 AM	7-8 mins	12:10 AM w 12:52 AM	5:20 AM ² 6:12 AM	9 mins	12:10 AM w 12:52 AM
C Cleveland Circle North Station	4:57 AM ¹ 5:48 AM	6-8 mins	9-11 mins	4:50 AM ² 5:30 AM	9-10 mins	12:10 AM w 12:46 AM	5:30 AM ² 6:06 AM	10 mins	12:10 AM w 12:46 AM
D Riverside	4:56 AM	6 mins	8-11 mins	4:55 AM	8-9 mins	12:05 AM	5:25 AM	11-12 mins	12:05 AM
Government Ctr.	5:45 AM	6 mins	8-11 mins	5:38 AM	8-9 mins	w 12:49 AM	6:10 AM	11-12 mins	w 12:49 AM
E Lechmere [*]	5:00 AM ⁴	6-7 mins	8-10 mins	5:01 AM	10 mins	12:30 AM	5:35 AM	12 mins	12:30 AM
Heath Street	5:45 AM	6 mins	8-10 mins	5:39 AM	10 mins	12:47 AM ³	6:15 AM	12 mins	12:47 AM ³
Silver Line									
SL1 Logan Airport South Station	5:38 AM 5:40 AM	7-12 mins	10-12 mins	5:48 AM 5:45 AM	10-12 mins	f 1:03 AM w 1:02 AM	5:50 AM 6:12 AM	10-12 mins	f 1:12 AM w 1:00 AM
SL2 Design Center South Station	6:07 AM 5:44 AM	6 mins	14-16 mins	6:03 AM 5:47 AM	14-16 mins	12:37 AM 12:50 AM	6:51 AM 6:35 AM	14-16 mins	12:51 AM 12:36 AM
SL3 Chelsea Station South Station	4:55 AM 4:20 AM	6-11 mins	8-13 mins	5:30 AM 4:56 AM	8-13 mins	f 1:05 AM w 12:35 AM	6:26 AM 5:53 AM	8-13 mins	f 1:25 AM w 12:55 AM
SL4 Nubian Station South Station	5:20 AM 5:38 AM	6-11 mins	6-11 mins	5:23 AM 5:40 AM	13-20 mins	12:20 AM 12:37 AM	6:02 AM 6:20 AM	13-20 mins	12:20 AM 12:40 AM
SL5 Nubian Station Downtown Xing	5:15 AM 5:32 AM	11-14 mins	13-20 mins	5:19 AM 5:34 AM	6-11 mins	12:51 AM w 1:07 AM	6:00 AM 6:16 AM	6-11 mins	12:25 AM w 12:47 AM

Peak Service:
Weekdays 7 AM - 9 AM, 4 PM - 6:30 PM

Green Line Notes:
New and ongoing infrastructure projects may result in diversions on some branches at various times.
See GL service changes at mbta.com/glework
View service alerts at mbta.com/alerts

* E trains start/end at North Station for Green Line Extension work – shuttles provided between North Station and Lechmere.
More: mbta.com/glework

1 - The first two C train AM northbound trips run through to Lechmere Station on weekdays.

2 - The first B and second C train AM northbound trips run through to Lechmere Station on weekends.

3 - On weekdays the 12:27 AM trip (weekends the 12:32 AM trip) from Heath St is the last connecting train to other lines downtown. The 12:37 AM and 12:47 AM trips (weekends the 12:47 AM trip) from Heath St. runs in service to Lechmere with no guaranteed connections.

4 - Early morning service from Lechmere to Riverside departs Lechmere at 5:00 AM.

f - After exiting Ted Williams Tunnel bus will only service World Trade Center and South Station stops.

w - Last trips wait at some stations, primarily in the Downtown area, for connecting service.
Departure times are approximate.

Fall 2020 & Winter 2021 Holidays
9/7/20: Sunday, 10/2/20 & 11/1/20: Weekday
11/26/20, 12/25/20, & 1/1/21: Sun; 1/16/21 & 2/15/21: Sat

Alewife

Start Time	Average Daily Entries	Average Daily Exits	Total	Average Flow
3:00 AM	1	2.6	3.6	
4:00 AM	8.5	2.1	10.6	
5:00 AM	265.8	40.3	306.1	
6:00 AM	901.7	286.9	1188.6	
7:00 AM	2210	465.8	2675.8	
8:00 AM	2623.1	684.2	3307.3	6092.0
9:00 AM	1182.8	408.8	1591.6	
10:00 AM	509.7	206.7	716.4	
11:00 AM	371.6	186.7	558.3	
12:00 PM	316.5	252.8	569.3	
1:00 PM	298.7	328	626.7	
2:00 PM	310.7	452.9	763.6	
3:00 PM	403.5	751.9	1155.4	
4:00 PM	696.4	1297.5	1993.9	
5:00 PM	1005	2082.1	3087.1	7291.0
6:00 PM	653.3	1636.1	2289.4	
7:00 PM	283.3	854.7	1138	
8:00 PM	145.7	498.9	644.6	
9:00 PM	141.2	369.5	510.7	
10:00 PM	110.8	303.5	414.3	
11:00 PM	48.1	229.4	277.5	
12:00 AM	12.2	95.9	108.1	
1:00 AM	5.7	23.5	29.2	
2:00 AM	1.8	4	5.8	
Total	12507.1	11464.8	23971.9	13383.0

Rail Flows Fall 2019

Direction 1				Direction 1			
time_period_id	time_period_name	stop_name	total_ons	time_period_id	time_period_name	stop_name	total_offs
time_period_06	PM_PEAK	Alewife	1979	time_period_01	VERY_EARLY_MORNING	Alewife	101
time_period_03	AM_PEAK	Alewife	4837	time_period_04	MIDDAY_BASE	Alewife	1093
time_period_07	EVENING	Alewife	755	time_period_05	MIDDAY_SCHOOL	Alewife	1720
time_period_04	MIDDAY_BASE	Alewife	2555	time_period_08	LATE_EVENING	Alewife	420
time_period_05	MIDDAY_SCHOOL	Alewife	779	time_period_09	NIGHT	Alewife	23
time_period_01	VERY_EARLY_MORNING	Alewife	102	time_period_06	PM_PEAK	Alewife	5312
time_period_02	EARLY_AM	Alewife	937	time_period_02	EARLY_AM	Alewife	327
time_period_08	LATE_EVENING	Alewife	120	time_period_07	EVENING	Alewife	2144
time_period_09	NIGHT	Alewife	8	time_period_03	AM_PEAK	Alewife	1255

VEHICLE CRASH DATA



MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Cambridge COUNT DATE : 2020 Adj.

DISTRICT : 6 UNSIGNALIZED : SIGNALIZED :

MHD USE ONLY

Source #

~ INTERSECTION DATA ~

MAJOR STREET : Concord Avenue at Blanchard Road/

ST #

MINOR STREET(S) : Griswold Street

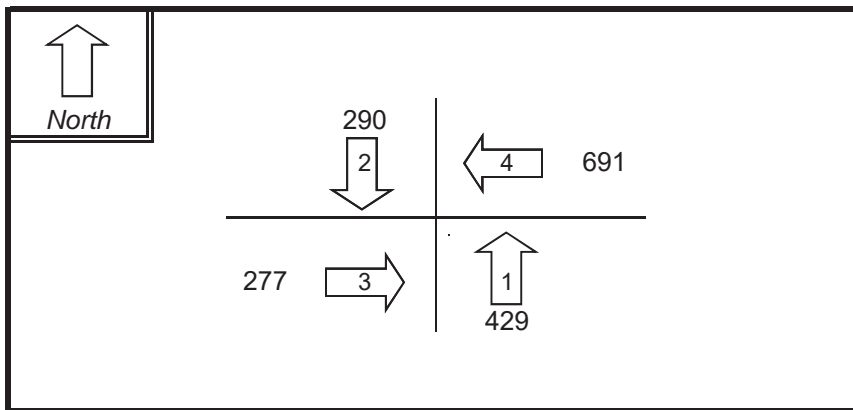
ST #

ST #

ST #

ST #

**INTERSECTION
DIAGRAM
(Label Approaches)**



INTERSECTION
REF #

Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	NB	SB	EB	WB		
VOLUMES (PM) :	429	290	277	691	10	1,697

"K" FACTOR : APPROACH ADT : ADT = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : # OF YEARS : AVERAGE # OF ACCIDENTS (A) :

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

Comments : Accident Rate for District 6 signalized intersections = 0.71
Accident Rate for District 6 unsignalized intersections = 0.52

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Cambridge COUNT DATE : 2020 Adj.

DISTRICT : 6 UNSIGNALIZED : SIGNALIZED :

MHD USE ONLY

Source #

~ INTERSECTION DATA ~

MAJOR STREET : Concord Avenue

ST #

MINOR STREET(S) : Smith Place

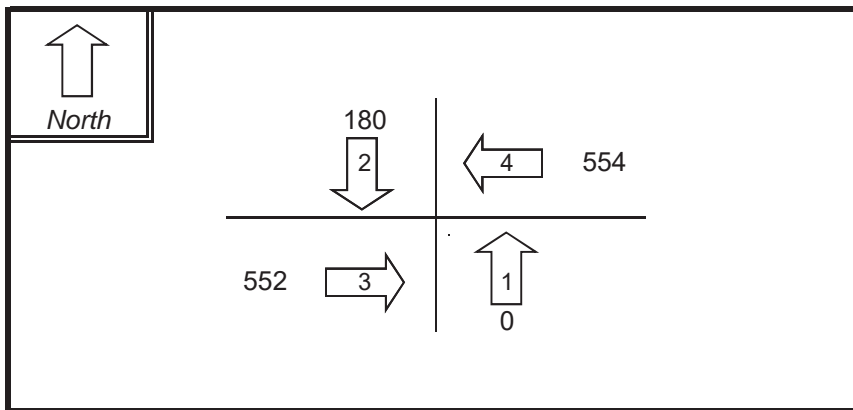
ST #

ST #

ST #

ST #

**INTERSECTION
DIAGRAM**
(Label Approaches)



INTERSECTION
REF #

Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	NB	SB	EB	WB		
VOLUMES (PM) :		180	552	554		1,286

" K " FACTOR : APPROACH ADT : ADT = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : # OF YEARS : AVERAGE # OF ACCIDENTS (A) :

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

Comments : Accident Rate for District 6 signalized intersections = 0.71
Accident Rate for District 6 unsignalized intersections = 0.52

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Cambridge COUNT DATE : 2020 Adj.

DISTRICT : 6 UNSIGNALIZED : SIGNALIZED :

MHD USE ONLY

Source #

~ INTERSECTION DATA ~

MAJOR STREET : Concord Avenue at

ST #

MINOR STREET(S) : Moulton Street

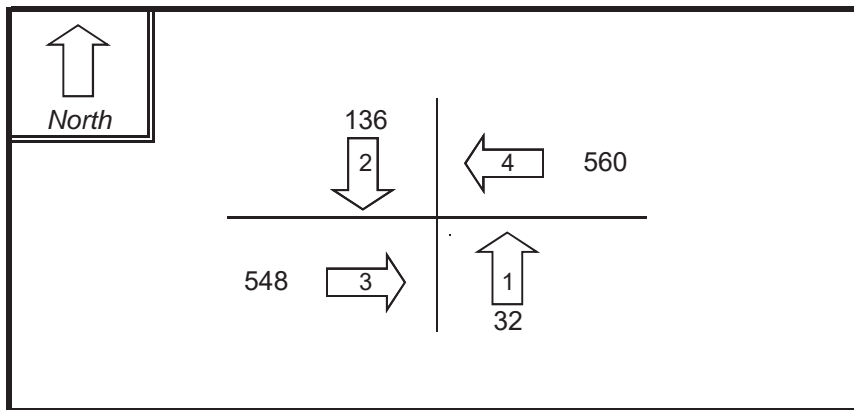
ST #

ST #

ST #

ST #

**INTERSECTION
DIAGRAM**
(Label Approaches)



INTERSECTION
REF #

Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	NB	SB	EB	WB		
VOLUMES (PM) :	32	136	548	560		1,276

" K " FACTOR : APPROACH ADT : ADT = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : # OF YEARS : AVERAGE # OF ACCIDENTS (A) :

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

Comments : Accident Rate for District 6 signalized intersections = 0.71
Accident Rate for District 6 unsignalized intersections = 0.52

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Cambridge COUNT DATE : 2020 Adj.

DISTRICT : 6 UNSIGNALIZED : SIGNALIZED :

MHD USE ONLY

Source #

~ INTERSECTION DATA ~

MAJOR STREET : Concord Avenue at

ST #

MINOR STREET(S) : Fawcett Street

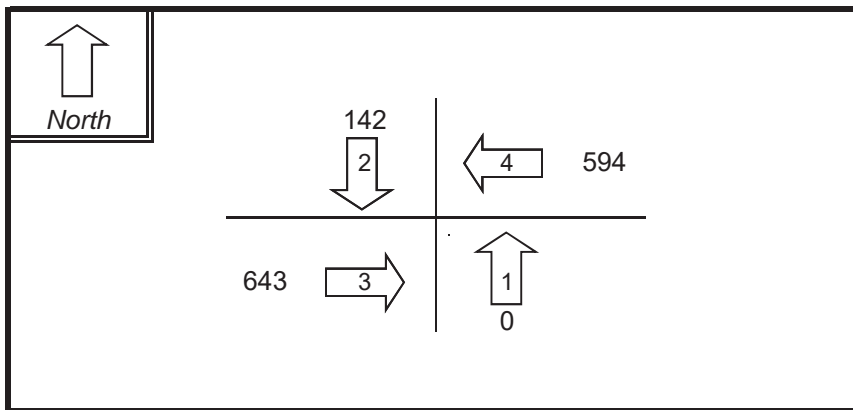
ST #

ST #

ST #

ST #

**INTERSECTION
DIAGRAM**
(Label Approaches)



INTERSECTION
REF #

Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	NB	SB	EB	WB		
VOLUMES (PM) :		142	643	594		1,379

" K " FACTOR : APPROACH ADT : ADT = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : # OF YEARS : AVERAGE # OF ACCIDENTS (A) :

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

Comments : Accident Rate for District 6 signalized intersections = 0.71
Accident Rate for District 6 unsignalized intersections = 0.52

MassHighway

CRASH RATE WORKSHEET

CITY/TOWN : Cambridge COUNT DATE : 2020 Adj.

DISTRICT : 6 UNSIGNALIZED : SIGNALIZED :

MHD USE ONLY

Source #

~ INTERSECTION DATA ~

MAJOR STREET : Smith Place at

ST #

MINOR STREET(S) : Fawcett Street

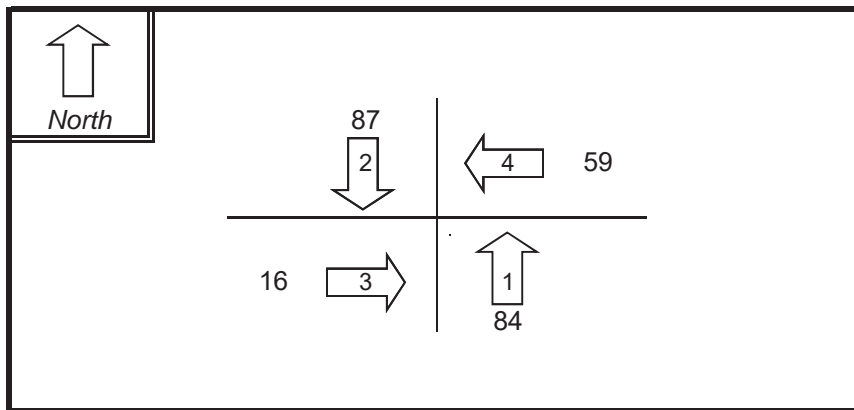
ST #

ST #

ST #

ST #

**INTERSECTION
DIAGRAM**
(Label Approaches)



INTERSECTION
REF #

Peak Hour Volumes

APPROACH :	1	2	3	4	5	Total Entering Vehicles
DIRECTION :	NB	SB	EB	WB		
VOLUMES (PM) :	84	87	16	59		246

" K " FACTOR : APPROACH ADT : ADT = TOTAL VOL/"K" FACT.

TOTAL # OF ACCIDENTS : # OF YEARS : AVERAGE # OF ACCIDENTS (A) :

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

Comments : Accident Rate for District 6 signalized intersections = 0.71
Accident Rate for District 6 unsignalized intersections = 0.52

MODE SPLIT DATA



Comparable Nearby R&D Properties: PTDM Reporting of Mode Shares

Land Use/Building	Size (Occupied)		SOV		HOV		Vehicle (SOV+HOV)		Transit		Walk		Bike		Other		Other (WFH)		Total		Source:		Date of Original	
West Cambridge Science Park	58.47	KSF	164	45.2%	45	12.4%	209	57.6%	53	14.6%	32	8.8%	48	13.2%	2	0.6%	19	5.2%	363	100.0%	2018 PTDM Report	F-17	9/20/2016	
10 Wilson Road	65.21	KSF	169	44.7%	52	13.8%	221	58.5%	66	17.5%	19	5.0%	53	14.0%	0	0.0%	19	5.0%	378	100.0%	2019 PTDM Report	F-17	9/20/2016	
75 Moulton St	36.30	KSF	143	66.2%	17	7.9%	160	74.1%	7	3.2%	11	5.1%	5	2.3%	0	0.0%	33	15.3%	216	100.0%	2017 PTDM Report	F-6	4/6/1999	
Median from PTDM properties	50.00	KSF	143	56.6%	15	6.0%	157	62.5%	58	23.1%	4	1.6%	30	12.0%	0	0.0%	2	0.8%	251	100.0%	2019 PTDM Report	F-60	4/13/2001	
Normalized Median	50.50	KSF	151	54.4%	17	7.9%	160	62.9%	58	17.5%	11	5.0%	30	12.0%	0	0.0%	19	5.0%	251	103.9%				
Average From PTDM	50.50	KSF	151	55.8%	28	9.2%	179	65.0%	44	16.8%	11	4.8%	29	11.5%	0	0.0%	18	4.8%	282	100.0%				
Total	151.51		454	54%	84	10%	538	64%	131	16%	34	4%	88	10%	-	0%	54	6%	845	100.0%	weighted average			



CITY OF CAMBRIDGE

TRAFFIC, PARKING, + TRANSPORTATION

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January 21, 2020

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RE: 40 Wilson Road TIS Scope

The Cambridge Traffic, Parking, and Transportation Department (TP+T) received your November 21, 2019 request for a Transportation Impact Study (TIS) scope for a proposed development project located at 40 Wilson Road in the Alewife Quadrangle area of Cambridge.

The Project proposes approximately 250,000 gross square feet of laboratory space in a new building, replacing the existing approximately 58,600 SF building and structures. The Project proposes approximately 444 parking spaces in a below-grade parking garage and a small surface parking lot including 375 spaces to serve 40 Wilson Road tenants, 59 spaces to serve 10 Wilson Road tenants, and 10 spaces to serve 26 Smith Place.

The project proposes 56 long-term bicycle parking spaces and 16 short-term bicycle parking spaces. However, the TIS scope request letter did not indicate the number of existing or proposed bicycle parking spaces to serve the 10 Wilson Road and 26 Smith Place buildings, which should also be indicated in the TIS.

Based on staff review, the TIS scope is approved as follows:

- The TIS shall comply with the Cambridge TIS Guidelines.
<http://www.cambridgema.gov/traffic/alldocuments/Documents/T/trafficstudyguidelines>.
Please provide 3 hard copies of the full TIS and one CD-ROM that includes the full TIS, TIS appendices and all electronic files.
- The TIS shall document the existing site and study area transportation conditions, including the following information:

- Collect AM (7:30 AM – 9:30 AM) and PM (4:30 PM – 7:30 PM) vehicle, pedestrian, and bicycle turning movement counts (TMCs), including vehicle classification and queue observations at the following study area intersections. The exact dates of the traffic counts should be labeled on the traffic network figures. All average daily traffic (ADT) and turning movement count (TMC) output data shall be provided to TP+T. Turning movement counts should be conducted on a Tuesday, Wednesday or Thursday.
 1. Concord Avenue/Smith Place
 2. Concord Avenue/Moulton Street/Neville Manor (signalized)
 3. Concord Avenue/Fawcett Street
 4. Concord Avenue Blanchard Road/Griswold Street
 5. Smith Place at 55 Wilson Road Driveway (proposed site driveway)
 6. Smith Place/Wilson Road
- Provide 12-hour pedestrian and bicycle counts at the following locations:
 - A. Smith Place at Concord Avenue, including bicycle counts for the bike lane on the north side of Concord Avenue, and bicycle and pedestrian counts for the cycle track on the south side of Concord Avenue.
 - B. Concord Avenue pedestrian/bike mid-block crossing between Fawcett Street and Wheeler Street (signalized)
 - C. Concord Avenue pedestrian/bike crossing between the Alewife Brook Parkway and Fresh Pond Parkway rotaries (signalized).
- As stated in your scope request letter, the TIS should include crash data for the three most recent years available at all study area intersections, however, crash data should be obtained from the Cambridge Police Department instead of or in addition to MassDOT crash report data. Bicycle and pedestrian crash rates should be listed separately. Crash rates should be compared to district and statewide averages for signalized and un-signalized intersections.
- The TIS mode split assumptions for the Project’s trip generation analysis should be as shown below or as approved by TP+T.

Land Use	SOV	HOV	Transit	Bike	Walk	Work at Home	Other
R&D	54%	10%	16%	10%	4%	2%	4%

Source: Average mode shares for 10 Wilson Ave 2017 PTDM report, 767 Concord Ave 2019 PTDM report, and 75 Moulton Street 2019 PTDM report.

- As suggested in your TIS scope request letter, the TIS should use the trip distribution assumptions used in the Envision Cambridge Alewife Planning Study for the Quadrangle Commercial Land Use.
- The TIS should justify any trip credits from vehicle trips currently being generated from the Project site.
- The estimated Total Project Generated Trips in your scope request letter appears low. TP+T will work with you on comparing ITE trip rates with local data and

TRIP GENERATION DATA



Land Use/Building	No.	Size (Occupied)	Date of Original PTDM Approval	% Parking On-Site	Year	Daily		AM Peak		PM Peak		Daily		AM		PM		Source:			
						Trips In	Trips Out	Total Trips	Trips In	Trips Out	Total Trips	Trips In	Trips Out	Total Trips	Enter	Exit	Enter		Exit	Enter	Exit
10 Wilson Road	F-6	50.00 KSF	4/6/1999	100%	2017	34	40	74	13	0	13	5	8	13	0.68	0.80	0.26	0.00	0.10	0.16	2017 PTDM Report
West Cambridge Science Park	F-17	58.47 KSF	9/20/2016	100%	2018	301	305	606	49	19	68	9	46	55	5.17	5.24	0.84	0.33	0.15	0.79	2018 PTDM Report
	E-17	65.24 KSF	9/20/2016	94%	2019																
75 Moulton St	F-60	36.30 KSF	4/13/2001	100%	2019	74	75	149	20	4	24	6	16	22	2.04	2.07	0.55	0.11	0.17	0.44	2019 PTDM Report
Median From PTDM		54.24 KSF													2.04	2.07	0.55	0.11	0.15	0.44	essentially 75 Moulton
Average From PTDM		52.50 KSF													2.63	2.70	0.55	0.15	0.14	0.46	
Total		144.78				409	420	829	82	23	105	20	70	90	2.83	2.90	0.57	0.16	0.14	0.48	weighted average

Adam's working trip rates (for comparison)

AM Enter	AM Exit	PM Enter	PM Exit
0.55	0.17	0.09	0.57

Trip Rates: R&D average

Time Period/ Direction	R&D		Vehicles Trip				Total Person trip	
	(SOV+HOV) Rates	Total (SOV+HOV) Vehicle Trips 62.05	Drive Alone (SOV) Auto	Rideshare (HOV) Auto	Total Trips	Vehicle Person Trips	Total 100% Person Trips	
Weekday :								64
Entering	2.83	176	148	28	275	185	289	
Exiting	2.90	180	151	29	281	189	295	
Total	5.73	356	299	57	556	374	584	
			84%	16%				
Weekday Morning Peak Hour:								
Entering	0.57	35	29	6	55	37	58	
Exiting	0.16	10	8	2	16	11	17	
Total	0.73	45	37	8	71	48	75	
Weekday Evening Peak Hour:								
Entering	0.14	9	8	1	13	9	14	
Exiting	0.48	30	25	5	48	32	50	
Total	0.62	39	33	6	61	41	64	

Total Person trip by mode							Total Vehicles Trips
Drive Alone (SOV) Auto	Rideshare (HOV) Auto	Transit	Bicycle	Pedestrian	Other		
156	29	46	29	12	17	289	176
159	30	47	30	11	18	295	180
315	59	93	59	23	35	584	356
31	6	9	6	2	4	58	35
9	2	2	2	1	1	17	10
40	8	11	8	3	5	75	45
8	1	2	1	1	1	14	9
27	5	8	5	2	3	50	30
35	6	10	6	3	4	64	39

	Office
(SOV) Auto	54%
(HOV) Auto	10%
Transit	16%
Bicycle	10%
Pedestrian	4%
Other	6%
Total	1

Veh	1.05
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TRIP DISTRIBUTION DATA



Alewife Critical Sums Analysis

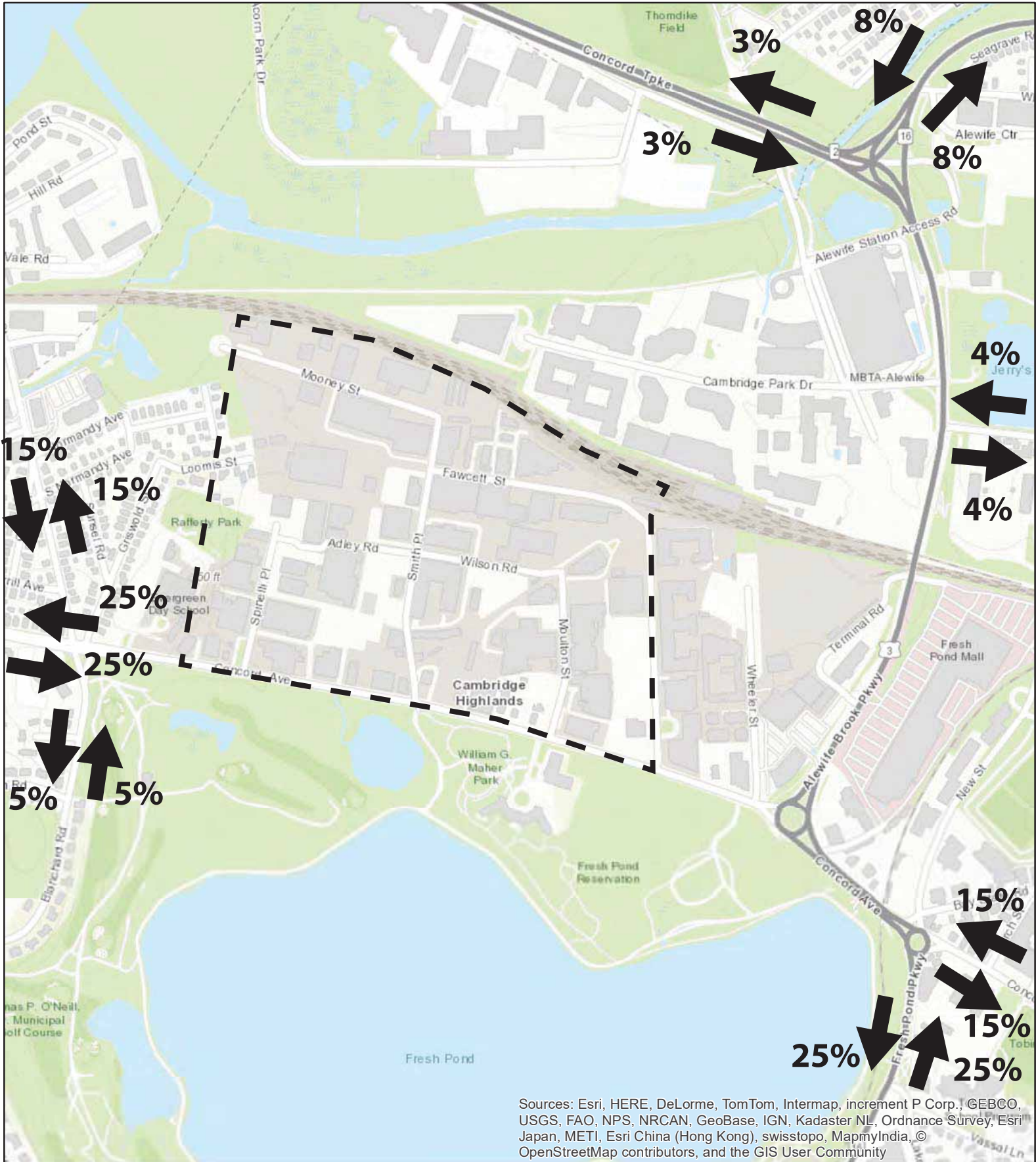
Envision Cambridge

McMahon Associates

Prepared for the City of Cambridge

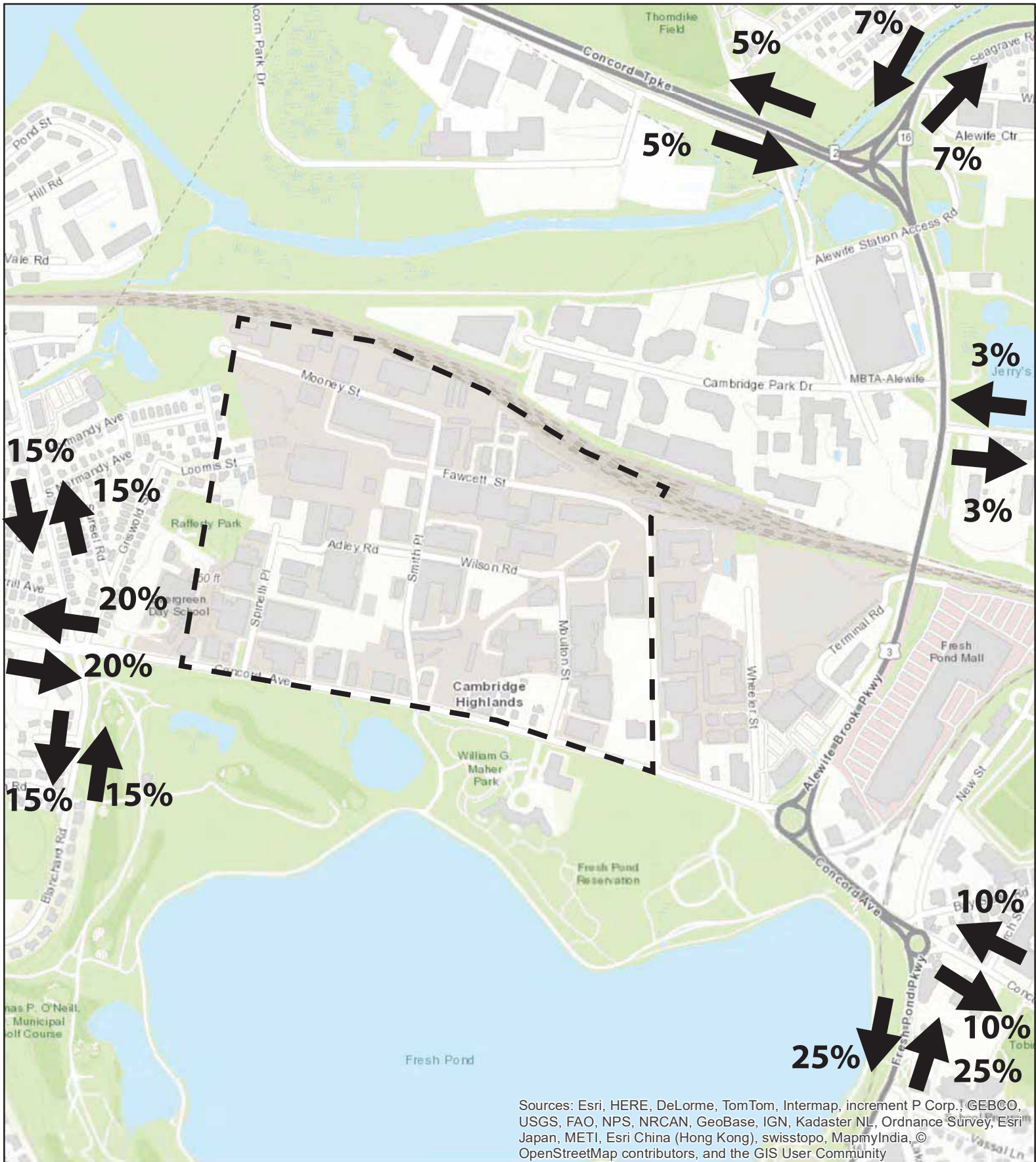
Revised January 25, 2019

QUAD RESIDENTIAL



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

QUAD COMMERCIAL



Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

CAPACITY ANALYSIS METHODOLOGY



CAPACITY ANALYSIS METHODOLOGY

LEVELS OF SERVICE

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic-flow conditions.¹ The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with level-of-service (LOS) A representing the best operating conditions and LOS F representing congested or constrained operating conditions.

Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

Unsignalized Intersections

The six levels of service for unsignalized intersections may be described as follows:

- *LOS A* represents a condition with little or no control delay to minor street traffic.
- *LOS B* represents a condition with short control delays to minor street traffic.
- *LOS C* represents a condition with average control delays to minor street traffic.
- *LOS D* represents a condition with long control delays to minor street traffic.
- *LOS E* represents operating conditions at or near capacity level, with very long control delays to minor street traffic.

¹The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016.

- *LOS F* represents a condition where minor street demand volume exceeds capacity of an approach lane, with extreme control delays resulting.

The levels of service of unsignalized intersections are determined by application of a procedure described in the *Highway Capacity Manual 6th Edition*.² Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the *Highway Capacity Manual 6th Edition*. Table 13 summarizes the relationship between level of service and average control delay for two-way stop controlled and all-way stop controlled intersections.

LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS^a

Level-Of-Service by Volume-to-Capacity Ratio		Average Control Delay (Seconds Per Vehicle)
v/c ≤ 1.0	v/c > 1.0	
A	F	≤10.0
B	F	10.1 to 15.0
C	F	15.1 to 25.0
D	F	25.1 to 35.0
E	F	35.1 to 50.0
F	F	>50.0

^aSource: *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016; page 20-6.

Signalized Intersections

The six levels of service for signalized intersections may be described as follows:

- * *LOS A* describes operations with very low control delay; most vehicles do not stop at all.
- * *LOS B* describes operations with relatively low control delay. However, more vehicles stop than *LOS A*.
- * *LOS C* describes operations with higher control delays. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
- * *LOS D* describes operations with control delay in the range where the influence of congestion becomes more noticeable. Many vehicles stop and individual cycle failures are noticeable.
- * *LOS E* describes operations with high control delay values. Individual cycle failures are frequent occurrences.

²*Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016.

- * *LOS F* describes operations with high control delay values that often occur with over-saturation. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Levels of service for signalized intersections are calculated using the operational analysis methodology of the *Highway Capacity Manual 6th Edition*. This method assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on delay. Level-of-service designations are based on the criterion of control or signal delay per vehicle. Control or signal delay is a measure of driver discomfort, frustration, and fuel consumption, and includes initial deceleration delay approaching the traffic signal, queue move-up time, stopped delay and final acceleration delay. Table 14 summarizes the relationship between level-of-service and control delay. The tabulated control delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to entire intersections.

LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS^a

Level-Of-Service by Volume-to-Capacity Ratio		Average Control Delay (Seconds Per Vehicle)
$v/c \leq 1.0$	$v/c > 1.0$	
A	F	≤ 10.0
B	F	10.1 to 20.0
C	F	20.1 to 35.0
D	F	35.1 to 55.0
E	F	55.1 to 80.0
F	F	> 80.0

^aSource: *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington, DC; 2016; page 19-16.

PEDESTRIAN ANALYSIS

The six pedestrian levels of service may be described as follows:

- * *LOS A*: Pedestrians basically move in desired paths without altering their movements in response to other pedestrians. Walking speeds are freely selected, and conflicts between pedestrians are unlikely.
- * *LOS B*: Sufficient area is provided to allow pedestrians to freely select walking speeds, to bypass other pedestrians, and to avoid crossing conflicts with others.
- * *LOS C*: Sufficient space is available to select normal walking speeds, and to bypass other pedestrians in primarily unidirectional streams.
- * *LOS D*: Freedom to select individual walking speed and to bypass other pedestrians is restricted.
- * *LOS E*: Virtually all pedestrians would have their normal walking speed restricted, requiring frequent adjustment of gait. At the lower range of this level of service, forward movement is possible only by “shuffling.” Insufficient space is provided for passing of slower pedestrians.

- * *LOS F*: All walking speeds are severely restricted, and forward progress is made only by “shuffling.” There is frequent, unavoidable contact with other pedestrians. Flow is sporadic and unstable.

**PEDESTRIAN LEVEL-OF-SERVICE CRITERIA
AT SIGNALIZED INTERSECTIONS^a**

Level of Service	Average Delay Per Pedestrian (Seconds)
A	<10
B	≥10 to 20
C	>20 to 30
D	>30 to 40
E	>40 to 60
F	>60

^aSource: *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2000; Exhibit 18-9.

**PEDESTRIAN LEVEL-OF-SERVICE CRITERIA
AT UNSIGNALIZED INTERSECTIONS^a**

Level of Service	Average Delay Per Pedestrian (Seconds)
A	≤5
B	≥5 to 10
C	>10 to 20
D	>20 to 30
E	>30 to 45
F	>45

^aSource: *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2000; Exhibit 18-13.

SIMTRAFFIC METHODOLOGY

SimTraffic is designed to model networks of signalized and unsignalized intersections, including roundabouts. SimTraffic can provide a number of measures of effectiveness for evaluating networks. One such measure is delay per vehicle which is calculated by dividing the total delay by the number of vehicles. The delay values were then used to determine level-of-service characteristics based on the HCM methodology previously described. Queue lengths are another output that SimTraffic generates. A vehicle is considered queued whenever it is traveling at less than 10 ft/sec. SimTraffic presents delays and queues by each individual lane and not by lane group.

QUEUE ANALYSIS



Queuing and Blocking Report

1 - 2021 Baseline Condition Weekday Morning

05/26/2021

Intersection: 17: blanchard Road & Concord Avenue

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	R	LT	R	LTR
Maximum Queue (ft)	280	244	136	145	88	287	125	358
Average Queue (ft)	159	107	112	123	39	145	61	208
95th Queue (ft)	271	231	154	154	76	262	163	351
Link Distance (ft)	755	755	122	122	122	631		778
Upstream Blk Time (%)			21	20	0			
Queuing Penalty (veh)			44	44	0			
Storage Bay Dist (ft)							100	
Storage Blk Time (%)						19	0	
Queuing Penalty (veh)						32	0	

Intersection: 40: Private Drive/Moulton Street & Concord Avenue

Movement	EB	EB	WB	NB	SB
Directions Served	LT	TR	LTR	LTR	LTR
Maximum Queue (ft)	209	219	186	39	51
Average Queue (ft)	113	97	86	6	33
95th Queue (ft)	204	200	178	33	57
Link Distance (ft)	647	647	530	194	834
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 120

Queuing and Blocking Report

2 - 2021 Baseline Condition Weekday Evening

05/26/2021

Intersection: 17: blanchard Road & Concord Avenue

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	R	LT	R	LTR
Maximum Queue (ft)	182	167	137	136	124	541	125	258
Average Queue (ft)	125	71	126	118	55	334	49	168
95th Queue (ft)	179	159	156	156	112	615	147	267
Link Distance (ft)	755	755	122	122	122	631		778
Upstream Blk Time (%)			47	20	1	4		
Queuing Penalty (veh)			109	47	2	0		
Storage Bay Dist (ft)							100	
Storage Blk Time (%)						38	0	
Queuing Penalty (veh)						51	0	

Intersection: 40: Private Drive/Moulton Street & Concord Avenue

Movement	EB	EB	WB	NB	SB
Directions Served	LT	TR	LTR	LTR	LTR
Maximum Queue (ft)	156	170	192	60	101
Average Queue (ft)	84	79	92	21	54
95th Queue (ft)	152	150	172	56	98
Link Distance (ft)	647	647	530	194	834
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 210

Queuing and Blocking Report

3 - 2021 Build Weekday Morning

05/26/2021

Intersection: 17: blanchard Road & Concord Avenue

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	R	LT	R	LTR
Maximum Queue (ft)	217	189	135	155	76	291	125	355
Average Queue (ft)	150	111	113	118	38	167	57	205
95th Queue (ft)	209	194	161	157	71	283	157	319
Link Distance (ft)	755	755	122	122	122	631		778
Upstream Blk Time (%)			28	15				
Queuing Penalty (veh)			62	33				
Storage Bay Dist (ft)							100	
Storage Blk Time (%)						23	0	
Queuing Penalty (veh)						38	0	

Intersection: 40: Private Drive/Moulton Street & Concord Avenue

Movement	EB	EB	WB	NB	SB
Directions Served	LT	TR	LTR	LTR	LTR
Maximum Queue (ft)	201	210	259	40	76
Average Queue (ft)	103	89	93	6	32
95th Queue (ft)	199	189	200	28	66
Link Distance (ft)	647	647	530	194	834
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 133

Queuing and Blocking Report
 4 - 2021 Build Weekday Evening

05/26/2021

Intersection: 17: blanchard Road & Concord Avenue

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	R	LT	R	LTR
Maximum Queue (ft)	189	159	140	136	134	570	125	309
Average Queue (ft)	125	66	132	114	58	332	52	178
95th Queue (ft)	184	153	150	159	120	638	152	289
Link Distance (ft)	755	755	122	122	122	631		778
Upstream Blk Time (%)			69	16	2	7		
Queuing Penalty (veh)			161	37	5	0		
Storage Bay Dist (ft)							100	
Storage Blk Time (%)						40	0	
Queuing Penalty (veh)						53	0	

Intersection: 40: Private Drive/Moulton Street & Concord Avenue

Movement	EB	EB	WB	NB	SB
Directions Served	LT	TR	LTR	LTR	LTR
Maximum Queue (ft)	144	147	199	52	138
Average Queue (ft)	81	69	92	21	61
95th Queue (ft)	133	135	176	48	113
Link Distance (ft)	647	647	530	194	834
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 256

Queuing and Blocking Report

5 - 2026 Build Weekday Morning

05/26/2021

Intersection: 17: blanchard Road & Concord Avenue

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	R	LT	R	LTR
Maximum Queue (ft)	318	269	138	137	104	326	125	410
Average Queue (ft)	216	175	131	127	50	160	51	251
95th Queue (ft)	369	336	144	148	92	304	151	385
Link Distance (ft)	755	755	122	122	122	631		778
Upstream Blk Time (%)			68	30	0			
Queuing Penalty (veh)			169	76	0			
Storage Bay Dist (ft)							100	
Storage Blk Time (%)						25	0	
Queuing Penalty (veh)						47	0	

Intersection: 37: Concord Avenue & Fawcett Street

Movement	EB	EB	WB	SB
Directions Served	LT	T	TR	LR
Maximum Queue (ft)	407	392	609	219
Average Queue (ft)	173	183	441	96
95th Queue (ft)	340	339	762	185
Link Distance (ft)	530	530	739	1314
Upstream Blk Time (%)	0		10	
Queuing Penalty (veh)	1		0	
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 40: Private Drive/Moulton Street & Concord Avenue

Movement	EB	EB	WB	NB	SB
Directions Served	LT	TR	LTR	LTR	LTR
Maximum Queue (ft)	247	274	438	45	68
Average Queue (ft)	125	123	211	5	32
95th Queue (ft)	231	233	458	27	62
Link Distance (ft)	647	647	530	194	834
Upstream Blk Time (%)			1		
Queuing Penalty (veh)			9		
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 302

Queuing and Blocking Report
 6 - 2026 Build Weekday Evening

05/26/2021

Intersection: 17: blanchard Road & Concord Avenue

Movement	EB	EB	WB	WB	WB	NB	NB	SB
Directions Served	LT	TR	L	T	R	LT	R	LTR
Maximum Queue (ft)	273	222	141	135	133	658	125	322
Average Queue (ft)	167	115	134	120	86	639	64	216
95th Queue (ft)	267	240	145	153	148	693	165	342
Link Distance (ft)	755	755	122	122	122	631		778
Upstream Blk Time (%)			85	33	6	50		
Queuing Penalty (veh)			228	88	17	0		
Storage Bay Dist (ft)							100	
Storage Blk Time (%)						61	0	
Queuing Penalty (veh)						95	1	

Intersection: 37: Concord Avenue & Fawcett Street

Movement	EB	EB	WB	SB
Directions Served	LT	T	TR	LR
Maximum Queue (ft)	175	172	265	197
Average Queue (ft)	83	89	139	117
95th Queue (ft)	151	164	256	199
Link Distance (ft)	530	530	739	1314
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)				
Storage Blk Time (%)				
Queuing Penalty (veh)				

Intersection: 40: Private Drive/Moulton Street & Concord Avenue

Movement	EB	EB	WB	NB	SB
Directions Served	LT	TR	LTR	LTR	LTR
Maximum Queue (ft)	187	156	303	44	121
Average Queue (ft)	112	95	162	23	79
95th Queue (ft)	167	156	310	49	122
Link Distance (ft)	647	647	530	194	834
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)					
Storage Blk Time (%)					
Queuing Penalty (veh)					

Zone Summary

Zone wide Queuing Penalty: 429

TRAFFIC ANALYSIS

2021 Existing Weekday Morning Peak Hour
2021 Existing Weekday Evening Peak Hour
2021 Build Weekday Morning Peak Hour
2021 Build Weekday Evening Peak Hour
2026 Future Weekday Morning Peak Hour
2026 Future Weekday Evening Peak Hour



2021 Existing Weekday Morning Peak Hour



Lanes, Volumes, Timings
17: blanchard Road & Concord Avenue

1 - 2021 Baseline Condition Weekday Morning
05/20/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↖	↗	↗		↖	↗		↕	
Traffic Volume (vph)	14	402	12	147	285	164	16	210	213	376	324	11
Future Volume (vph)	14	402	12	147	285	164	16	210	213	376	324	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	12	12	12	11	11	11
Storage Length (ft)	0		0	0		0	0		100	0		0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.996				0.850			0.850		0.998	
Fl _t Protected		0.998		0.950				0.996			0.974	
Satd. Flow (prot)	0	3318	0	1574	1756	1492	0	1892	1583	0	1785	0
Fl _t Permitted		0.936		0.950				0.996			0.974	
Satd. Flow (perm)	0	3112	0	1574	1756	1492	0	1892	1583	0	1785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				193			169			1
Link Speed (mph)		30			30			30				30
Link Distance (ft)		799			183			684				825
Travel Time (s)		18.2			4.2			15.5				18.8
Peak Hour Factor	0.91	0.91	0.91	0.85	0.85	0.85	0.95	0.95	0.95	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	7%	1%	1%	0%	0%	2%	0%	0%	1%
Adj. Flow (vph)	15	442	13	173	335	193	17	221	224	388	334	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	470	0	173	335	193	0	238	224	0	733	0
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA	Perm	Split	NA	Prot	Split	NA	
Protected Phases		4		3	8		2	2	2	6	6	
Permitted Phases	4					8						6
Detector Phase	4	4		3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	23.0	23.0		21.0	21.0	21.0	21.0	21.0	21.0	23.0	23.0	
Total Split (s)	30.0	30.0		21.0	51.0	51.0	45.0	45.0	45.0	45.0	45.0	
Total Split (%)	21.3%	21.3%		14.9%	36.2%	36.2%	31.9%	31.9%	31.9%	31.9%	31.9%	

Lanes, Volumes, Timings
17: blanchard Road & Concord Avenue

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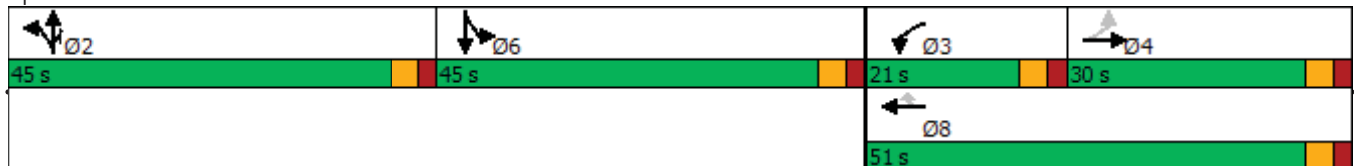


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	25.0	25.0		16.0	46.0	46.0	40.0	40.0	40.0	40.0	40.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0		-1.0	-1.0			-1.0
Total Lost Time (s)		4.0		4.0	4.0	4.0		4.0	4.0			4.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	None	None		None	None	None	Max	Max	Max	None	None	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	0
Act Effect Green (s)		24.7		17.0	45.8	45.8		41.0	41.0			41.0
Actuated g/C Ratio		0.18		0.12	0.33	0.33		0.29	0.29			0.29
v/c Ratio		0.85		0.91	0.58	0.31		0.43	0.38			1.40
Control Delay		70.8		105.0	43.9	5.7		43.1	12.8			228.4
Queue Delay		0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		70.8		105.0	43.9	5.7		43.1	12.8			228.4
LOS		E		F	D	A		D	B			F
Approach Delay		70.8			48.4			28.4				228.4
Approach LOS		E			D			C				F
Queue Length 50th (ft)		219		159	253	0		178	37			~906
Queue Length 95th (ft)		#296		#276	331	44		260	109			#1155
Internal Link Dist (ft)		719			103			604				745
Turn Bay Length (ft)									100			
Base Capacity (vph)		580		191	590	630		555	584			524
Starvation Cap Reductn		0		0	0	0		0	0			0
Spillback Cap Reductn		0		0	0	0		0	0			0
Storage Cap Reductn		0		0	0	0		0	0			0
Reduced v/c Ratio		0.81		0.91	0.57	0.31		0.43	0.38			1.40

Intersection Summary

Area Type: Other
 Cycle Length: 141
 Actuated Cycle Length: 139.8
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.40
 Intersection Signal Delay: 104.7
 Intersection LOS: F
 Intersection Capacity Utilization 90.7%
 ICU Level of Service E
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: blanchard Road & Concord Avenue



Lanes, Volumes, Timings
40: Private Drive/Moulton Street & Concord Avenue

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕			↕↕	
Traffic Volume (vph)	18	843	19	12	649	52	2	0	4	41	1	10
Future Volume (vph)	18	843	19	12	649	52	2	0	4	41	1	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	11	11	10	10	10	11	11	11
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.990			0.916			0.974	
Flt Protected		0.999			0.999			0.982			0.962	
Satd. Flow (prot)	0	3410	0	0	1779	0	0	1343	0	0	1694	0
Flt Permitted		0.937			0.983			0.871			0.766	
Satd. Flow (perm)	0	3199	0	0	1751	0	0	1191	0	0	1349	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			6			61			12	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		705			591			232			864	
Travel Time (s)		19.2			16.1			5.3			19.6	
Peak Hour Factor	0.90	0.90	0.90	0.97	0.97	0.97	0.75	0.75	0.75	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	0%	8%	2%	2%	50%	0%	0%	2%	0%	0%
Adj. Flow (vph)	20	937	21	12	669	54	3	0	5	53	1	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	978	0	0	735	0	0	8	0	0	67	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	46.0	46.0		46.0	46.0		21.0	21.0		21.0	21.0	
Total Split (%)	51.1%	51.1%		51.1%	51.1%		23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	41.0	41.0		41.0	41.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0

Lanes, Volumes, Timings
40: Private Drive/Moulton Street & Concord Avenue

1 - 2021 Baseline Condition Weekday Morning
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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)		53.9			53.9			8.3			8.3	
Actuated g/C Ratio		0.78			0.78			0.12			0.12	
v/c Ratio		0.39			0.53			0.04			0.39	
Control Delay		4.0			6.1			0.3			30.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		4.0			6.1			0.3			30.0	
LOS		A			A			A			C	
Approach Delay		4.0			6.1			0.3			30.0	
Approach LOS		A			A			A			C	
Queue Length 50th (ft)		63			107			0			24	
Queue Length 95th (ft)		108			220			0			43	
Internal Link Dist (ft)		625			511			152			784	
Turn Bay Length (ft)												
Base Capacity (vph)		2509			1374			325			325	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.39			0.53			0.02			0.21	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	68.7
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.53
Intersection Signal Delay:	5.8
Intersection LOS:	A
Intersection Capacity Utilization:	61.5%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 40: Private Drive/Moulton Street & Concord Avenue



Lane Group	Ø9
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	0	46	64	0	0	0
Future Vol, veh/h	0	46	64	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	50	70	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	70	0	-	0	120 70
Stage 1	-	-	-	-	70 -
Stage 2	-	-	-	-	50 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1531	-	-	-	876 993
Stage 1	-	-	-	-	953 -
Stage 2	-	-	-	-	972 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1531	-	-	-	876 993
Mov Cap-2 Maneuver	-	-	-	-	876 -
Stage 1	-	-	-	-	953 -
Stage 2	-	-	-	-	972 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1531	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	991	562	6	0	34
Future Vol, veh/h	0	991	562	6	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	280	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	85	85	77	77
Heavy Vehicles, %	0	1	8	12	0	0
Mvmt Flow	0	1089	661	7	0	44

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	334
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	569
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	569
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	569
HCM Lane V/C Ratio	-	-	-	0.078
HCM Control Delay (s)	-	-	-	11.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.3

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑	
Traffic Vol, veh/h	65	877	601	38	34	51
Future Vol, veh/h	65	877	601	38	34	51
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	94	94	79	79
Heavy Vehicles, %	6	1	1	10	9	6
Mvmt Flow	73	985	639	40	43	65

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	679	0	-	0	1298 659
Stage 1	-	-	-	-	659 -
Stage 2	-	-	-	-	639 -
Critical Hdwy	4.19	-	-	-	6.735 6.29
Critical Hdwy Stg 1	-	-	-	-	5.535 -
Critical Hdwy Stg 2	-	-	-	-	5.935 -
Follow-up Hdwy	2.257	-	-	-	3.5855 3.357
Pot Cap-1 Maneuver	889	-	-	-	158 454
Stage 1	-	-	-	-	497 -
Stage 2	-	-	-	-	473 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	889	-	-	-	129 454
Mov Cap-2 Maneuver	-	-	-	-	129 -
Stage 1	-	-	-	-	407 -
Stage 2	-	-	-	-	473 -

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	34.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	889	-	-	-	226
HCM Lane V/C Ratio	0.082	-	-	-	0.476
HCM Control Delay (s)	9.4	0.7	-	-	34.6
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.3	-	-	-	2.4

Intersection												
Int Delay, s/veh	4.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	6	30	1	33	1	26	32	13	31	0
Future Vol, veh/h	1	1	6	30	1	33	1	26	32	13	31	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	87	87	87	75	75	75
Heavy Vehicles, %	0	0	17	3	0	9	100	38	0	15	23	0
Mvmt Flow	1	1	8	40	1	44	1	30	37	17	41	0

Major/Minor	Minor2		Minor1			Major1			Major2			
Conflicting Flow All	148	144	41	131	126	49	41	0	0	67	0	0
Stage 1	75	75	-	51	51	-	-	-	-	-	-	-
Stage 2	73	69	-	80	75	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.37	7.13	6.5	6.29	5.1	-	-	4.25	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.453	3.527	4	3.381	3.1	-	-	2.335	-	-
Pot Cap-1 Maneuver	825	751	989	839	768	1000	1115	-	-	1456	-	-
Stage 1	939	836	-	959	856	-	-	-	-	-	-	-
Stage 2	942	841	-	926	836	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	780	741	989	823	758	1000	1115	-	-	1456	-	-
Mov Cap-2 Maneuver	780	741	-	823	758	-	-	-	-	-	-	-
Stage 1	938	826	-	958	855	-	-	-	-	-	-	-
Stage 2	898	840	-	906	826	-	-	-	-	-	-	-

Approach	EB		WB			NB			SB		
HCM Control Delay, s	9		9.4			0.1			2.2		
HCM LOS	A		A								

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1115	-	-	920	904	1456	-
HCM Lane V/C Ratio	0.001	-	-	0.012	0.094	0.012	-
HCM Control Delay (s)	8.2	0	-	9	9.4	7.5	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.3	0	-

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑	
Traffic Vol, veh/h	22	899	679	149	73	31
Future Vol, veh/h	22	899	679	149	73	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	98	98	79	79
Heavy Vehicles, %	4	1	3	3	6	0
Mvmt Flow	24	999	693	152	92	39

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	845	0	-	0	1317 769
Stage 1	-	-	-	-	769 -
Stage 2	-	-	-	-	548 -
Critical Hdwy	4.16	-	-	-	6.69 6.2
Critical Hdwy Stg 1	-	-	-	-	5.49 -
Critical Hdwy Stg 2	-	-	-	-	5.89 -
Follow-up Hdwy	2.238	-	-	-	3.557 3.3
Pot Cap-1 Maneuver	779	-	-	-	157 404
Stage 1	-	-	-	-	447 -
Stage 2	-	-	-	-	535 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	779	-	-	-	146 404
Mov Cap-2 Maneuver	-	-	-	-	146 -
Stage 1	-	-	-	-	416 -
Stage 2	-	-	-	-	535 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	65.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	779	-	-	-	180
HCM Lane V/C Ratio	0.031	-	-	-	0.731
HCM Control Delay (s)	9.8	0.3	-	-	65.7
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.1	-	-	-	4.6

2021 Existing Weekday Evening Peak Hour



Lanes, Volumes, Timings
17: blanchard Road & Concord Avenue

2 - 2021 Baseline Condition Weekday Evening

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↖	↗	↗		↖	↖		↕	
Traffic Volume (vph)	31	228	17	197	277	200	16	291	120	159	266	7
Future Volume (vph)	31	228	17	197	277	200	16	291	120	159	266	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	12	12	12	11	11	11
Storage Length (ft)	0		0	0		0	0		100	0		0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.991				0.850			0.850		0.998	
Fl _t Protected		0.994		0.950				0.997			0.982	
Satd. Flow (prot)	0	3319	0	1685	1773	1492	0	1894	1599	0	1789	0
Fl _t Permitted		0.876		0.950				0.997			0.982	
Satd. Flow (perm)	0	2925	0	1685	1773	1492	0	1894	1599	0	1789	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		4				213			74			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		799			183			684			825	
Travel Time (s)		18.2			4.2			15.5			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.80	0.80	0.80	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	1%	0%
Adj. Flow (vph)	33	243	18	210	295	213	20	364	150	169	283	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	294	0	210	295	213	0	384	150	0	459	0
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA	Perm	Split	NA	Prot	Split	NA	
Protected Phases		4		3	8		2	2	2	6	6	
Permitted Phases	4					8						6
Detector Phase	4	4		3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	23.0	23.0		21.0	21.0	21.0	21.0	21.0	21.0	23.0	23.0	
Total Split (s)	45.0	45.0		21.0	66.0	66.0	55.0	55.0	55.0	55.0	55.0	
Total Split (%)	25.6%	25.6%		11.9%	37.5%	37.5%	31.3%	31.3%	31.3%	31.3%	31.3%	

Lanes, Volumes, Timings
17: blanchard Road & Concord Avenue

2 - 2021 Baseline Condition Weekday Evening
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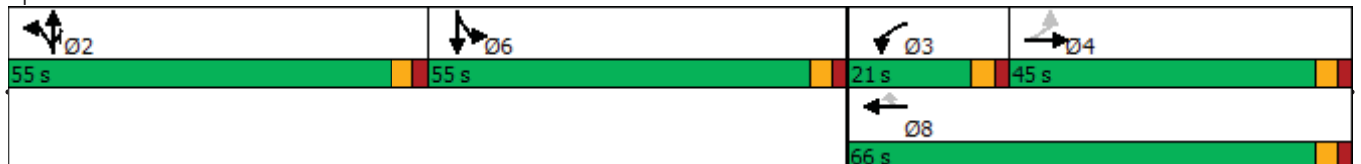


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	40.0	40.0		16.0	61.0	61.0	50.0	50.0	50.0	50.0	50.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0		-1.0	-1.0			-1.0
Total Lost Time (s)		4.0		4.0	4.0	4.0		4.0	4.0			4.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	None	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	
Act Effect Green (s)		21.3		17.1	42.5	42.5		51.3	51.3			44.1
Actuated g/C Ratio		0.14		0.11	0.28	0.28		0.34	0.34			0.29
v/c Ratio		0.70		1.09	0.59	0.37		0.59	0.25			0.87
Control Delay		70.6		152.1	52.4	6.9		47.1	20.8			68.7
Queue Delay		0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		70.6		152.1	52.4	6.9		47.1	20.8			68.7
LOS		E		F	D	A		D	C			E
Approach Delay		70.6			68.1			39.7				68.7
Approach LOS		E			E			D				E
Queue Length 50th (ft)		146		~239	255	0		319	53			428
Queue Length 95th (ft)		206		#445	369	64		407	99			#607
Internal Link Dist (ft)		719			103			604				745
Turn Bay Length (ft)									100			
Base Capacity (vph)		807		192	737	745		648	596			612
Starvation Cap Reductn		0		0	0	0		0	0			0
Spillback Cap Reductn		0		0	0	0		0	0			0
Storage Cap Reductn		0		0	0	0		0	0			0
Reduced v/c Ratio		0.36		1.09	0.40	0.29		0.59	0.25			0.75

Intersection Summary

Area Type: Other
 Cycle Length: 176
 Actuated Cycle Length: 149.9
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.09
 Intersection Signal Delay: 61.0
 Intersection LOS: E
 Intersection Capacity Utilization 75.1%
 ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: blanchard Road & Concord Avenue



Lanes, Volumes, Timings
40: Private Drive/Moulton Street & Concord Avenue

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕			↕↕	
Traffic Volume (vph)	2	535	8	7	542	8	12	1	19	93	0	43
Future Volume (vph)	2	535	8	7	542	8	12	1	19	93	0	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	11	11	10	10	10	11	11	11
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998			0.920			0.958	
Flt Protected					0.999			0.981			0.967	
Satd. Flow (prot)	0	3449	0	0	1814	0	0	1600	0	0	1701	0
Flt Permitted		0.954			0.994			0.879			0.769	
Satd. Flow (perm)	0	3290	0	0	1804	0	0	1434	0	0	1353	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			25			61	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		705			591			232			864	
Travel Time (s)		19.2			16.1			5.3			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.84	0.84	0.84	0.75	0.75	0.75	0.79	0.79	0.79
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	582	9	8	645	10	16	1	25	118	0	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	593	0	0	663	0	0	42	0	0	172	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	46.0	46.0		46.0	46.0		21.0	21.0		21.0	21.0	
Total Split (%)	51.1%	51.1%		51.1%	51.1%		23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	41.0	41.0		41.0	41.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0

Lanes, Volumes, Timings
40: Private Drive/Moulton Street & Concord Avenue

2 - 2021 Baseline Condition Weekday Evening

05/20/2021

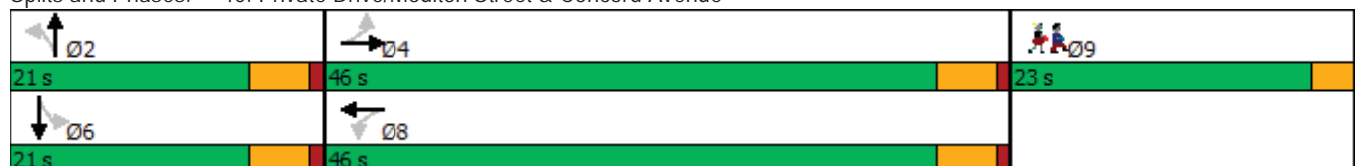


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)		44.8			44.8			10.8			10.8	
Actuated g/C Ratio		0.68			0.68			0.16			0.16	
v/c Ratio		0.26			0.54			0.16			0.63	
Control Delay		4.9			8.1			13.9			26.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		4.9			8.1			13.9			26.1	
LOS		A			A			B			C	
Approach Delay		4.9			8.1			13.9			26.1	
Approach LOS		A			A			B			C	
Queue Length 50th (ft)		37			106			5			38	
Queue Length 95th (ft)		76			207			21			74	
Internal Link Dist (ft)		625			511			152			784	
Turn Bay Length (ft)												
Base Capacity (vph)		2246			1231			369			377	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.26			0.54			0.11			0.46	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	65.6
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	9.1
Intersection LOS:	A
Intersection Capacity Utilization:	56.6%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 40: Private Drive/Moulton Street & Concord Avenue



Lane Group	Ø9
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	36	59	0	0	0
Future Vol, veh/h	0	36	59	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	39	64	0	0	0

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	64	0	-	0	103 64
Stage 1	-	-	-	-	64 -
Stage 2	-	-	-	-	39 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1538	-	-	-	895 1000
Stage 1	-	-	-	-	959 -
Stage 2	-	-	-	-	983 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1538	-	-	-	895 1000
Mov Cap-2 Maneuver	-	-	-	-	895 -
Stage 1	-	-	-	-	959 -
Stage 2	-	-	-	-	983 -

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

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1538	-	-	-	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	-	0
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	507	664	24	0	10
Future Vol, veh/h	0	507	664	24	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	280	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	0	539	706	26	0	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	366
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	543
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	543
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

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

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	543
HCM Lane V/C Ratio	-	-	-	0.025
HCM Control Delay (s)	-	-	-	11.8
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection						
Int Delay, s/veh	4.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑	
Traffic Vol, veh/h	57	493	533	18	77	103
Future Vol, veh/h	57	493	533	18	77	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	93	93	88	88
Heavy Vehicles, %	0	1	0	1	0	1
Mvmt Flow	61	524	573	19	88	117

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	592	0	-	0	967 583
Stage 1	-	-	-	-	583 -
Stage 2	-	-	-	-	384 -
Critical Hdwy	4.1	-	-	-	6.6 6.215
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.8 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3095
Pot Cap-1 Maneuver	994	-	-	-	270 514
Stage 1	-	-	-	-	562 -
Stage 2	-	-	-	-	664 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	994	-	-	-	247 514
Mov Cap-2 Maneuver	-	-	-	-	247 -
Stage 1	-	-	-	-	513 -
Stage 2	-	-	-	-	664 -

Approach	EB	WB	SB
HCM Control Delay, s	1.2	0	28.6
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	994	-	-	-	351
HCM Lane V/C Ratio	0.061	-	-	-	0.583
HCM Control Delay (s)	8.9	0.3	-	-	28.6
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	3.5

Intersection												
Int Delay, s/veh	4.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	14	24	9	26	44	19	21	13	73	1
Future Vol, veh/h	0	2	14	24	9	26	44	19	21	13	73	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	4	0	5	0	8	3	0
Mvmt Flow	0	3	19	32	12	35	59	25	28	17	97	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	313	303	98	300	289	39	98	0	0	53	0	0
Stage 1	132	132	-	157	157	-	-	-	-	-	-	-
Stage 2	181	171	-	143	132	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.24	4.1	-	-	4.18	-	-
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	3.336	2.2	-	-	2.272	-	-
Pot Cap-1 Maneuver	643	613	963	656	624	1027	1508	-	-	1515	-	-
Stage 1	876	791	-	850	772	-	-	-	-	-	-	-
Stage 2	825	761	-	865	791	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	588	581	963	616	592	1027	1508	-	-	1515	-	-
Mov Cap-2 Maneuver	588	581	-	616	592	-	-	-	-	-	-	-
Stage 1	841	782	-	816	741	-	-	-	-	-	-	-
Stage 2	753	731	-	835	782	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.1		10.4		3.9		1.1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1508	-	-	890	742	1515	-
HCM Lane V/C Ratio	0.039	-	-	0.024	0.106	0.011	-
HCM Control Delay (s)	7.5	0	-	9.1	10.4	7.4	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.4	0	-

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑	
Traffic Vol, veh/h	22	618	493	99	110	32
Future Vol, veh/h	22	618	493	99	110	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	85	85	87	87
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	24	665	580	116	126	37

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	696	0	-	0	1019 638
Stage 1	-	-	-	-	638 -
Stage 2	-	-	-	-	381 -
Critical Hdwy	4.1	-	-	-	6.6 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.8 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	909	-	-	-	250 480
Stage 1	-	-	-	-	530 -
Stage 2	-	-	-	-	666 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	909	-	-	-	240 480
Mov Cap-2 Maneuver	-	-	-	-	240 -
Stage 1	-	-	-	-	508 -
Stage 2	-	-	-	-	666 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	36.8
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	909	-	-	-	270
HCM Lane V/C Ratio	0.026	-	-	-	0.605
HCM Control Delay (s)	9.1	0.2	-	-	36.8
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.1	-	-	-	3.6

2021 Build Weekday Morning Peak Hour



Lanes, Volumes, Timings
17: blanchard Road & Concord Avenue

3 - 2021 Build Weekday Morning

05/20/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↖	↗	↗		↖	↖		↕	
Traffic Volume (vph)	14	409	12	148	287	166	16	210	218	382	324	11
Future Volume (vph)	14	409	12	148	287	166	16	210	218	382	324	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	12	12	12	11	11	11
Storage Length (ft)	0		0	0		0	0		100	0		0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996				0.850			0.850		0.998	
Flt Protected		0.998		0.950				0.996			0.974	
Satd. Flow (prot)	0	3318	0	1574	1756	1492	0	1892	1583	0	1785	0
Flt Permitted		0.936		0.950				0.996			0.974	
Satd. Flow (perm)	0	3112	0	1574	1756	1492	0	1892	1583	0	1785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2				195			173			1
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		799			183			684			825	
Travel Time (s)		18.2			4.2			15.5			18.8	
Peak Hour Factor	0.91	0.91	0.91	0.85	0.85	0.85	0.95	0.95	0.95	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	7%	1%	1%	0%	0%	2%	0%	0%	1%
Adj. Flow (vph)	15	449	13	174	338	195	17	221	229	394	334	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	477	0	174	338	195	0	238	229	0	739	0
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA	Perm	Split	NA	Prot	Split	NA	
Protected Phases		4		3	8		2	2	2	6	6	
Permitted Phases	4					8						6
Detector Phase	4	4		3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	23.0	23.0		21.0	21.0	21.0	21.0	21.0	21.0	23.0	23.0	
Total Split (s)	30.0	30.0		21.0	51.0	51.0	45.0	45.0	45.0	45.0	45.0	
Total Split (%)	21.3%	21.3%		14.9%	36.2%	36.2%	31.9%	31.9%	31.9%	31.9%	31.9%	

Lanes, Volumes, Timings
17: blanchard Road & Concord Avenue

3 - 2021 Build Weekday Morning
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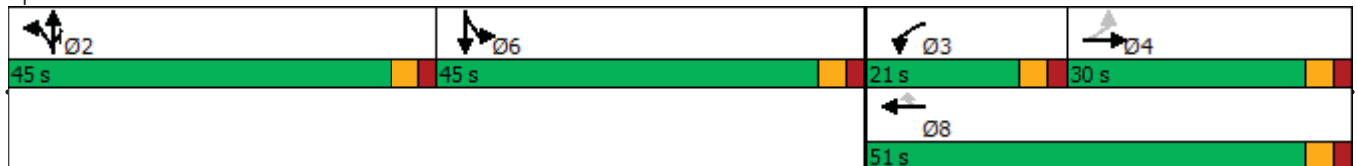


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	25.0	25.0		16.0	46.0	46.0	40.0	40.0	40.0	40.0	40.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0		-1.0	-1.0			-1.0
Total Lost Time (s)		4.0		4.0	4.0	4.0		4.0	4.0			4.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	None	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	
Act Effect Green (s)		24.9		17.0	45.9	45.9		41.0	41.0			41.0
Actuated g/C Ratio		0.18		0.12	0.33	0.33		0.29	0.29			0.29
v/c Ratio		0.86		0.91	0.59	0.31		0.43	0.39			1.41
Control Delay		71.4		106.2	44.0	5.7		43.2	12.8			234.1
Queue Delay		0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		71.4		106.2	44.0	5.7		43.2	12.8			234.1
LOS		E		F	D	A		D	B			F
Approach Delay		71.4			48.7			28.3				234.1
Approach LOS		E			D			C				F
Queue Length 50th (ft)		223		160	256	0		178	38			~917
Queue Length 95th (ft)		#305		#278	334	44		260	111			#1168
Internal Link Dist (ft)		719			103			604				745
Turn Bay Length (ft)									100			
Base Capacity (vph)		579		191	589	630		554	586			523
Starvation Cap Reductn		0		0	0	0		0	0			0
Spillback Cap Reductn		0		0	0	0		0	0			0
Storage Cap Reductn		0		0	0	0		0	0			0
Reduced v/c Ratio		0.82		0.91	0.57	0.31		0.43	0.39			1.41

Intersection Summary

Area Type: Other
 Cycle Length: 141
 Actuated Cycle Length: 139.9
 Natural Cycle: 110
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.41
 Intersection Signal Delay: 106.6
 Intersection LOS: F
 Intersection Capacity Utilization 91.3%
 ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: blanchard Road & Concord Avenue



Lanes, Volumes, Timings
40: Private Drive/Moulton Street & Concord Avenue

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕			↕↕	
Traffic Volume (vph)	18	844	19	12	649	52	2	0	4	41	1	10
Future Volume (vph)	18	844	19	12	649	52	2	0	4	41	1	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	11	11	10	10	10	11	11	11
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.990			0.916			0.974	
Flt Protected		0.999			0.999			0.982			0.962	
Satd. Flow (prot)	0	3410	0	0	1779	0	0	1343	0	0	1694	0
Flt Permitted		0.937			0.983			0.871			0.766	
Satd. Flow (perm)	0	3199	0	0	1751	0	0	1191	0	0	1349	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			6			61			12	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		705			591			232			864	
Travel Time (s)		19.2			16.1			5.3			19.6	
Peak Hour Factor	0.90	0.90	0.90	0.97	0.97	0.97	0.75	0.75	0.75	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	0%	8%	2%	2%	50%	0%	0%	2%	0%	0%
Adj. Flow (vph)	20	938	21	12	669	54	3	0	5	53	1	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	979	0	0	735	0	0	8	0	0	67	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	46.0	46.0		46.0	46.0		21.0	21.0		21.0	21.0	
Total Split (%)	51.1%	51.1%		51.1%	51.1%		23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	41.0	41.0		41.0	41.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0

Lanes, Volumes, Timings
40: Private Drive/Moulton Street & Concord Avenue

3 - 2021 Build Weekday Morning
05/20/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)		53.9			53.9			8.3			8.3	
Actuated g/C Ratio		0.78			0.78			0.12			0.12	
v/c Ratio		0.39			0.53			0.04			0.39	
Control Delay		4.0			6.1			0.3			30.0	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		4.0			6.1			0.3			30.0	
LOS		A			A			A			C	
Approach Delay		4.0			6.1			0.3			30.0	
Approach LOS		A			A			A			C	
Queue Length 50th (ft)		63			107			0			24	
Queue Length 95th (ft)		108			220			0			43	
Internal Link Dist (ft)		625			511			152			784	
Turn Bay Length (ft)												
Base Capacity (vph)		2509			1374			325			325	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.39			0.53			0.02			0.21	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	68.7
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.53
Intersection Signal Delay:	5.8
Intersection LOS:	A
Intersection Capacity Utilization:	61.5%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 40: Private Drive/Moulton Street & Concord Avenue



Lane Group	Ø9
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	18	46	64	17	4	6
Future Vol, veh/h	18	46	64	17	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	50	70	18	4	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	88	0	-	0	169 79
Stage 1	-	-	-	-	79 -
Stage 2	-	-	-	-	90 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1508	-	-	-	821 981
Stage 1	-	-	-	-	944 -
Stage 2	-	-	-	-	934 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1508	-	-	-	810 981
Mov Cap-2 Maneuver	-	-	-	-	810 -
Stage 1	-	-	-	-	931 -
Stage 2	-	-	-	-	934 -

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1508	-	-	-	905
HCM Lane V/C Ratio	0.013	-	-	-	0.012
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	1009	567	6	0	34
Future Vol, veh/h	0	1009	567	6	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	280	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	85	85	77	77
Heavy Vehicles, %	0	1	8	12	0	0
Mvmt Flow	0	1109	667	7	0	44

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	337
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	567
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	567
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	567
HCM Lane V/C Ratio	-	-	-	0.078
HCM Control Delay (s)	-	-	-	11.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.3

Intersection						
Int Delay, s/veh	3.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑↑	
Traffic Vol, veh/h	83	877	601	38	35	56
Future Vol, veh/h	83	877	601	38	35	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	94	94	79	79
Heavy Vehicles, %	6	1	1	10	9	6
Mvmt Flow	93	985	639	40	44	71

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	679	0	-	0	1338 659
Stage 1	-	-	-	-	659 -
Stage 2	-	-	-	-	679 -
Critical Hdwy	4.19	-	-	-	6.735 6.29
Critical Hdwy Stg 1	-	-	-	-	5.535 -
Critical Hdwy Stg 2	-	-	-	-	5.935 -
Follow-up Hdwy	2.257	-	-	-	3.5855 3.357
Pot Cap-1 Maneuver	889	-	-	-	149 454
Stage 1	-	-	-	-	497 -
Stage 2	-	-	-	-	451 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	889	-	-	-	115 454
Mov Cap-2 Maneuver	-	-	-	-	115 -
Stage 1	-	-	-	-	382 -
Stage 2	-	-	-	-	451 -

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	40.2
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	889	-	-	-	213
HCM Lane V/C Ratio	0.105	-	-	-	0.541
HCM Control Delay (s)	9.5	0.9	-	-	40.2
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.3	-	-	-	2.9

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	6	36	1	33	1	26	50	13	31	0
Future Vol, veh/h	1	1	6	36	1	33	1	26	50	13	31	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	87	87	87	75	75	75
Heavy Vehicles, %	0	0	17	3	0	9	100	38	0	15	23	0
Mvmt Flow	1	1	8	48	1	44	1	30	57	17	41	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	158	164	41	141	136	59	41	0	0	87	0	0
Stage 1	75	75	-	61	61	-	-	-	-	-	-	-
Stage 2	83	89	-	80	75	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.37	7.13	6.5	6.29	5.1	-	-	4.25	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.453	3.527	4	3.381	3.1	-	-	2.335	-	-
Pot Cap-1 Maneuver	813	732	989	827	759	987	1115	-	-	1431	-	-
Stage 1	939	836	-	948	848	-	-	-	-	-	-	-
Stage 2	930	825	-	926	836	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	768	722	989	811	749	987	1115	-	-	1431	-	-
Mov Cap-2 Maneuver	768	722	-	811	749	-	-	-	-	-	-	-
Stage 1	938	826	-	947	847	-	-	-	-	-	-	-
Stage 2	886	824	-	906	826	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9		9.6		0.1		2.2	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1115	-	-	914	884	1431	-
HCM Lane V/C Ratio	0.001	-	-	0.012	0.106	0.012	-
HCM Control Delay (s)	8.2	0	-	9	9.6	7.5	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.4	0	-

Intersection						
Int Delay, s/veh	5.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑	
Traffic Vol, veh/h	22	900	679	166	77	31
Future Vol, veh/h	22	900	679	166	77	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	98	98	79	79
Heavy Vehicles, %	4	1	3	3	6	0
Mvmt Flow	24	1000	693	169	97	39

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	862	0	-	0	1326 778
Stage 1	-	-	-	-	778 -
Stage 2	-	-	-	-	548 -
Critical Hdwy	4.16	-	-	-	6.69 6.2
Critical Hdwy Stg 1	-	-	-	-	5.49 -
Critical Hdwy Stg 2	-	-	-	-	5.89 -
Follow-up Hdwy	2.238	-	-	-	3.557 3.3
Pot Cap-1 Maneuver	767	-	-	-	154 400
Stage 1	-	-	-	-	443 -
Stage 2	-	-	-	-	535 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	767	-	-	-	143 400
Mov Cap-2 Maneuver	-	-	-	-	143 -
Stage 1	-	-	-	-	412 -
Stage 2	-	-	-	-	535 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	74.6
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	767	-	-	-	175
HCM Lane V/C Ratio	0.032	-	-	-	0.781
HCM Control Delay (s)	9.8	0.3	-	-	74.6
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.1	-	-	-	5.2

2021 Build Weekday Evening Peak Hour



Lanes, Volumes, Timings
17: blanchard Road & Concord Avenue

4 - 2021 Build Weekday Evening
05/20/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↖	↗	↗		↖	↖		↕	
Traffic Volume (vph)	31	230	17	201	283	205	16	291	121	161	266	7
Future Volume (vph)	31	230	17	201	283	205	16	291	121	161	266	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	12	12	12	11	11	11
Storage Length (ft)	0		0	0		0	0		100	0		0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.991				0.850			0.850		0.998	
Flt Protected		0.994		0.950				0.997			0.982	
Satd. Flow (prot)	0	3319	0	1685	1773	1492	0	1894	1599	0	1789	0
Flt Permitted		0.875		0.950				0.997			0.982	
Satd. Flow (perm)	0	2922	0	1685	1773	1492	0	1894	1599	0	1789	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				218			74			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		799			183			684			825	
Travel Time (s)		18.2			4.2			15.5			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.80	0.80	0.80	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	1%	0%
Adj. Flow (vph)	33	245	18	214	301	218	20	364	151	171	283	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	296	0	214	301	218	0	384	151	0	461	0
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA	Perm	Split	NA	Prot	Split	NA	
Protected Phases		4		3	8		2	2	2	6	6	
Permitted Phases	4					8						6
Detector Phase	4	4		3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	23.0	23.0		21.0	21.0	21.0	21.0	21.0	21.0	23.0	23.0	
Total Split (s)	45.0	45.0		21.0	66.0	66.0	55.0	55.0	55.0	55.0	55.0	
Total Split (%)	25.6%	25.6%		11.9%	37.5%	37.5%	31.3%	31.3%	31.3%	31.3%	31.3%	

Lanes, Volumes, Timings
17: blanchard Road & Concord Avenue

4 - 2021 Build Weekday Evening
05/20/2021

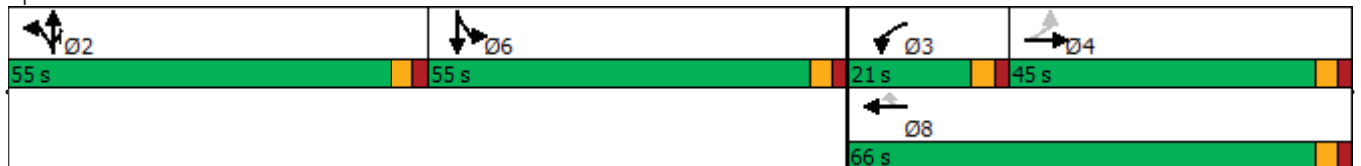


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	40.0	40.0		16.0	61.0	61.0	50.0	50.0	50.0	50.0	50.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0		-1.0	-1.0			-1.0
Total Lost Time (s)		4.0		4.0	4.0	4.0		4.0	4.0			4.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	None	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	
Act Effect Green (s)		21.5		17.1	42.7	42.7		51.3	51.3			44.3
Actuated g/C Ratio		0.14		0.11	0.28	0.28		0.34	0.34			0.29
v/c Ratio		0.70		1.12	0.60	0.38		0.59	0.25			0.87
Control Delay		70.9		159.3	52.9	6.8		47.4	21.0			68.9
Queue Delay		0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		70.9		159.3	52.9	6.8		47.4	21.0			68.9
LOS		E		F	D	A		D	C			E
Approach Delay		70.9			70.3			40.0				68.9
Approach LOS		E			E			D				E
Queue Length 50th (ft)		148		~249	262	0		321	54			431
Queue Length 95th (ft)		207		#455	377	65		408	100			#612
Internal Link Dist (ft)		719			103			604				745
Turn Bay Length (ft)									100			
Base Capacity (vph)		803		191	735	746		646	594			610
Starvation Cap Reductn		0		0	0	0		0	0			0
Spillback Cap Reductn		0		0	0	0		0	0			0
Storage Cap Reductn		0		0	0	0		0	0			0
Reduced v/c Ratio		0.37		1.12	0.41	0.29		0.59	0.25			0.76

Intersection Summary

Area Type: Other
 Cycle Length: 176
 Actuated Cycle Length: 150.3
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.12
 Intersection Signal Delay: 62.0
 Intersection LOS: E
 Intersection Capacity Utilization 75.6%
 ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: blanchard Road & Concord Avenue



Lanes, Volumes, Timings
40: Private Drive/Moulton Street & Concord Avenue

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Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕			↕↕	
Traffic Volume (vph)	2	538	8	7	542	8	12	1	19	93	0	43
Future Volume (vph)	2	538	8	7	542	8	12	1	19	93	0	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	11	11	10	10	10	11	11	11
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998			0.920			0.958	
Flt Protected					0.999			0.981			0.967	
Satd. Flow (prot)	0	3449	0	0	1814	0	0	1600	0	0	1701	0
Flt Permitted		0.954			0.994			0.879			0.769	
Satd. Flow (perm)	0	3290	0	0	1804	0	0	1434	0	0	1353	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			25			61	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		705			591			232			864	
Travel Time (s)		19.2			16.1			5.3			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.84	0.84	0.84	0.75	0.75	0.75	0.79	0.79	0.79
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	585	9	8	645	10	16	1	25	118	0	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	596	0	0	663	0	0	42	0	0	172	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	46.0	46.0		46.0	46.0		21.0	21.0		21.0	21.0	
Total Split (%)	51.1%	51.1%		51.1%	51.1%		23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	41.0	41.0		41.0	41.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0

Lanes, Volumes, Timings
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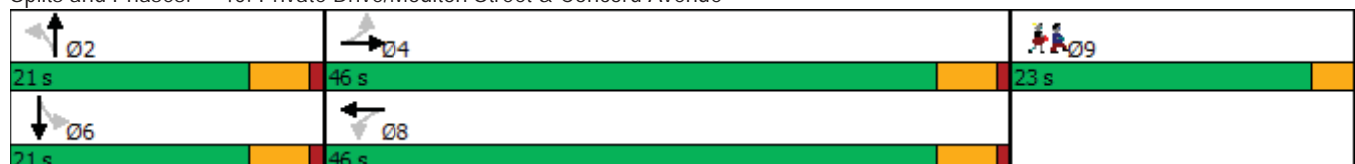


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)		44.8			44.8			10.8			10.8	
Actuated g/C Ratio		0.68			0.68			0.16			0.16	
v/c Ratio		0.27			0.54			0.16			0.63	
Control Delay		4.9			8.1			13.9			26.1	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		4.9			8.1			13.9			26.1	
LOS		A			A			B			C	
Approach Delay		4.9			8.1			13.9			26.1	
Approach LOS		A			A			B			C	
Queue Length 50th (ft)		38			106			5			38	
Queue Length 95th (ft)		77			207			21			74	
Internal Link Dist (ft)		625			511			152			784	
Turn Bay Length (ft)												
Base Capacity (vph)		2246			1231			369			377	
Starvation Cap Reductn		0			0			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.27			0.54			0.11			0.46	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	65.6
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.63
Intersection Signal Delay:	9.1
Intersection LOS:	A
Intersection Capacity Utilization:	56.6%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 40: Private Drive/Moulton Street & Concord Avenue



Lane Group	Ø9
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Intersection						
Int Delay, s/veh	2.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	5	36	59	4	12	18
Future Vol, veh/h	5	36	59	4	12	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	39	64	4	13	20

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	68	0	-	0	115 66
Stage 1	-	-	-	-	66 -
Stage 2	-	-	-	-	49 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1533	-	-	-	881 998
Stage 1	-	-	-	-	957 -
Stage 2	-	-	-	-	973 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1533	-	-	-	878 998
Mov Cap-2 Maneuver	-	-	-	-	878 -
Stage 1	-	-	-	-	954 -
Stage 2	-	-	-	-	973 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	8.9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1533	-	-	-	946
HCM Lane V/C Ratio	0.004	-	-	-	0.034
HCM Control Delay (s)	7.4	0	-	-	8.9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	512	679	24	0	10
Future Vol, veh/h	0	512	679	24	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	280	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	0	545	722	26	0	13

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	374
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	537
Stage 1	0	-	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	-	-	537
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.9
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	537
HCM Lane V/C Ratio	-	-	-	0.025
HCM Control Delay (s)	-	-	-	11.9
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection						
Int Delay, s/veh	5.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑	
Traffic Vol, veh/h	62	493	533	18	80	118
Future Vol, veh/h	62	493	533	18	80	118
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	93	93	88	88
Heavy Vehicles, %	0	1	0	1	0	1
Mvmt Flow	66	524	573	19	91	134

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	592	0	-	0	977 583
Stage 1	-	-	-	-	583 -
Stage 2	-	-	-	-	394 -
Critical Hdwy	4.1	-	-	-	6.6 6.215
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.8 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3095
Pot Cap-1 Maneuver	994	-	-	-	266 514
Stage 1	-	-	-	-	562 -
Stage 2	-	-	-	-	656 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	994	-	-	-	241 514
Mov Cap-2 Maneuver	-	-	-	-	241 -
Stage 1	-	-	-	-	509 -
Stage 2	-	-	-	-	656 -

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	31.5
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	994	-	-	-	353
HCM Lane V/C Ratio	0.066	-	-	-	0.637
HCM Control Delay (s)	8.9	0.3	-	-	31.5
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	4.2

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	14	42	9	26	44	19	26	13	73	1
Future Vol, veh/h	0	2	14	42	9	26	44	19	26	13	73	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	4	0	5	0	8	3	0
Mvmt Flow	0	3	19	56	12	35	59	25	35	17	97	1

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	316	310	98	304	293	43	98	0	0	60	0	0
Stage 1	132	132	-	161	161	-	-	-	-	-	-	-
Stage 2	184	178	-	143	132	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.24	4.1	-	-	4.18	-	-
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	3.336	2.2	-	-	2.272	-	-
Pot Cap-1 Maneuver	641	608	963	652	621	1022	1508	-	-	1506	-	-
Stage 1	876	791	-	846	769	-	-	-	-	-	-	-
Stage 2	822	756	-	865	791	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	585	576	963	612	588	1022	1508	-	-	1506	-	-
Mov Cap-2 Maneuver	585	576	-	612	588	-	-	-	-	-	-	-
Stage 1	840	782	-	811	737	-	-	-	-	-	-	-
Stage 2	749	725	-	835	782	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.2	11	3.7	1.1
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1508	-	-	888	704	1506	-
HCM Lane V/C Ratio	0.039	-	-	0.024	0.146	0.012	-
HCM Control Delay (s)	7.5	0	-	9.2	11	7.4	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.5	0	-

Intersection						
Int Delay, s/veh	4.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑	
Traffic Vol, veh/h	22	621	493	103	122	32
Future Vol, veh/h	22	621	493	103	122	32
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	85	85	87	87
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	24	668	580	121	140	37

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	701	0	-	0	1023 641
Stage 1	-	-	-	-	641 -
Stage 2	-	-	-	-	382 -
Critical Hdwy	4.1	-	-	-	6.6 6.2
Critical Hdwy Stg 1	-	-	-	-	5.4 -
Critical Hdwy Stg 2	-	-	-	-	5.8 -
Follow-up Hdwy	2.2	-	-	-	3.5 3.3
Pot Cap-1 Maneuver	905	-	-	-	249 478
Stage 1	-	-	-	-	528 -
Stage 2	-	-	-	-	665 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	905	-	-	-	239 478
Mov Cap-2 Maneuver	-	-	-	-	239 -
Stage 1	-	-	-	-	506 -
Stage 2	-	-	-	-	665 -

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	41.5
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	905	-	-	-	267
HCM Lane V/C Ratio	0.026	-	-	-	0.663
HCM Control Delay (s)	9.1	0.2	-	-	41.5
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.1	-	-	-	4.3

2026 Future Weekday Morning Peak Hour



Lanes, Volumes, Timings
17: blanchard Road & Concord Avenue

5 - 2026 Build Weekday Morning

05/20/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔		↖	↗	↗		↖	↖		↕	
Traffic Volume (vph)	14	467	12	169	346	192	16	215	235	407	332	11
Future Volume (vph)	14	467	12	169	346	192	16	215	235	407	332	11
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	12	12	12	11	11	11
Storage Length (ft)	0		0	0		0	0		100	0		0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.996				0.850			0.850		0.998	
Flt Protected		0.999		0.950				0.997			0.974	
Satd. Flow (prot)	0	3321	0	1574	1756	1492	0	1894	1583	0	1785	0
Flt Permitted		0.935		0.950				0.997			0.974	
Satd. Flow (perm)	0	3108	0	1574	1756	1492	0	1894	1583	0	1785	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				226			183		1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		799			183			684			825	
Travel Time (s)		18.2			4.2			15.5			18.8	
Peak Hour Factor	0.91	0.91	0.91	0.85	0.85	0.85	0.95	0.95	0.95	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	7%	1%	1%	0%	0%	2%	0%	0%	1%
Adj. Flow (vph)	15	513	13	199	407	226	17	226	247	420	342	11
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	541	0	199	407	226	0	243	247	0	773	0
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA	Perm	Split	NA	Prot	Split	NA	
Protected Phases		4		3	8		2	2	2	6	6	
Permitted Phases	4					8						6
Detector Phase	4	4		3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	23.0	23.0		21.0	21.0	21.0	21.0	21.0	21.0	23.0	23.0	
Total Split (s)	30.0	30.0		21.0	51.0	51.0	45.0	45.0	45.0	45.0	45.0	
Total Split (%)	21.3%	21.3%		14.9%	36.2%	36.2%	31.9%	31.9%	31.9%	31.9%	31.9%	

Lanes, Volumes, Timings
17: blanchard Road & Concord Avenue

5 - 2026 Build Weekday Morning
05/20/2021

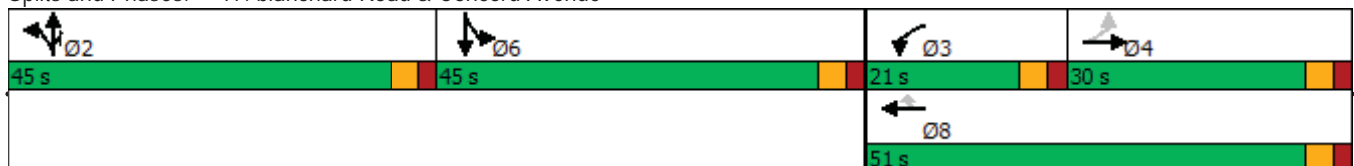


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	25.0	25.0		16.0	46.0	46.0	40.0	40.0	40.0	40.0	40.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0		-1.0	-1.0			-1.0
Total Lost Time (s)		4.0		4.0	4.0	4.0		4.0	4.0			4.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	None	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	
Act Effect Green (s)		26.0		17.0	47.0	47.0		41.0	41.0			41.0
Actuated g/C Ratio		0.18		0.12	0.33	0.33		0.29	0.29			0.29
v/c Ratio		0.94		1.05	0.70	0.35		0.44	0.42			1.49
Control Delay		82.5		138.1	48.3	5.5		43.8	13.4			266.0
Queue Delay		0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		82.5		138.1	48.3	5.5		43.8	13.4			266.0
LOS		F		F	D	A		D	B			F
Approach Delay		82.5			58.2			28.5				266.0
Approach LOS		F			E			C				F
Queue Length 50th (ft)		260		~198	324	0		182	44			~983
Queue Length 95th (ft)		#375		#331	414	46		267	121			#1236
Internal Link Dist (ft)		719			103			604				745
Turn Bay Length (ft)									100			
Base Capacity (vph)		573		189	585	648		550	590			519
Starvation Cap Reductn		0		0	0	0		0	0			0
Spillback Cap Reductn		0		0	0	0		0	0			0
Storage Cap Reductn		0		0	0	0		0	0			0
Reduced v/c Ratio		0.94		1.05	0.70	0.35		0.44	0.42			1.49

Intersection Summary

Area Type: Other
 Cycle Length: 141
 Actuated Cycle Length: 141
 Natural Cycle: 120
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.49
 Intersection Signal Delay: 118.6 Intersection LOS: F
 Intersection Capacity Utilization 98.1% ICU Level of Service F
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: blanchard Road & Concord Avenue



Lanes, Volumes, Timings
37: Concord Avenue & Fawcett Street

5 - 2026 Build Weekday Morning
05/20/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations		↕↕	↔		↕↕		
Traffic Volume (vph)	24	982	810	180	120	38	
Future Volume (vph)	24	982	810	180	120	38	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	12	12	11	11	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	
Frt			0.975		0.968		
Flt Protected		0.999			0.963		
Satd. Flow (prot)	0	3449	1799	0	1637	0	
Flt Permitted		0.804			0.963		
Satd. Flow (perm)	0	2776	1799	0	1637	0	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			17		15		
Link Speed (mph)		25	25		25		
Link Distance (ft)		591	768		1376		
Travel Time (s)		16.1	20.9		37.5		
Peak Hour Factor	0.90	0.90	0.98	0.98	0.79	0.79	
Heavy Vehicles (%)	4%	1%	3%	3%	6%	0%	
Adj. Flow (vph)	27	1091	827	184	152	48	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	1118	1011	0	200	0	
Number of Detectors	1	2	2		1		
Detector Template	Left	Thru	Thru		Left		
Leading Detector (ft)	20	100	100		20		
Trailing Detector (ft)	0	0	0		0		
Detector 1 Position(ft)	0	0	0		0		
Detector 1 Size(ft)	20	6	6		20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm	NA	NA		Prot		
Protected Phases		2	6		4		9
Permitted Phases	2						
Detector Phase	2	2	6		4		
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0		4.0		4.0
Minimum Split (s)	20.5	20.5	20.5		20.5		21.0
Total Split (s)	48.5	48.5	48.5		20.5		21.0
Total Split (%)	53.9%	53.9%	53.9%		22.8%		23%
Maximum Green (s)	43.5	43.5	43.5		15.5		16.0
Yellow Time (s)	4.0	4.0	4.0		4.0		4.0
All-Red Time (s)	1.0	1.0	1.0		1.0		1.0

Lanes, Volumes, Timings
40: Private Drive/Moulton Street & Concord Avenue

5 - 2026 Build Weekday Morning

05/20/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕			↕↕	
Traffic Volume (vph)	18	925	19	12	782	53	2	0	4	42	1	10
Future Volume (vph)	18	925	19	12	782	53	2	0	4	42	1	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	11	11	10	10	10	11	11	11
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.997			0.991			0.916			0.975	
Flt Protected		0.999			0.999			0.982			0.962	
Satd. Flow (prot)	0	3410	0	0	1781	0	0	1343	0	0	1696	0
Flt Permitted		0.934			0.984			0.874			0.764	
Satd. Flow (perm)	0	3188	0	0	1754	0	0	1196	0	0	1347	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3			5			61			11	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		705			591			232			864	
Travel Time (s)		19.2			16.1			5.3			19.6	
Peak Hour Factor	0.90	0.90	0.90	0.97	0.97	0.97	0.75	0.75	0.75	0.77	0.77	0.77
Heavy Vehicles (%)	0%	2%	0%	8%	2%	2%	50%	0%	0%	2%	0%	0%
Adj. Flow (vph)	20	1028	21	12	806	55	3	0	5	55	1	13
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	1069	0	0	873	0	0	8	0	0	69	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	46.0	46.0		46.0	46.0		21.0	21.0		21.0	21.0	
Total Split (%)	51.1%	51.1%		51.1%	51.1%		23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	41.0	41.0		41.0	41.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0

Lanes, Volumes, Timings
40: Private Drive/Moulton Street & Concord Avenue

5 - 2026 Build Weekday Morning
05/20/2021

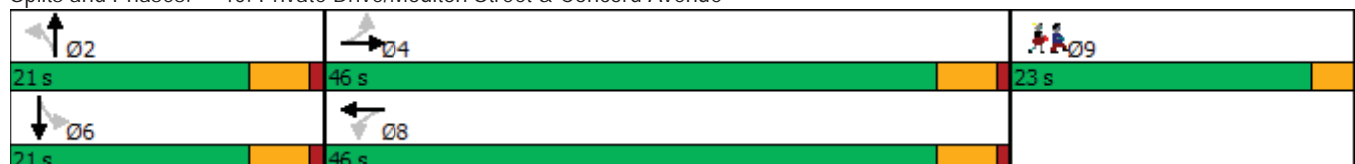


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)		53.7			53.7			8.4			8.4	
Actuated g/C Ratio		0.78			0.78			0.12			0.12	
v/c Ratio		0.43			0.64			0.04			0.40	
Control Delay		4.3			7.9			0.3			30.4	
Queue Delay		0.0			0.3			0.0			0.0	
Total Delay		4.3			8.2			0.3			30.4	
LOS		A			A			A			C	
Approach Delay		4.3			8.2			0.3			30.4	
Approach LOS		A			A			A			C	
Queue Length 50th (ft)		73			150			0			25	
Queue Length 95th (ft)		125			319			0			44	
Internal Link Dist (ft)		625			511			152			784	
Turn Bay Length (ft)												
Base Capacity (vph)		2493			1372			326			323	
Starvation Cap Reductn		0			125			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.43			0.70			0.02			0.21	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	68.7
Natural Cycle:	90
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	6.9
Intersection LOS:	A
Intersection Capacity Utilization:	68.7%
ICU Level of Service:	C
Analysis Period (min):	15

Splits and Phases: 40: Private Drive/Moulton Street & Concord Avenue



Lane Group	Ø9
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	↷
Traffic Vol, veh/h	18	47	66	17	4	6
Future Vol, veh/h	18	47	66	17	4	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	51	72	18	4	7

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	90	0	-	0	172 81
Stage 1	-	-	-	-	81 -
Stage 2	-	-	-	-	91 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1505	-	-	-	818 979
Stage 1	-	-	-	-	942 -
Stage 2	-	-	-	-	933 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1505	-	-	-	807 979
Mov Cap-2 Maneuver	-	-	-	-	807 -
Stage 1	-	-	-	-	929 -
Stage 2	-	-	-	-	933 -

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1505	-	-	-	902
HCM Lane V/C Ratio	0.013	-	-	-	0.012
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	1109	673	6	0	34
Future Vol, veh/h	0	1109	673	6	0	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	280	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	85	85	77	77
Heavy Vehicles, %	0	1	8	12	0	0
Mvmt Flow	0	1219	792	7	0	44

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 400
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 7.1
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3.9
Pot Cap-1 Maneuver	0	-	- 0 517
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %	-	-	- - -
Mov Cap-1 Maneuver	-	-	- - 517
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	517
HCM Lane V/C Ratio	-	-	-	0.085
HCM Control Delay (s)	-	-	-	12.6
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.3

Intersection						
Int Delay, s/veh	22.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑	
Traffic Vol, veh/h	131	934	691	85	50	73
Future Vol, veh/h	131	934	691	85	50	73
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	89	89	94	94	79	79
Heavy Vehicles, %	6	1	1	10	9	6
Mvmt Flow	147	1049	735	90	63	92

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	825	0	-	0	1599 780
Stage 1	-	-	-	-	780 -
Stage 2	-	-	-	-	819 -
Critical Hdwy	4.19	-	-	-	6.735 6.29
Critical Hdwy Stg 1	-	-	-	-	5.535 -
Critical Hdwy Stg 2	-	-	-	-	5.935 -
Follow-up Hdwy	2.257	-	-	-	3.5855 3.357
Pot Cap-1 Maneuver	782	-	-	-	101 386
Stage 1	-	-	-	-	435 -
Stage 2	-	-	-	-	381 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	782	-	-	-	~ 55 386
Mov Cap-2 Maneuver	-	-	-	-	~ 55 -
Stage 1	-	-	-	-	239 -
Stage 2	-	-	-	-	381 -

Approach	EB	WB	SB
HCM Control Delay, s	3	0	291.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	782	-	-	-	112
HCM Lane V/C Ratio	0.188	-	-	-	1.39
HCM Control Delay (s)	10.7	1.9	-	-	291.7
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.7	-	-	-	10.8

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

Intersection												
Int Delay, s/veh	4.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	1	1	6	37	1	34	1	27	51	13	32	0
Future Vol, veh/h	1	1	6	37	1	34	1	27	51	13	32	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	87	87	87	75	75	75
Heavy Vehicles, %	0	0	17	3	0	9	100	38	0	15	23	0
Mvmt Flow	1	1	8	49	1	45	1	31	59	17	43	0

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	163	169	43	145	140	61	43	0	0	90	0	0
Stage 1	77	77	-	63	63	-	-	-	-	-	-	-
Stage 2	86	92	-	82	77	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.37	7.13	6.5	6.29	5.1	-	-	4.25	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.13	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.453	3.527	4	3.381	3.1	-	-	2.335	-	-
Pot Cap-1 Maneuver	806	728	986	822	755	985	1113	-	-	1427	-	-
Stage 1	937	835	-	945	846	-	-	-	-	-	-	-
Stage 2	927	823	-	924	835	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	760	719	986	806	745	985	1113	-	-	1427	-	-
Mov Cap-2 Maneuver	760	719	-	806	745	-	-	-	-	-	-	-
Stage 1	936	825	-	944	845	-	-	-	-	-	-	-
Stage 2	882	822	-	904	825	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9	9.6	0.1	2.2
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1113	-	-	910	881	1427	-
HCM Lane V/C Ratio	0.001	-	-	0.012	0.109	0.012	-
HCM Control Delay (s)	8.2	0	-	9	9.6	7.6	0
HCM Lane LOS	A	A	-	A	A	A	A
HCM 95th %tile Q(veh)	0	-	-	0	0.4	0	-

2026 Future Weekday Evening Peak Hour



Lanes, Volumes, Timings
17: blanchard Road & Concord Avenue

6 - 2026 Build Weekday Evening
05/20/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕		↖	↗	↗		↖	↗		↕	
Traffic Volume (vph)	32	283	17	218	330	220	16	298	134	176	273	7
Future Volume (vph)	32	283	17	218	330	220	16	298	134	176	273	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	10	10	10	10	10	12	12	12	11	11	11
Storage Length (ft)	0		0	0		0	0		100	0		0
Storage Lanes	0		0	1		1	0		1	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fr _t		0.992				0.850			0.850		0.998	
Fl _t Protected		0.995		0.950				0.997			0.981	
Satd. Flow (prot)	0	3326	0	1685	1773	1492	0	1894	1599	0	1787	0
Fl _t Permitted		0.877		0.950				0.997			0.981	
Satd. Flow (perm)	0	2931	0	1685	1773	1492	0	1894	1599	0	1787	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3				232			74			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		799			183			684			825	
Travel Time (s)		18.2			4.2			15.5			18.8	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.80	0.80	0.80	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	1%	0%	0%	1%	0%	1%	0%
Adj. Flow (vph)	34	301	18	232	351	234	20	373	168	187	290	7
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	353	0	232	351	234	0	393	168	0	484	0
Number of Detectors	1	2		1	2	1	1	2	1	1	2	
Detector Template	Left	Thru		Left	Thru	Right	Left	Thru	Right	Left	Thru	
Leading Detector (ft)	20	100		20	100	20	20	100	20	20	100	
Trailing Detector (ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Position(ft)	0	0		0	0	0	0	0	0	0	0	
Detector 1 Size(ft)	20	6		20	6	20	20	6	20	20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Prot	NA	Perm	Split	NA	Prot	Split	NA	
Protected Phases		4		3	8		2	2	2	6	6	
Permitted Phases	4					8						6
Detector Phase	4	4		3	8	8	2	2	2	6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	23.0	23.0		21.0	21.0	21.0	21.0	21.0	21.0	23.0	23.0	
Total Split (s)	45.0	45.0		21.0	66.0	66.0	55.0	55.0	55.0	55.0	55.0	
Total Split (%)	25.6%	25.6%		11.9%	37.5%	37.5%	31.3%	31.3%	31.3%	31.3%	31.3%	

Lanes, Volumes, Timings
17: blanchard Road & Concord Avenue

6 - 2026 Build Weekday Evening
05/20/2021

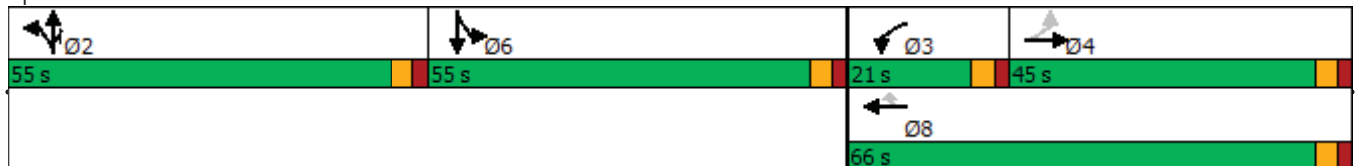


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Maximum Green (s)	40.0	40.0		16.0	61.0	61.0	50.0	50.0	50.0	50.0	50.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
All-Red Time (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		-1.0		-1.0	-1.0	-1.0		-1.0	-1.0			-1.0
Total Lost Time (s)		4.0		4.0	4.0	4.0		4.0	4.0			4.0
Lead/Lag	Lag	Lag		Lead								
Lead-Lag Optimize?	Yes	Yes		Yes								
Vehicle Extension (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None		None	None	None	Max	Max	Max	None	None	
Walk Time (s)	5.0	5.0		5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0	0	0	0	0	0	0	
Act Effect Green (s)		25.0		17.1	46.1	46.1		51.2	51.2			47.4
Actuated g/C Ratio		0.16		0.11	0.29	0.29		0.33	0.33			0.30
v/c Ratio		0.75		1.27	0.67	0.39		0.64	0.29			0.90
Control Delay		73.3		209.9	56.4	6.7		52.0	24.4			72.8
Queue Delay		0.0		0.0	0.0	0.0		0.0	0.0			0.0
Total Delay		73.3		209.9	56.4	6.7		52.0	24.4			72.8
LOS		E		F	E	A		D	C			E
Approach Delay		73.3			85.7			43.7				72.8
Approach LOS		E			F			D				E
Queue Length 50th (ft)		187		~309	328	2		355	72			476
Queue Length 95th (ft)		246		#516	446	68		432	120			#713
Internal Link Dist (ft)		719			103			604				745
Turn Bay Length (ft)									100			
Base Capacity (vph)		771		183	704	732		618	572			583
Starvation Cap Reductn		0		0	0	0		0	0			0
Spillback Cap Reductn		0		0	0	0		0	0			0
Storage Cap Reductn		0		0	0	0		0	0			0
Reduced v/c Ratio		0.46		1.27	0.50	0.32		0.64	0.29			0.83

Intersection Summary

Area Type: Other
 Cycle Length: 176
 Actuated Cycle Length: 156.8
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated
 Maximum v/c Ratio: 1.27
 Intersection Signal Delay: 70.3
 Intersection LOS: E
 Intersection Capacity Utilization 81.1%
 ICU Level of Service D
 Analysis Period (min) 15
 ~ Volume exceeds capacity, queue is theoretically infinite.
 Queue shown is maximum after two cycles.
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 17: blanchard Road & Concord Avenue



Lanes, Volumes, Timings
37: Concord Avenue & Fawcett Street

6 - 2026 Build Weekday Evening
05/20/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR	Ø9
Lane Configurations		↕↕	↔		↕↕		
Traffic Volume (vph)	30	744	526	143	150	36	
Future Volume (vph)	30	744	526	143	150	36	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	10	11	12	12	11	11	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	
Frt			0.971		0.974		
Flt Protected		0.998			0.961		
Satd. Flow (prot)	0	3450	1831	0	1719	0	
Flt Permitted		0.904			0.961		
Satd. Flow (perm)	0	3125	1831	0	1719	0	
Right Turn on Red				Yes		Yes	
Satd. Flow (RTOR)			21		12		
Link Speed (mph)		25	25		25		
Link Distance (ft)		591	768		1376		
Travel Time (s)		16.1	20.9		37.5		
Peak Hour Factor	0.93	0.93	0.85	0.85	0.87	0.87	
Heavy Vehicles (%)	0%	1%	1%	0%	0%	0%	
Adj. Flow (vph)	32	800	619	168	172	41	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	0	832	787	0	213	0	
Number of Detectors	1	2	2		1		
Detector Template	Left	Thru	Thru		Left		
Leading Detector (ft)	20	100	100		20		
Trailing Detector (ft)	0	0	0		0		
Detector 1 Position(ft)	0	0	0		0		
Detector 1 Size(ft)	20	6	6		20		
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex		
Detector 1 Channel							
Detector 1 Extend (s)	0.0	0.0	0.0		0.0		
Detector 1 Queue (s)	0.0	0.0	0.0		0.0		
Detector 1 Delay (s)	0.0	0.0	0.0		0.0		
Detector 2 Position(ft)		94	94				
Detector 2 Size(ft)		6	6				
Detector 2 Type		Cl+Ex	Cl+Ex				
Detector 2 Channel							
Detector 2 Extend (s)		0.0	0.0				
Turn Type	Perm	NA	NA		Prot		
Protected Phases		2	6		4	9	
Permitted Phases	2						
Detector Phase	2	2	6		4		
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0		4.0	4.0	
Minimum Split (s)	20.5	20.5	20.5		20.5	21.0	
Total Split (s)	48.5	48.5	48.5		20.5	21.0	
Total Split (%)	53.9%	53.9%	53.9%		22.8%	23%	
Maximum Green (s)	43.5	43.5	43.5		15.5	16.0	
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0		1.0	1.0	

Lanes, Volumes, Timings
40: Private Drive/Moulton Street & Concord Avenue

6 - 2026 Build Weekday Evening

05/20/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕			↕↕			↕↕	
Traffic Volume (vph)	2	666	8	7	580	8	12	1	19	95	0	44
Future Volume (vph)	2	666	8	7	580	8	12	1	19	95	0	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	10	11	11	11	11	11	10	10	10	11	11	11
Lane Util. Factor	0.95	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.998			0.998			0.920			0.957	
Flt Protected					0.999			0.981			0.967	
Satd. Flow (prot)	0	3449	0	0	1813	0	0	1600	0	0	1700	0
Flt Permitted		0.954			0.993			0.879			0.770	
Satd. Flow (perm)	0	3290	0	0	1803	0	0	1434	0	0	1353	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		2			1			25			61	
Link Speed (mph)		25			25			30			30	
Link Distance (ft)		705			591			232			864	
Travel Time (s)		19.2			16.1			5.3			19.6	
Peak Hour Factor	0.92	0.92	0.92	0.84	0.84	0.84	0.75	0.75	0.75	0.79	0.79	0.79
Heavy Vehicles (%)	0%	1%	0%	0%	1%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	2	724	9	8	690	10	16	1	25	120	0	56
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	735	0	0	708	0	0	42	0	0	176	0
Number of Detectors	1	2		1	2		1	2		1	2	
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	
Leading Detector (ft)	20	100		20	100		20	100		20	100	
Trailing Detector (ft)	0	0		0	0		0	0		0	0	
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Detector Phase	4	4		8	8		2	2		6	6	
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
Minimum Split (s)	21.0	21.0		21.0	21.0		21.0	21.0		21.0	21.0	
Total Split (s)	46.0	46.0		46.0	46.0		21.0	21.0		21.0	21.0	
Total Split (%)	51.1%	51.1%		51.1%	51.1%		23.3%	23.3%		23.3%	23.3%	
Maximum Green (s)	41.0	41.0		41.0	41.0		16.0	16.0		16.0	16.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0		1.0	1.0		1.0	1.0		1.0	1.0	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Lane Width (ft)	
Lane Util. Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Number of Detectors	
Detector Template	
Leading Detector (ft)	
Trailing Detector (ft)	
Detector 1 Position(ft)	
Detector 1 Size(ft)	
Detector 1 Type	
Detector 1 Channel	
Detector 1 Extend (s)	
Detector 1 Queue (s)	
Detector 1 Delay (s)	
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	23.0
Total Split (s)	23.0
Total Split (%)	26%
Maximum Green (s)	20.0
Yellow Time (s)	3.0
All-Red Time (s)	0.0

Lanes, Volumes, Timings
40: Private Drive/Moulton Street & Concord Avenue

6 - 2026 Build Weekday Evening
05/20/2021



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lost Time Adjust (s)		0.0			0.0			0.0			0.0	
Total Lost Time (s)		5.0			5.0			5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Max	Max		Max	Max		None	None		None	None	
Walk Time (s)	5.0	5.0		5.0	5.0		5.0	5.0		5.0	5.0	
Flash Dont Walk (s)	11.0	11.0		11.0	11.0		11.0	11.0		11.0	11.0	
Pedestrian Calls (#/hr)	0	0		0	0		0	0		0	0	
Act Effect Green (s)		44.7			44.7			11.0			11.0	
Actuated g/C Ratio		0.68			0.68			0.17			0.17	
v/c Ratio		0.33			0.58			0.16			0.64	
Control Delay		5.3			8.7			13.8			26.4	
Queue Delay		0.0			0.0			0.0			0.0	
Total Delay		5.3			8.8			13.8			26.4	
LOS		A			A			B			C	
Approach Delay		5.3			8.8			13.8			26.4	
Approach LOS		A			A			B			C	
Queue Length 50th (ft)		51			119			5			39	
Queue Length 95th (ft)		98			230			21			76	
Internal Link Dist (ft)		625			511			152			784	
Turn Bay Length (ft)												
Base Capacity (vph)		2239			1227			369			376	
Starvation Cap Reductn		0			17			0			0	
Spillback Cap Reductn		0			0			0			0	
Storage Cap Reductn		0			0			0			0	
Reduced v/c Ratio		0.33			0.59			0.11			0.47	

Intersection Summary

Area Type:	Other
Cycle Length:	90
Actuated Cycle Length:	65.7
Natural Cycle:	80
Control Type:	Semi Act-Uncoord
Maximum v/c Ratio:	0.64
Intersection Signal Delay:	9.2
Intersection LOS:	A
Intersection Capacity Utilization:	58.9%
ICU Level of Service:	B
Analysis Period (min):	15

Splits and Phases: 40: Private Drive/Moulton Street & Concord Avenue



Lane Group	Ø9
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	None
Walk Time (s)	
Flash Dont Walk (s)	
Pedestrian Calls (#/hr)	
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Intersection						
Int Delay, s/veh	2.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	5	37	61	4	12	18
Future Vol, veh/h	5	37	61	4	12	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	40	66	4	13	20

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	70	0	-	0	118 68
Stage 1	-	-	-	-	68 -
Stage 2	-	-	-	-	50 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1531	-	-	-	878 995
Stage 1	-	-	-	-	955 -
Stage 2	-	-	-	-	972 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1531	-	-	-	875 995
Mov Cap-2 Maneuver	-	-	-	-	875 -
Stage 1	-	-	-	-	952 -
Stage 2	-	-	-	-	972 -

Approach	EB	WB	SB
HCM Control Delay, s	0.9	0	9
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1531	-	-	-	943
HCM Lane V/C Ratio	0.004	-	-	-	0.035
HCM Control Delay (s)	7.4	0	-	-	9
HCM Lane LOS	A	A	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	593	758	25	0	10
Future Vol, veh/h	0	593	758	25	0	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	280	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	94	94	75	75
Heavy Vehicles, %	0	0	0	1	0	0
Mvmt Flow	0	631	806	27	0	13

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	-
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	-
Pot Cap-1 Maneuver	0	-	-
Stage 1	0	-	-
Stage 2	0	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	12.3
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	504
HCM Lane V/C Ratio	-	-	-	0.026
HCM Control Delay (s)	-	-	-	12.3
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.1

Intersection						
Int Delay, s/veh	30.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑	↑		↑	
Traffic Vol, veh/h	74	562	551	27	137	178
Future Vol, veh/h	74	562	551	27	137	178
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	94	94	93	93	88	88
Heavy Vehicles, %	0	1	0	1	0	1
Mvmt Flow	79	598	592	29	156	202

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	621	0	0	1064	607
Stage 1	-	-	-	607	-
Stage 2	-	-	-	457	-
Critical Hdwy	4.1	-	-	6.6	6.215
Critical Hdwy Stg 1	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	5.8	-
Follow-up Hdwy	2.2	-	-	3.5	3.3095
Pot Cap-1 Maneuver	969	-	-	235	498
Stage 1	-	-	-	548	-
Stage 2	-	-	-	610	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	969	-	-	206	498
Mov Cap-2 Maneuver	-	-	-	206	-
Stage 1	-	-	-	481	-
Stage 2	-	-	-	610	-

Approach	EB	WB	SB
HCM Control Delay, s	1.4	0	139.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	969	-	-	-	308
HCM Lane V/C Ratio	0.081	-	-	-	1.162
HCM Control Delay (s)	9	0.4	-	-	139.5
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0.3	-	-	-	15.1

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	2	14	43	9	27	45	19	27	13	75	1
Future Vol, veh/h	0	2	14	43	9	27	45	19	27	13	75	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	75	75	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	4	0	5	0	8	3	0
Mvmt Flow	0	3	19	57	12	36	60	25	36	17	100	1

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	322	316	101	309	298	43	101	0	0	61	0	0
Stage 1	135	135	-	163	163	-	-	-	-	-	-	-
Stage 2	187	181	-	146	135	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.24	4.1	-	-	4.18	-	-
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	3.336	2.2	-	-	2.272	-	-
Pot Cap-1 Maneuver	635	603	960	647	617	1022	1504	-	-	1505	-	-
Stage 1	873	789	-	844	767	-	-	-	-	-	-	-
Stage 2	819	754	-	861	789	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	579	571	960	607	584	1022	1504	-	-	1505	-	-
Mov Cap-2 Maneuver	579	571	-	607	584	-	-	-	-	-	-	-
Stage 1	837	780	-	809	736	-	-	-	-	-	-	-
Stage 2	745	723	-	831	780	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.2		11		3.7		1.1	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1504	-	-	885	701	1505	-
HCM Lane V/C Ratio	0.04	-	-	0.024	0.15	0.012	-
HCM Control Delay (s)	7.5	0	-	9.2	11	7.4	0
HCM Lane LOS	A	A	-	A	B	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.5	0	-

PEDESTRIAN ANALYSIS



PEDESTRIAN WORKSHEET

General Information		Site Information	
Analyst	JC	Facility	180 Fawcett Street
Agency or Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	6/2/2021	Analysis Year	2021 Baseline / 2021 Build/ 2026 Build
Analysis Time Period	AM		
<input type="checkbox"/> Operational (LOS)	<input type="checkbox"/> Design (W _E)	<input type="checkbox"/> Planning (LOS)	<input type="checkbox"/> Planning (W _E)

Crossings at Signalized Intersections										
Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8	9	10
Cycle length, C (s)	141	141	141	141	90	90	90	90	90	
Effective green time for pedestrians, g (s)	41	41	25	25	20	20	20	21	21	
Average delay, d _p	35.5	35.5	47.7	47.7	27.2	27.2	27.2	26.5	26.5	
LOS at signalized intersections (Exhibit 18-9)	D	D	E	E	C	C	C	C	C	

Signalized Intersection Identification		
Intersection #	Major Street at Minor Street	
1	Concord Avenue at Blanchard Road (Concord AV West Crossing)	
2	Concord Avenue at Blanchard Road (Concord AV East Crossing)	
3	Concord Avenue at Blanchard Road (Blanchard North Crossing)	
4	Concord Avenue at Blanchard Road (Blanchard South Crossing)	
5	Concord Avenue at Moulton St/ Private Driveway (Concord Crossing)	
6	Concord Avenue at Moulton St/ Private Driveway (Molton Crossing)	
7	Concord Avenue at Moulton St/ Private Driveway (Private Crossing)	
8	Concord Avenue at Fawcett Street (Concord Crossing)	
9	Concord Avenue at Fawcett Street (Fawcett Crossing)	

* - Street which pedestrians are crossing

PEDESTRIAN WORKSHEET

General Information		Site Information	
Analyst	JC	Facility	180 Fawcett Street
Agency or Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	6/2/2021	Analysis Year	2021 Baseline / 2021 Build/ 2026 Build
Analysis Time Period	AM		
<input type="checkbox"/> Operational (LOS)	<input type="checkbox"/> Design (W _E)	<input type="checkbox"/> Planning (LOS)	<input type="checkbox"/> Planning (W _E)

Crossings at Signalized Intersections										
Pedestrian Delay at Signalized Intersections	1	2	3	4	5	6	7	8	9	10
Cycle length, C (s)	176	176	176	176	90	90	90	90	90	
Effective green time for pedestrians, g (s)	44	44	43	43	20	20	20	17	17	
Average delay, d _p	49.5	49.5	50.6	50.3	27.2	27.2	27.2	29.6	29.6	
LOS at signalized intersections (Exhibit 18-9)	E	E	E	E	C	C	C	C	C	

Signalized Intersection Identification		
Intersection #	Major Street at Minor Street	
1	Concord Avenue at Blanchard Road (Concord AV West Crossing)	
2	Concord Avenue at Blanchard Road (Concord AV East Crossing)	
3	Concord Avenue at Blanchard Road (Blanchard North Crossing)	
4	Concord Avenue at Blanchard Road (Blanchard South Crossing)	
5	Concord Avenue at Moulton St/ Private Driveway (Concord Crossing)	
6	Concord Avenue at Moulton St/ Private Driveway (Molton Crossing)	
7	Concord Avenue at Moulton St/ Private Driveway (Private Crossing)	
8	Concord Avenue at Fawcett Street (Concord Crossing)	
9	Concord Avenue at Fawcett Street (Fawcett Crossing)	

* - Street which pedestrians are crossing

PEDESTRIANS WORKSHEET^a

General Information		Site Information	
Analyst	JC	Facility	180 Fawcett Street
Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	6/2/2021	Analysis Year	2020 Baseline
Analysis Time Period	AM		
<input checked="" type="checkbox"/> Operational (LOS)		<input type="checkbox"/> Planning (LOS)	

Walkways and Sidewalk Pedestrian Facilities								
	1	2	3	4	5	6	7	8
Total Width of crosswalks (ft), W_T	10	10	10	10	10	10	10	10
Sum of obstructions width and/or shy distances (ft), ¹ W_o								
Effective crosswalk width, W_E (ft) $W_E = W_T - W_o$	10	10	10	10	10	10	10	10
Peak 15-min flow rate (both directions), v_{15} (p/15-min)								
Pedestrian unit flow rate, v_p (p/min/ft), $v_p = v_{15}/15 * W_E$								
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)								

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities									
Pedestrian Delay at Signalized Intersections		1	2	3	4	5	6	7	8
Cycle Length, C (s)									
Effective green time for pedestrians, g (s)									
Average delay, $d_p = 0.5(C-g)^2/C$									
LOS at Signalized Intersections (Exhibit 18-9)									
Pedestrian Delay at TWSC Intersections		Smith Pl. at Concord Av. (West)	Smith Pl. at Concord Av. (North)	Fawcett St. at Concord Av. (West)	Fawcett St. at Concord Av. (North)	Smith Pl. at Fawcett st. (West)	Smith Pl. at Fawcett St (East)	Smith Pl. at Fawcett St (North)	Smith Pl. at Fawcett St (South)
Peak 60-min pedestrian flow rate (both directions)		2	15	16	15	2	1	1	2
Pedestrian Flow Rate, $v_p = 60 \text{ min ped flow rate}/3600 \text{ sec}$		0.00056	0.00417	0.00444	0.00417	0.00056	0.00028	0.00028	0.00056
Vehicular flow rate, veh/h		1594	188	1631	275	10	110	104	126
Pedestrian walking speed, S_p (ft/s)		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Pedestrian start-up time, t_s (s)		3	3	3	3	3	3	3	3
Length of crosswalk, L (ft)		44	28	38	33	24	30	30	25
Single pedestrian critical gap, $t_c = (L/S_p) + t_s$		15.5714286	11	13.85714286	12.42857143	9.85714286	11.5714286	11.5714286	10.1428571
Typical pedestrian number in crossing platoon, N_c ³		2.23	1.02	6.11	1.03	1	1	1	1
Spatial pedestrian distribution, ² N_p (p), $N_p = \text{INT} [8.0 (N_c - 1)/W_E] + 1$		1	1	5	1	1	1	1	1
Group critical gap, t_G (s), $t_G = t_c + 2(N_p - 1)$		15.5714286	11	21.85714286	12.42857143	9.85714286	11.5714286	11.5714286	10.1428571
Vehicular flow rate, v (veh/s)		0.4428	0.0522	0.4531	0.0764	0.0028	0.0306	0.0289	0.0350
Average pedestrian delay, d_p (s), $d_p = (1/v)(e^{v t_G} - v t_G - 1)$		2211.3	3.9	44077.1	8.3	0.1	2.3	2.2	2.0
LOS at unsignalized intersections (Exhibit 18-13)		F	A	F	B	A	A	A	A

Notes

^a Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume $N_p = 1$.

$$N_c = (v_p e^{v t_c} + v e^{-v t_c}) / (v_p + v) e^{(v_p - v) t_c}$$

Paths:

PEDESTRIANS WORKSHEET^a

General Information		Site Information	
Analyst	JC	Facility	180 Fawcett Street
Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	6/2/2021	Analysis Year	2020 Baseline
Analysis Time Period	PM		
<input checked="" type="checkbox"/> Operational (LOS)		<input type="checkbox"/> Planning (LOS)	

Walkways and Sidewalk Pedestrian Facilities								
	1	2	3	4	5	6	7	8
Total Width of crosswalks (ft), W_T	10	10	10	10	10	10	10	10
Sum of obstructions width and/or shy distances (ft), ¹ W_o								
Effective crosswalk width, W_E (ft) $W_E = W_T - W_o$	10	10	10	10	10	10	10	10
Peak 15-min flow rate (both directions), v_{15} (p/15-min)								
Pedestrian unit flow rate, v_p (p/min/ft), $v_p = v_{15}/15 * W_E$								
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)								

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities									
Pedestrian Delay at Signalized Intersections		1	2	3	4	5	6	7	8
Cycle Length, C (s)									
Effective green time for pedestrians, g (s)									
Average delay, $d_p = 0.5(C-g)^2/C$									
LOS at Signalized Intersections (Exhibit 18-9)									
Pedestrian Delay at TWSC Intersections		Smith Pl. at Concord Av. (West)	Smith Pl. at Concord Av. (North)	Fawcett St. at Concord Av. (West)	Fawcett St. at Concord Av. (North)	Smith Pl. at Fawcett st. (West)	Smith Pl. at Fawcett St (East)	Smith Pl. at Fawcett St (North)	Smith Pl. at Fawcett St (South)
Peak 60-min pedestrian flow rate (both directions)		19	20	17	39	5	9	13	2
Pedestrian Flow Rate, $v_p = 60 \text{ min ped flow rate}/3600 \text{ sec}$		0.00528	0.00556	0.00472	0.01083	0.00139	0.00250	0.00361	0.00056
Vehicular flow rate, veh/h		1186	255	1165	263	70	95	132	195
Pedestrian walking speed, S_p (ft/s)		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Pedestrian start-up time, t_s (s)		3	3	3	3	3	3	3	3
Length of crosswalk, L (ft)		44	28	38	33	24	30	30	25
Single pedestrian critical gap, $t_c = (L/S_p) + t_s$		15.5714286	11	13.85714286	12.42857143	9.85714286	11.5714286	11.5714286	10.1428571
Typical pedestrian number in crossing platoon, N_c ³		3.57	1.03	2.2	1.08	1	1	1.01	1
Spatial pedestrian distribution, ² N_p (p), $N_p = \text{INT}[8.0(N_c - 1)/W_E] + 1$		3	1	1	1	1	1	1	1
Group critical gap, t_G (s), $t_G = t_c + 2(N_p - 1)$		19.5714286	11	13.85714286	12.42857143	9.85714286	11.5714286	11.5714286	10.1428571
Vehicular flow rate, v (veh/s)		0.3294	0.0708	0.3236	0.0731	0.0194	0.0264	0.0367	0.0542
Average pedestrian delay, d_p (s), $d_p = (1/v)(e^{v t_G} - v t_G - 1)$		1893.5	5.7	256.9	7.8	1.0	2.0	2.8	3.4
LOS at unsignalized intersections (Exhibit 18-13)		F	B	F	B	A	A	A	A

Notes

^a Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume $N_p = 1$.

$$N_c = (v_p e^{v t_c} + v e^{-v t_c}) / (v_p + v) e^{(v_p - v) t_c}$$

Paths:

PEDESTRIANS WORKSHEET^a

General Information		Site Information	
Analyst	JC	Facility	180 Fawcett Street
Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	6/2/2021	Analysis Year	2021 Build
Analysis Time Period	AM		
<input checked="" type="checkbox"/> Operational (LOS)		<input type="checkbox"/> Planning (LOS)	

Walkways and Sidewalk Pedestrian Facilities								
	1	2	3	4	5	6	7	8
Total Width of crosswalks (ft), W_T	10	10	10	10	10	10	10	10
Sum of obstructions width and/or shy distances (ft), ¹ W_o								
Effective crosswalk width, W_E (ft) $W_E = W_T - W_o$	10	10	10	10	10	10	10	10
Peak 15-min flow rate (both directions), v_{15} (p/15-min)								
Pedestrian unit flow rate, v_p (p/min/ft), $v_p = v_{15}/15 * W_E$								
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)								

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities									
Pedestrian Delay at Signalized Intersections		1	2	3	4	5	6	7	8
Cycle Length, C (s)									
Effective green time for pedestrians, g (s)									
Average delay, $d_p = 0.5(C-g)^2/C$									
LOS at Signalized Intersections (Exhibit 18-9)									
Pedestrian Delay at TWSC Intersections		Smith Pl. at Concord Av. (West)	Smith Pl. at Concord Av. (North)	Fawcett St. at Concord Av. (West)	Fawcett St. at Concord Av. (North)	Smith Pl. at Fawcett st. (West)	Smith Pl. at Fawcett St (East)	Smith Pl. at Fawcett St (North)	Smith Pl. at Fawcett St (South)
Peak 60-min pedestrian flow rate (both directions)		4	17	16	17	4	4	3	3
Pedestrian Flow Rate, $v_p = 60 \text{ min ped flow rate}/3600 \text{ sec}$		0.00111	0.00472	0.00444	0.00472	0.00111	0.00111	0.00083	0.00083
Vehicular flow rate, veh/h		1617	212	1632	296	10	134	104	150
Pedestrian walking speed, S_p (ft/s)		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Pedestrian start-up time, t_s (s)		3	3	3	3	3	3	3	3
Length of crosswalk, L (ft)		44	28	38	33	24	30	30	25
Single pedestrian critical gap, $t_c = (L/S_p) + t_s$		15.5714286	11	13.85714286	12.42857143	9.85714286	11.5714286	11.5714286	10.1428571
Typical pedestrian number in crossing platoon, N_c ³		3.67	1.02	6.12	1.04	1	1	1	1
Spatial pedestrian distribution, ² N_p (p), $N_p = \text{INT} [8.0 (N_c - 1)/W_E] + 1$		3	1	5	1	1	1	1	1
Group critical gap, t_G (s), $t_G = t_c + 2(N_p - 1)$		19.5714286	11	21.85714286	12.42857143	9.85714286	11.5714286	11.5714286	10.1428571
Vehicular flow rate, v (veh/s)		0.4492	0.0589	0.4533	0.0822	0.0028	0.0372	0.0289	0.0417
Average pedestrian delay, d_p (s), $d_p = (1/v)(e^{v t_G} - v t_G - 1)$		14613.5	4.5	44318.4	9.2	0.1	2.9	2.2	2.5
LOS at unsignalized intersections (Exhibit 18-13)		F	A	F	B	A	A	A	A

Notes

^a Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume $N_p = 1$.

$$N_c = (v_p e^{v t_c} + v e^{-v t_c}) / (v_p + v) e^{(v_p - v) t_c}$$

Paths:

PEDESTRIANS WORKSHEET^a

General Information		Site Information	
Analyst	JC	Facility	180 Fawcett Street
Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	6/2/2021	Analysis Year	2021 Build
Analysis Time Period	PM		
<input checked="" type="checkbox"/> Operational (LOS)		<input type="checkbox"/> Planning (LOS)	

Walkways and Sidewalk Pedestrian Facilities								
	1	2	3	4	5	6	7	8
Total Width of crosswalks (ft), W_T	10	10	10	10	10	10	10	10
Sum of obstructions width and/or shy distances (ft), ¹ W_o								
Effective crosswalk width, W_E (ft) $W_E = W_T - W_o$	10	10	10	10	10	10	10	10
Peak 15-min flow rate (both directions), v_{15} (p/15-min)								
Pedestrian unit flow rate, v_p (p/min/ft), $v_p = v_{15}/15 * W_E$								
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)								

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities									
Pedestrian Delay at Signalized Intersections		1	2	3	4	5	6	7	8
Cycle Length, C (s)									
Effective green time for pedestrians, g (s)									
Average delay, $d_p = 0.5(C-g)^2/C$									
LOS at Signalized Intersections (Exhibit 18-9)									
Pedestrian Delay at TWSC Intersections		Smith Pl. at Concord Av. (West)	Smith Pl. at Concord Av. (North)	Fawcett St. at Concord Av. (West)	Fawcett St. at Concord Av. (North)	Smith Pl. at Fawcett st. (West)	Smith Pl. at Fawcett St (East)	Smith Pl. at Fawcett St (North)	Smith Pl. at Fawcett St (South)
Peak 60-min pedestrian flow rate (both directions)		22	22	17	39	7	15	15	3
Pedestrian Flow Rate, $v_p = 60 \text{ min ped flow rate}/3600 \text{ sec}$		0.00611	0.00611	0.00472	0.01083	0.00194	0.00417	0.00417	0.00083
Vehicular flow rate, veh/h		1206	278	1168	279	70	92	132	218
Pedestrian walking speed, S_p (ft/s)		3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Pedestrian start-up time, t_s (s)		3	3	3	3	3	3	3	3
Length of crosswalk, L (ft)		44	28	38	33	24	30	30	25
Single pedestrian critical gap, $t_c = (L/S_p) + t_s$		15.5714286	11	13.85714286	12.42857143	9.85714286	11.5714286	11.5714286	10.1428571
Typical pedestrian number in crossing platoon, N_c^3		4.19	1.04	2.21	1.09	1	1.01	1.01	1
Spatial pedestrian distribution, ² N_p (p), $N_p = \text{INT} [8.0 (N_c - 1)/W_E] + 1$		3	1	1	1	1	1	1	1
Group critical gap, t_G (s), $t_G = t_c + 2(N_p - 1)$		19.5714286	11	13.85714286	12.42857143	9.85714286	11.5714286	11.5714286	10.1428571
Vehicular flow rate, v (veh/s)		0.3350	0.0772	0.3244	0.0775	0.0194	0.0256	0.0367	0.0606
Average pedestrian delay, d_p (s), $d_p = (1/v)(e^{v t_G} - v t_G - 1)$		2078.2	6.3	259.4	8.5	1.0	1.9	2.8	3.9
LOS at unsignalized intersections (Exhibit 18-13)		F	B	F	B	A	A	A	A

Notes

^a Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume $N_p = 1$.

$$N_c = (v_p e^{v t_c} + v e^{-v t_c}) / (v_p + v) e^{(v_p - v) t_c}$$

Paths:

PEDESTRIANS WORKSHEET^a

General Information		Site Information	
Analyst	JC	Facility	180 Fawcett Street
Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	6/2/2021	Analysis Year	2026 Build
Analysis Time Period	AM		
<input checked="" type="checkbox"/> Operational (LOS)		<input type="checkbox"/> Planning (LOS)	

Walkways and Sidewalk Pedestrian Facilities						
	1	2	5	6	7	8
Total Width of crosswalks (ft), W_T	10	10	10	10	10	10
Sum of obstructions width and/or shy distances (ft), ¹ W_o						
Effective crosswalk width, W_E (ft) $W_E = W_T - W_o$	10	10	10	10	10	10
Peak 15-min flow rate (both directions), v_{15} (p/15-min)						
Pedestrian unit flow rate, v_p (p/min/ft), $v_p = v_{15}/15 * W_E$						
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)						

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities							
Pedestrian Delay at Signalized Intersections		1	2	5	6	7	8
Cycle Length, C (s)							
Effective green time for pedestrians, g (s)							
Average delay, $d_p = 0.5(C-g)^2/C$							
LOS at Signalized Intersections (Exhibit 18-9)							
Pedestrian Delay at TWSC Intersections		Smith Pl. at Concord Av. (West)	Smith Pl. at Concord Av. (North)	Smith Pl. at Fawcett st. (West)	Smith Pl. at Fawcett St (East)	Smith Pl. at Fawcett St (North)	Smith Pl. at Fawcett St (South)
Peak 60-min pedestrian flow rate (both directions)		4	17	4	4	3	3
Pedestrian Flow Rate, $v_p = 60 \text{ min ped flow rate}/3600 \text{ sec}$		0.00111	0.00472	0.00111	0.00111	0.00083	0.00083
Vehicular flow rate, veh/h		1829	339	10	137	107	154
Pedestrian walking speed, S_p (ft/s)		3.5	3.5	3.5	3.5	3.5	3.5
Pedestrian start-up time, t_s (s)		3	3	3	3	3	3
Length of crosswalk, L (ft)		44	28	24	30	30	25
Single pedestrian critical gap, $t_c = (L/S_p) + t_s$		15.5714286	11	9.85714286	11.5714286	11.5714286	10.1428571
Typical pedestrian number in crossing platoon, N_c^3		6.93	1.04	1	1	1	1
Spatial pedestrian distribution, ² N_p (p), $N_p = \text{INT}[8.0(N_c - 1)/W_E] + 1$		5	1	1	1	1	1
Group critical gap, t_G (s), $t_G = t_c + 2(N_p - 1)$		23.5714286	11	9.85714286	11.5714286	11.5714286	10.1428571
Vehicular flow rate, v (veh/s)		0.5081	0.0942	0.0028	0.0381	0.0297	0.0428
Average pedestrian delay, d_p (s), $d_p = (1/v)(e^{v t_G} - v t_G - 1)$		312599.5	8.3	0.1	3.0	2.2	2.6
LOS at unsignalized intersections (Exhibit 18-13)		F	B	A	A	A	A

Notes

^aBased on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume $N_p = 1$.

$$N_c = (v_p e^{v t_c} + v e^{-v t_c}) / (v_p + v) e^{(v_p - v) t_c}$$

Paths:

PEDESTRIANS WORKSHEET^a

General Information		Site Information	
Analyst	JC	Facility	180 Fawcett Street
Company	VAI	Jurisdiction	Cambridge, MA
Date Performed	6/2/2021	Analysis Year	2061 Build
Analysis Time Period	PM		
<input checked="" type="checkbox"/> Operational (LOS)		<input type="checkbox"/> Planning (LOS)	

Walkways and Sidewalk Pedestrian Facilities						
	1	2	5	6	7	8
Total Width of crosswalks (ft), W_T	10	10	10	10	10	10
Sum of obstructions width and/or shy distances (ft), ¹ W_o						
Effective crosswalk width, W_E (ft) $W_E = W_T - W_o$	10	10	10	10	10	10
Peak 15-min flow rate (both directions), v_{15} (p/15-min)						
Pedestrian unit flow rate, v_p (p/min/ft), $v_p = v_{15}/15 * W_E$						
LOS (Exhibits 18-3, 18-4, 18-5, 18-6, or 18-7)						

Crossings at Signalized Intersection, Unsignalized Intersections, and Urban Street Facilities							
Pedestrian Delay at Signalized Intersections		1	2	5	6	7	8
Cycle Length, C (s)							
Effective green time for pedestrians, g (s)							
Average delay, $d_p = 0.5(C-g)^2/C$							
LOS at Signalized Intersections (Exhibit 18-9)							
Pedestrian Delay at TWSC Intersections		Smith Pl. at Concord Av. (West)	Smith Pl. at Concord Av. (North)	Smith Pl. at Fawcett st. (West)	Smith Pl. at Fawcett St (East)	Smith Pl. at Fawcett St (North)	Smith Pl. at Fawcett St (South)
Peak 60-min pedestrian flow rate (both directions)		22	22	7	15	15	3
Pedestrian Flow Rate, $v_p = 60 \text{ min ped flow rate}/3600 \text{ sec}$		0.00611	0.00611	0.00194	0.00417	0.00417	0.00083
Vehicular flow rate, veh/h		1365	416	71	121	135	223
Pedestrian walking speed, S_p (ft/s)		3.5	3.5	3.5	3.5	3.5	3.5
Pedestrian start-up time, t_s (s)		3	3	3	3	3	3
Length of crosswalk, L (ft)		44	28	24	30	30	25
Single pedestrian critical gap, $t_c = (L/S_p) + t_s$		15.5714286	11	9.85714286	11.5714286	11.5714286	10.1428571
Typical pedestrian number in crossing platoon, N_c^3		6.71	1.07	1	1.01	1.01	1
Spatial pedestrian distribution, ² N_p (p), $N_p = \text{INT} [8.0 (N_c - 1)/W_E] + 1$		5	1	1	1	1	1
Group critical gap, t_G (s), $t_G = t_c + 2(N_p - 1)$		23.5714286	11	9.85714286	11.5714286	11.5714286	10.1428571
Vehicular flow rate, v (veh/s)		0.3792	0.1156	0.0197	0.0336	0.0375	0.0619
Average pedestrian delay, d_p (s), $d_p = (1/v)(e^{v t_G} - v t_G - 1)$		20049.8	11.2	1.0	2.6	2.9	4.0
LOS at unsignalized intersections (Exhibit 18-13)		F	C	A	A	A	A

Notes

^a Based on Pedestrians Worksheet from HCM 2000, Chapter 18, Appendix A

¹ Includes curb width, street furniture, window shops, building protrusions, inside clearance, and all other field-observed obstructions.

² If there is no platoon crossing, assume $N_p = 1$.

$$N_c = (v_p e^{v t_c} + v e^{-v t_c}) / (v_p + v) e^{(v_p - v) t_c}$$

Paths: