

MEMORANDUM

TO: Mr. Huseyin A. Kara
Chief Development Officer
Pioneer Charter School of Science
466 Broadway
Everett, Massachusetts 02149

DATE: May 25, 2022

FROM: Samuel W. Gregorio, PE, PTOE, RSP₁
Project Manager / Senior Design Engineer

PROJECT NO.: T1219

RE: Pioneer Charter School of Sciences - #67 Pulaski Street - Peabody, Massachusetts
Traffic Impact Assessment

INTRODUCTION

TEC, Inc. (TEC) has been retained by Pioneer Charter School of Science (the "Applicant") to prepare a Traffic Impact Assessment (TIA) for the proposed Pioneer Charter School of Science development (the "Project") located between Pulaski Street and Water Street within Peabody and Danvers, Massachusetts. The site is currently comprised of two lots within the City of Peabody (Map 42 - Lots 1 and 2) and two lots within the Town of Danvers (Map 66 – Lots 6 and 7). The entirety of the school building structure will be within the City of Peabody while a short segment of circulation drive aisles and some on-site parking will be within the Town of Danvers.

The several lots consist of a mix of vacant land, a 6,474 square foot (SF) restaurant, and a single-family dwelling. Each existing building structure will be razed as part of the project. The charter school will be constructed to accommodate a maximum enrollment for 594 students and 85 faculty/staff between Grades K to 8. The school will provide a regional draw from surrounding communities and provide school bus service for approximately two-thirds of students dependent on student residence location. Although the school will grow its student and faculty/staff population over time, this TIA provides an analysis of conditions under full build-out conditions to assess the long-term impacts of the proposed school.

Access to the proposed charter school is proposed via a full-access/egress driveway along Pulaski Street and a full-access/egress driveway along Margin Street. A third site driveway will be provided at the site's southwest corner along Pulaski Street and allow authorized movements for school buses to enter the site's bus staging area and for delivery vehicle movements exclusively. Usage for each driveway and general on-site circulation during dedicated student pick-up and drop-up times will be managed by the school and clearly defined for parents and buses alike.

Methodology

TEC has evaluated the traffic operations and safety characteristics of the study area under an existing year and future year conditions consistent with the *Transportation Impact Assessment (TIA) Guidelines* issued by the Massachusetts Department of Transportation (MassDOT)¹ and the

¹ *Transportation Impact Assessment (TIA) Guidelines*; Massachusetts Department of Transportation; March 13, 2014.

standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports. The future year examines traffic operations under a 7-year planning horizon (2029) for traffic volume projections, which includes an evaluation of the future year conditions with and without improvements. The findings and recommendations for the improvements are based on the detailed traffic analyses included in this report.

EXISTING CONDITIONS

The study area is typically selected to contain the major roadways and intersections providing local access/egress to/from the subject site. This includes an evaluation of intersections in which the site generated trips increase the peak hour traffic volume by more than 5 percent and/or by more than 100 vehicles per hour per MassDOT's *TIA Guidelines* (Section 3.I.C). Additionally, the proposed driveways along both Pulaski Street and Margin Street have also been evaluated as part of an operational and safety evaluation.

Study Area Intersections

The following intersections were included in the study area:

1. Water Street (Route 35) / Endicott Street [Town of Danvers]
2. Water Street (Route 35) / S. Liberty Street [Town of Danvers]
3. Water Street (Route 35) / Site Driveway East [Town of Danvers]
4. Margin Street (Route 35) / Gardner Street (Route 114) [City of Peabody]
5. Pulaski Street / Site Driveway West [City of Peabody]
6. Pulaski Street (Route 114) / Gardner Street (Route 114) / Pound Lane [City of Peabody]
7. Andover Street (Route 114) / Central Street / Endicott Street / Pulaski Street (Route 114) [City of Peabody]

The study area intersections are shown graphically in Figure 1.

Geometry

Roadways

Pulaski Street / S. Liberty Street

Pulaski Street, signed as State Route 114 between Andover Street to the south and Gardner Street to the north, is a north-south urban minor arterial roadway which is municipally maintained. Within the Town of Danvers, the roadway is signed as S. Liberty Street and enters its intersection with Water Street in the east-west cardinal direction. Pulaski Street consists of one travel lane in each direction north of Gardner Street and two travel lanes in each direction south of Gardner Street. Directional flow along the corridor is separated by a marked centerline. The posted speed limit along the roadway in the vicinity of the project is 35 miles per hour (mph). Sidewalk is provided along S. Liberty Street immediately south of its intersection with Water Street; however, the sidewalk terminates 200-feet from the intersection. Sidewalk is also provided along the easterly side of Pulaski Street between Dobbs Road and Pulaski Rear Street, the westerly side

of Pulaski Street south of #52 Pulaski Street, and the easterly side of Pulaski Street south of #39 Pulaski Street. There are no formal bicycle accommodations along the corridor. Land use along the corridor consists of a mix of residential, commercial, industrial, and municipal uses.

Margin Street (Route 35) / Water Street (Route 35)

State Route 35 is a north-south urban minor arterial roadway which is municipally maintained. Within the Town of Danvers, the roadway is signed as Water Street while the roadway is signed as Margin Street within the City of Peabody. Route 35 generally consists of one travel lane in each direction with directional flow along the corridor is separated by a marked centerline. The posted speed limit along the roadway in the vicinity of the project is 30 mph; however, the posted speed increases to 35 mph south of North Shore Avenue approximately 200-feet south of the Site Driveway East. Sidewalk is provided along the easterly side of the corridor through the entire project limits and along the westerly side of the corridor for all but a short section between Rainbow Terrace and the Danversport Bridge within the Town of Danvers. There are no formal bicycle accommodations along the corridor. Land use along the corridor consists of a mix of residential, commercial, industrial, and recreational uses.

Intersections

Water Street (Route 35) / Endicott Street [Town of Danvers]

Endicott Street [Town of Danvers] intersects Water Street to form a three-way signalized intersection. The Endicott Street eastbound approach consists of an exclusive left-turn lane and an exclusive right-turn lane. The Water Street northbound approach consists of an exclusive left-turn lane and a through lane. The Water Street southbound approach consists of a single general-purpose travel lane. All three approaches have directional flow separated by a marked centerline. A 'No Turn on Red' prohibition is signed along Endicott Street eastbound. Sidewalks are provided along both sides of all three intersection approaches with a crosswalk striped across the eastbound approach. Although not marked with a crosswalk, pedestrian signal housings are placed for pedestrian crossings across all three approaches. No formal bicycle accommodations are provided at the intersection.

Water Street (Route 35) / S. Liberty Street [Town of Danvers]

S. Liberty Street and the Driveway for the New England Home for the Deaf intersect Water Street to form a four-way signalized intersection. The S. Liberty Street eastbound approach consists of a left-turn lane and a channelized through / right-turn lane with directional flow separated by a raised landscaped median. The Driveway for the New England Home for the Deaf westbound approach consists of a single general-purpose travel lane with directional flow separated by a raised landscaped median. The Water Street northbound approach consists of an exclusive left-turn lane and a shared through / right-turn lane with directional flow separated by a raised concrete median. The Water Street southbound approach consists of a shared left-turn / through lane and a channelized right-turn lane with directional flow separated by a raised concrete median. MBTA bus stops are signed along both sides of Water Street immediately south of the intersection. Sidewalks are provided along both sides of all four intersection approaches with crosswalks striped across the northbound and westbound approaches. No formal bicycle accommodations are provided at the intersection.



1" = 1000'

Pioneer Charter School - Peabody, Massachusetts

Traffic Impact Assessment



Figure 1

Project Location Map

Margin Street (Route 35) / Gardner Street (Route 114) [City of Peabody]

Gardner Street intersects Margin Street to form a three-way unsignalized intersection. A residential driveway is present opposite Gardner Street at the intersection. The Gardner Street eastbound approach is under stop-control while the Margin Street northbound and southbound approaches are free-flowing. The Gardner Street eastbound approach consists of a single general-purpose travel lane with directional flow separated by a raised landscaped median. Although the intersection is striped for one-lane, the widened approach typically operates as two-lanes, with an exclusive left-turn lane and exclusive right-turn lane, during peak periods. Gardner Street also carries a truck exclusive for vehicles in excess of 2.5 tons. The Margin Street northbound approach consists of an exclusive left-turn lane and a through lane while the Margin Street southbound approach consists of a single general-purpose travel lane. Directional flow along Margin Street is separated by a marker centerline. Sidewalks are provided along both sides of all three approaches and a crosswalk is present across the Gardner Street eastbound approach. No formal bicycle accommodations are provided at the intersection.

Pulaski Street (Route 114) / Gardner Street (Route 114) / Pound Lane [City of Peabody]

Pound Lane and Gardner Street intersect Pulaski Street to form a four-way signalized intersection. Pound Lane enters the intersection as a one-way flow roadway. Both the Pound Lane eastbound and Gardner Street westbound approaches are slightly offset requiring split signal phasing. The Pound Lane eastbound approach consists of a shared left-turn / through lane and a channelized right-turn lane separated by a raised landscaped island. The Gardner Street westbound approach consists of a single general-purpose travel lane with directional flow separated by a marked centerline. The Pulaski Street northbound approach consists of a through lane and an exclusive right-turn lane with directional flow separated by a marked centerline. The Pulaski Street southbound approach consists of a single general-purpose travel lane with directional flow separated by a marked centerline. A similar truck exclusion is posted along Gardner Street with alternative route signage provided in the vicinity of the intersection. Sidewalks are provided along both sides of all four intersection approaches with crosswalks striped across each approach. No formal bicycle accommodations are provided at the intersection.

Andover Street (Route 114) / Central Street / Endicott Street / Pulaski Street (Route 114) [City of Peabody]

Andover Street and Central Street intersect Endicott Street and Pulaski Street to form a four-way signalized intersection. The Andover Street eastbound approach consists of an exclusive left-turn lane a shared through / right-turn lane with directional flow separated by a marked centerline. The Central Street westbound approach consists of a shared left-turn / through lane, a through lane, and a channelized right-turn lane with directional flow separated by a striped median. The Endicott Street northbound approach consists of a single general-purpose travel lane with directional flow separated by a marked centerline. The Pulaski Street southbound approach consists of a shared left-turn / through lane and an exclusive right-turn lane with directional flow separated by a raised landscaped median. A 'No Turn on Red' prohibition is signed along Andover Street eastbound and Endicott Street northbound. A Massachusetts Bay Transportation Authority (MBTA) bus stop is provided along Andover Street westbound west of the intersection. Sidewalks are provided along both sides of all four intersection approaches with crosswalks striped across each approach. No formal bicycle accommodations are provided at the intersection.

Public Transportation

The MBTA provide bus services within the vicinity of the Project site. This includes bus stops in the vicinity of the study area intersections. Schedule and route data are included in Attachment A, and a summary of the nearby routes is as follows:

- *MBTA Bus Route 435 (Salem Depot – Central Square Lynn or Neptune Towers) -* Service is provided between the Salem Depot (Commuter Rail) Station and Downtown Lynn with stops in Salem, Peabody, Danvers, and Lynn. Weekday inbound service from Salem Depot operates with scheduled departure times between 6:30 AM to 11:50 PM at 55-to-65-minute headways. At and prior to 4:17 PM, all routes travel through Central Square in Lynn and terminate at Neptune Towers in Lynn. Following 4:17 PM, all routes terminate at Central Square in Lynn. Weekday outbound service to Salem Depot operate with scheduled departure times from Neptune Towers through Central Square in Lynn between 6:00 AM and 3:25 PM at 50-to-60-minute headways. Weekday outbound service to Salem Depot operate with scheduled departure times from Central Square in Lynn between 4:00 PM and 10:40 PM at 50-to-60-minute headways.

Saturday service from Salem Depot operates with scheduled departure times between 9:20 AM to 11:56 PM at 50-to-60-minute headways. At and prior to 6:07 PM, all routes travel through Central Square in Lynn and terminate at Neptune Towers in Lynn. Following 6:07 PM, all routes terminate at Central Square in Lynn. Saturday outbound service to Salem Depot operate with scheduled departure times from Neptune Towers through Central Square in Lynn between 8:00 AM and 6:15 PM at 50-to-60-minute headways. Saturday outbound service to Salem Depot operate with scheduled departure times from Central Square in Lynn between 7:10 PM and 10:51 PM at 50-to-60-minute headways. Sunday service is limited to between the Liberty Tree Mall in Danvers and Neptune Towers operating six runs inbound and six runs outbound throughout the day.

Bus Route 435 currently has signed bus stops in both the northbound and southbound directions of Water Street immediately south of S. Liberty Street. In addition, the route also has a signed stop along Water Street southbound immediately north of the proposed Site Driveway [East] and along Andover Street westbound immediately west of Pulaski Street.

Both Peabody and Danvers have local public transportation for the senior citizens in the area. In Peabody, a shuttle runs people to different stores in the area Monday to Friday. The different areas served are based on the day of the week. Each day tends to about four different areas.

Existing Traffic Volumes

Traffic volume data for this report was obtained from Manual Turning Movement Counts (TMCs) and supplemented with Automatic Traffic Recorder (ATR) counts conducted at the study area intersections. The details of the data collection effort for this project are described below.

Turning Movement Counts

To establish existing traffic volume conditions at the study intersection, manual Turning Movement Counts (TMCs) were conducted at the study area intersections, with the exception of the Margin Street / Gardner Street intersection, during the weekday morning (7:00 AM – 9:00 AM) and weekday dismissal / evening (2:00 PM – 6:00 PM) peak periods on Wednesday, March 23, 2022. Manual TMCs were conducted at the Margin Street / Gardner Street intersection during the weekday morning (7:00 AM – 8:00 AM), weekday dismissal / evening (3:00 PM – 5:00 PM) peak periods on Tuesday, May 4, 2022. Area schools were in regular session during the time of traffic counts. The traffic counts represent a reasonable reflection of traffic for a post COVID-19 pandemic condition. No further adjustment to the traffic volumes have been made based on updated guidance from MassDOT for traffic counts related to COVID-19. A detailed summary of the turning movement counts, partitioned into 15-minute intervals, is provided within Attachment B.

Automatic Traffic Recorder Counts

In addition, ATR counts were conducted along Pulaski Street, north of Dobbs Road from Wednesday, March 23, 2022 through Thursday, March 24, 2022 concurrently with the TMCs to gather daily traffic volume data, vehicle speeds, and vehicle classifications during a continuous 48-hour time period. A summary of the weekday ATR traffic data is presented in Table 1. A detailed summary of the ATR data, partitioned into one-hour intervals, is provided within Attachment C.

Table 1 – Existing Weekday Traffic Volume Summary

Location	Weekday Traffic Volume ^(a)	Weekday Morning Peak Hour			Weekday Evening Peak Hour		
		Traffic Volume ^(b)	K Factor ^(c)	Directional Distribution ^(d)	Traffic Volume	K Factor	Directional Distribution
Pulaski Street, north of Dobbs Road	5,966	400	6.7	59.5% NB	462	7.7	60.4% SB

^a Daily traffic expressed in vehicles per day

^b Hourly traffic expressed in vehicles per hour

^c Percent of daily traffic volumes which occurs during the peak hour

^d Percent of peak hour volume in the predominant direction of travel

Pulaski Street carries approximately 5,966 vehicles per day (vpd) on an average weekday. Directional distribution along the roadway is more prominent in the commuter direction to/from Route 128 via Endicott Street during the weekday morning and the weekday evening peak hour. Speed data indicates that the average speed and 85th percentile speed along Pulaski Street is 33 mph and 37 mph in the northbound direction, respectively, and 33 mph and 38 mph in the southbound direction, respectively. The average speed and 85th percentile speed is therefore generally consistent with the posted 35 mph speed limit along the corridor.

Seasonal Adjustment

To account for seasonal adjustment for the localized roadways around the site, TEC utilized MassDOT's weekday seasonal and axle correction factors as published in 2019 (most recent publication). For urban minor arterials, traffic volumes in the month of March are 5 percent higher (factor of 0.95 in 2019 of the average month) and traffic volumes in the month of May are 12

percent higher (factor of 0.88 in 2019 of the average month) than average-month conditions. Therefore, the March and May 2022 traffic volumes were left unadjusted to reflect a conservative analysis condition. The compiled seasonal adjustment data is provided in Attachment D. The resulting 2022 Existing Year Conditions weekday arrival, weekday dismissal, and weekday evening peak hour traffic volumes are illustrated in Figure 2.

SAFETY ANALYSIS

Crash History Analysis

Crash reports for the project area were compiled and analyzed for a five-year period (2017 – 2021) on file with the MassDOT's Interactive Mapping Portal for Analysis and Crash Tracking (IMPACT) system. The motor vehicle crash data was reviewed to determine if any crash trends exist within the study area. A summary of the vehicle crash data and intersection crash rates are provided in Table 2.

Crash Rate Worksheets

In addition to examining the number of crashes at the study area intersection, a crash rate was calculated to compare the occurrence of crashes to the volume of traffic passing through the intersection. The crash rate per million entering vehicles (MEV) was calculated using the weekday evening peak hour volumes from the TMCs and a K-factor obtained from the Pulaski Street ATR. The crash rate at the study area intersections was compared to the statewide and district-wide averages published by MassDOT in June 2018 to determine the significance of the crash occurrence. The statewide average for signalized intersections is 0.78 and the District 4 average for signalized intersections is 0.73. The statewide average for unsignalized intersections is 0.57 and the District 4 average for unsignalized intersections is 0.57. Crash rates are calculated based on years of complete data only (2017 – 2019). A compilation of the MEV rate calculation worksheet and detailed crash data are provided in Attachment E.

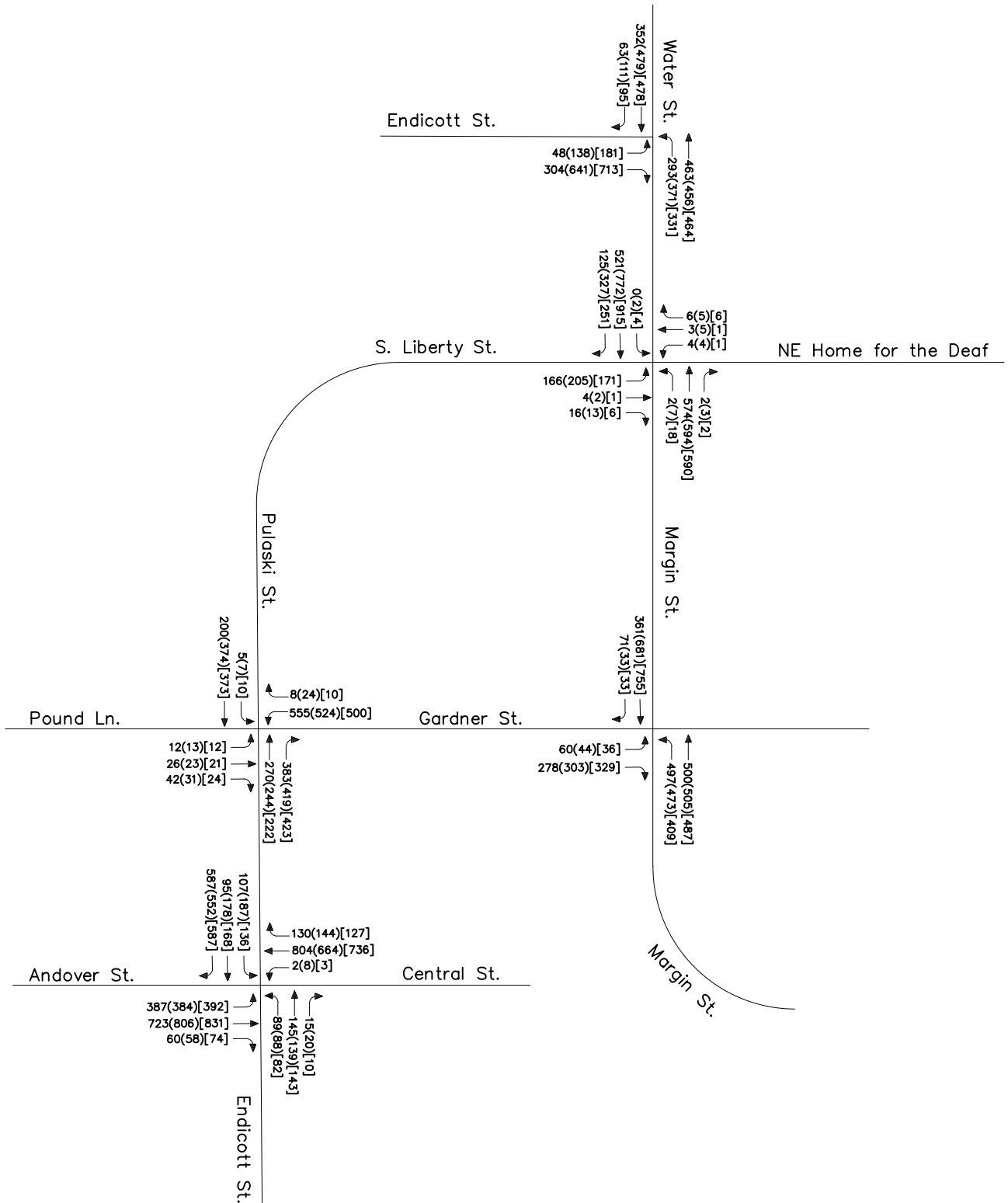
Crash Data Summary

Pulaski Street (Route 114) / Gardner Street (Route 114) / Pound Lane [City of Peabody]

The intersection of Pulaski Street / Gardner Street / Pound Lane [City of Peabody] experienced more than seven (7.33) crashes per year over the five-year study period, yielding a crash rate of 0.97 crashes per MEV. The crash rate for this intersection is significantly higher than the statewide and district-wide averages for signalized intersections. Half (14 of 28) crashes at this location were reported as rear-end crashes. An additional seven (7) crashes were single vehicle crashes and six (6) crashes were angled crashes. More than one-third (10 of 28) of the crashes at this location occurred during periods of wet or snow-covered pavement which may indicate that the grade through the intersection, which is steep along both Gardner Street and Pulaski Street, may be a contributing factor in crashes. Twelve (12) of the crashes occurred during the nighttime period between 6:00 PM and 6:00 AM when traffic volumes are relatively low comparative to the day. This may indicate that congestion through the intersection is not a leading cause of crashes.



Not to Scale



XXX(XXX)[XXX] = Weekday Arrival(Weekday Dismissal)[Weekday Evening]

Figure 2

2022 Existing Conditions
Weekday Arrival, Weekday Dismissal,
and Weekday Evening
Peak Hour Traffic Volumes



Table 2 – Intersection Crash Summary

Parameter		Water St. / Endicott St.	Water St. / S. Liberty St.	Margin St. / Gardner St.	Pulaski St. / Gardner St.	Pulaski St. / Andover St. / Central St. / Endicott St.
Crash Year	2017	3	0	2	11	13
	2018	1	3	2	6	15
	2019	4	2	3	5	8
	2020	3	2	0	4	13
	2021	<u>2</u>	<u>2</u>	<u>0</u>	<u>2</u>	<u>4</u>
	TOTAL	13	10	7	28	53
Average Annual Rate per MEV		2.67	1.67	2.33	7.33	12.00
		0.25	0.18	0.24	0.97	0.77
Manner of Collision	Angle	2	2	3	6	19
	Rear-end	2	7	2	14	21
	Sideswipe	2	0	1	1	12
	Single Vehicle	5	1	1	7	0
	Head-On	0	0	0	0	0
	Ped / Bike	0	0	0	0	0
	Other/NR	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>
	TOTAL	13	10	7	28	53
Road Surface Conditions	Dry	8	6	3	18	41
	Wet	4	3	1	6	11
	Snow / Ice	0	1	2	4	1
	Other / Unknown	<u>1</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>0</u>
	TOTAL	13	10	7	28	53
Injury Status (Crash Severity)	Property Damage	7	8	6	24	43
	Non-Fatal Injury	5	2	1	3	9
	Not Reported	<u>1</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>1</u>
	TOTAL	13	10	7	28	53
Day of Week	Monday-Friday	9	5	7	20	43
	Saturday-Sunday	<u>4</u>	<u>5</u>	<u>0</u>	<u>8</u>	<u>10</u>
	TOTAL	13	10	7	28	53
Time of Day	6:00AM-9:00AM	1	0	2	5	7
	9:00AM-3:00PM	3	5	3	7	15
	3:00PM-6:00PM	2	2	0	4	13
	6:00PM-6:00AM	<u>7</u>	<u>3</u>	<u>2</u>	<u>12</u>	<u>18</u>
	TOTAL	13	10	7	28	53

Andover Street (Route 114) / Central Street / Endicott Street / Pulaski Street (Route 114) [City of Peabody]

The intersection of Andover Street / Central Street / Endicott Street / Pulaski Street [City of Peabody] experienced twelve (12) crashes per year over the five-year study period, yielding a crash rate of 0.77 crashes per MEV. The crash rate for this intersection is comparable to the statewide and district-wide averages for signalized intersections. Approximately 40 percent (21 of 53) crashes at this location were reported as rear-end crashes which may be a result of the heavy congestion at the intersection during peak periods. An additional 35 percent (19 of 53) crashes were angled crashes. Twelve (12) crashes at the intersection were sideswipe crashes which is most likely the result of the multi-lane nature of each approach. One-quarter (12 of 53) of the crashes at this location occurred during periods of wet or snow-covered pavement. Nearly 40 percent of the crashes (20 of 52) occurred during one of the two commuter peak periods indicating that congestion through the intersection may be a leading cause of crashes.

All other study area intersections experienced less than three (3) crashes over the five-year study period with crash rates significantly lower than both the statewide and district-wide averages. Based on the low level of crash occurrences at these intersections, the data indicates that there are no notable crash trends.

Sight Distance Measurements

TEC measured the available sight distances at the intersection of Pulaski Street / Site Driveway West and Water Street / Site Driveway East. The available sight lines were compared to minimum requirements established by the American Association of State Highway and Transportation Officials (AASHTO).

Sight distance represents the length of the roadway that is visible to a driver traveling within the roadway. Two types of sight distance are typically evaluated for driveways and intersections: stopping sight distance (SSD) and intersection sight distance (ISD). SSD is the minimum distance required for a driver traveling along a roadway to perceive an object in the roadway and stop safely in advance of the object when traveling on a wet pavement surface. SSD is measured from an eye height of 3.5-feet to an object height of 2-feet above the ground, which is equivalent to a driver viewing the taillight of a vehicle ahead. SSD is measured along the centerline of the travel lane approaching the driveway or intersection.

ISD represents the length of the roadway visible to a driver waiting to exit a driveway or minor street. Minimum ISD requirements are based on the distance required for a driver to exit a minor street onto a major street without requiring an approaching vehicle to reduce its speed from the design speed to less than 70 percent of the design speed. ISD is measured from an eye height of 3.5-feet to an object height of 3.5-feet and is measured from a distance of 14.5-feet beyond the edge of the travel-way of the major roadway to represent a driver waiting to exit a driveway or minor roadway.

SSD is typically considered the critical sight distance, as it represents the minimum distance required for safe stopping, while ISD represents an acceptable speed reduction for approaching vehicles. The ISD, however, must be at least equal to the minimum required SSD in order to prevent a driver from entering the roadway when an approaching vehicle is too close to stop safely. The guidance provided by AASHTO states:

“If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. However, in some cases, this may require a major-road vehicle to stop or slow to accommodate the maneuver by a minor-road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road.”

Tables 3 and 4 provide a summary of the available SSD and ISD, respectively, at the driveways along Pulaski Street and Water Street.

Table 3 – Existing Stopping Sight Distance Measurements

Approach / Direction	Operating Speed	AASHTO Recommended Minimum	Measured Stopping Sight Distance
Site Driveway [West] at Pulaski Street: Pulaski Street Northbound Pulaski Street Southbound	37 MPH 38 MPH	270 FT 280 FT	>600 FT 375 FT
Site Driveway [East] at Water Street: Water Street Northbound Water Street Southbound	37 MPH ^a 37 MPH ^a	270 FT 280 FT	>600 FT 380 FT

^a Based on the posted speed plus 7 mph

Table 4 – Existing Intersection Sight Distance Measurements

Approach / Direction	Operating Speed	AASHTO Recommended Minimum	AASHTO Desired Minimum	Measured Intersection Sight Distance
Site Driveway [West] at Pulaski Street: <i>Looking (left) to the South</i> <i>Looking (right) to the North</i>	37 MPH 38 MPH	270 FT 280 FT	410 FT 420 FT	>600 FT >600 FT
Site Driveway [east] at Water Street: <i>Looking (left) to the North</i> <i>Looking (right) to the South</i>	37 MPH ^a 37 MPH ^a	280 FT 270 FT	410 FT 410 FT	105 FT >600 FT

^a Based on the posted speed plus 7 mph

As shown in Table 3, the SSD at both the Pulaski Street and Water Street Driveways exceeds AASHTO minimum recommendations. Although ISD is sufficient in both directions at the Pulaski Street Driveway (pending proper landscape treatments as part of the school development), the measured ISD looking north from the Water Street Driveway is lower than the AASHTO recommended length. The sight line is impeded by vegetation and a chain linked fence at the back of sidewalk. The Applicant will work with the Town of Danvers and the adjacent property owner on the maintain of this vegetation to further extend the sight line from the driveway location.

FUTURE CONDITIONS

Traffic volumes in the study area were projected to the year 2029, reflecting a 7-year planning horizon according to MassDOT standards for TIA. The traffic conditions for the year 2029, under No Build conditions, were developed to document the operating conditions independent of the proposed project, including all existing traffic, new traffic resulting from background growth, and traffic from specific developments in the vicinity of the site. Anticipated site generated traffic volumes for the proposed mixed-use development were superimposed upon the No Build traffic networks to reflect the Build conditions with the proposed project.

Background Traffic Growth

Traffic growth is a function of the expected land development in the immediate area and the surrounding region. Several methods can be used to estimate this growth. Traffic engineers frequently employ an annual percentage increase in traffic growth, which is applied to all traffic volumes under study. The drawback to such a procedure is that some turning volumes may actually grow at either a higher or a lower rate at particular intersections.

An alternative procedure identifies the location and type of planned development, estimates the traffic to be generated, and assigns it to the area roadway network. This procedure produces a more realistic estimate of growth for local traffic. However, the drawback of this procedure is that the potential growth in population and development external to the study area would not be accounted for in the traffic projections.

To provide a conservative analysis framework, both procedures were considered.

General Background Growth

To project traffic to a future horizon year, TEC utilized MassDOT published year-by-year annual growth data between 2016 and 2019. The data indicates that traffic volumes between 2016 and 2017 grew 1.7 percent for urban minor arterials, between 2017 and 2018 growing 0.3 percent, and between 2018 and 2019 decreasing 0.4 percent. This equates to an annual growth rate of approximately 0.5 percent per year on average between 2016 and 2019. To provide a consistent analysis scenario, a 0.5 percent per year compounded annual background traffic growth rate was used to account for potential future traffic growth external to the study area and any presently unforeseen development. MassDOT historic growth rate data have been included in Attachment F.

Specific Development by Others

TEC coordinated with the Town of Danvers and City of Peabody Planning Departments to identify nearby private / public development projects in the vicinity of the study area that are either in the planning process or were recently approved but not yet occupied. Based on these discussions, one (1) project in the vicinity was noted and is expected to contribute notable traffic to the study intersection, including the following:

- #58 Pulaski Street – The project includes the construction of a 51-unit multifamily residential development to be located within the existing building on-site located on the westerly side of Pulaski Street. To-date, a traffic study has not been completed by the project's proponent; however, the project's traffic engineering consultant, Vanasse and Associates, Inc., provided traffic volumes projections for the site based on their upcoming study submittal to the city.

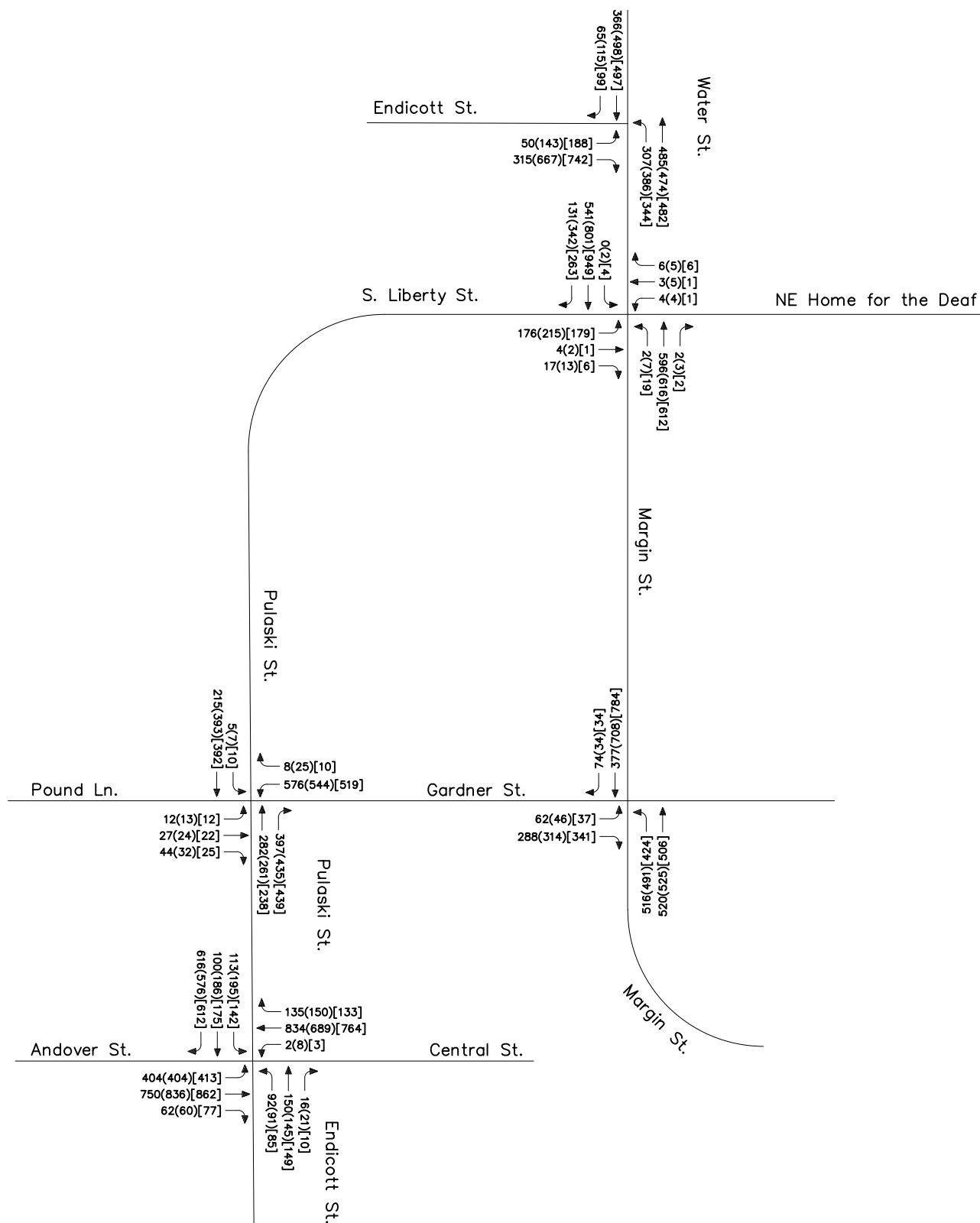
Trip generation data related to these specific developments by others are provided in Attachment G.

No Build Traffic Volumes

The 2029 No Build weekday arrival, weekday dismissal, and weekday evening peak hour traffic volume networks were developed by applying the 0.5 percent per year compounded annual background traffic growth rate to the 2022 Existing Conditions peak hour traffic volumes over the 7-year design horizon (9-years from Existing Condition) and adding traffic generated by the nearby proposed developments. The resulting 2029 No Build weekday arrival, weekday dismissal, and weekday evening peak hour traffic volume networks are illustrated in Figure 3.



Not to Scale



XXX(XXX)[XXX] = Weekday Arrival(Weekday Dismissal)[Weekday Evening]

Figure 3

2029 No-Build Conditions
Weekday Arrival, Weekday Dismissal,
and Weekday Evening
Peak Hour Traffic Volumes

Site Generated Traffic

The charter school is proposed to have a maximum enrollment of 594 students between Grades K to 8: including specifically 66 students per grade level. The school will provide a regional draw from surrounding communities and provide school bus service for approximately two-thirds of students dependent on their residence location. Detailed information on student residency and busing for students currently projected to attend the proposed school was provided by the Pioneer Charter School and utilized to estimate the number and distribution of trips generated by the school. In addition, the Pioneer Charter School provided information on the anticipated number of staff, buses, student drivers, parent pick-up/drop-off, and students/staff participating in after school activities by municipality. This information is summarized in Tables 5 and 6 below.

Table 5 – Pioneer Charter School Enrollment Summary

Student Population	594 students
Academic Levels	Grades K - 8
Staff Population	85 staff
AM Bussed / PM Bussed	400 students / 317 students
AM Drop-off / PM Pick-up	194 students / 177 students
Percent Students with Siblings ^a	25%
Number of Students for Extra-Curricular Activities ^b	100 students

^a Based on population of Everett and Saugus PCSS facilities

^b No bus service provided at end of extra-curricular activities.

Table 6 – Student and Staff Summary by Town/City

City/Town	Bus Service Provided	Estimated # of Students	Estimated # of Buses	Estimated # of Staff
Peabody	Yes	160	3	23
Danvers	Yes	160	3	23
Salem	Yes	8	0	1
Lynn	Yes	100	1	14
Saugus	Yes	100	1	14
Others	No	66	-	10
Total	-	594	8	85

^bThe residence of staff members was unknown at time of traffic study. Staff residence was distributed to each town/city using same distribution as student population.

The primary draw of students will be provided from Peabody and Danvers with a second-tier level of students from Lynn and Saugus. Note that Salem has been included separately based on its proximity to the site and its maximum charter school draw potential of eight (8) students. Other communities in the area will draw a very small number of students per community which results in a grouping of "Other" in the Tables above and below. The trip distribution for these "Other" communities has been weighted to/from the Route 128 access/egress.

Based upon the total enrollment summary in Table 5 provided by the Pioneer Charter School and the population by town/city break-down as shown in Table 6, site generated trips to/from the Pioneer Charter School were estimated for each time period. The trip generation summary is provided in Table 7.

Table 7 –Trip Generation Summary

Trip Type	City/Town	Weekday Arrival		Weekday Dismissal		Weekday Evening	
		Entering Trips	Exiting Trips	Entering Trips	Exiting Trips	Entering Trips	Exiting Trips
Student							
Pick-up and	Peabody	30	30	25	25	20	20
Drop-Off	Danvers	30	30	25	25	20	20
(194	Salem	2	2	1	1	1	1
students w/	Lynn	19	19	16	16	13	13
25% Sibling	Saugus	19	19	16	16	13	13
Rate)	Others	50	50	42	42	8	8
School Staff (85)	Peabody	23	-	-	-	-	23
	Danvers	23	-	-	-	-	23
	Salem	1	-	-	-	-	1
	Lynn	14	-	-	-	-	14
	Saugus	14	-	-	-	-	14
	Others	10	-	-	-	-	10
Bus (8)	Peabody	3	8*	8*	3	-	-
	Danvers	3	-	-	3	-	-
	Salem	-	-	-	-	-	-
	Lynn	1	-	-	1	-	-
	Saugus	1	-	-	1	-	-
TOTAL TRIP GENERATION		243	158	133	133	75	160

*Subsequent to the morning arrival and prior to the afternoon dismissal periods, buses are assumed to travel to/from Water Street to the south for stationing.

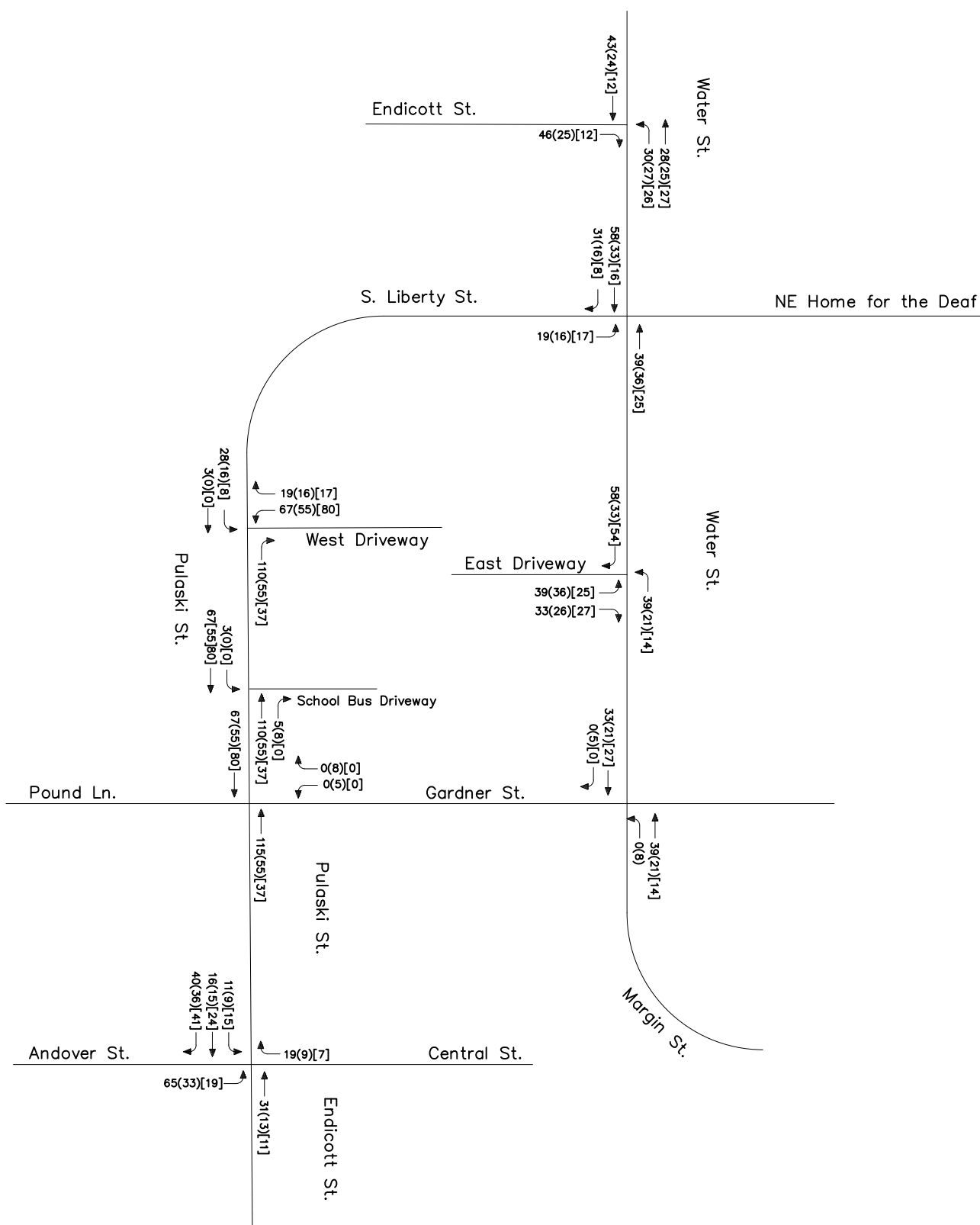
Trip Distribution

The distribution of site-generated traffic volumes was based upon a gravity model prepared using projected student residency and busing information. For each municipality, route choice was determined by vehicle travel time and total distance to/from the proposed Pioneer Charter School. As previously mentioned, the trip distribution for “Other” communities has been weighted to/from Route 128 access/egress with a lesser draw from Margin Street to the south and Water Street to the north.

The resulting primary trip distribution is summarized in Table 8 and the gravity model is included in Attachment H. The resulting site-generated traffic volume network is presented in Figure 4.

Table 8 – Trip Distribution by City/Town

Town/City	To/From Endicott Street [West]	To/From Water Street [North]	To/From Margin Street [South]	To/From Andover Street [West]	To/From Endicott Street [South]	To/From Central Street [South]	TOTAL
Peabody	-	-	10%	20%	30%	30%	100%
Danvers	50%	50%	-	-	-	-	100%
Salem	-	-	100%	-	-	-	100%
Lynn	-	-	66%	-	34%	-	100%
Saugus	-	-	-	100%	-	-	100%
Others	30%	25%	15%	30%	-	-	100%



XXX(XXX)[XXX] = Weekday Arrival(Weekday Dismissal)[Weekday Evening]

Figure 4

Site Trip Generation

Weekday Arrival, Weekday Dismissal and Weekday Evening Peak Hour Traffic Volumes

2029 Build Traffic Volumes

The 2029 Build Condition traffic volume networks consist of the 2029 No Build traffic volumes with the addition of the site generated traffic for the proposed school. The resulting 2029 Build weekday arrival, weekday dismissal, and weekday evening peak hour traffic volume networks are presented in Figure 5.

DAILY SCHOOL OPERATIONS

The charter school will be constructed to provide for a maximum enrollment of 594 students and 85 faculty/staff between Grades K to 8. The school will provide a regional draw from surrounding communities and provide school bus service for approximately two-thirds of students (400 – 440 students) dependent on student residence location. Operations at the school will be organized and implementation to limit impact to the surrounding roadways.

School Arrival and Dismissal

School arrival and dismissal operations will be documented in the school handbook and provided to the parents of the students prior to the school year. The school operates with the following arrival and dismissal times:

Table 9 – School Operations Summary ^(a)

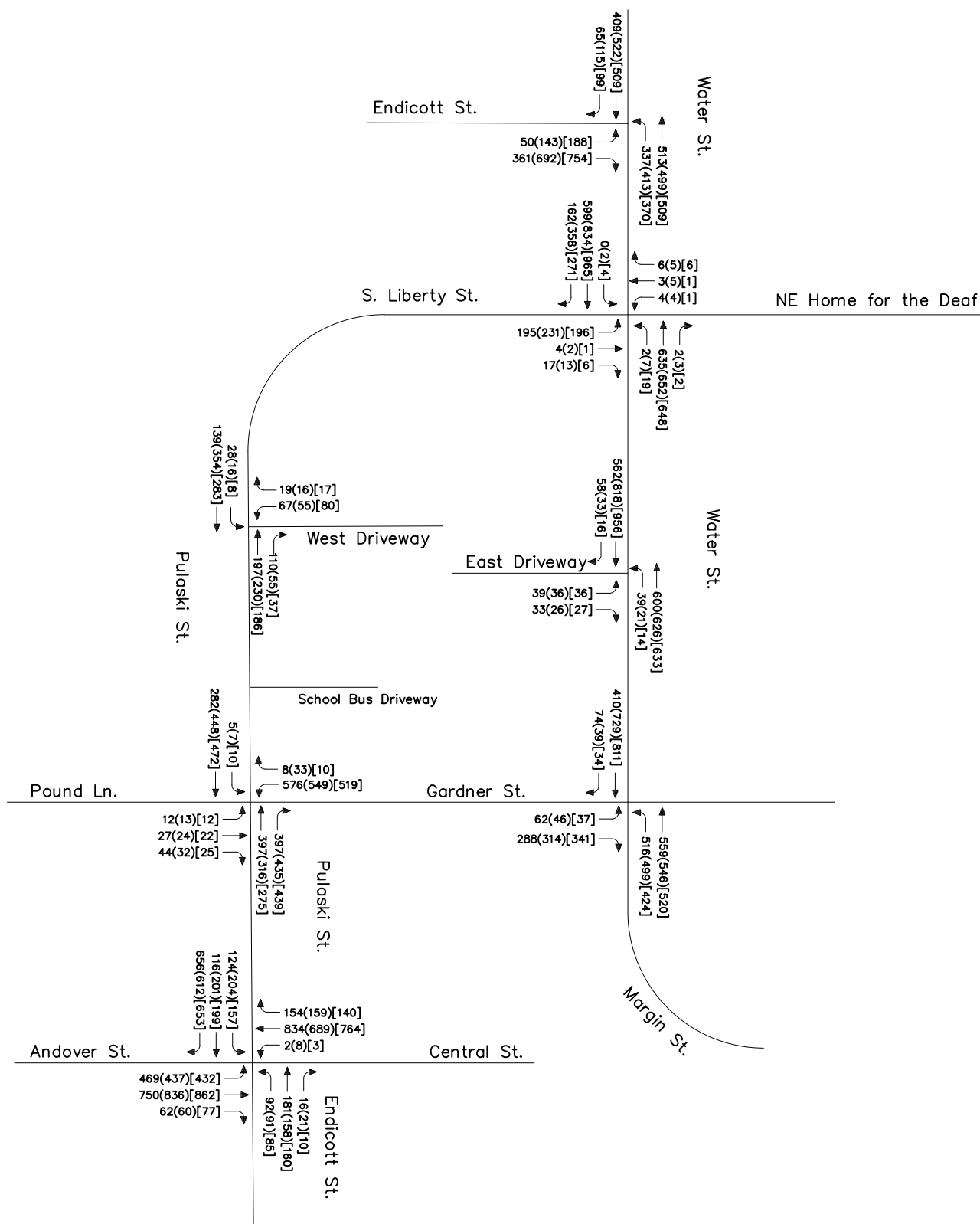
<u>School Action</u>	<u>Timeframe</u>	<u>Buses</u>	<u>Students</u>	<u>Faculty</u>
<i>School Arrival Period (School Starts 7:30am)</i>				
Faculty / Staff Arrival	6:30am – 7:30am	-	-	85
Student Drop-Off				
<i>Parent Drop-Off</i>	7:00am – 7:30am	-	194	-
<i>Bus Drop-Off</i>	7:15am – 7:30am	8	400	-
<i>School Dismissal Period (School Ends 3:20pm)</i>				
Student Pick-up				
<i>Parent Pick-up</i>	3:15pm – 3:45pm	-	177	-
<i>Bus Pick-up</i>	3:15pm – 3:45pm	8	317	-
<i>Extracurricular Dismissal Period (Activities End 4:30pm)</i>				
Faculty / Staff Leave	4:15pm – 5:00pm	-	-	85
Student Pick-up				
<i>Parent Pick-up</i>	4:30pm – 5:00pm	-	100	-

^a Times listed above may slightly vary

The school will make faculty / staff personnel available to be stationed at key locations on-site to facilitate student pick-up and drop-off procedures, including, directing parent traffic to/from designated pick-up and drop-off areas and stacking areas. Both pick-up and drop-off periods will consist of two separate timeframes for specific grade levels. The staggered times will allow for approximately half of the student population to be dropped-off and/or picked-up in an one period.



Not to Scale



XXX(XXX)[XXX] = Weekday Arrival(Weekday Dismissal)[Weekday Evening]

Figure 5

2029 Build Conditions
Weekday Arrival, Weekday Dismissal,
and Weekday Evening
Peak Hour Traffic Volumes



For the purposes of the traffic operational analysis provided in this study, the following timeframes were evaluated based on both the school's arrival / dismissal periods and the general commuter flow of traffic in the study area:

- Weekday Morning Arrival (7:00 AM to 8:00 AM) encompassing the peak flow of commuter traffic in the study area and inclusive of the entirety of the school arrival drop-off period.
- Weekday Afternoon / Dismissal (3:00 PM to 4:00 PM) encompassing the peak flow of afternoon traffic in the study area and inclusive of the entirety of the school's normal dismissal pick-up period.
- Weekday Evening (4:00 PM to 5:00 PM) encompassing the peak flow of evening commuter traffic and extracurricular dismissal.

Pick-Up, Drop-Off, and Circulation Procedures

Buses

Approximately 400 – 440 students per day will be bussed to the school. Whereas buses are not provided for the extracurricular portion of the school day, proportionally less students will be serviced by buses following school dismissal based specifically on the rate of extracurricular attendance. All off-site capacity and queue analyses assume the 400-student usage to provide a worst-case scenario. The buses will service only five (5) communities in closer proximity to the school, including, Danvers, Peabody, Salem, Lynn, and Saugus.

Regardless of origin, all buses will enter the site via the School Bus Driveway along Pulaski Street at the site's southwest corner. Buses will utilize the designated bus pick-up / drop-off zone on-site along the westerly side and northerly side of the school building. This designated area has been designed to accommodate up to eight (8) school buses on-site without stacking onto Pulaski Street. School bus pick-up and drop-off procedures include:

- During school arrival, buses will travel towards the front entrance of the school within this dedicated zone and immediate exit to Water Street following drop-off. Although all eight (8) buses can be accommodated within this zone, it is expected that all eight (8) buses would not be present at any one-time during school arrival.
- During school dismissal, buses will travel stack within the dedicated zone with the first bus near the school's front entrance. All eight (8) buses will be provided opportunity to accept students at the same time, although the school anticipates a staggered dismissal. Upon completing student pick-up, each bus will exit to Water Street and turn left or right towards its destination.

Students and Parents

Approximately 194 students (assuming 400 bussed students) are expected to drive to school from all participating communities. Since the school system typically observes a 25% sibling rate, only 150 parent vehicles are expected during the school arrival period. This number of parent vehicles is expected to be less during the school dismissal period, 125 parent vehicles, because of student participation in extracurricular activities.

Parents driving their child(ren) to school will be allowed to enter and exit the school from both the Pulaski Street and Water Street driveways. The school will establish a set area and organization for parents dropping-off and picking up their child(ren). This will be broadcast to all school parents. School bus pick-up and drop-off procedures include:

- During school arrival, parents will enter via either the Pulaski Street or Water Street driveway and proceed to the easternmost parking drive aisle. Drivers will circulate in a clockwise motion to the westernmost parking drive aisle and release the child(ren) at the northernmost point near the school front entrance/exit. The area will allow for nineteen (19) vehicles to queue prior to encroaching on the site's main drive aisle. Whereas parents are expected to arrive, release, and leave at a quick interval, multiple vehicle queuing is not expected to be a common or detrimental occurrence. Upon acceptance of the child(ren), parents will exit the site via either the Pulaski Street or Water Street driveways.
- During school dismissal, parents will enter via either the Pulaski Street or Water Street driveway and proceed to the easternmost parking drive aisle. Drivers will circulate in a clockwise motion to the westernmost parking drive aisle and wait for the child(ren) to be dismissed from the school at the northernmost point near the school front entrance/exit. The area will allow for nineteen (19) vehicles to queue prior to encroaching on the site's main drive aisle. An additional seven (7) vehicles will be able to queue within the central parking drive aisle if needed and will be directed to do so within the on-site faculty/staff monitoring pick-up procedures. The dismissal time of students will be staggered by grade levels, a timeframe established and conveyed to the parents, where the school expected turnover of the stacking to occur at a quickened interval to limit queuing.
- Parents who need to utilize school offices or have other needs that may need to avoid the typical queuing area noted above, will be able to utilize 22 short-term parking spaces along the site's main drive aisle.

TRAFFIC IMPACT ANALYSIS

To assess the quality of future traffic flow with each alternative, roadway capacity and vehicle queue analyses were conducted under 2022 Existing Conditions, 2029 No Build, 2029 Build, and 2029 Build with Mitigation 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. Synchro 11™ software was used to perform the analysis.

Methodology

The signalized intersection capacity and queue analysis were conducted using methodology from the *Highway Capacity Manual 2000 (HCM 2000)* due to the restrictions posed on signalized intersection analysis using Synchro 11™ by the more recently published *HCM 6th Edition*. This includes the inability of *HCM 6th Edition* to correctly analyze custom signal phasing and exclusive pedestrian phases which is present at a study area intersection. All signalized intersection capacity and queue analyses were conducted using *HCM 2000* methodology to remain consistent

throughout the study. Unsignalized intersection capacity and queue analyses will utilize the more updated *HCM 6th Edition*.

MassDOT has recognized the significant errors and deficiencies in the *HCM 6th Edition* methodology and traffic impact software such as Synchro when attempting to analyze traffic signals. Based on conversations with the MassDOT – Highway Division's Traffic Section, alternate methodologies to analyze capacity, delays, and queues can be conducted as long as the models are properly calibrated.

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 the worst. 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.

Queue Length Analysis

Vehicle queue analyses are a direct measurement of an intersection's ability to process vehicles under various traffic control and volume scenarios and lane use arrangements. The vehicle queue analysis was performed using the Synchro 11TM intersection capacity analysis software, which is also based upon the methodology and procedures presented in the *HCM*. Synchro reports the 95th percentile queues for unsignalized intersections and both the 50th (average) and 95th percentile vehicle queues for signalized intersections, which are based on the number of vehicles that experience a delay of six seconds or more at an intersection and is a function of the traffic signal timing; vehicle arrival patterns during the analysis period; and the saturation flow rate. The 50th percentile or average vehicle queue is the average number of vehicles that are projected to be delayed by six seconds or more at the intersection under study during the analysis period. The 95th percentile vehicle queue is the vehicle queue length that will be exceeded only five percent of the time, or approximately three minutes out of 60 minutes during the peak one hour of the day. During the remaining 57 minutes, the vehicle queue length will be less than the 95th percentile queue length.

Parameters for Traffic Impact Analysis

Unsignalized Intersections

The levels of service of two-way stop-controlled unsignalized intersections are determined by the application of a procedure described in the *HCM 6th Edition*. The 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 the level of service at unsignalized intersections are also given in the *HCM 6th Edition*.

Table 10 summarizes the relationship between LOS and control delay. The tabulated control delay criterion may be applied in assigning LOS designations to individual lane groups, to individual intersection approaches, or to entire intersections.

Table 10 – Level of service Criteria for Unsignalized Intersections ^(a)

Level of Service ($v/c \leq 1.0$)	Level of Service ($v/c > 1.0$)	Average Control Delay (sec/veh)	Description
A	F	≤ 10.0	LOS A represents a condition with little or no control delay to minor street traffic.
B	F	10.1 to 15.0	LOS B represents a condition with short control delays to minor street traffic.
C	F	15.1 to 25.0	LOS C represents a condition with average control delays to minor street traffic.
D	F	25.1 to 35.0	LOS D represents a condition with long control delays to minor street traffic.
E	F	35.1 to 50.0	LOS E represents operating conditions at or near capacity level, with exceptionally long control delays to minor street traffic.
F	F	> 50.0	LOS F represents a condition where minor street demand volume exceeds capacity of an approach lane, with excessive control delays resulting.

^a Source: *Highway Capacity Manual 6th Edition*; Transportation Research Board; Washington D.C.; 2017

Signalized Intersections

The level of service for the signalized intersection is calculated using the operational analysis methodology of the *HCM 2000*. 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 can be related to 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 11 summarizes the relationship between the 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.

Table 11 – Level of Service Criteria for Signalized Intersections ^(a)

Level of Service ($v/c \leq 1.0$)	Average Control Delay (seconds per vehicle)	Description
A	≤ 10.0	LOS A describes operations with exceptionally low control delay; most vehicles do not stop at all.
B	10.1 to 20.0	LOS B describes operations with relatively low control delay. However, more vehicles stop than LOS A.
C	20.1 to 35.0	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.
D	35.1 to 55.0	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, whereby motorists are not able to get through the signal on one cycle.
E	55.1 to 80.0	LOS E describes operations with high control delay values. Individual cycle failures are frequent occurrences.
F	> 80.0	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.

^a Source: *Highway Capacity Manual 2000*; Transportation Research Board; Washington D.C.; 2000

Traffic Impact Analysis Results

Level of service analyses were conducted for the 2022 Existing Condition, 2029 No Build Condition, and 2029 Build Condition for the study area intersections. The results of the intersection capacity analysis are summarized in Table 12. The capacity analysis worksheets are provided in Attachment I.

Water Street (Route 35) / Endicott Street [Town of Danvers]

The Endicott Street eastbound right-turn and the Water Street northbound left-turn movements are anticipated to operate at degraded levels of service during the weekday dismissal period for both the No Build and Build conditions. All other movements at this intersection during each other time period are anticipated to operate at acceptable levels of service (LOS D or better) with volume-to-capacity (V/C) ratios well below 1.00 indicating each movement has adequate capacity to process the demand. Upon modifications to the traffic signal timings following introduction of school related traffic, the operations on both the Endicott Street eastbound right-turn and the Water Street northbound left-turn improve to acceptable levels of service (LOS D or better).

Water Street (Route 35) / S. Liberty Street [Town of Danvers]

Under Build Conditions, all movements at the intersection are expected to operate at acceptable levels of service (LOS D or better) during all peak hour analysis scenarios V/C ratios well below 1.00 indicating each movement has adequate capacity to process the demand. No project-specific mitigation is proposed or warranted at this location.

Water Street (Route 35) / Site Driveway East [Town of Danvers]

The Site Driveway along Water Street is anticipated to operate under elevated levels of service during each of the associated time periods where traffic is expected to exit from the site. Although the driveway operates at LOS F during the weekday evening period, the delay is specifically off the mainline roadway. It is expected that this level of delay along the driveway will not fully materialize as the analysis does not take into account gaps in the traffic flow that will be presented by the upstream traffic signal located at Water Street / S. Liberty Street. The analysis also shows that delay along the Water Street northbound approach is projected to be minimal (11 seconds or less per vehicle) with the introduction of left-turning traffic into the site within the northbound lane. Additionally, the queue along the site driveway during any peak period is not anticipated to extend more than three (3) vehicles.

Margin Street (Route 35) / Gardner Street (Route 114) [City of Peabody]

The Gardner Street eastbound movements experience significant delay during all specified time periods during both the No Build and Build scenario. The school's projected traffic has a minimal impact at the unsignalized intersection resulting in the extension of existing queuing by less than one (1) vehicle. Although the intersection does operate in a deficient manner, the Project is only expected to increase traffic at the intersection by approximately 1 new vehicle per minute or less on average generally equating to an increase in overall traffic by 4% during the school arrival period, 2.5% during the school dismissal period, and 2% during the weekday evening peak period. No project-specific mitigation is proposed or warranted at this location.

Pulaski Street / Site Driveway West [City of Peabody]

Under Build Conditions, all movements at the intersection are expected to operate at acceptable levels of service (LOS D or better) during all peak hour analysis scenarios V/C ratios well below 1.00 indicating each movement has adequate capacity to process the demand.

Pulaski Street (Route 114) / Gardner Street (Route 114) / Pound Lane [City of Peabody]

Under Build Conditions, all movements at the intersection are expected to operate at acceptable levels of service (LOS D or better) during all peak hour analysis scenarios V/C ratios well below 1.00 indicating each movement has adequate capacity to process the demand. No project-specific mitigation is proposed or warranted at this location.

Andover Street (Route 114) / Central Street / Endicott Street / Pulaski Street (Route 114) [City of Peabody]

Under both the No Build and Build conditions, several movements at the intersection of Andover Street / Central Street / Endicott Street / Pulaski Street are anticipated to operate with degraded levels of service during each of the peak periods of the day. The Applicant is committed to work with the City of Peabody to monitor, modify phasing, and optimize traffic signal timings post-occupancy, if necessary, through joint field observations with the city. The analysis shows that with modifications to the Andover Street eastbound phasing to permit permissive left-turns following the protected phase, as well as optimizing all signal timings, will result in a significant improvement to traffic operations. With these improvements, the post-occupancy Build condition will be comparable to operations observed in the No Build condition.

TEC's recommends that the Andover Street eastbound phasing be modified from a protected phase to a protected-permissive phase. TEC evaluated the sight distance forward from the left-turn vehicle position and notes that sufficient sight distance is available to allow for permissive phasing. Although the opposing movement along Central Street westbound is two lanes, the presence of two lanes does not preclude the ability to implement this type of phasing as long as sight distance is available.

Table 11 – Capacity and Queue Analysis Summary

	2022 Existing Condition				2029 No Build Condition				2029 Build Condition				2029 Build Mitigation Condition				
Intersection / Lane Group	V/C ^a	Delay ^b	LOS ^c	Queue ^d	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue	
Water Street / Endicott Street																	
<i>Weekday Arrival Peak Period</i>																	
Endicott Street EBL	0.54	41.1	D	48/57	0.50	41.5	D	28/68	0.40	39.8	D	30/68	0.50	38.5	D	28/68	
Endicott Street EBR	0.72	22.6	C	248/248	0.46	17.0	B	117/212	0.52	18.5	B	155/251	0.59	20.8	C	152/251	
Water Street NBL	0.57	26.4	C	167/270	0.53	23.5	C	149/270	0.61	27.3	C	180/300	0.70	27.5	C	178/300	
Water Street NBT	0.82	32.1	C	265/391	0.79	28.6	C	247/391	0.82	31.1	C	269/424	0.74	22.0	C	242/424	
Water Street SB	0.63	23.8	C	208/314	0.61	21.9	C	196/307	0.66	23.6	C	224/348	0.59	17.7	B	202/348	
Intersection	0.81	26.9	C	-	0.66	23.9	C	-	0.72	25.9	C	-	0.74	22.1	C	-	
<i>Weekday Dismissal Peak Period</i>																	
Endicott Street EBL	0.64	33.9	C	57/124	0.65	35.2	D	61/128	0.66	36.5	D	63/128	0.64	43.4	D	87/151	
Endicott Street EBR	1.02	62.6	E	281/594	1.07	78.8	E	342/626	1.14	102.7	F	387/657	0.92	40.4	D	408/662	
Water Street NBL	1.08	96.3	F	216/462	1.14	119.4	F	240/485	1.26	164.7	F	282/520	0.84	40.4	D	265/455	
Water Street NBT	0.64	17.1	B	162/277	0.66	17.4	B	172/291	0.67	17.6	B	187/313	0.78	30.2	C	277/418	
Water Street SB	0.70	18.6	B	198/333	0.72	19.1	B	212/352	0.73	19.2	B	226/374	0.85	34.6	C	340/521	
Intersection	0.94	45.4	D	-	0.98	54.5	D	-	1.01	69.8	E	-	0.95	36.9	D	-	
<i>Weekday Evening Peak Period</i>																	
Endicott Street EBL	0.67	44.4	D	112/185	0.69	45.3	D	117/192	0.69	45.6	D	117/192	0.69	45.8	D	117/192	
Endicott Street EBR	0.89	34.3	C	412/667	0.93	40.2	D	444/712	0.95	44.1	D	459/730	0.94	43.5	D	459/730	
Water Street NBL	0.67	34.8	C	208/336	0.70	36.7	D	216/364	0.75	39.6	D	238/409	0.75	35.8	D	238/409	
Water Street NBT	0.77	31.8	C	270/422	0.78	32.7	C	283/438	0.82	35.0	C	306/504	0.82	35.4	D	306/504	
Water Street SB	0.84	35.7	D	341/533	0.86	37.4	D	360/583	0.87	38.5	D	370/602	0.87	38.9	D	370/602	
Intersection	0.92	35.0	C	-	0.95	37.8	D	-	0.97	40.1	D	-	0.97	39.5	D	-	
Water Street / S. Liberty Street																	
<i>Weekday Arrival Peak Period</i>																	
S. Liberty Street EBL	0.70	27.3	C	50/102	0.71	25.9	C	45/108	0.66	22.7	C	58/122	No Mitigation Proposed				
S. Liberty Street EBT/R	0.03	16.4	B	<25/<25	0.03	15.3	B	<25/<25	0.02	14.9	B	<25/<25					
NEHD Driveway WB	0.04	16.5	B	<25/<25	0.04	15.4	B	<25/<25	0.03	14.9	B	<25/<25					
Water Street NBL	0.01	3.9	A	<25/<25	0.01	4.1	A	<25/<25	0.01	4.8	A	<25/<25					
Water Street NBT/R	0.62	7.1	A	126/212	0.59	6.9	A	110/224	0.66	9.0	A	134/248					
Water Street SBL/T	0.67	7.9	A	147/170	0.52	6.2	A	94/189	0.60	8.1	A	120/220					
Water Street WBR	0.11	4.1	A	<25/<25	0.08	4.3	A	<25/<25	0.10	5.1	A	<25/<25					
Intersection	0.68	9.2	A	-	0.62	8.8	A	-	0.66	10.0	B	-					
<i>Weekday Dismissal Peak Period</i>																	
S. Liberty Street EBL	0.75	26.0	C	79/124	0.70	24.7	C	68/149	0.73	26.4	C	75/164					
S. Liberty Street EBT/R	0.02	14.5	B	<25/<25	0.01	15.4	B	<25/<25	0.01	15.2	B	<25/<25					
NEHD Driveway WB	0.03	14.5	B	<25/<25	0.02	15.5	B	<25/<25	0.02	15.3	B	<25/<25					
Water Street NBL	0.04	5.4	A	<25/<25	0.04	5.1	A	<25/<25	0.05	5.3	A	<25/<25					
Water Street NBT/R	0.60	8.5	A	121/206	0.60	8.2	A	125/217	0.64	9.0	A	140/239					
Water Street SBL/T	0.76	12.0	B	183/314	0.76	11.7	B	190/360	0.80	13.2	B	210/435					
Water Street WBR	0.20	5.9	A	<25/28	0.21	5.6	A	<25/28	0.22	5.8	A	<25/29					
Intersection	0.75	11.8	B	-	0.74	11.1	B	-	0.78	12.2	B	-					
<i>Weekday Evening Peak Period</i>																	
S. Liberty Street EBL	0.76	31.9	C	58/105	0.74	30.3	C	55/110	0.68	25.8	C	61/120					
S. Liberty Street EBT/R	0.01	17.0	B	<25/<25	0.01	17.2	B	<25/<25	0.01	16.8	B	<25/<25					
NEHD Driveway WB	0.01	17.1	B	<25/<25	0.01	17.2	B	<25/<25	0.01	16.9	B	<25/<25					
Water Street NBL	0.13	4.4	A	<25/<25	0.15	4.6	A	<25/<25	0.16	5.5	A	<25/<25					
Water Street NBT/R	0.57	6.5	A	121/225	0.57	6.4	A	118/232	0.63	8.2	A	136/254					
Water Street SBL/T	0.80	11.4	B	222/501	0.83	12.5	B	234/529	0.87	16.9	B	254/541					
Water Street WBR	0.15	4.3	A	<25/<25	0.16	4.2	A	<25/25	0.16	5.1	A	<25/25					
Intersection	0.79	11.0	B	-	0.81	11.2	B	-	0.82	13.4	B	-					

^a Volume-to-capacity ratio,
^b Delay expressed in seconds per vehicle (average)
^c Level of service,
^d 50th/95th Percentile Queue [95th Percentile Queue only for unsignalized intersections]

Table 11 (Continued) – Capacity and Queue Analysis Summary

	2022 Existing Condition				2029 No Build Condition				2029 Build Condition				2029 Build Mitigation Condition							
Intersection / Lane Group	V/C ^a	Delay ^b	LOS ^c	Queue ^d	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue				
Water Street / Site Driveway [East]																				
<i>Weekday Arrival Peak Period</i>																				
Site Driveway EB	-	-	-	-	-	-	-	-	0.36	31.0	D	40	No Mitigation Proposed							
Water Street NBL	-	-	-	-	-	-	-	-	0.05	9.1	A	<25								
<i>Weekday Dismissal Peak Period</i>																				
Site Driveway EB	-	-	-	-	-	-	-	-	0.42	42.2	E	45								
Water Street NBL	-	-	-	-	-	-	-	-	0.03	9.8	A	<25								
<i>Weekday Evening Peak Period</i>																				
Site Driveway EB	-	-	-	-	-	-	-	-	0.53	60.0	F	63								
Water Street NBL	-	-	-	-	-	-	-	-	0.02	10.5	B	<25								
Margin Street / Gardner Street																				
<i>Weekday Arrival Peak Period</i>																				
Gardner Street EBL	>2.0	>999	F	225	>2.0	>999	F	208	>2.0	>999	F	215	No Mitigation Proposed							
Gardner Street EBR	0.56	18.2	C	85	0.52	17.1	B	75	0.54	18.3	C	80								
Margin Street NBL	0.53	12.1	B	80	0.52	11.9	B	78	0.54	12.4	B	83								
<i>Weekday Dismissal Peak Period</i>																				
Gardner Street EBL	>2.0	>999	F	165	>2.0	>999	F	180	>2.0	>999	F	185								
Gardner Street EBR	0.78	38.2	E	168	0.84	46.6	E	198	0.87	51.9	F	213								
Margin Street NBL	0.61	15.7	C	108	0.65	16.9	C	120	0.67	18.1	C	133								
<i>Weekday Evening Peak Period</i>																				
Gardner Street EBL	>2.0	890.3	F	135	>2.0	939.3	F	135	>2.0	>999	F	140								
Gardner Street EBR	1.08	106.9	F	343	1.05	96.8	F	323	1.09	110.7	F	348								
Margin Street NBL	0.56	15.8	C	90	0.58	15.9	C	93	0.59	16.5	C	98								
Pulaski Street / Site Driveway [West]																				
<i>Weekday Arrival Peak Period</i>																				
Site Driveway WB	-	-	-	-	-	-	-	-	0.17	12.6	B	<25	No Mitigation Proposed							
Pulaski Street SBL	-	-	-	-	-	-	-	-	0.03	8.0	A	<25								
<i>Weekday Dismissal Peak Period</i>																				
Site Driveway WB	-	-	-	-	-	-	-	-	0.17	14.7	B	<25								
Pulaski Street SBL	-	-	-	-	-	-	-	-	0.02	7.9	A	<25								
<i>Weekday Evening Peak Period</i>																				
Site Driveway WB	-	-	-	-	-	-	-	-	0.20	13.5	B	<25								
Pulaski Street SBL	-	-	-	-	-	-	-	-	0.01	7.7	A	<25								
Pulaski Street / Gardner Street																				
<i>Weekday Arrival Peak Period</i>																				
Pound Lane EBL/T	0.28	34.3	C	<25/55	0.25	32.9	C	<25/56	0.26	36.0	D	<25/56	No Mitigation Proposed							
Pound Lane EBR	0.03	32.5	C	<25/<25	0.03	31.3	C	<25/<25	0.03	34.3	C	<25/<25								
Gardner Street WB	0.80	25.0	C	263/402	0.76	23.3	C	223/421	0.78	26.3	C	270/421								
Pulaski Street NBT	0.60	26.0	C	142/235	0.60	24.6	C	131/242	0.75	30.1	C	213/389								
Pulaski Street NBR	0.26	4.3	A	<25/<25	0.26	4.4	A	<25/<25	0.27	4.1	A	<25/<25								
Pulaski Street SB	0.14	23.7	C	110/175	0.46	22.3	C	97/187	0.54	23.5	C	141/246								
Intersection	0.67	20.4	C	-	0.64	19.0	B	-	0.72	22.1	C	-								
<i>Weekday Dismissal Peak Period</i>																				
Pound Lane EBL/T	0.27	34.3	C	<25/53	0.26	34.4	C	<25/55	0.27	36.3	D	<25/55								
Pound Lane EBR	0.02	32.5	C	<25/<25	0.02	32.7	C	<25/<25	0.02	34.4	C	<25/<25								
Gardner Street WB	0.77	24.8	C	244/393	0.75	24.4	C	240/408	0.78	26.8	C	271/424								
Pulaski Street NBT	0.47	22.6	C	106/195	0.49	22.6	C	114/209	0.57	24.1	C	148/256								
Pulaski Street NBR	0.26	4.2	A	<25/<25	0.27	4.3	A	<25/<25	0.27	4.1	A	<25/<25								
Pulaski Street SB	0.67	26.7	C	178/306	0.69	27.1	C	188/324	0.75	29.4	C	230/404								
Intersection	0.68	20.4	C	-	0.68	20.2	C	-	0.72	22.1	C	-								

^a Volume-to-capacity ratio,
^b Delay expressed in seconds per vehicle (average)
^c Level of service,
^d 50th/95th Percentile Queue [95th Percentile Queue only for unsignalized intersections]

Table 11 (Continued) – Capacity and Queue Analysis Summary

	2022 Existing Condition				2029 No Build Condition				2029 Build Condition				2029 Build Mitigation Condition			
Intersection / Lane Group	V/C ^a	Delay ^b	LOS ^c	Queue ^d	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue	V/C	Delay	LOS	Queue
Pulaski Street / Gardner Street																
<i>Weekday Evening Peak Period</i>																
Pound Lane EBL/T	0.33	35.2	D	<25/50	0.32	35.3	D	<25/51	0.32	36.9	D	<25/51	No Mitigation Proposed			
Pound Lane EBR	0.02	32.5	C	<25/<25	0.02	32.7	C	<25/<25	0.02	34.3	C	<25/<25				
Gardner Street WB	0.68	21.4	C	200/342	0.70	22.0	C	216/362	0.73	24.5	C	228/362				
Pulaski Street NBT	0.40	19.5	B	91/183	0.43	19.9	B	101/196	0.46	19.9	B	119/227				
Pulaski Street NBR	0.27	3.8	A	<25/<25	0.28	3.8	A	<25/<25	0.28	3.7	A	<25/<25				
Pulaski Street SB	0.69	24.6	C	188/342	0.70	25.2	C	196/354	0.78	28.4	C	250/495				
Intersection	0.66	17.9	B	-	0.67	18.2	C	-	0.72	20.2	C	-				
Pulaski Street / Central Street																
<i>Weekday Arrival Peak Period</i>																
Andover Street EBL	0.93	61.1	E	280/488	0.89	50.7	D	264/503	1.07	97.4	F	395/614	0.93	50.0	D	285/517
Andover Street EBT/R	0.80	18.3	B	420/667	0.78	15.8	B	358/698	0.81	19.3	B	441/706	0.81	19.1	B	437/698
Central Street WBL/T	0.98	59.0	E	372/434	0.89	42.3	D	283/454	0.93	50.0	D	313/454	0.93	50.0	D	313/454
Central Street WBR	0.23	26.6	C	45/87	0.20	25.2	C	35/93	0.25	27.7	C	49/109	0.25	27.7	C	49/109
Endicott Street NB	0.94	67.2	E	201/258	0.96	76.3	E	173/306	0.96	75.2	E	201/361	0.96	75.2	E	201/361
Pulaski Street SBL/T	0.70	38.3	D	125/211	0.80	47.0	D	132/220	0.83	50.7	D	155/278	0.83	50.7	D	155/278
Pulaski Street SBR	0.68	17.7	B	241/364	0.72	18.8	B	263/398	0.74	19.4	B	296/451	0.74	19.4	B	296/451
Intersection	0.95	40.4	D	-	0.91	34.6	C	-	0.99	44.7	D	-	0.97	38.2	C	-
<i>Weekday Dismissal Peak Period</i>																
Andover Street EBL	0.88	48.3	D	227/380	0.89	49.3	D	229/408	0.92	53.7	D	255/460	0.87	37.6	D	199/359
Andover Street EBT/R	0.81	17.3	B	347/522	0.84	19.1	B	369/563	0.83	18.1	B	373/568	0.90	28.2	C	436/738
Central Street WBL/T	0.84	35.8	D	244/276	0.80	34.5	C	218/286	0.81	35.5	D	218/286	0.88	43.2	D	233/338
Central Street WBR	0.25	24.3	C	40/79	0.23	24.8	C	33/84	0.24	25.6	C	36/89	0.27	27.4	C	41/100
Endicott Street NB	1.55	305.0	F	251/404	1.68	361.7	F	250/422	>2.0	674.7	F	291/466	1.21	159.6	F	230/394
Pulaski Street SBL/T	1.23	163.2	F	311/490	1.29	183.0	F	316/516	1.45	253.1	F	353/559	1.15	126.9	F	323/514
Pulaski Street SBR	0.62	15.4	B	208/323	0.63	14.9	B	196/341	0.67	15.7	B	218/379	0.65	14.2	B	215/333
Intersection	1.10	63.5	E	-	1.17	71.0	E	-	1.37	105.9	F	-	1.08	52.0	D	-
<i>Weekday Evening Peak Period</i>																
Andover Street EBL	0.96	76.5	E	268/582	1.01	90.8	F	287/624	1.06	103.8	F	305/659	1.05	93.5	F	255/613
Andover Street EBT/R	0.94	39.5	D	512/1110	0.97	46.7	D	551/1174	0.97	47.2	D	554/1172	1.02	61.7	E	594/1211
Central Street WBL/T	0.89	50.9	D	268/493	0.94	57.8	E	284/528	0.94	57.8	E	284/528	1.02	78.1	E	292/557
Central Street WBR	0.17	32.6	C	<25/87	0.18	32.8	C	26/93	0.20	33.0	C	30/101	0.20	32.2	C	29/100
Endicott Street NB	0.99	91.4	F	174/420	0.99	90.2	F	175/427	1.21	168.1	F	221/484	0.97	82.0	F	180/440
Pulaski Street SBL/T	0.96	76.5	E	226/500	0.96	74.9	E	224/514	1.09	114.4	F	283/599	0.99	80.0	F	253/571
Pulaski Street SBR	0.53	17.0	B	74/257	0.52	16.9	B	74/275	0.57	17.9	B	98/336	0.58	18.6	B	105/350
Intersection	0.98	49.2	D	-	1.00	54.2	D	-	1.08	65.9	E	-	1.04	63.1	E	-

^a Volume-to-capacity ratio,
^b Delay expressed in seconds per vehicle (average)
^c Level of service,
^d 50th/95th Percentile Queue [95th Percentile Queue only for unsignalized intersections]

PARKING

The project proposes to construct 120 parking spaces on-site to service the staff and parent needs on the site. The parking has been separated into two major areas including 98 spaces within the general parking field to be utilized mostly by faculty and staff, as well as 22 head-in parking spaces along the main drive aisle to accommodate short-term parent related visits. The parking locations have been organized to allow for parent pick-up and drop-off time periods to block spaces in the faculty / staff parking area where maneuvers in/out of these spaces would not generally be occurring. Note that no students are of age to drive to the school and therefore no student parking spaces are provided on-site.

Institute of Transportation Engineers Parking Demand Estimate

The peak parking demand generated by the proposed land uses was estimated based on the average peak parking demand generation rates obtained from the ITE publication *Parking Generation, 5th Edition* for LUC 522 – Middle School / Junior High School. The estimation was based upon both 85 employees and/or 594 students. This land use was used, as opposed to Private School (K-12), as the charter school would have no student drivers and therefore any land use presenting opportunity for off-age students to drive would show a larger need than what would be projected for the subject site. The LUC 522 – Middle School / Junior High School was also used over LUC 520 – Elementary School as the higher-level school results in a higher estimated (more conservative) demand for parking. Detailed parking demand generation worksheets are included in Attachment J.

Based on the ITE publication *Parking Generation, 5th Edition*, the average peak parking demand for an 85-employee school would be 119 parked vehicles. The average peak parking demand for a 594-student school would be 64 parked vehicles. The Applicant is proposing 122 total spaces, comparable and higher than the average peak demand for the conservative 119 parked vehicle demand.

Comparison to Pioneer Charter School in Everett

The Pioneer Charter School has a comparable grade level (K-8) location in Everett, MA that currently has 540 students. The school has provided empirical data of the parking demand on a typical school day for the Everett, MA location, which is constructed with 110 parking spaces. Under an interpolated student population condition, the proposed Peabody location would require 121 parking spaces, proximate to the 122 spaces proposed. The empirical data for the school shows that the parking demand on an average day is 50-60 vehicles. Although a larger number of students are expected to walk at the Everett location, 50 students typical, the number of driven students (100 vehicles inclusive of carpool /siblings) with the walkers is still less than what would be expected at the Peabody location (175 vehicles). The empirical data indicates that the 122 parking spaces provided on-site will be sufficient to handle the projected parking demand of the school on a typical day.

CONCLUSIONS

TEC has examined the potential traffic and parking impacts associated with the proposed Pioneer Charter School of Sciences located at #67 Pulaski Street in Peabody, Massachusetts. The following is a summary of the results and conclusions of this effort:

- The charter school will be constructed to accommodate a maximum enrollment for 594 students and 85 faculty/staff between Grades K to 8. The school will provide a regional draw from surrounding communities and provide school bus service for approximately 400 students dependent on student residence location.
- The entirety of the school building structure will be within the City of Peabody while circulation drive aisles and some parking will be within the Town of Danvers.
- Access to the proposed charter school is proposed via a full-access/egress driveway along Pulaski Street and a full-access/egress driveway along Margin Street. A third site driveway will be provided at the site's southwest corner along Pulaski Street and allow for bus entrance and delivery vehicle movements exclusively.
- Usage for each driveway during dedicated student pick-up and drop-up times will be managed by the school and defined for parents and buses alike.
- The stopping sight distance at both the Pulaski Street and Water Street Driveways exceeds AASHTO minimum recommendations. The measured intersection sight distance looking north from the Water Street Driveway is lower than the AASHTO recommended length. The sight line is impeded by vegetation and a chain linked fence at the back of sidewalk. The Applicant will work with the Town of Danvers and the adjacent property owner on the maintain of this vegetation to further extend the sight line from the driveway location.
- The school is anticipated to generated 902 vehicle trips on a typical school day with 401 vehicle trips (243 entering and 158 exiting) during the school arrival period (coinciding with the weekday morning peak commuter period), 266 vehicle trips (133 entering and 133 exiting) during the school dismissal period, and 235 vehicle trips (75 entering and 160 exiting) during the weekday evening peak commuter period.
- The school is ideally situated between Pulaski Street (South Liberty Street in Danvers) and Water Street (Margin Street in Peabody) to allow for a vehicle dispersing effect for parents and staff to enter and exit the site from multiple directions. The location is also situated between two interchanges along Route 128, which will also allow for parents and staff to split the traffic flow and lower the chance of major impacts at any one key intersection both north and south of the project.
- The traffic generated by the school is expected to result in a moderate impact at two signalized intersections within the study area: the intersection of Water Street / Endicott Street in Danvers and the intersection of Andover Street / Endicott Street / Central Street / Pulaski Street in Peabody. The impacts at each of these locations can be fully mitigated to a condition comparable to the No Build condition with minor traffic signal timing and/or phasing adjustments. The Applicant will commit to complete these adjustments post-occupancy in coordination with both municipalities.
- The school's traffic has a more minimal impact at the unsignalized intersection of Margin Street / Gardner Street in Peabody. This intersection already experiences significant traffic challenges, specifically along the Gardner Street

approach. Although the intersection does operate in a deficient manner, the Project is only expected to increase traffic at the intersection by approximately 1 new vehicle per minute or less on average, generally equating to an increase in overall traffic by 4% during the school arrival period, 2.5% during the school dismissal period, and 2% during the weekday evening peak period.

- Both ITE parking demand estimates and empirical data from the Pioneer Charter School in Everett indicate that the 122 parking spaces proposed on the site will be sufficient to handle the peak parking demand on a typical weekday.

In conclusion, the traffic and parking generated by the school can be reasonably accommodated along the existing roadway network and parking facilities and is not expected to noticeably impact the capacity of the surrounding roadways in the vicinity. The level of impact from the project does warrant minimal project-specific mitigation, which generally includes updates to existing traffic signal timing and phasing as identified. The Applicant is committed to work with the Town of Danvers and City of Peabody to implement these changes post-occupancy in coordination with each community.

Attachment A

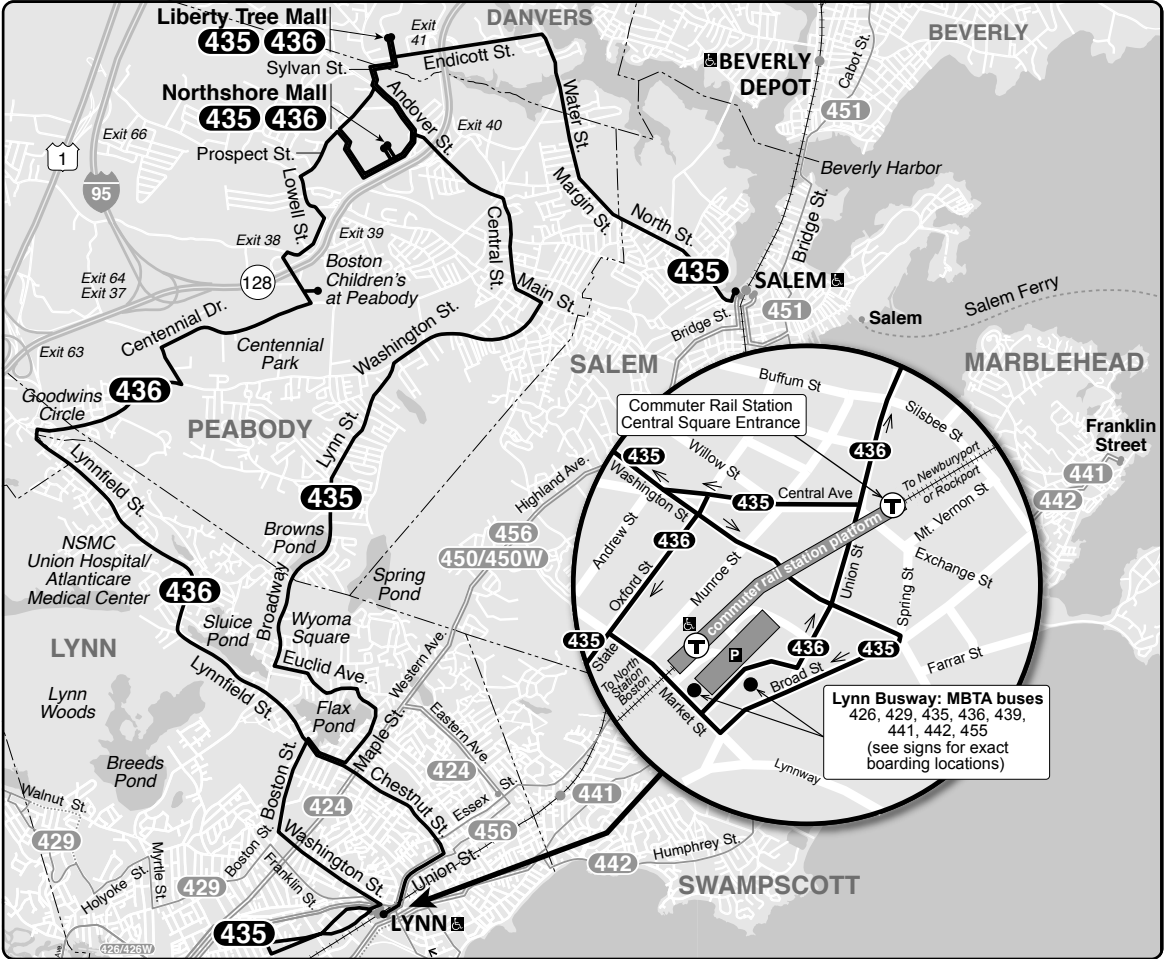
Public Transportation

Sunday **435**

Inbound			
Liberty Tree Mall	North Shore Mall	Central Sq, Lynn	Neptune Towers
11:10	11:20	11:52	11:59
1:30	1:40	2:14	2:21
3:55	4:07	4:46	4:53
6:20	6:32	7:11	-
7:05	7:16	7:53	-
8:00	8:11	8:48	-

Outbound

Neptune Towers	Central Sq, Lynn	North Shore Mall	Liberty Tree Mall
-	9:30	10:02	10:16
10:07	10:12	10:44	10:55
12:20	12:25	12:59	1:14
2:45	2:49	3:22	3:37
5:05	5:09	5:43	5:58
-	6:10	6:44	7:00



- Transfer to bus/subway available on CharlieCard—good for 2 hours, pay fare difference.
- Children 11 & under ride free with a paying customer.
- ♿ All MBTA buses are accessible to people with disabilities.

	CharlieCard	Cash on board	Reduced fare
Bus	\$1.70	\$1.70	\$0.85
Bus + Subway	\$2.40	\$4.10	\$1.10

Complete fare/pass rules and free/reduced fare eligibility:
[mbta.com/fares](https://www.mbta.com/fares) or call 617-222-3200

Effective **March 13, 2022**

435 Salme Depot – Central Sq, Lynn or Neptune Tws

436 Liberty Tree Mall – Central Sq, Lynn

Connections

NEWBURYPORT/ROCKPORT LINE



Information **617-222-3200**
Lost and Found **617-222-5263**
TTY **617-222-5146**

Realtime arrival information, maps, and more

mbta.com

A129-4-22.0

Weekday **435 436**

Inbound

	Salem Depot	Liberty Tree Mall	North Shore Mall	Main Street, Peabody	Centennial Park	Goodwins Circle	Central Sq, Lynn	Neptune Towers
A	-	-	-	-	-	6:40	7:03	7:17
	6:30	6:43	6:52	6:57	-	-	7:30	7:41
A	-	-	6:54	-	7:06	7:14	7:40	-
A	-	-	7:11	-	7:23	7:31	7:57	-
	7:30	7:43	7:52	7:57	-	-	8:30	8:41
A	-	-	7:55	-	8:07	8:14	8:38	-
	8:25	8:38	8:47	8:52	-	-	9:24	9:35
A	-	-	8:45	-	8:57	9:03	9:25	-
	9:20	9:33	9:42	9:47	-	-	10:18	10:29
A	-	9:49	9:55	-	10:08	10:14	10:37	-
	10:15	10:28	10:38	10:44	-	-	11:15	11:26
A	-	10:35	10:41	-	10:54	11:00	11:23	-
	11:10	11:23	11:33	11:39	-	-	12:11	12:22
A	-	11:55	12:01	-	12:14	12:20	12:45	-
	12:05	12:18	12:29	12:36	-	-	1:08	1:19
A	-	12:40	12:46	-	12:59	1:05	1:30	-
	1:00	1:13	1:24	1:31	-	-	2:03	2:14
T	-	-	-	-	-	-	2:46	-
A	-	1:53	2:00	-	2:15	2:22	2:53	-
	1:55	2:08	2:19	2:26	-	-	3:00	3:11
S	-	-	-	-	-	-	3:04	-
A	-	2:47	2:57	-	3:12	3:19	3:50	-
	2:50	3:03	3:15	3:23	-	-	4:06	4:17
	3:55	4:08	4:20	4:28	-	-	5:12	-
A	-	4:23	4:33	-	4:48	4:55	5:27	-
A	-	5:05	5:15	-	5:30	5:38	6:08	-
	5:00	5:13	5:25	5:33	-	-	6:17	-
A	-	5:55	6:03	-	6:16	6:22	6:43	-
	6:00	6:13	6:25	6:33	-	-	7:07	-
A	-	6:40	6:46	-	6:59	7:05	7:26	-
	6:50	7:03	7:13	7:20	-	-	7:54	-
	7:40	7:53	8:03	8:08	-	-	8:35	-
	8:30	8:43	8:53	8:58	-	-	9:25	-
	9:20	9:33	9:43	9:48	-	-	10:12	-
	10:10	10:23	10:32	10:36	-	-	11:00	-
	11:00	11:13	11:22	11:26	-	-	11:50	-

Outbound

	Neptune Towers	Central Sq, Lynn	Goodwins Circle	Centennial Park	Main Street, Peabody	North Shore Mall	Liberty Tree Mall	Salem Depot
	6:00	6:05	-	-	6:27	6:43	6:57	7:10
A	-	6:07	6:25	6:32	-	6:44	-	-
A	-	6:25	6:43	6:50	-	7:03	-	-
	6:50	6:55	-	-	7:26	7:42	7:56	8:09
A	-	7:00	7:27	7:33	-	7:47	-	-
A	-	7:50	8:17	8:23	-	8:37	-	-
	7:50	7:55	-	-	8:23	8:39	8:53	9:06
A	-	8:40	8:59	9:05	-	9:18	9:26	-
	8:50	8:55	-	-	9:19	9:31	9:44	9:57
A	-	9:35	9:54	10:00	-	10:13	10:22	-
	9:50	9:54	-	-	10:16	10:28	10:41	10:54
	10:40	10:44	-	-	11:06	11:18	11:31	11:44
A	-	11:00	11:19	11:25	-	11:38	11:47	-
A	-	11:33	11:52	11:58	-	12:11	12:20	-
	11:40	11:45	-	-	12:07	12:19	12:32	12:45
	12:30	12:35	-	-	1:00	1:12	1:25	1:38
A	-	12:55	1:17	1:23	-	1:36	1:45	-
	1:26	1:31	-	-	1:58	2:13	2:27	2:40
A	-	1:46	2:11	2:17	-	2:30	2:39	-
	2:25	2:30	-	-	2:59	3:15	3:30	3:43
U	2:36	2:44	3:13	-	-	-	-	-
A	-	3:06	3:35	3:41	-	3:54	4:03	-
	3:25	3:31	-	-	4:04	4:20	4:35	4:48
A	-	4:00	4:26	4:32	-	4:44	4:53	-
	-	4:30	-	-	5:03	5:15	5:32	5:45
A	-	4:54	5:20	5:26	-	5:38	5:47	-
	-	5:30	-	-	5:59	6:08	6:24	6:37
A	-	5:40	6:05	6:11	-	6:23	6:32	-
	-	6:30	-	-	6:52	7:01	7:14	7:27
A	-	6:35	6:54	-	-	-	-	-
	-	7:20	-	-	7:42	7:51	8:03	8:16
A	-	7:30	7:49	-	-	-	-	-
	-	8:10	-	-	8:29	8:36	8:47	9:00
	-	9:00	-	-	9:19	9:26	9:37	9:50
	-	9:50	-	-	10:09	10:16	10:27	10:40

Saturday **435 436**

Inbound

	Salem Depot	Liberty Tree Mall	North Shore Mall	Main Street, Peabody	Centennial Park	Goodwins Circle	Central Sq, Lynn	Neptune Towers
A	-	-	-	-	-	6:47	7:06	-
A	-	-	-	-	-	8:27	8:46	-
	9:20	9:33	9:41	9:47	-	-	10:10	10:22
A	-	10:05	10:12	-	10:24	10:30	10:49	-
	10:10	10:23	10:32	10:40	-	-	11:16	11:28
A	-	11:15	11:23	-	11:35	11:41	12:00	-
	11:05	11:18	11:29	11:37	-	-	12:10	12:22
	12:05	12:18	12:29	12:36	-	-	1:09	1:21
A	-	12:30	12:38	-	12:50	12:56	1:15	-
	1:05	1:18	1:29	1:36	-	-	2:09	2:21
A	-	1:40	1:48	-	2:00	2:06	2:25	-
	2:05	2:18	2:29	2:37	-	-	3:16	3:28
A	-	2:50	2:58	-	3:10	3:16	3:35	-
	3:05	3:18	3:33	3:40	-	-	4:09	4:21
A	-	3:50	3:58	-	4:10	4:16	4:35	-
	4:00	4:13	4:25	4:32	-	-	5:01	5:15
A	-	5:00	5:08	-	5:20	5:26	5:45	-
	4:55	5:08	5:20	5:27	-	-	5:56	6:07
A	-	6:00	6:08	-	6:20	6:26	6:45	-
	5:50	6:03	6:14	6:19	-	-	6:49	-
	6:45	6:58	7:09	7:14	-	-	7:43	-
	7:35	7:48	7:58	8:02	-	-	8:30	-
	8:20	8:33	8:43	8:47	-	-	9:15	-
	9:00	9:13	9:23	9:27	-	-	9:52	-
	9:45	9:58	10:07	10:11	-	-	10:36	-
	10:30	10:43	10:52	10:56	-	-	11:21	-
	11:05	11:18	11:27	11:31	-	-	11:56	-

Outbound

	Neptune Towers	Central Sq, Lynn	Goodwins Circle	Centennial Park	Main Street, Peabody	North Shore Mall	Liberty Tree Mall	Salem Depot
A	-	6:20	6:40	-	-	-	-	-
A	-	8:00	8:20	-	-	-	-	-
	8:00	8:05	-	-	8:29	8:41	8:54	9:07
	8:50	8:55	-	-	9:19	9:31	9:44	9:57
A	-	9:00	9:19	9:23	-	9:36	9:45	-
	9:40	9:45	-	-	10:09	10:21	10:34	10:47
A	-	10:10	10:32	10:36	-	10:50	10:59	-
	10:40	10:45	-	-	11:09	11:21	11:35	11:48
A	-	11:15	11:36	11:40	-	11:54	12:03	-
	11:40	11:45	-	-	12:11	12:23	12:38	12:51
A	-	12:35	12:56	1:01	-	1:15	1:24	-
	12:40	12:45	-	-	1:11	1:23	1:38	1:51
	1:40	1:45	-	-	2:10	2:22	2:37	2:50
A	-	1:50	2:10	2:15	-	2:28	2:37	-
	2:40	2:44	-	-	3:08	3:20	3:35	3:48
A	-	2:50	3:11	3:16	-	3:29	3:37	-
	3:40	3:44	-	-	4:08	4:20	4:34	4:47
A	-	4:00	4:18	4:23	-	4:35	4:43	-
	4:35	4:39	-	-	5:03	5:15	5:29	5:42
A	-	5:00	5:17	5:21	-	5:33	5:41	-
	5:25	5:29	-	-	5:53	6:05	6:19	6:32
	6:15	6:19	-	-	6:43	6:55	7:09	7:22
	-	7:10	-	-	7:32	7:40	7:54	8:07
	-	7:55	-	-	8:15	8:22	8:33	8:46
	-	8:40	-	-	9:00	9:07	9:18	9:31
	-	9:25	-	-	9:45	9:52	10:03	10:16
	-	10:00	-	-	10:20	10:27	10:38	10:51

A **S** and shaded trips are Route 436

S **T** **U** only runs on school days

S from Broadway & Conomo Ave to West Lynn Garage at this time

T from Goodridge St & Memorial Park Ave at this time

PM times are **bold**

Information in this timetable is subject to change without notice. Traffic and weather may affect running times.

Always check bus destination signs before boarding. Some buses may only serve a part, or skip portions of this route.

2022 Holidays

SUN Memorial Day

SUN Independence Day

SUN Labor Day

SUN Thanksgiving Day

SUN Christmas Day

SUN Christmas Day Observed

SAT New Year's Eve

SUN New Year's Day



Flip over for Sunday service

DANVERS COUNCIL ON AGING
25 Stone Street
978-762-0208

Shopping Schedule

EFFECTIVE: July 6, 2021

Please call the senior center to reserve your ride on the shopping van.

Shoppers will be brought to the Senior Center in the morning and leave from the Senior Center at 12:30pm to one of the following locations:

- Monday - Market Basket on Endicott Street or Target at the Liberty Tree Mall** – Leave Senior Center at 12:30pm. Pick up at 2pm to bring shoppers to their homes.
- Tuesday - Super Stop and Shop (Rt. 62/Rt. 1)** - Leave Senior Center at 12:30pm. Pick up at 2pm to bring shoppers to their homes.
- Wednesday – Market Basket on Endicott Street** – Leave Senior Center at 12:30pm. Pick up at 2pm to bring shopper to their homes.
- Thursday – Shaw’s & the North Shore Mall, Peabody** – Leave Senior Center at 12:30pm – (drop off next to Salem 5 entrance to the mall and at Shaw’s front entrance). Pick up at 2pm to bring shopper to their homes.
- Friday - Wal-Mart (Rt. 114)** - Leave Senior Center at 12:30pm. Pick up at 2pm to bring shoppers to their homes.

You are only allowed 2 shopping bags per person.

We ask that you please follow this rule for the safety of all passengers on the shopping van.

This program has been made possible in part by funding from the Older Americans Act as granted by Elder Services of the Merrimack Valley and North Shore.

Attachment B

Tuning Movement Counts (TMCs)

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars and Heavy Vehicles (Combined)

	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	153	18	25	0	196	26	183	1	0	210	1	30	18	0	49	16	135	72	0	223	678
7:15 AM	175	15	19	0	209	23	177	0	0	200	6	30	15	0	51	10	184	112	0	306	766
7:30 AM	124	31	29	0	184	27	208	1	0	236	3	48	29	0	80	13	190	114	0	317	817
7:45 AM	135	31	34	0	200	54	236	0	0	290	5	37	27	0	69	21	214	89	0	324	883
Total	587	95	107	0	789	130	804	2	0	936	15	145	89	0	249	60	723	387	0	1170	3144
8:00 AM	114	20	13	0	147	47	231	0	0	278	5	30	38	0	73	17	187	79	0	283	781
8:15 AM	132	19	23	0	174	39	214	0	0	253	4	44	40	0	88	19	195	77	0	291	806
8:30 AM	109	28	24	0	161	35	198	0	0	233	6	35	16	0	57	15	200	94	0	309	760
8:45 AM	104	25	25	0	154	46	151	2	0	199	1	35	25	0	61	14	189	100	0	303	717
Total	459	92	85	0	636	167	794	2	0	963	16	144	119	0	279	65	771	350	0	1186	3064
Grand Total	1046	187	192	0	1425	297	1598	4	0	1899	31	289	208	0	528	125	1494	737	0	2356	6208
Approach %	73.4	13.1	13.5	0.0		15.6	84.1	0.2	0.0		5.9	54.7	39.4	0.0		5.3	63.4	31.3	0.0		
Total %	16.8	3.0	3.1	0.0	23.0	4.8	25.7	0.1	0.0	30.6	0.5	4.7	3.4	0.0	8.5	2.0	24.1	11.9	0.0	38.0	
Exiting Leg Total	1323					1717					316					2852					6208
Cars	1012	186	180	0	1378	288	1564	4	0	1856	28	282	204	0	514	117	1447	714	0	2278	6026
% Cars	96.7	99.5	93.8	0.0	96.7	97.0	97.9	100.0	0.0	97.7	90.3	97.6	98.1	0.0	97.3	93.6	96.9	96.9	0.0	96.7	97.1
Exiting Leg Total	1284					1655					307					2780					6026
Heavy Vehicles	34	1	12	0	47	9	34	0	0	43	3	7	4	0	14	8	47	23	0	78	182
% Heavy Vehicles	3.3	0.5	6.3	0.0	3.3	3.0	2.1	0.0	0.0	2.3	9.7	2.4	1.9	0.0	2.7	6.4	3.1	3.1	0.0	3.3	2.9
Exiting Leg Total	39					62					9					72					182

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:30 AM	124	31	29	0	184	27	208	1	0	236	3	48	29	0	80	13	190	114	0	317	817
7:45 AM	135	31	34	0	200	54	236	0	0	290	5	37	27	0	69	21	214	89	0	324	883
8:00 AM	114	20	13	0	147	47	231	0	0	278	5	30	38	0	73	17	187	79	0	283	781
8:15 AM	132	19	23	0	174	39	214	0	0	253	4	44	40	0	88	19	195	77	0	291	806
Total Volume	505	101	99	0	705	167	889	1	0	1057	17	159	134	0	310	70	786	359	0	1215	3287
% Approach Total	71.6	14.3	14.0	0.0		15.8	84.1	0.1	0.0		5.5	51.3	43.2	0.0		5.8	64.7	29.5	0.0		
PHF	0.935	0.815	0.728	0.000	0.881	0.773	0.942	0.250	0.000	0.911	0.850	0.828	0.838	0.000	0.881	0.833	0.918	0.787	0.000	0.938	0.931
Cars	492	101	94	0	687	163	873	1	0	1037	16	156	131	0	303	66	763	346	0	1175	3202
Cars %	97.4	100.0	94.9	0.0	97.4	97.6	98.2	100.0	0.0	98.1	94.1	98.1	97.8	0.0	97.7	94.3	97.1	96.4	0.0	96.7	97.4
Heavy Vehicles	13	0	5	0	18	4	16	0	0	20	1	3	3	0	7	4	23	13	0	40	85
Heavy Vehicles %	2.6	0.0	5.1	0.0	2.6	2.4	1.8	0.0	0.0	1.9	5.9	1.9	2.2	0.0	2.3	5.7	2.9	3.6	0.0	3.3	2.6
Cars Enter Leg	492	101	94	0	687	163	873	1	0	1037	16	156	131	0	303	66	763	346	0	1175	3202
Heavy Enter Leg	13	0	5	0	18	4	16	0	0	20	1	3	3	0	7	4	23	13	0	40	85
Total Entering Leg	505	101	99	0	705	167	889	1	0	1057	17	159	134	0	310	70	786	359	0	1215	3287
Cars Exiting Leg	665					873					168					1496					3202
Heavy Exiting Leg	20					29					4					32					85
Total Exiting Leg	685					902					172					1528					3287

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars

	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	146	18	23	0	187	26	177	1	0	204	1	29	17	0	47	15	130	72	0	217	655
7:15 AM	170	15	19	0	204	23	174	0	0	197	6	27	15	0	48	10	181	107	0	298	747
7:30 AM	123	31	27	0	181	26	206	1	0	233	3	47	29	0	79	11	185	113	0	309	802
7:45 AM	131	31	34	0	196	53	231	0	0	284	5	37	27	0	69	21	206	86	0	313	862
Total	570	95	103	0	768	128	788	2	0	918	15	140	88	0	243	57	702	378	0	1137	3066
8:00 AM	111	20	13	0	144	45	229	0	0	274	4	28	37	0	69	16	181	75	0	272	759
8:15 AM	127	19	20	0	166	39	207	0	0	246	4	44	38	0	86	18	191	72	0	281	779
8:30 AM	104	28	21	0	153	33	191	0	0	224	5	35	16	0	56	14	191	93	0	298	731
8:45 AM	100	24	23	0	147	43	149	2	0	194	0	35	25	0	60	12	182	96	0	290	691
Total	442	91	77	0	610	160	776	2	0	938	13	142	116	0	271	60	745	336	0	1141	2960
Grand Total	1012	186	180	0	1378	288	1564	4	0	1856	28	282	204	0	514	117	1447	714	0	2278	6026
Approach %	73.4	13.5	13.1	0.0		15.5	84.3	0.2	0.0		5.4	54.9	39.7	0.0		5.1	63.5	31.3	0.0		
Total %	16.8	3.1	3.0	0.0	22.9	4.8	26.0	0.1	0.0	30.8	0.5	4.7	3.4	0.0	8.5	1.9	24.0	11.8	0.0	37.8	
Exiting Leg Total	1284					1655					307					2780					6026

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:30 AM	123	31	27	0	181	26	206	1	0	233	3	47	29	0	79	11	185	113	0	309	802
7:45 AM	131	31	34	0	196	53	231	0	0	284	5	37	27	0	69	21	206	86	0	313	862
8:00 AM	111	20	13	0	144	45	229	0	0	274	4	28	37	0	69	16	181	75	0	272	759
8:15 AM	127	19	20	0	166	39	207	0	0	246	4	44	38	0	86	18	191	72	0	281	779
Total Volume	492	101	94	0	687	163	873	1	0	1037	16	156	131	0	303	66	763	346	0	1175	3202
% Approach Total	71.6	14.7	13.7	0.0		15.7	84.2	0.1	0.0		5.3	51.5	43.2	0.0		5.6	64.9	29.4	0.0		
PHF	0.939	0.815	0.691	0.000	0.876	0.769	0.945	0.250	0.000	0.913	0.800	0.830	0.862	0.000	0.881	0.786	0.926	0.765	0.000	0.938	0.929
Entering Leg	492	101	94	0	687	163	873	1	0	1037	16	156	131	0	303	66	763	346	0	1175	3202
Exiting Leg	665					873					168					1496					3202
Total	1352					1910					471					2671					6404

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	7	0	2	0	9	0	6	0	0	6	0	1	1	0	2	1	5	0	0	6	23
7:15 AM	5	0	0	0	5	0	3	0	0	3	0	3	0	0	3	0	3	5	0	8	19
7:30 AM	1	0	2	0	3	1	2	0	0	3	0	1	0	0	1	2	5	1	0	8	15
7:45 AM	4	0	0	0	4	1	5	0	0	6	0	0	0	0	0	0	8	3	0	11	21
Total	17	0	4	0	21	2	16	0	0	18	0	5	1	0	6	3	21	9	0	33	78
8:00 AM	3	0	0	0	3	2	2	0	0	4	1	2	1	0	4	1	6	4	0	11	22
8:15 AM	5	0	3	0	8	0	7	0	0	7	0	0	2	0	2	1	4	5	0	10	27
8:30 AM	5	0	3	0	8	2	7	0	0	9	1	0	0	0	1	1	9	1	0	11	29
8:45 AM	4	1	2	0	7	3	2	0	0	5	1	0	0	0	1	2	7	4	0	13	26
Total	17	1	8	0	26	7	18	0	0	25	3	2	3	0	8	5	26	14	0	45	104
Grand Total	34	1	12	0	47	9	34	0	0	43	3	7	4	0	14	8	47	23	0	78	182
Approach %	72.3	2.1	25.5	0.0		20.9	79.1	0.0	0.0		21.4	50.0	28.6	0.0		10.3	60.3	29.5	0.0		
Total %	18.7	0.5	6.6	0.0	25.8	4.9	18.7	0.0	0.0	23.6	1.6	3.8	2.2	0.0	7.7	4.4	25.8	12.6	0.0	42.9	
Exiting Leg Total	39					62					9					72					182
Buses	6	0	1	0	7	3	10	0	0	13	1	2	2	0	5	2	7	1	0	10	35
% Buses	17.6	0.0	8.3	0.0	14.9	33.3	29.4	0.0	0.0	30.2	33.3	28.6	50.0	0.0	35.7	25.0	14.9	4.3	0.0	12.8	19.2
Exiting Leg Total	6					9					2					18					35
Single-Unit Trucks	22	1	10	0	33	5	19	0	0	24	2	5	2	0	9	6	37	21	0	64	130
% Single-Unit	64.7	100.0	83.3	0.0	70.2	55.6	55.9	0.0	0.0	55.8	66.7	71.4	50.0	0.0	64.3	75.0	78.7	91.3	0.0	82.1	71.4
Exiting Leg Total	31					49					7					43					130
Articulated Trucks	6	0	1	0	7	1	5	0	0	6	0	0	0	0	0	0	3	1	0	4	17
% Articulated	17.6	0.0	8.3	0.0	14.9	11.1	14.7	0.0	0.0	14.0	0.0	0.0	0.0	0.0	0.0	0.0	6.4	4.3	0.0	5.1	9.3
Exiting Leg Total	2					4					0					11					17

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	3	0	0	0	3	2	2	0	0	4	1	2	1	0	4	1	6	4	0	11	22
8:15 AM	5	0	3	0	8	0	7	0	0	7	0	0	2	0	2	1	4	5	0	10	27
8:30 AM	5	0	3	0	8	2	7	0	0	9	1	0	0	0	1	1	9	1	0	11	29
8:45 AM	4	1	2	0	7	3	2	0	0	5	1	0	0	0	1	2	7	4	0	13	26
Total Volume	17	1	8	0	26	7	18	0	0	25	3	2	3	0	8	5	26	14	0	45	104
% Approach Total	65.4	3.8	30.8	0.0		28.0	72.0	0.0	0.0		37.5	25.0	37.5	0.0		11.1	57.8	31.1	0.0		
PHF	0.850	0.250	0.667	0.000	0.813	0.583	0.643	0.000	0.000	0.694	0.750	0.250	0.375	0.000	0.500	0.625	0.722	0.700	0.000	0.865	0.897
Buses	4	0	1	0	5	2	4	0	0	6	1	1	1	0	3	2	3	0	0	5	19
Buses %	23.5	0.0	12.5	0.0	19.2	28.6	22.2	0.0	0.0	24.0	33.3	50.0	33.3	0.0	37.5	40.0	11.5	0.0	0.0	11.1	18.3
Single-Unit Trucks	12	1	6	0	19	4	13	0	0	17	2	1	2	0	5	3	22	14	0	39	80
Single-Unit %	70.6	100.0	75.0	0.0	73.1	57.1	72.2	0.0	0.0	68.0	66.7	50.0	66.7	0.0	62.5	60.0	84.6	100.0	0.0	86.7	76.9
Articulated Trucks	1	0	1	0	2	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	5
Articulated %	5.9	0.0	12.5	0.0	7.7	14.3	5.6	0.0	0.0	8.0	0.0	0.0	0.0	0.0	0.0	0.0	3.8	0.0	0.0	2.2	4.8
Buses	4	0	1	0	5	2	4	0	0	6	1	1	1	0	3	2	3	0	0	5	19
Single-Unit Trucks	12	1	6	0	19	4	13	0	0	17	2	1	2	0	5	3	22	14	0	39	80
Articulated Trucks	1	0	1	0	2	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	5
Total Entering Leg	17	1	8	0	26	7	18	0	0	25	3	2	3	0	8	5	26	14	0	45	104
Buses	3					5					2					9					19
Single-Unit Trucks	19					30					4					27					80
Articulated Trucks	1					2					0					2					5
Total Exiting Leg	23					37					6					38					104

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Buses

	Pulaski Street					Central Street					Endicott Street					Andover Street					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
7:00 AM	1	0	0	0	1	0	1	0	0	1	0	0	1	0	1	0	0	1	0	0	1	4
7:15 AM	1	0	0	0	1	0	1	0	0	1	0	1	0	0	1	0	0	1	0	1	1	4
7:30 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	2
7:45 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	0	2	6
Total	2	0	0	0	2	1	6	0	0	7	0	1	1	0	2	0	4	1	0	5	16	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	2	3	
8:15 AM	3	0	1	0	4	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	7	
8:30 AM	1	0	0	0	1	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	4	
8:45 AM	0	0	0	0	0	1	1	0	0	2	1	0	0	0	1	1	1	0	0	2	5	
Total	4	0	1	0	5	2	4	0	0	6	1	1	1	0	3	2	3	0	0	5	19	
Grand Total	6	0	1	0	7	3	10	0	0	13	1	2	2	0	5	2	7	1	0	10	35	
Approach %	85.7	0.0	14.3	0.0		23.1	76.9	0.0	0.0		20.0	40.0	40.0	0.0		20.0	70.0	10.0	0.0			
Total %	17.1	0.0	2.9	0.0	20.0	8.6	28.6	0.0	0.0	37.1	2.9	5.7	5.7	0.0	14.3	5.7	20.0	2.9	0.0	28.6		
Exiting Leg Total	6					9					2					18					35	

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:45 AM	Pulaski Street					Central Street					Endicott Street					Andover Street						
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total	
7:45 AM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	0	2	6
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	0	0	0	2	3
8:15 AM	3	0	1	0	4	0	1	0	0	1	0	0	1	0	1	0	1	0	0	0	1	7
8:30 AM	1	0	0	0	1	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	0	4
Total Volume	4	0	1	0	5	1	7	0	0	8	0	1	1	0	2	1	4	0	0	0	5	20
% Approach Total	80.0	0.0	20.0	0.0		12.5	87.5	0.0	0.0		0.0	50.0	50.0	0.0		20.0	80.0	0.0	0.0			
PHF	0.333	0.000	0.250	0.000	0.313	0.250	0.438	0.000	0.000	0.500	0.000	0.250	0.250	0.000	0.500	0.250	0.500	0.000	0.000	0.625		0.714
Entering Leg	4	0	1	0	5	1	7	0	0	8	0	1	1	0	2	1	4	0	0	0	5	20
Exiting Leg	2					5					1					12					20	
Total	7					13					3					17					40	

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Single-Unit Trucks

	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	2	0	2	0	4	0	3	0	0	3	0	1	0	0	1	1	3	0	0	4	12
7:15 AM	4	0	0	0	4	0	2	0	0	2	0	2	0	0	2	0	3	4	0	7	15
7:30 AM	1	0	2	0	3	0	1	0	0	1	0	1	0	0	1	2	3	1	0	6	11
7:45 AM	3	0	0	0	3	1	0	0	0	1	0	0	0	0	0	0	6	2	0	8	12
Total	10	0	4	0	14	1	6	0	0	7	0	4	0	0	4	3	15	7	0	25	50
8:00 AM	3	0	0	0	3	2	2	0	0	4	1	1	1	0	3	0	5	4	0	9	19
8:15 AM	1	0	1	0	2	0	5	0	0	5	0	0	1	0	1	1	3	5	0	9	17
8:30 AM	4	0	3	0	7	0	5	0	0	5	1	0	0	0	1	1	8	1	0	10	23
8:45 AM	4	1	2	0	7	2	1	0	0	3	0	0	0	0	0	1	6	4	0	11	21
Total	12	1	6	0	19	4	13	0	0	17	2	1	2	0	5	3	22	14	0	39	80
Grand Total	22	1	10	0	33	5	19	0	0	24	2	5	2	0	9	6	37	21	0	64	130
Approach %	66.7	3.0	30.3	0.0		20.8	79.2	0.0	0.0		22.2	55.6	22.2	0.0		9.4	57.8	32.8	0.0		
Total %	16.9	0.8	7.7	0.0	25.4	3.8	14.6	0.0	0.0	18.5	1.5	3.8	1.5	0.0	6.9	4.6	28.5	16.2	0.0	49.2	
Exiting Leg Total	31					49					7					43					130

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Pulaski Street					Central Street					Endicott Street					Andover Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Total
8:00 AM	3	0	0	0	3	2	2	0	0	4	1	1	1	0	3	0	5	4	0	9	19
8:15 AM	1	0	1	0	2	0	5	0	0	5	0	0	1	0	1	1	3	5	0	9	17
8:30 AM	4	0	3	0	7	0	5	0	0	5	1	0	0	0	1	1	8	1	0	10	23
8:45 AM	4	1	2	0	7	2	1	0	0	3	0	0	0	0	0	1	6	4	0	11	21
Total Volume	12	1	6	0	19	4	13	0	0	17	2	1	2	0	5	3	22	14	0	39	80
% Approach Total	63.2	5.3	31.6	0.0		23.5	76.5	0.0	0.0		40.0	20.0	40.0	0.0		7.7	56.4	35.9	0.0		
PHF	0.750	0.250	0.500	0.000	0.679	0.500	0.650	0.000	0.000	0.850	0.500	0.250	0.500	0.000	0.417	0.750	0.688	0.700	0.000	0.886	0.870
Entering Leg	12	1	6	0	19	4	13	0	0	17	2	1	2	0	5	3	22	14	0	39	80
Exiting Leg					19					30					4					27	80
Total					38					47					9					66	160

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Articulated Trucks

	Pulaski Street					Central Street					Endicott Street					Andover Street					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
7:00 AM	4	0	0	0	4	0	2	0	0	2	0	0	0	0	0	0	1	0	0	0	1	7
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	1	2
7:45 AM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	3
Total	5	0	0	0	5	0	4	0	0	4	0	0	0	0	0	0	0	2	1	0	3	12
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3
8:30 AM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	1	0	0	1	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	1	0	2	1	1	0	0	2	0	0	0	0	0	0	0	1	0	0	1	5
Grand Total	6	0	1	0	7	1	5	0	0	6	0	0	0	0	0	0	0	3	1	0	4	17
Approach %	85.7	0.0	14.3	0.0		16.7	83.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	75.0	25.0	0.0			
Total %	35.3	0.0	5.9	0.0	41.2	5.9	29.4	0.0	0.0	35.3	0.0	0.0	0.0	0.0	0.0	0.0	17.6	5.9	0.0	0.0	23.5	
Exiting Leg Total	2					4					0					11					17	

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Pulaski Street					Central Street					Endicott Street					Andover Street					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
7:00 AM	4	0	0	0	4	0	2	0	0	2	0	0	0	0	0	0	1	0	0	0	1	7
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	1	2
7:45 AM	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	1	0	1	3
Total Volume	5	0	0	0	5	0	4	0	0	4	0	0	0	0	0	0	2	1	0	0	3	12
% Approach Total	100.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	66.7	33.3	0.0			
PHF	0.313	0.000	0.000	0.000	0.313	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.750	0.429	
Entering Leg	5	0	0	0	5	0	4	0	0	4	0	0	0	0	0	0	2	1	0	0	3	12
Exiting Leg	1					2					0					9					12	
Total	6					6					0					12					24	

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Pulaski Street							Central Street							Endicott Street							Andover Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0							0							0							0							0

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Pulaski Street							Central Street							Endicott Street							Andover Street								
	from North							from East							from South							from West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0							0							0							0							0	
Total	0							0							0							0							0	

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Pedestrians

	Pulaski Street							Central Street							Endicott Street							Andover Street							Total	
	from North							from East							from South							from West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Total	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	3	
Total	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	4	
Grand Total	0	0	0	0	0	2	0	2	0	0	0	0	1	0	1	0	0	0	0	1	1	2	0	0	0	0	1	0	1	6
Approach %	0	0	0	0	0	100	0		0	0	0	0	100	0		0	0	0	0	50	50		0	0	0	0	100	0		
Total %	0	0	0	0	0	33.3	0	33.3	0	0	0	0	16.7	0	16.7	0	0	0	0	16.7	16.7	33.3	0	0	0	0	16.7	0	16.7	
Exiting Leg Total	2							1							2							1								

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Pulaski Street							Central Street							Endicott Street							Andover Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	1	3
Total Volume	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	1	4
% Approach Total	0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	0.0	100.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.333
Entering Leg	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	1	0	1	4
Exiting Leg	1							0							2							1							4
Total	2							0							4							2							8

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Cars and Heavy Vehicles (Combined)

	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	90	24	29	0	143	34	177	3	0	214	3	21	20	0	44	19	212	88	0	319	720
2:15 PM	90	36	43	0	169	41	186	4	0	231	5	30	18	0	53	33	168	90	0	291	744
2:30 PM	150	54	34	0	238	32	152	2	0	186	5	37	21	0	63	20	189	92	0	301	788
2:45 PM	147	30	51	0	228	39	177	2	0	218	2	33	28	0	63	34	182	85	0	301	810
Total	477	144	157	0	778	146	692	11	0	849	15	121	87	0	223	106	751	355	0	1212	3062
3:00 PM	118	40	53	0	211	31	175	2	0	208	9	39	28	0	76	12	196	91	0	299	794
3:15 PM	145	45	48	0	238	37	142	3	0	182	6	31	13	0	50	11	207	103	0	321	791
3:30 PM	151	50	40	0	241	38	190	2	0	230	4	36	26	0	66	20	204	90	0	314	851
3:45 PM	138	43	46	0	227	38	157	1	0	196	1	33	21	0	55	15	199	100	0	314	792
Total	552	178	187	0	917	144	664	8	0	816	20	139	88	0	247	58	806	384	0	1248	3228
4:00 PM	145	38	43	0	226	39	144	3	0	186	5	45	21	0	71	21	193	91	0	305	788
4:15 PM	134	36	50	0	220	33	177	1	0	211	4	29	19	0	52	14	218	99	0	331	814
4:30 PM	140	52	36	0	228	30	189	0	0	219	3	44	19	0	66	22	204	94	0	320	833
4:45 PM	154	31	37	0	222	35	181	0	0	216	3	35	18	0	56	10	218	106	0	334	828
Total	573	157	166	0	896	137	691	4	0	832	15	153	77	0	245	67	833	390	0	1290	3263
5:00 PM	124	37	27	0	188	28	169	2	0	199	3	37	25	0	65	23	209	97	0	329	781
5:15 PM	169	48	36	0	253	34	197	1	0	232	1	27	20	0	48	19	200	95	0	314	847
5:30 PM	148	38	38	0	224	29	151	2	0	182	4	30	11	0	45	18	216	105	0	339	790
5:45 PM	161	41	35	0	237	27	156	3	0	186	2	25	22	0	49	19	182	98	0	299	771
Total	602	164	136	0	902	118	673	8	0	799	10	119	78	0	207	79	807	395	0	1281	3189
Grand Total	2204	643	646	0	3493	545	2720	31	0	3296	60	532	330	0	922	310	3197	1524	0	5031	12742
Approach %	63.1	18.4	18.5	0.0		16.5	82.5	0.9	0.0		6.5	57.7	35.8	0.0		6.2	63.5	30.3	0.0		
Total %	17.3	5.0	5.1	0.0	27.4	4.3	21.3	0.2	0.0	25.9	0.5	4.2	2.6	0.0	7.2	2.4	25.1	12.0	0.0	39.5	
Exiting Leg Total	2601					3903					984					5254					12742
Cars	2159	626	635	0	3420	522	2676	29	0	3227	57	529	328	0	914	306	3145	1491	0	4942	12503
% Cars	98.0	97.4	98.3	0.0	97.9	95.8	98.4	93.5	0.0	97.9	95.0	99.4	99.4	0.0	99.1	98.7	98.4	97.8	0.0	98.2	98.1
Exiting Leg Total	2542					3837					961					5163					12503
Heavy Vehicles	45	17	11	0	73	23	44	2	0	69	3	3	2	0	8	4	52	33	0	89	239
% Heavy Vehicles	2.0	2.6	1.7	0.0	2.1	4.2	1.6	6.5	0.0	2.1	5.0	0.6	0.6	0.0	0.9	1.3	1.6	2.2	0.0	1.8	1.9
Exiting Leg Total	59					66					23					91					239

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

4:30 PM	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:30 PM	140	52	36	0	228	30	189	0	0	219	3	44	19	0	66	22	204	94	0	320	833
4:45 PM	154	31	37	0	222	35	181	0	0	216	3	35	18	0	56	10	218	106	0	334	828
5:00 PM	124	37	27	0	188	28	169	2	0	199	3	37	25	0	65	23	209	97	0	329	781
5:15 PM	169	48	36	0	253	34	197	1	0	232	1	27	20	0	48	19	200	95	0	314	847
Total Volume	587	168	136	0	891	127	736	3	0	866	10	143	82	0	235	74	831	392	0	1297	3289
% Approach Total	65.9	18.9	15.3	0.0		14.7	85.0	0.3	0.0		4.3	60.9	34.9	0.0		5.7	64.1	30.2	0.0		
PHF	0.868	0.808	0.919	0.000	0.880	0.907	0.934	0.375	0.000	0.933	0.833	0.813	0.820	0.000	0.890	0.804	0.953	0.925	0.000	0.971	0.971
Cars	582	161	135	0	878	122	728	3	0	853	10	143	81	0	234	74	825	384	0	1283	3248
Cars %	99.1	95.8	99.3	0.0	98.5	96.1	98.9	100.0	0.0	98.5	100.0	100.0	98.8	0.0	99.6	100.0	99.3	98.0	0.0	98.9	98.8
Heavy Vehicles	5	7	1	0	13	5	8	0	0	13	0	0	1	0	1	0	6	8	0	14	41
Heavy Vehicles %	0.9	4.2	0.7	0.0	1.5	3.9	1.1	0.0	0.0	1.5	0.0	0.0	1.2	0.0	0.4	0.0	0.7	2.0	0.0	1.1	1.2
Cars Enter Leg	582	161	135	0	878	122	728	3	0	853	10	143	81	0	234	74	825	384	0	1283	3248
Heavy Enter Leg	5	7	1	0	13	5	8	0	0	13	0	0	1	0	1	0	6	8	0	14	41
Total Entering Leg	587	168	136	0	891	127	736	3	0	866	10	143	82	0	235	74	831	392	0	1297	3289
Cars Exiting Leg	649					970					238					1391					3248
Heavy Exiting Leg	13					7					7					14					41
Total Exiting Leg	662					977					245					1405					3289

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Cars

	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	87	23	29	0	139	31	170	3	0	204	3	21	20	0	44	18	203	83	0	304	691
2:15 PM	86	34	42	0	162	39	179	2	0	220	4	28	18	0	50	33	161	89	0	283	715
2:30 PM	141	54	33	0	228	31	149	2	0	182	5	36	21	0	62	20	186	92	0	298	770
2:45 PM	145	29	51	0	225	38	175	2	0	215	2	33	28	0	63	32	177	84	0	293	796
Total	459	140	155	0	754	139	673	9	0	821	14	118	87	0	219	103	727	348	0	1178	2972
3:00 PM	114	40	52	0	206	30	173	2	0	205	9	39	27	0	75	12	191	89	0	292	778
3:15 PM	143	44	48	0	235	36	140	3	0	179	5	31	13	0	49	10	202	98	0	310	773
3:30 PM	148	48	39	0	235	35	188	2	0	225	3	36	26	0	65	20	199	85	0	304	829
3:45 PM	134	43	44	0	221	37	156	1	0	194	1	33	21	0	55	15	197	98	0	310	780
Total	539	175	183	0	897	138	657	8	0	803	18	139	87	0	244	57	789	370	0	1216	3160
4:00 PM	139	35	41	0	215	37	140	3	0	180	5	45	21	0	71	21	191	89	0	301	767
4:15 PM	133	36	49	0	218	32	173	1	0	206	4	29	19	0	52	14	218	97	0	329	805
4:30 PM	140	46	35	0	221	30	187	0	0	217	3	44	19	0	66	22	203	94	0	319	823
4:45 PM	153	31	37	0	221	33	179	0	0	212	3	35	18	0	56	10	214	104	0	328	817
Total	565	148	162	0	875	132	679	4	0	815	15	153	77	0	245	67	826	384	0	1277	3212
5:00 PM	122	37	27	0	186	26	166	2	0	194	3	37	25	0	65	23	209	95	0	327	772
5:15 PM	167	47	36	0	250	33	196	1	0	230	1	27	19	0	47	19	199	91	0	309	836
5:30 PM	146	38	38	0	222	28	151	2	0	181	4	30	11	0	45	18	214	105	0	337	785
5:45 PM	161	41	34	0	236	26	154	3	0	183	2	25	22	0	49	19	181	98	0	298	766
Total	596	163	135	0	894	113	667	8	0	788	10	119	77	0	206	79	803	389	0	1271	3159
Grand Total	2159	626	635	0	3420	522	2676	29	0	3227	57	529	328	0	914	306	3145	1491	0	4942	12503
Approach %	63.1	18.3	18.6	0.0		16.2	82.9	0.9	0.0		6.2	57.9	35.9	0.0		6.2	63.6	30.2	0.0		
Total %	17.3	5.0	5.1	0.0	27.4	4.2	21.4	0.2	0.0	25.8	0.5	4.2	2.6	0.0	7.3	2.4	25.2	11.9	0.0	39.5	
Exiting Leg Total	2542					3837					961					5163					12503

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

4:30 PM	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:30 PM	140	46	35	0	221	30	187	0	0	217	3	44	19	0	66	22	203	94	0	319	823
4:45 PM	153	31	37	0	221	33	179	0	0	212	3	35	18	0	56	10	214	104	0	328	817
5:00 PM	122	37	27	0	186	26	166	2	0	194	3	37	25	0	65	23	209	95	0	327	772
5:15 PM	167	47	36	0	250	33	196	1	0	230	1	27	19	0	47	19	199	91	0	309	836
Total Volume	582	161	135	0	878	122	728	3	0	853	10	143	81	0	234	74	825	384	0	1283	3248
% Approach Total	66.3	18.3	15.4	0.0		14.3	85.3	0.4	0.0		4.3	61.1	34.6	0.0		5.8	64.3	29.9	0.0		
PHF	0.871	0.856	0.912	0.000	0.878	0.924	0.929	0.375	0.000	0.927	0.833	0.813	0.810	0.000	0.886	0.804	0.964	0.923	0.000	0.978	0.971
Entering Leg	582	161	135	0	878	122	728	3	0	853	10	143	81	0	234	74	825	384	0	1283	3248
Exiting Leg	649					970					238					1391					3248
Total	1527					1823					472					2674					6496

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	3	1	0	0	4	3	7	0	0	10	0	0	0	0	0	1	9	5	0	15	29
2:15 PM	4	2	1	0	7	2	7	2	0	11	1	2	0	0	3	0	7	1	0	8	29
2:30 PM	9	0	1	0	10	1	3	0	0	4	0	1	0	0	1	0	3	0	0	3	18
2:45 PM	2	1	0	0	3	1	2	0	0	3	0	0	0	0	0	2	5	1	0	8	14
Total	18	4	2	0	24	7	19	2	0	28	1	3	0	0	4	3	24	7	0	34	90
3:00 PM	4	0	1	0	5	1	2	0	0	3	0	0	1	0	1	0	5	2	0	7	16
3:15 PM	2	1	0	0	3	1	2	0	0	3	1	0	0	0	1	1	5	5	0	11	18
3:30 PM	3	2	1	0	6	3	2	0	0	5	1	0	0	0	1	0	5	5	0	10	22
3:45 PM	4	0	2	0	6	1	1	0	0	2	0	0	0	0	0	0	2	2	0	4	12
Total	13	3	4	0	20	6	7	0	0	13	2	0	1	0	3	1	17	14	0	32	68
4:00 PM	6	3	2	0	11	2	4	0	0	6	0	0	0	0	0	0	2	2	0	4	21
4:15 PM	1	0	1	0	2	1	4	0	0	5	0	0	0	0	0	0	0	2	0	2	9
4:30 PM	0	6	1	0	7	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	10
4:45 PM	1	0	0	0	1	2	2	0	0	4	0	0	0	0	0	0	4	2	0	6	11
Total	8	9	4	0	21	5	12	0	0	17	0	0	0	0	0	0	7	6	0	13	51
5:00 PM	2	0	0	0	2	2	3	0	0	5	0	0	0	0	0	0	0	2	0	2	9
5:15 PM	2	1	0	0	3	1	1	0	0	2	0	0	1	0	1	0	1	4	0	5	11
5:30 PM	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	0	2	0	0	2	5
5:45 PM	0	0	1	0	1	1	2	0	0	3	0	0	0	0	0	0	1	0	0	1	5
Total	6	1	1	0	8	5	6	0	0	11	0	0	1	0	1	0	4	6	0	10	30
Grand Total	45	17	11	0	73	23	44	2	0	69	3	3	2	0	8	4	52	33	0	89	239
Approach %	61.6	23.3	15.1	0.0		33.3	63.8	2.9	0.0		37.5	37.5	25.0	0.0		4.5	58.4	37.1	0.0		
Total %	18.8	7.1	4.6	0.0	30.5	9.6	18.4	0.8	0.0	28.9	1.3	1.3	0.8	0.0	3.3	1.7	21.8	13.8	0.0	37.2	
Exiting Leg Total	59					66					23					91					239
Buses	7	2	2	0	11	6	10	0	0	16	3	2	1	0	6	1	10	4	0	15	48
% Buses	15.6	11.8	18.2	0.0	15.1	26.1	22.7	0.0	0.0	23.2	100.0	66.7	50.0	0.0	75.0	25.0	19.2	12.1	0.0	16.9	20.1
Exiting Leg Total	12					15					3					18					48
Single-Unit Trucks	32	15	8	0	55	13	30	2	0	45	0	1	1	0	2	3	37	23	0	63	165
% Single-Unit	71.1	88.2	72.7	0.0	75.3	56.5	68.2	100.0	0.0	65.2	0.0	33.3	50.0	0.0	25.0	75.0	71.2	69.7	0.0	70.8	69.0
Exiting Leg Total	37					45					20					63					165
Articulated Trucks	6	0	1	0	7	4	4	0	0	8	0	0	0	0	0	0	5	6	0	11	26
% Articulated	13.3	0.0	9.1	0.0	9.6	17.4	9.1	0.0	0.0	11.6	0.0	0.0	0.0	0.0	0.0	0.0	9.6	18.2	0.0	12.4	10.9
Exiting Leg Total	10					6					0					10					26

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:00 PM	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	3	1	0	0	4	3	7	0	0	10	0	0	0	0	0	1	9	5	0	15	29
2:15 PM	4	2	1	0	7	2	7	2	0	11	1	2	0	0	3	0	7	1	0	8	29
2:30 PM	9	0	1	0	10	1	3	0	0	4	0	1	0	0	1	0	3	0	0	3	18
2:45 PM	2	1	0	0	3	1	2	0	0	3	0	0	0	0	0	2	5	1	0	8	14
Total Volume	18	4	2	0	24	7	19	2	0	28	1	3	0	0	4	3	24	7	0	34	90
% Approach Total	75.0	16.7	8.3	0.0		25.0	67.9	7.1	0.0		25.0	75.0	0.0	0.0		8.8	70.6	20.6	0.0		
PHF	0.500	0.500	0.500	0.000	0.600	0.583	0.679	0.250	0.000	0.636	0.250	0.375	0.000	0.000	0.333	0.375	0.667	0.350	0.000	0.567	0.776
Buses	4	0	2	0	6	5	4	0	0	9	1	2	0	0	3	1	5	2	0	8	26
Buses %	22.2	0.0	100.0	0.0	25.0	71.4	21.1	0.0	0.0	32.1	100.0	66.7	0.0	0.0	75.0	33.3	20.8	28.6	0.0	23.5	28.9
Single-Unit Trucks	14	4	0	0	18	2	14	2	0	18	0	1	0	0	1	2	16	3	0	21	58
Single-Unit %	77.8	100.0	0.0	0.0	75.0	28.6	73.7	100.0	0.0	64.3	0.0	33.3	0.0	0.0	25.0	66.7	66.7	42.9	0.0	61.8	64.4
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	2	0	5	6
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	5.3	0.0	0.0	3.6	0.0	0.0	0.0	0.0	0.0	0.0	12.5	28.6	0.0	14.7	6.7
Buses	4	0	2	0	6	5	4	0	0	9	1	2	0	0	3	1	5	2	0	8	26
Single-Unit Trucks	14	4	0	0	18	2	14	2	0	18	0	1	0	0	1	2	16	3	0	21	58
Articulated Trucks	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	2	0	5	6
Total Entering Leg	18	4	2	0	24	7	19	2	0	28	1	3	0	0	4	3	24	7	0	34	90
Buses	9					8					1					8					26
Single-Unit Trucks	6					16					8					28					58
Articulated Trucks	2					3					0					1					6
Total Exiting Leg	17					27					9					37					90

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Buses

	Pulaski Street					Central Street					Endicott Street					Andover Street					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
2:00 PM	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	5	1	0	0	6	10
2:15 PM	1	0	1	0	2	2	0	0	0	2	1	1	0	0	2	0	0	1	0	1	7	
2:30 PM	3	0	1	0	4	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	6	
2:45 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	1	0	0	0	0	3	
Total	4	0	2	0	6	5	4	0	0	9	1	2	0	0	3	1	5	2	0	8	26	
3:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	0	0	0	0	0	2	
3:15 PM	0	1	0	0	1	0	1	0	0	1	1	0	0	0	1	0	2	2	0	4	7	
3:30 PM	1	1	0	0	2	1	1	0	0	2	1	0	0	0	1	0	1	0	0	1	6	
3:45 PM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Total	3	2	0	0	5	1	3	0	0	4	2	0	1	0	3	0	3	2	0	5	17	
4:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
4:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	3	
5:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	
Grand Total	7	2	2	0	11	6	10	0	0	16	3	2	1	0	6	1	10	4	0	15	48	
Approach %	63.6	18.2	18.2	0.0		37.5	62.5	0.0	0.0		50.0	33.3	16.7	0.0		6.7	66.7	26.7	0.0			
Total %	14.6	4.2	4.2	0.0	22.9	12.5	20.8	0.0	0.0	33.3	6.3	4.2	2.1	0.0	12.5	2.1	20.8	8.3	0.0	31.3		
Exiting Leg Total	12					15					3					18					48	

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:00 PM	Pulaski Street					Central Street					Endicott Street					Andover Street						
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
2:00 PM	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	5	1	0	0	6	10
2:15 PM	1	0	1	0	2	2	0	0	0	2	1	1	0	0	2	0	0	1	0	1	7	
2:30 PM	3	0	1	0	4	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	6	
2:45 PM	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	1	0	0	0	0	3	
Total Volume	4	0	2	0	6	5	4	0	0	9	1	2	0	0	3	1	5	2	0	8	26	
% Approach Total	66.7	0.0	33.3	0.0		55.6	44.4	0.0	0.0		33.3	66.7	0.0	0.0		12.5	62.5	25.0	0.0			
PHF	0.333	0.000	0.500	0.000	0.375	0.625	0.333	0.000	0.000	0.563	0.250	0.500	0.000	0.000	0.375	0.250	0.250	0.500	0.000	0.333	0.650	
Entering Leg	4	0	2	0	6	5	4	0	0	9	1	2	0	0	3	1	5	2	0	8	26	
Exiting Leg					9					8					1					8	26	
Total	15					17					4					16					52	

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Single-Unit Trucks

	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	3	1	0	0	4	2	4	0	0	6	0	0	0	0	0	1	2	3	0	6	16
2:15 PM	3	2	0	0	5	0	7	2	0	9	0	1	0	0	1	0	6	0	0	6	21
2:30 PM	6	0	0	0	6	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	11
2:45 PM	2	1	0	0	3	0	1	0	0	1	0	0	0	0	0	1	5	0	0	6	10
Total	14	4	0	0	18	2	14	2	0	18	0	1	0	0	1	2	16	3	0	21	58
3:00 PM	3	0	1	0	4	1	1	0	0	2	0	0	0	0	0	0	5	2	0	7	13
3:15 PM	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	1	3	2	0	6	9
3:30 PM	1	1	1	0	3	1	1	0	0	2	0	0	0	0	0	0	4	3	0	7	12
3:45 PM	1	0	1	0	2	0	1	0	0	1	0	0	0	0	0	0	1	2	0	3	6
Total	7	1	3	0	11	3	3	0	0	6	0	0	0	0	0	1	13	9	0	23	40
4:00 PM	5	3	2	0	10	1	2	0	0	3	0	0	0	0	0	0	2	2	0	4	17
4:15 PM	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	0	2	0	2	5
4:30 PM	0	6	1	0	7	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	9
4:45 PM	1	0	0	0	1	2	2	0	0	4	0	0	0	0	0	0	3	2	0	5	10
Total	6	9	4	0	19	3	8	0	0	11	0	0	0	0	0	0	5	6	0	11	41
5:00 PM	2	0	0	0	2	2	2	0	0	4	0	0	0	0	0	0	0	2	0	2	8
5:15 PM	1	1	0	0	2	1	1	0	0	2	0	0	1	0	1	0	1	3	0	4	9
5:30 PM	2	0	0	0	2	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	4
5:45 PM	0	0	1	0	1	1	2	0	0	3	0	0	0	0	0	0	1	0	0	1	5
Total	5	1	1	0	7	5	5	0	0	10	0	0	1	0	1	0	3	5	0	8	26
Grand Total	32	15	8	0	55	13	30	2	0	45	0	1	1	0	2	3	37	23	0	63	165
Approach %	58.2	27.3	14.5	0.0		28.9	66.7	4.4	0.0		0.0	50.0	50.0	0.0		4.8	58.7	36.5	0.0		
Total %	19.4	9.1	4.8	0.0	33.3	7.9	18.2	1.2	0.0	27.3	0.0	0.6	0.6	0.0	1.2	1.8	22.4	13.9	0.0	38.2	
Exiting Leg Total	37					45					20					63					165

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:00 PM	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	3	1	0	0	4	2	4	0	0	6	0	0	0	0	0	1	2	3	0	6	16
2:15 PM	3	2	0	0	5	0	7	2	0	9	0	1	0	0	1	0	6	0	0	6	21
2:30 PM	6	0	0	0	6	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	11
2:45 PM	2	1	0	0	3	0	1	0	0	1	0	0	0	0	0	1	5	0	0	6	10
Total Volume	14	4	0	0	18	2	14	2	0	18	0	1	0	0	1	2	16	3	0	21	58
% Approach Total	77.8	22.2	0.0	0.0		11.1	77.8	11.1	0.0		0.0	100.0	0.0	0.0		9.5	76.2	14.3	0.0		
PHF	0.583	0.500	0.000	0.000	0.750	0.250	0.500	0.250	0.000	0.500	0.000	0.250	0.000	0.000	0.250	0.500	0.667	0.250	0.000	0.875	0.690
Entering Leg	14	4	0	0	18	2	14	2	0	18	0	1	0	0	1	2	16	3	0	21	58
Exiting Leg	6					16					8					28					58
Total	24					34					9					49					116

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Articulated Trucks

	Pulaski Street					Central Street					Endicott Street					Andover Street					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	3	3
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
2:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	2	0	0	5	6
3:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	1	0	0	1	2
3:30 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	2	0	0	2	4
3:45 PM	1	0	1	0	2	1	0	0	0	1	0	0	0	0	0	0	1	0	0	0	1	4
Total	3	0	1	0	4	2	1	0	0	3	0	0	0	0	0	0	1	3	0	0	4	11
4:00 PM	1	0	0	0	1	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3
4:15 PM	1	0	0	0	1	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	3
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	2	0	0	0	2	2	2	0	0	4	0	0	0	0	0	0	1	0	0	0	1	7
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
Grand Total	6	0	1	0	7	4	4	0	0	8	0	0	0	0	0	0	5	6	0	0	11	26
Approach %	85.7	0.0	14.3	0.0		50.0	50.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	45.5	54.5	0.0			
Total %	23.1	0.0	3.8	0.0	26.9	15.4	15.4	0.0	0.0	30.8	0.0	0.0	0.0	0.0	0.0	0.0	19.2	23.1	0.0	42.3		
Exiting Leg Total	10					6					0					10					26	

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

3:30 PM	Pulaski Street					Central Street					Endicott Street					Andover Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
3:30 PM	1	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	2	0	2	4
3:45 PM	1	0	1	0	2	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	4
4:00 PM	1	0	0	0	1	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3
4:15 PM	1	0	0	0	1	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	3
Total Volume	4	0	1	0	5	4	2	0	0	6	0	0	0	0	0	0	1	2	0	3	14
% Approach Total	80.0	0.0	20.0	0.0		66.7	33.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	33.3	66.7	0.0		
PHF	1.000	0.000	0.250	0.000	0.625	1.000	0.500	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.375	0.875
Entering Leg	4	0	1	0	5	4	2	0	0	6	0	0	0	0	0	0	1	2	0	3	14
Exiting Leg	6					2					0					6					14
Total	11					8					0					9					28

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Pulaski Street							Central Street							Endicott Street							Andover Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	1	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	2
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1
4:45 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2
Total	0	0	0	0	1	0	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	2	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
Grand Total	0	1	0	0	2	0	3	0	3	0	0	0	0	3	0	0	0	0	0	0	0	1	2	0	0	0	0	3	9
Approach %	0.0	33.3	0.0	0.0	66.7	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		33.3	66.7	0.0	0.0	0.0	0.0		
Total %	0.0	11.1	0.0	0.0	22.2	0.0	33.3	0.0	33.3	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	11.1	22.2	0.0	0.0	0.0	0.0	33.3	
Exiting Leg Total	2							2							2							3							9

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

4:00 PM	Pulaski Street							Central Street							Endicott Street							Andover Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	
4:45 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2	
Total Volume	0	0	0	0	1	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	2	4	
% Approach Total	0.0	0.0	0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.500	0.500	
Entering Leg	0	0	0	0	1	0	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	2	4	
Exiting Leg	1							2							0							1							4
Total	2							3							0							3							8

PDI File #: **228478 A**
 Location: **N: Pulaski Street S: Endicott Street**
 Location: **E: Central Street W: Andover Street**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Pedestrians

	Pulaski Street							Central Street							Endicott Street							Andover Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:00 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	4	4	6
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	0	0	3	
2:45 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	3	
Total	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	4	4	8	0	0	0	0	0	4	4	14
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2	
4:00 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
4:15 PM	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	4
4:30 PM	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	2
Total	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	5	0	5	10
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
5:30 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	2
Total	0	0	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	1	0	1	5
Grand Total	0	0	0	0	3	6	9	0	0	0	0	0	0	0	0	0	0	0	7	5	12	0	0	0	0	6	4	10	31
Approach %	0	0	0	0	33.3	66.7		0	0	0	0	0	0		0	0	0	0	58.3	41.7		0	0	0	0	60	40		
Total %	0	0	0	0	9.68	19.4	29	0	0	0	0	0	0	0	0	0	0	0	22.6	16.1	38.7	0	0	0	0	19.4	12.9	32.3	
Exiting Leg Total	9							0							12							10							31

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:00 PM	Pulaski Street							Central Street							Endicott Street							Andover Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:00 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	4	4	6
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	2
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	0	0	0	3
2:45 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	3
Total Volume	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	4	4	8	0	0	0	0	0	4	4	14
% Approach Total	0.0	0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	0.0	0.0	100.0		
PHF	0.000	0.000	0.000	0.000	0.500	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.500	0.667	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.583
Entering Leg	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	4	4	8	0	0	0	0	0	4	4	14
Exiting Leg	2							0							8							4							14
Total	4							0							16							8							28

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars and Heavy Vehicles (Combined)

	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	42	0	0	42	1	0	148	0	149	73	54	0	0	127	8	3	4	0	15	333
7:15 AM	0	39	2	0	41	1	0	170	0	171	102	68	0	0	170	12	7	1	0	20	402
7:30 AM	0	60	1	0	61	2	0	106	0	108	118	65	0	0	183	9	12	4	0	25	377
7:45 AM	0	59	2	0	61	4	0	131	0	135	90	83	0	0	173	13	4	3	0	20	389
Total	0	200	5	0	205	8	0	555	0	563	383	270	0	0	653	42	26	12	0	80	1501
8:00 AM	0	39	0	0	39	3	0	114	0	117	82	76	0	0	158	5	4	4	0	13	327
8:15 AM	0	42	2	0	44	1	0	117	0	118	88	69	0	0	157	10	6	4	0	20	339
8:30 AM	0	39	2	0	41	2	0	122	0	124	91	66	0	0	157	6	6	3	0	15	337
8:45 AM	0	50	1	0	51	4	0	87	0	91	108	70	0	0	178	8	11	0	0	19	339
Total	0	170	5	0	175	10	0	440	0	450	369	281	0	0	650	29	27	11	0	67	1342
Grand Total	0	370	10	0	380	18	0	995	0	1013	752	551	0	0	1303	71	53	23	0	147	2843
Approach %	0.0	97.4	2.6	0.0		1.8	0.0	98.2	0.0		57.7	42.3	0.0	0.0		48.3	36.1	15.6	0.0		
Total %	0.0	13.0	0.4	0.0	13.4	0.6	0.0	35.0	0.0	35.6	26.5	19.4	0.0	0.0	45.8	2.5	1.9	0.8	0.0	5.2	
Exiting Leg Total	592					815					1436					0					2843
Cars	0	334	9	0	343	18	0	985	0	1003	738	528	0	0	1266	68	53	20	0	141	2753
% Cars	0.0	90.3	90.0	0.0	90.3	100.0	0.0	99.0	0.0	99.0	98.1	95.8	0.0	0.0	97.2	95.8	100.0	87.0	0.0	95.9	96.8
Exiting Leg Total	566					800					1387					0					2753
Heavy Vehicles	0	36	1	0	37	0	0	10	0	10	14	23	0	0	37	3	0	3	0	6	90
% Heavy Vehicles	0.0	9.7	10.0	0.0	9.7	0.0	0.0	1.0	0.0	1.0	1.9	4.2	0.0	0.0	2.8	4.2	0.0	13.0	0.0	4.1	3.2
Exiting Leg Total	26					15					49					0					90

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	42	0	0	42	1	0	148	0	149	73	54	0	0	127	8	3	4	0	15	333
7:15 AM	0	39	2	0	41	1	0	170	0	171	102	68	0	0	170	12	7	1	0	20	402
7:30 AM	0	60	1	0	61	2	0	106	0	108	118	65	0	0	183	9	12	4	0	25	377
7:45 AM	0	59	2	0	61	4	0	131	0	135	90	83	0	0	173	13	4	3	0	20	389
Total Volume	0	200	5	0	205	8	0	555	0	563	383	270	0	0	653	42	26	12	0	80	1501
% Approach Total	0.0	97.6	2.4	0.0		1.4	0.0	98.6	0.0		58.7	41.3	0.0	0.0		52.5	32.5	15.0	0.0		
PHF	0.000	0.833	0.625	0.000	0.840	0.500	0.000	0.816	0.000	0.823	0.811	0.813	0.000	0.000	0.892	0.808	0.542	0.750	0.000	0.800	0.933
Cars	0	180	5	0	185	8	0	552	0	560	376	258	0	0	634	40	26	12	0	78	1457
Cars %	0.0	90.0	100.0	0.0	90.2	100.0	0.0	99.5	0.0	99.5	98.2	95.6	0.0	0.0	97.1	95.2	100.0	100.0	0.0	97.5	97.1
Heavy Vehicles	0	20	0	0	20	0	0	3	0	3	7	12	0	0	19	2	0	0	0	2	44
Heavy Vehicles %	0.0	10.0	0.0	0.0	9.8	0.0	0.0	0.5	0.0	0.5	1.8	4.4	0.0	0.0	2.9	4.8	0.0	0.0	0.0	2.5	2.9
Cars Enter Leg	0	180	5	0	185	8	0	552	0	560	376	258	0	0	634	40	26	12	0	78	1457
Heavy Enter Leg	0	20	0	0	20	0	0	3	0	3	7	12	0	0	19	2	0	0	0	2	44
Total Entering Leg	0	200	5	0	205	8	0	555	0	563	383	270	0	0	653	42	26	12	0	80	1501
Cars Exiting Leg	278					407					772					0					1457
Heavy Exiting Leg	12					7					25					0					44
Total Exiting Leg	290					414					797					0					1501

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars

	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	34	0	0	34	1	0	147	0	148	73	51	0	0	124	8	3	4	0	15	321
7:15 AM	0	35	2	0	37	1	0	169	0	170	98	64	0	0	162	10	7	1	0	18	387
7:30 AM	0	55	1	0	56	2	0	105	0	107	117	62	0	0	179	9	12	4	0	25	367
7:45 AM	0	56	2	0	58	4	0	131	0	135	88	81	0	0	169	13	4	3	0	20	382
Total	0	180	5	0	185	8	0	552	0	560	376	258	0	0	634	40	26	12	0	78	1457
8:00 AM	0	37	0	0	37	3	0	113	0	116	82	72	0	0	154	5	4	3	0	12	319
8:15 AM	0	36	1	0	37	1	0	114	0	115	84	69	0	0	153	10	6	3	0	19	324
8:30 AM	0	36	2	0	38	2	0	120	0	122	91	63	0	0	154	5	6	2	0	13	327
8:45 AM	0	45	1	0	46	4	0	86	0	90	105	66	0	0	171	8	11	0	0	19	326
Total	0	154	4	0	158	10	0	433	0	443	362	270	0	0	632	28	27	8	0	63	1296
Grand Total	0	334	9	0	343	18	0	985	0	1003	738	528	0	0	1266	68	53	20	0	141	2753
Approach %	0.0	97.4	2.6	0.0		1.8	0.0	98.2	0.0		58.3	41.7	0.0	0.0		48.2	37.6	14.2	0.0		
Total %	0.0	12.1	0.3	0.0	12.5	0.7	0.0	35.8	0.0	36.4	26.8	19.2	0.0	0.0	46.0	2.5	1.9	0.7	0.0	5.1	
Exiting Leg Total	566					800					1387					0					2753

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	34	0	0	34	1	0	147	0	148	73	51	0	0	124	8	3	4	0	15	321
7:15 AM	0	35	2	0	37	1	0	169	0	170	98	64	0	0	162	10	7	1	0	18	387
7:30 AM	0	55	1	0	56	2	0	105	0	107	117	62	0	0	179	9	12	4	0	25	367
7:45 AM	0	56	2	0	58	4	0	131	0	135	88	81	0	0	169	13	4	3	0	20	382
Total Volume	0	180	5	0	185	8	0	552	0	560	376	258	0	0	634	40	26	12	0	78	1457
% Approach Total	0.0	97.3	2.7	0.0		1.4	0.0	98.6	0.0		59.3	40.7	0.0	0.0		51.3	33.3	15.4	0.0		
PHF	0.000	0.804	0.625	0.000	0.797	0.500	0.000	0.817	0.000	0.824	0.803	0.796	0.000	0.000	0.885	0.769	0.542	0.750	0.000	0.780	0.941
Entering Leg	0	180	5	0	185	8	0	552	0	560	376	258	0	0	634	40	26	12	0	78	1457
Exiting Leg					278					407					772					0	1457
Total					463					967					1406					78	2914

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	8	0	0	8	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	12
7:15 AM	0	4	0	0	4	0	0	1	0	1	4	4	0	0	8	2	0	0	0	2	15
7:30 AM	0	5	0	0	5	0	0	1	0	1	1	3	0	0	4	0	0	0	0	0	10
7:45 AM	0	3	0	0	3	0	0	0	0	0	2	2	0	0	4	0	0	0	0	0	7
Total	0	20	0	0	20	0	0	3	0	3	7	12	0	0	19	2	0	0	0	2	44
8:00 AM	0	2	0	0	2	0	0	1	0	1	0	4	0	0	4	0	0	1	0	1	8
8:15 AM	0	6	1	0	7	0	0	3	0	3	4	0	0	0	4	0	0	1	0	1	15
8:30 AM	0	3	0	0	3	0	0	2	0	2	0	3	0	0	3	1	0	1	0	2	10
8:45 AM	0	5	0	0	5	0	0	1	0	1	3	4	0	0	7	0	0	0	0	0	13
Total	0	16	1	0	17	0	0	7	0	7	7	11	0	0	18	1	0	3	0	4	46
Grand Total	0	36	1	0	37	0	0	10	0	10	14	23	0	0	37	3	0	3	0	6	90
Approach %	0.0	97.3	2.7	0.0		0.0	0.0	100.0	0.0		37.8	62.2	0.0	0.0		50.0	0.0	50.0	0.0		
Total %	0.0	40.0	1.1	0.0	41.1	0.0	0.0	11.1	0.0	11.1	15.6	25.6	0.0	0.0	41.1	3.3	0.0	3.3	0.0	6.7	
Exiting Leg Total	26					15					49					0					90
Buses	0	3	0	0	3	0	0	3	0	3	2	3	0	0	5	1	0	2	0	3	14
% Buses	0.0	8.3	0.0	0.0	8.1	0.0	0.0	30.0	0.0	30.0	14.3	13.0	0.0	0.0	13.5	33.3	0.0	66.7	0.0	50.0	15.6
Exiting Leg Total	5					2					7					0					14
Single-Unit Trucks	0	26	1	0	27	0	0	6	0	6	11	16	0	0	27	2	0	1	0	3	63
% Single-Unit	0.0	72.2	100.0	0.0	73.0	0.0	0.0	60.0	0.0	60.0	78.6	69.6	0.0	0.0	73.0	66.7	0.0	33.3	0.0	50.0	70.0
Exiting Leg Total	17					12					34					0					63
Articulated Trucks	0	7	0	0	7	0	0	1	0	1	1	4	0	0	5	0	0	0	0	0	13
% Articulated	0.0	19.4	0.0	0.0	18.9	0.0	0.0	10.0	0.0	10.0	7.1	17.4	0.0	0.0	13.5	0.0	0.0	0.0	0.0	0.0	14.4
Exiting Leg Total	4					1					8					0					13

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	0	2	0	0	2	0	0	1	0	1	0	4	0	0	4	0	0	1	0	1	8
8:15 AM	0	6	1	0	7	0	0	3	0	3	4	0	0	4	0	0	1	0	1	15	
8:30 AM	0	3	0	0	3	0	0	2	0	2	0	3	0	0	3	1	0	1	0	2	10
8:45 AM	0	5	0	0	5	0	0	1	0	1	3	4	0	0	7	0	0	0	0	0	13
Total Volume	0	16	1	0	17	0	0	7	0	7	7	11	0	0	18	1	0	3	0	4	46
% Approach Total	0.0	94.1	5.9	0.0		0.0	0.0	100.0	0.0		38.9	61.1	0.0	0.0		25.0	0.0	75.0	0.0		
PHF	0.000	0.667	0.250	0.000	0.607	0.000	0.000	0.583	0.000	0.583	0.438	0.688	0.000	0.000	0.643	0.250	0.000	0.750	0.000	0.500	0.767
Buses	0	2	0	0	2	0	0	3	0	3	0	2	0	0	2	0	0	2	0	2	9
Buses %	0.0	12.5	0.0	0.0	11.8	0.0	0.0	42.9	0.0	42.9	0.0	18.2	0.0	0.0	11.1	0.0	0.0	66.7	0.0	50.0	19.6
Single-Unit Trucks	0	12	1	0	13	0	0	4	0	4	6	7	0	0	13	1	0	1	0	2	32
Single-Unit %	0.0	75.0	100.0	0.0	76.5	0.0	0.0	57.1	0.0	57.1	85.7	63.6	0.0	0.0	72.2	100.0	0.0	33.3	0.0	50.0	69.6
Articulated Trucks	0	2	0	0	2	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	5
Articulated %	0.0	12.5	0.0	0.0	11.8	0.0	0.0	0.0	0.0	0.0	14.3	18.2	0.0	0.0	16.7	0.0	0.0	0.0	0.0	0.0	10.9
Buses	0	2	0	0	2	0	0	3	0	3	0	2	0	0	2	0	0	2	0	2	9
Single-Unit Trucks	0	12	1	0	13	0	0	4	0	4	6	7	0	0	13	1	0	1	0	2	32
Articulated Trucks	0	2	0	0	2	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	5
Total Entering Leg	0	16	1	0	17	0	0	7	0	7	7	11	0	0	18	1	0	3	0	4	46
Buses	4					0					5					0					9
Single-Unit Trucks	8					7					17					0					32
Articulated Trucks	2					1					2					0					5
Total Exiting Leg	14					8					24					0					46

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**



Buses

	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	1	0	0	0	1	3
7:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	2	1	0	0	3	1	0	0	0	1	5
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:15 AM	0	2	0	0	2	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	4
8:30 AM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	1	0	1	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	2	0	0	2	0	0	3	0	3	0	2	0	0	2	0	0	2	0	2	9
Grand Total	0	3	0	0	3	0	0	3	0	3	2	3	0	0	5	1	0	2	0	3	14
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		40.0	60.0	0.0	0.0		33.3	0.0	66.7	0.0		
Total %	0.0	21.4	0.0	0.0	21.4	0.0	0.0	21.4	0.0	21.4	14.3	21.4	0.0	0.0	35.7	7.1	0.0	14.3	0.0	21.4	
Exiting Leg Total	5					2					7					0					14

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
8:15 AM	0	2	0	0	2	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	4
8:30 AM	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	1	0	1	1	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
Total Volume	0	2	0	0	2	0	0	3	0	3	0	2	0	0	2	0	0	2	0	2	9	9
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0			
PHF	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.375	0.000	0.375	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.500	0.000	0.500	0.563	0.563
Entering Leg	0	2	0	0	2	0	0	3	0	3	0	2	0	0	2	0	0	2	0	2	9	9
Exiting Leg					4					0					5					0	9	9
Total	6					3					7					2					18	18

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Single-Unit Trucks

	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	6
7:15 AM	0	4	0	0	4	0	0	1	0	1	3	3	0	0	6	1	0	0	0	1	12
7:30 AM	0	3	0	0	3	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	7
7:45 AM	0	3	0	0	3	0	0	0	0	0	2	1	0	0	3	0	0	0	0	0	6
Total	0	14	0	0	14	0	0	2	0	2	5	9	0	0	14	1	0	0	0	1	31
8:00 AM	0	2	0	0	2	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	6
8:15 AM	0	2	1	0	3	0	0	1	0	1	3	0	0	0	3	0	0	1	0	1	8
8:30 AM	0	3	0	0	3	0	0	1	0	1	0	1	0	0	1	1	0	0	0	1	6
8:45 AM	0	5	0	0	5	0	0	1	0	1	3	3	0	0	6	0	0	0	0	0	12
Total	0	12	1	0	13	0	0	4	0	4	6	7	0	0	13	1	0	1	0	2	32
Grand Total	0	26	1	0	27	0	0	6	0	6	11	16	0	0	27	2	0	1	0	3	63
Approach %	0.0	96.3	3.7	0.0		0.0	0.0	100.0	0.0		40.7	59.3	0.0	0.0		66.7	0.0	33.3	0.0		
Total %	0.0	41.3	1.6	0.0	42.9	0.0	0.0	9.5	0.0	9.5	17.5	25.4	0.0	0.0	42.9	3.2	0.0	1.6	0.0	4.8	
Exiting Leg Total	17					12					34					0					63

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	0	2	0	0	2	0	0	1	0	1	0	3	0	0	3	0	0	0	0	0	6
8:15 AM	0	2	1	0	3	0	0	1	0	1	3	0	0	0	3	0	0	1	0	1	8
8:30 AM	0	3	0	0	3	0	0	1	0	1	0	1	0	0	1	1	0	0	0	1	6
8:45 AM	0	5	0	0	5	0	0	1	0	1	3	3	0	0	6	0	0	0	0	0	12
Total Volume	0	12	1	0	13	0	0	4	0	4	6	7	0	0	13	1	0	1	0	2	32
% Approach Total	0.0	92.3	7.7	0.0		0.0	0.0	100.0	0.0		46.2	53.8	0.0	0.0		50.0	0.0	50.0	0.0		
PHF	0.000	0.600	0.250	0.000	0.650	0.000	0.000	1.000	0.000	1.000	0.500	0.583	0.000	0.000	0.542	0.250	0.000	0.250	0.000	0.500	0.667
Entering Leg	0	12	1	0	13	0	0	4	0	4	6	7	0	0	13	1	0	1	0	2	32
Exiting Leg					8					7					17					0	32
Total	21					11					30					2					64

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Articulated Trucks

	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	3	0	0	3	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	5
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	5	0	0	5	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	8
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
8:15 AM	0	2	0	0	2	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	5
Grand Total	0	7	0	0	7	0	0	1	0	1	1	4	0	0	5	0	0	0	0	0	13
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		20.0	80.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	53.8	0.0	0.0	53.8	0.0	0.0	7.7	0.0	7.7	7.7	30.8	0.0	0.0	38.5	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	4					1					8					0					13

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	3	0	0	3	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	5
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total Volume	0	5	0	0	5	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	8
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.417	0.000	0.000	0.417	0.000	0.000	0.250	0.000	0.250	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.400
Entering Leg	0	5	0	0	5	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	8
Exiting Leg	2					0					6					0					8
Total	7					1					8					0					16

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Pulaski Street							Gardner Street							Pulaski Street							Pound Lane							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		50.0	0.0	0.0	0.0	0.0	50.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	50.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Exiting Leg Total	1							1							0							0							2

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:45 AM	Pulaski Street							Gardner Street							Pulaski Street							Pound Lane							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		50.0	0.0	0.0	0.0	0.0	50.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	
Entering Leg	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Exiting Leg	1							1							0							0							2
Total	1							3							0							0							4

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Pedestrians

	Pulaski Street							Gardner Street							Pulaski Street							Pound Lane							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100			
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	100		
Exiting Leg Total	0							0							0							1							1

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Pulaski Street							Gardner Street							Pulaski Street							Pound Lane							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250		0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1
Exiting Leg	0							0							0							1							1
Total	0							0							0							2							2

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Cars and Heavy Vehicles (Combined)

	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
2:00 PM	0	68	3	0	71	0	0	96	0	96	86	62	1	0	149	8	11	1	0	20	336	
2:15 PM	0	64	2	0	66	5	0	96	0	101	97	61	0	0	158	12	3	3	0	18	343	
2:30 PM	0	97	4	0	101	5	0	140	0	145	105	56	0	0	161	7	9	4	1	21	428	
2:45 PM	0	93	5	0	98	6	0	146	0	152	109	52	0	0	161	6	7	2	0	15	426	
Total	0	322	14	0	336	16	0	478	0	494	397	231	1	0	629	33	30	10	1	74	1533	
3:00 PM	0	94	1	0	95	6	0	119	0	125	116	47	0	0	163	10	7	2	0	19	402	
3:15 PM	1	92	2	0	95	4	0	138	0	142	100	70	0	0	170	5	6	3	0	14	421	
3:30 PM	0	93	1	0	94	8	0	151	0	159	100	69	0	0	169	4	7	3	0	14	436	
3:45 PM	0	95	3	0	98	6	0	116	0	122	103	58	0	1	162	12	3	5	0	20	402	
Total	1	374	7	0	382	24	0	524	0	548	419	244	0	1	664	31	23	13	0	67	1661	
4:00 PM	0	103	5	0	108	3	0	118	0	121	104	66	0	0	170	7	6	4	0	17	416	
4:15 PM	0	102	1	0	103	2	0	125	0	127	109	49	0	0	158	6	4	3	0	13	401	
4:30 PM	0	94	2	0	96	3	0	121	0	124	105	54	0	0	159	3	6	4	0	13	392	
4:45 PM	0	74	2	0	76	2	0	136	0	138	105	53	0	0	158	8	5	1	0	14	386	
Total	0	373	10	0	383	10	0	500	0	510	423	222	0	0	645	24	21	12	0	57	1595	
5:00 PM	0	98	2	0	100	1	0	114	0	115	106	56	0	0	162	5	4	0	0	9	386	
5:15 PM	0	105	1	0	106	0	0	140	0	140	104	53	0	0	157	9	4	4	0	17	420	
5:30 PM	0	84	3	0	87	0	0	128	0	128	109	55	0	0	164	6	11	5	0	22	401	
5:45 PM	0	50	2	0	52	4	0	150	0	154	103	41	0	0	144	9	4	4	0	17	367	
Total	0	337	8	0	345	5	0	532	0	537	422	205	0	0	627	29	23	13	0	65	1574	
Grand Total	1	1406	39	0	1446	55	0	2034	0	2089	1661	902	1	1	2565	117	97	48	1	263	6363	
Approach %	0.1	97.2	2.7	0.0		2.6	0.0	97.4	0.0		64.8	35.2	0.0	0.0		44.5	36.9	18.3	0.4			
Total %	0.0	22.1	0.6	0.0	22.7	0.9	0.0	32.0	0.0	32.8	26.1	14.2	0.0	0.0	40.3	1.8	1.5	0.8	0.0	4.1		
Exiting Leg Total	1005					1797					3558										3	6363
Cars	1	1362	38	0	1401	54	0	2012	0	2066	1650	857	0	1	2508	113	95	46	1	255	6230	
% Cars	100.0	96.9	97.4	0.0	96.9	98.2	0.0	98.9	0.0	98.9	99.3	95.0	0.0	100.0	97.8	96.6	97.9	95.8	100.0	97.0		97.9
Exiting Leg Total	957					1783					3488										2	6230
Heavy Vehicles	0	44	1	0	45	1	0	22	0	23	11	45	1	0	57	4	2	2	0	8	133	
% Heavy Vehicles	0.0	3.1	2.6	0.0	3.1	1.8	0.0	1.1	0.0	1.1	0.7	5.0	100.0	0.0	2.2	3.4	2.1	4.2	0.0	3.0		2.1
Exiting Leg Total	48					14					70										1	133

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:45 PM	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:45 PM	0	93	5	0	98	6	0	146	0	152	109	52	0	0	161	6	7	2	0	15	426
3:00 PM	0	94	1	0	95	6	0	119	0	125	116	47	0	0	163	10	7	2	0	19	402
3:15 PM	1	92	2	0	95	4	0	138	0	142	100	70	0	0	170	5	6	3	0	14	421
3:30 PM	0	93	1	0	94	8	0	151	0	159	100	69	0	0	169	4	7	3	0	14	436
Total Volume	1	372	9	0	382	24	0	554	0	578	425	238	0	0	663	25	27	10	0	62	1685
% Approach Total	0.3	97.4	2.4	0.0		4.2	0.0	95.8	0.0		64.1	35.9	0.0	0.0		40.3	43.5	16.1	0.0		
PHF	0.250	0.989	0.450	0.000	0.974	0.750	0.000	0.917	0.000	0.909	0.916	0.850	0.000	0.000	0.975	0.625	0.964	0.833	0.000	0.816	0.966
Cars	1	362	8	0	371	24	0	547	0	571	420	226	0	0	646	25	26	9	0	60	1648
Cars %	100.0	97.3	88.9	0.0	97.1	100.0	0.0	98.7	0.0	98.8	98.8	95.0	0.0	0.0	97.4	100.0	96.3	90.0	0.0	96.8	97.8
Heavy Vehicles	0	10	1	0	11	0	0	7	0	7	5	12	0	0	17	0	1	1	0	2	37
Heavy Vehicles %	0.0	2.7	11.1	0.0	2.9	0.0	0.0	1.3	0.0	1.2	1.2	5.0	0.0	0.0	2.6	0.0	3.7	10.0	0.0	3.2	2.2
Cars Enter Leg	1	362	8	0	371	24	0	547	0	571	420	226	0	0	646	25	26	9	0	60	1648
Heavy Enter Leg	0	10	1	0	11	0	0	7	0	7	5	12	0	0	17	0	1	1	0	2	37
Total Entering Leg	1	372	9	0	382	24	0	554	0	578	425	238	0	0	663	25	27	10	0	62	1685
Cars Exiting Leg	259					454					934					1					1648
Heavy Exiting Leg	13					7					17					0					37
Total Exiting Leg	272					461					951					1					1685

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Cars

	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	63	3	0	66	0	0	95	0	95	85	54	0	0	139	7	10	1	0	18	318
2:15 PM	0	61	2	0	63	4	0	95	0	99	95	58	0	0	153	11	3	3	0	17	332
2:30 PM	0	93	4	0	97	5	0	135	0	140	105	53	0	0	158	7	9	3	1	20	415
2:45 PM	0	90	4	0	94	6	0	146	0	152	108	51	0	0	159	6	7	2	0	15	420
Total	0	307	13	0	320	15	0	471	0	486	393	216	0	0	609	31	29	9	1	70	1485
3:00 PM	0	93	1	0	94	6	0	116	0	122	116	44	0	0	160	10	6	2	0	18	394
3:15 PM	1	89	2	0	92	4	0	138	0	142	98	67	0	0	165	5	6	2	0	13	412
3:30 PM	0	90	1	0	91	8	0	147	0	155	98	64	0	0	162	4	7	3	0	14	422
3:45 PM	0	94	3	0	97	6	0	113	0	119	102	56	0	1	159	12	3	5	0	20	395
Total	1	366	7	0	374	24	0	514	0	538	414	231	0	1	646	31	22	12	0	65	1623
4:00 PM	0	99	5	0	104	3	0	116	0	119	104	61	0	0	165	7	6	4	0	17	405
4:15 PM	0	96	1	0	97	2	0	125	0	127	109	48	0	0	157	6	4	3	0	13	394
4:30 PM	0	92	2	0	94	3	0	121	0	124	105	54	0	0	159	3	6	4	0	13	390
4:45 PM	0	73	2	0	75	2	0	135	0	137	105	51	0	0	156	8	5	1	0	14	382
Total	0	360	10	0	370	10	0	497	0	507	423	214	0	0	637	24	21	12	0	57	1571
5:00 PM	0	97	2	0	99	1	0	113	0	114	104	53	0	0	157	5	4	0	0	9	379
5:15 PM	0	100	1	0	101	0	0	140	0	140	104	48	0	0	152	8	4	4	0	16	409
5:30 PM	0	83	3	0	86	0	0	127	0	127	109	54	0	0	163	5	11	5	0	21	397
5:45 PM	0	49	2	0	51	4	0	150	0	154	103	41	0	0	144	9	4	4	0	17	366
Total	0	329	8	0	337	5	0	530	0	535	420	196	0	0	616	27	23	13	0	63	1551
Grand Total	1	1362	38	0	1401	54	0	2012	0	2066	1650	857	0	1	2508	113	95	46	1	255	6230
Approach %	0.1	97.2	2.7	0.0		2.6	0.0	97.4	0.0		65.8	34.2	0.0	0.0		44.3	37.3	18.0	0.4		
Total %	0.0	21.9	0.6	0.0	22.5	0.9	0.0	32.3	0.0	33.2	26.5	13.8	0.0	0.0	40.3	1.8	1.5	0.7	0.0	4.1	
Exiting Leg Total	957					1783					3488					2					6230

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:45 PM	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:45 PM	0	90	4	0	94	6	0	146	0	152	108	51	0	0	159	6	7	2	0	15	420
3:00 PM	0	93	1	0	94	6	0	116	0	122	116	44	0	0	160	10	6	2	0	18	394
3:15 PM	1	89	2	0	92	4	0	138	0	142	98	67	0	0	165	5	6	2	0	13	412
3:30 PM	0	90	1	0	91	8	0	147	0	155	98	64	0	0	162	4	7	3	0	14	422
Total Volume	1	362	8	0	371	24	0	547	0	571	420	226	0	0	646	25	26	9	0	60	1648
% Approach Total	0.3	97.6	2.2	0.0		4.2	0.0	95.8	0.0		65.0	35.0	0.0	0.0		41.7	43.3	15.0	0.0		
PHF	0.250	0.973	0.500	0.000	0.987	0.750	0.000	0.930	0.000	0.921	0.905	0.843	0.000	0.000	0.979	0.625	0.929	0.750	0.000	0.833	0.976
Entering Leg	1	362	8	0	371	24	0	547	0	571	420	226	0	0	646	25	26	9	0	60	1648
Exiting Leg					259					454					934					1	1648
Total					630					1025					1580					61	3296

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	5	0	0	5	0	0	1	0	1	1	8	1	0	10	1	1	0	0	2	18
2:15 PM	0	3	0	0	3	1	0	1	0	2	2	3	0	0	5	1	0	0	0	1	11
2:30 PM	0	4	0	0	4	0	0	5	0	5	0	3	0	0	3	0	0	1	0	1	13
2:45 PM	0	3	1	0	4	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	6
Total	0	15	1	0	16	1	0	7	0	8	4	15	1	0	20	2	1	1	0	4	48
3:00 PM	0	1	0	0	1	0	0	3	0	3	0	3	0	0	3	0	1	0	0	1	8
3:15 PM	0	3	0	0	3	0	0	0	0	0	2	3	0	0	5	0	0	1	0	1	9
3:30 PM	0	3	0	0	3	0	0	4	0	4	2	5	0	0	7	0	0	0	0	0	14
3:45 PM	0	1	0	0	1	0	0	3	0	3	1	2	0	0	3	0	0	0	0	0	7
Total	0	8	0	0	8	0	0	10	0	10	5	13	0	0	18	0	1	1	0	2	38
4:00 PM	0	4	0	0	4	0	0	2	0	2	0	5	0	0	5	0	0	0	0	0	11
4:15 PM	0	6	0	0	6	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	7
4:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	4
Total	0	13	0	0	13	0	0	3	0	3	0	8	0	0	8	0	0	0	0	0	24
5:00 PM	0	1	0	0	1	0	0	1	0	1	2	3	0	0	5	0	0	0	0	0	7
5:15 PM	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	1	0	0	0	1	11
5:30 PM	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	1	0	0	0	1	4
5:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	8	0	0	8	0	0	2	0	2	2	9	0	0	11	2	0	0	0	2	23
Grand Total	0	44	1	0	45	1	0	22	0	23	11	45	1	0	57	4	2	2	0	8	133
Approach %	0.0	97.8	2.2	0.0		4.3	0.0	95.7	0.0		19.3	78.9	1.8	0.0		50.0	25.0	25.0	0.0		
Total %	0.0	33.1	0.8	0.0	33.8	0.8	0.0	16.5	0.0	17.3	8.3	33.8	0.8	0.0	42.9	3.0	1.5	1.5	0.0	6.0	
Exiting Leg Total	48					14					70					1					133
Buses	0	2	0	0	2	0	0	7	0	7	6	5	0	0	11	2	1	1	0	4	24
% Buses	0.0	4.5	0.0	0.0	4.4	0.0	0.0	31.8	0.0	30.4	54.5	11.1	0.0	0.0	19.3	50.0	50.0	50.0	0.0	50.0	18.0
Exiting Leg Total	6					7					11					0					24
Single-Unit Trucks	0	34	1	0	35	1	0	15	0	16	5	28	1	0	34	2	1	1	0	4	89
% Single-Unit	0.0	77.3	100.0	0.0	77.8	100.0	0.0	68.2	0.0	69.6	45.5	62.2	100.0	0.0	59.6	50.0	50.0	50.0	0.0	50.0	66.9
Exiting Leg Total	30					7					51					1					89
Articulated Trucks	0	8	0	0	8	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	20
% Articulated	0.0	18.2	0.0	0.0	17.8	0.0	0.0	0.0	0.0	0.0	0.0	26.7	0.0	0.0	21.1	0.0	0.0	0.0	0.0	0.0	15.0
Exiting Leg Total	12					0					8					0					20

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:00 PM	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	5	0	0	5	0	0	1	0	1	1	8	1	0	10	1	1	0	0	2	18
2:15 PM	0	3	0	0	3	1	0	1	0	2	2	3	0	0	5	1	0	0	0	1	11
2:30 PM	0	4	0	0	4	0	0	5	0	5	0	3	0	0	3	0	0	1	0	1	13
2:45 PM	0	3	1	0	4	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	6
Total Volume	0	15	1	0	16	1	0	7	0	8	4	15	1	0	20	2	1	1	0	4	48
% Approach Total	0.0	93.8	6.3	0.0		12.5	0.0	87.5	0.0		20.0	75.0	5.0	0.0		50.0	25.0	25.0	0.0		
PHF	0.000	0.750	0.250	0.000	0.800	0.250	0.000	0.350	0.000	0.400	0.500	0.469	0.250	0.000	0.500	0.500	0.250	0.250	0.000	0.500	0.667
Buses	0	1	0	0	1	0	0	3	0	3	3	5	0	0	8	2	1	0	0	3	15
Buses %	0.0	6.7	0.0	0.0	6.3	0.0	0.0	42.9	0.0	37.5	75.0	33.3	0.0	0.0	40.0	100.0	100.0	0.0	0.0	75.0	31.3
Single-Unit Trucks	0	14	1	0	15	1	0	4	0	5	1	7	1	0	9	0	0	1	0	1	30
Single-Unit %	0.0	93.3	100.0	0.0	93.8	100.0	0.0	57.1	0.0	62.5	25.0	46.7	100.0	0.0	45.0	0.0	0.0	100.0	0.0	25.0	62.5
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	6.3
Buses	0	1	0	0	1	0	0	3	0	3	3	5	0	0	8	2	1	0	0	3	15
Single-Unit Trucks	0	14	1	0	15	1	0	4	0	5	1	7	1	0	9	0	0	1	0	1	30
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
Total Entering Leg	0	15	1	0	16	1	0	7	0	8	4	15	1	0	20	2	1	1	0	4	48
Buses	5					4					6					0					15
Single-Unit Trucks	9					2					18					1					30
Articulated Trucks	3					0					0					0					3
Total Exiting Leg	17					6					24					1					48

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**



Buses

	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	1	1	0	0	2	4
2:15 PM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	1	0	0	0	1	4
2:30 PM	0	1	0	0	1	0	0	3	0	3	0	2	0	0	2	0	0	0	0	0	6
2:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total	0	1	0	0	1	0	0	3	0	3	3	5	0	0	8	2	1	0	0	3	15
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	1	0	0	1	0	0	0	0	0	2	0	0	0	2	0	0	1	0	1	4
3:30 PM	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	0	0	0	0	0	3
3:45 PM	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	1	0	0	1	0	0	4	0	4	3	0	0	0	3	0	0	1	0	1	9
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	2	0	0	2	0	0	7	0	7	6	5	0	0	11	2	1	1	0	4	24
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		54.5	45.5	0.0	0.0		50.0	25.0	25.0	0.0		
Total %	0.0	8.3	0.0	0.0	8.3	0.0	0.0	29.2	0.0	29.2	25.0	20.8	0.0	0.0	45.8	8.3	4.2	4.2	0.0	16.7	
Exiting Leg Total	6					7					11					0					24

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:00 PM	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	1	1	0	0	2	4
2:15 PM	0	0	0	0	0	0	0	0	0	0	1	2	0	0	3	1	0	0	0	1	4
2:30 PM	0	1	0	0	1	0	0	3	0	3	0	2	0	0	2	0	0	0	0	0	6
2:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	1
Total Volume	0	1	0	0	1	0	0	3	0	3	3	5	0	0	8	2	1	0	0	3	15
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		37.5	62.5	0.0	0.0		66.7	33.3	0.0	0.0		
PHF	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.250	0.750	0.625	0.000	0.000	0.667	0.500	0.250	0.000	0.000	0.375	0.625
Entering Leg	0	1	0	0	1	0	0	3	0	3	3	5	0	0	8	2	1	0	0	3	15
Exiting Leg	5					4					6					0					15
Total	6					7					14					3					30

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Single-Unit Trucks

	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	5	0	0	5	0	0	1	0	1	0	5	1	0	6	0	0	0	0	0	12
2:15 PM	0	3	0	0	3	1	0	1	0	2	1	1	0	0	2	0	0	0	0	0	7
2:30 PM	0	3	0	0	3	0	0	2	0	2	0	1	0	0	1	0	0	1	0	1	7
2:45 PM	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	0	14	1	0	15	1	0	4	0	5	1	7	1	0	9	0	0	1	0	1	30
3:00 PM	0	0	0	0	0	0	0	3	0	3	0	3	0	0	3	0	1	0	0	1	7
3:15 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
3:30 PM	0	0	0	0	0	0	0	2	0	2	1	2	0	0	3	0	0	0	0	0	5
3:45 PM	0	1	0	0	1	0	0	1	0	1	1	1	0	0	2	0	0	0	0	0	4
Total	0	3	0	0	3	0	0	6	0	6	2	8	0	0	10	0	1	0	0	1	20
4:00 PM	0	3	0	0	3	0	0	2	0	2	0	4	0	0	4	0	0	0	0	0	9
4:15 PM	0	5	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
4:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	4
Total	0	11	0	0	11	0	0	3	0	3	0	6	0	0	6	0	0	0	0	0	20
5:00 PM	0	1	0	0	1	0	0	1	0	1	2	3	0	0	5	0	0	0	0	0	7
5:15 PM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	1	0	0	0	1	7
5:30 PM	0	1	0	0	1	0	0	1	0	1	0	1	0	0	1	1	0	0	0	1	4
5:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	6	0	0	6	0	0	2	0	2	2	7	0	0	9	2	0	0	0	2	19
Grand Total	0	34	1	0	35	1	0	15	0	16	5	28	1	0	34	2	1	1	0	4	89
Approach %	0.0	97.1	2.9	0.0		6.3	0.0	93.8	0.0		14.7	82.4	2.9	0.0		50.0	25.0	25.0	0.0		
Total %	0.0	38.2	1.1	0.0	39.3	1.1	0.0	16.9	0.0	18.0	5.6	31.5	1.1	0.0	38.2	2.2	1.1	1.1	0.0	4.5	
Exiting Leg Total	30					7					51					1					89

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:00 PM	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	5	0	0	5	0	0	1	0	1	0	5	1	0	6	0	0	0	0	0	12
2:15 PM	0	3	0	0	3	1	0	1	0	2	1	1	0	0	2	0	0	0	0	0	7
2:30 PM	0	3	0	0	3	0	0	2	0	2	0	1	0	0	1	0	0	1	0	1	7
2:45 PM	0	3	1	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Total Volume	0	14	1	0	15	1	0	4	0	5	1	7	1	0	9	0	0	1	0	1	30
% Approach Total	0.0	93.3	6.7	0.0		20.0	0.0	80.0	0.0		11.1	77.8	11.1	0.0		0.0	0.0	100.0	0.0		
PHF	0.000	0.700	0.250	0.000	0.750	0.250	0.000	0.500	0.000	0.625	0.250	0.350	0.250	0.000	0.375	0.000	0.000	0.250	0.000	0.250	0.625
Entering Leg	0	14	1	0	15	1	0	4	0	5	1	7	1	0	9	0	0	1	0	1	30
Exiting Leg	9					2					18					1					30
Total	24					7					27					2					60

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Articulated Trucks

	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
3:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
3:30 PM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	9
4:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
4:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
Grand Total	0	8	0	0	8	0	0	0	0	0	0	12	0	0	12	0	0	0	0	0	20
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		
Total %	0.0	40.0	0.0	0.0	40.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0	0.0	0.0	60.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	12					0					8					0					20

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

3:30 PM	Pulaski Street					Gardner Street					Pulaski Street					Pound Lane					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
3:30 PM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	
4:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	
4:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2	
Total Volume	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11	
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0			0.0	100.0	0.0	0.0	0.0	0.0	0.0				
PHF	0.000	0.417	0.000	0.000	0.417	0.000	0.000	0.000	0.000	0.000		0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.458	
Entering Leg	0	5	0	0	5	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	11	
Exiting Leg	6					0					5					0					11	
Total	11					0					11					0					22	

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Pulaski Street							Gardner Street							Pulaski Street							Pound Lane							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	1	0	0	0	0	1	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Approach %	0.0	100.0	0.0	0.0	0.0	0.0		50.0	0.0	0.0	0.0	50.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	33.3	0.0	0.0	0.0	0.0	33.3	33.3	0.0	0.0	0.0	33.3	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	1							1							1							0							3

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

4:00 PM	Pulaski Street							Gardner Street							Pulaski Street							Pound Lane								
	from North							from East							from South							from West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total Volume	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		50.0	0.0	0.0	0.0	50.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500		
Entering Leg	0	0	0	0	0	0	0	1	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Exiting Leg	1							1							0							0							2	
Total	1							3							0							0							4	

PDI File #: **228478 B**
 Location: **N: Pulaski Street S: Pulaski Street**
 Location: **E: Gardner Street W: Pound Lane**
 City, State: **Peabody, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Pedestrians

	Pulaski Street							Gardner Street							Pulaski Street							Pound Lane							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:00 PM	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Grand Total	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	4	0	4	6	6
Approach %	0	0	0	0	0	100		0	0	0	0	0	100		0	0	0	0	0	0	0	0	0	0	100	0			
Total %	0	0	0	0	0	16.7	16.7	0	0	0	0	0	16.7	16.7	0	0	0	0	0	0	0	0	0	0	66.7	0	66.7		
Exiting Leg Total	1							1							0							4							6

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:00 PM	Pulaski Street							Gardner Street							Pulaski Street							Pound Lane							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:00 PM	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	3	3
% Approach Total	0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	100.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250		0.250
Entering Leg	0	0	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	1	0	1	3	3
Exiting Leg	1							1							0							1							3
Total	2							2							0							2							6

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars and Heavy Vehicles (Combined)

	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	25	75	0	0	100	2	1	1	0	4	1	127	1	0	129	1	1	43	0	45	278
7:15 AM	35	119	0	0	154	2	2	1	0	5	1	111	0	0	112	4	1	39	0	44	315
7:30 AM	32	210	0	0	242	1	0	2	0	3	0	161	0	0	161	9	1	37	0	47	453
7:45 AM	33	117	0	0	150	1	0	0	0	1	0	175	1	0	176	2	1	47	0	50	377
Total	125	521	0	0	646	6	3	4	0	13	2	574	2	0	578	16	4	166	0	186	1423
8:00 AM	37	105	0	0	142	1	0	0	0	1	1	141	1	0	143	7	2	53	0	62	348
8:15 AM	34	105	0	0	139	1	0	0	0	1	0	126	1	0	127	3	2	53	0	58	325
8:30 AM	40	97	0	0	137	0	1	0	0	1	0	138	2	0	140	3	0	54	0	57	335
8:45 AM	48	84	1	0	133	0	1	0	0	1	1	157	1	0	159	3	0	58	0	61	354
Total	159	391	1	0	551	2	2	0	0	4	2	562	5	0	569	16	4	218	0	238	1362
Grand Total	284	912	1	0	1197	8	5	4	0	17	4	1136	7	0	1147	32	8	384	0	424	2785
Approach %	23.7	76.2	0.1	0.0		47.1	29.4	23.5	0.0		0.3	99.0	0.6	0.0		7.5	1.9	90.6	0.0		
Total %	10.2	32.7	0.0	0.0	43.0	0.3	0.2	0.1	0.0	0.6	0.1	40.8	0.3	0.0	41.2	1.1	0.3	13.8	0.0	15.2	
Exiting Leg Total	1528					13					948					296					2785
Cars	265	886	1	0	1152	8	5	4	0	17	4	1116	4	0	1124	24	8	363	0	395	2688
% Cars	93.3	97.1	100.0	0.0	96.2	100.0	100.0	100.0	0.0	100.0	100.0	98.2	57.1	0.0	98.0	75.0	100.0	94.5	0.0	93.2	96.5
Exiting Leg Total	1487					13					914					274					2688
Heavy Vehicles	19	26	0	0	45	0	0	0	0	0	0	20	3	0	23	8	0	21	0	29	97
% Heavy Vehicles	6.7	2.9	0.0	0.0	3.8	0.0	0.0	0.0	0.0	0.0	0.0	1.8	42.9	0.0	2.0	25.0	0.0	5.5	0.0	6.8	3.5
Exiting Leg Total	41					0					34					22					97

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:30 AM	32	210	0	0	242	1	0	2	0	3	0	161	0	0	161	9	1	37	0	47	453
7:45 AM	33	117	0	0	150	1	0	0	0	1	0	175	1	0	176	2	1	47	0	50	377
8:00 AM	37	105	0	0	142	1	0	0	0	1	1	141	1	0	143	7	2	53	0	62	348
8:15 AM	34	105	0	0	139	1	0	0	0	1	0	126	1	0	127	3	2	53	0	58	325
Total Volume	136	537	0	0	673	4	0	2	0	6	1	603	3	0	607	21	6	190	0	217	1503
% Approach Total	20.2	79.8	0.0	0.0		66.7	0.0	33.3	0.0		0.2	99.3	0.5	0.0		9.7	2.8	87.6	0.0		
PHF	0.919	0.639	0.000	0.000	0.695	1.000	0.000	0.250	0.000	0.500	0.250	0.861	0.750	0.000	0.862	0.583	0.750	0.896	0.000	0.875	0.829
Cars	125	522	0	0	647	4	0	2	0	6	1	594	2	0	597	18	6	184	0	208	1458
Cars %	91.9	97.2	0.0	0.0	96.1	100.0	0.0	100.0	0.0	100.0	100.0	98.5	66.7	0.0	98.4	85.7	100.0	96.8	0.0	95.9	97.0
Heavy Vehicles	11	15	0	0	26	0	0	0	0	0	0	9	1	0	10	3	0	6	0	9	45
Heavy Vehicles %	8.1	2.8	0.0	0.0	3.9	0.0	0.0	0.0	0.0	0.0	0.0	1.5	33.3	0.0	1.6	14.3	0.0	3.2	0.0	4.1	3.0
Cars Enter Leg	125	522	0	0	647	4	0	2	0	6	1	594	2	0	597	18	6	184	0	208	1458
Heavy Enter Leg	11	15	0	0	26	0	0	0	0	0	0	9	1	0	10	3	0	6	0	9	45
Total Entering Leg	136	537	0	0	673	4	0	2	0	6	1	603	3	0	607	21	6	190	0	217	1503
Cars Exiting Leg	782					7					542					127					1458
Heavy Exiting Leg	15					0					18					12					45
Total Exiting Leg	797					7					560					139					1503

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars

	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	24	70	0	0	94	2	1	1	0	4	1	123	0	0	124	0	1	40	0	41	263
7:15 AM	34	116	0	0	150	2	2	1	0	5	1	110	0	0	111	3	1	34	0	38	304
7:30 AM	31	208	0	0	239	1	0	2	0	3	0	157	0	0	157	8	1	37	0	46	445
7:45 AM	31	113	0	0	144	1	0	0	0	1	0	171	1	0	172	2	1	45	0	48	365
Total	120	507	0	0	627	6	3	4	0	13	2	561	1	0	564	13	4	156	0	173	1377
8:00 AM	33	101	0	0	134	1	0	0	0	1	1	140	0	0	141	5	2	51	0	58	334
8:15 AM	30	100	0	0	130	1	0	0	0	1	0	126	1	0	127	3	2	51	0	56	314
8:30 AM	37	95	0	0	132	0	1	0	0	1	0	135	1	0	136	2	0	50	0	52	321
8:45 AM	45	83	1	0	129	0	1	0	0	1	1	154	1	0	156	1	0	55	0	56	342
Total	145	379	1	0	525	2	2	0	0	4	2	555	3	0	560	11	4	207	0	222	1311
Grand Total	265	886	1	0	1152	8	5	4	0	17	4	1116	4	0	1124	24	8	363	0	395	2688
Approach %	23.0	76.9	0.1	0.0		47.1	29.4	23.5	0.0		0.4	99.3	0.4	0.0		6.1	2.0	91.9	0.0		
Total %	9.9	33.0	0.0	0.0	42.9	0.3	0.2	0.1	0.0	0.6	0.1	41.5	0.1	0.0	41.8	0.9	0.3	13.5	0.0	14.7	
Exiting Leg Total	1487					13					914					274					2688

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:30 AM	31	208	0	0	239	1	0	2	0	3	0	157	0	0	157	8	1	37	0	46	445
7:45 AM	31	113	0	0	144	1	0	0	0	1	0	171	1	0	172	2	1	45	0	48	365
8:00 AM	33	101	0	0	134	1	0	0	0	1	1	140	0	0	141	5	2	51	0	58	334
8:15 AM	30	100	0	0	130	1	0	0	0	1	0	126	1	0	127	3	2	51	0	56	314
Total Volume	125	522	0	0	647	4	0	2	0	6	1	594	2	0	597	18	6	184	0	208	1458
% Approach Total	19.3	80.7	0.0	0.0		66.7	0.0	33.3	0.0		0.2	99.5	0.3	0.0		8.7	2.9	88.5	0.0		
PHF	0.947	0.627	0.000	0.000	0.677	1.000	0.000	0.250	0.000	0.500	0.250	0.868	0.500	0.000	0.868	0.563	0.750	0.902	0.000	0.897	0.819
Entering Leg	125	522	0	0	647	4	0	2	0	6	1	594	2	0	597	18	6	184	0	208	1458
Exiting Leg	782					7					542					127					1458
Total	1429					13					1139					335					2916

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	1	5	0	0	6	0	0	0	0	0	0	4	1	0	5	1	0	3	0	4	15
7:15 AM	1	3	0	0	4	0	0	0	0	0	0	1	0	0	1	1	0	5	0	6	11
7:30 AM	1	2	0	0	3	0	0	0	0	0	0	4	0	0	4	1	0	0	0	1	8
7:45 AM	2	4	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	2	0	2	12
Total	5	14	0	0	19	0	0	0	0	0	0	13	1	0	14	3	0	10	0	13	46
8:00 AM	4	4	0	0	8	0	0	0	0	0	0	1	1	0	2	2	0	2	0	4	14
8:15 AM	4	5	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	11
8:30 AM	3	2	0	0	5	0	0	0	0	0	0	3	1	0	4	1	0	4	0	5	14
8:45 AM	3	1	0	0	4	0	0	0	0	0	0	3	0	0	3	2	0	3	0	5	12
Total	14	12	0	0	26	0	0	0	0	0	0	7	2	0	9	5	0	11	0	16	51
Grand Total	19	26	0	0	45	0	0	0	0	0	0	20	3	0	23	8	0	21	0	29	97
Approach %	42.2	57.8	0.0	0.0		0.0	0.0	0.0	0.0		0.0	87.0	13.0	0.0		27.6	0.0	72.4	0.0		
Total %	19.6	26.8	0.0	0.0	46.4	0.0	0.0	0.0	0.0	0.0	0.0	20.6	3.1	0.0	23.7	8.2	0.0	21.6	0.0	29.9	
Exiting Leg Total	41					0					34					22					97
Buses	2	4	0	0	6	0	0	0	0	0	0	11	1	0	12	1	0	2	0	3	21
% Buses	10.5	15.4	0.0	0.0	13.3	0.0	0.0	0.0	0.0	0.0	0.0	55.0	33.3	0.0	52.2	12.5	0.0	9.5	0.0	10.3	21.6
Exiting Leg Total	13					0					5					3					21
Single-Unit Trucks	15	21	0	0	36	0	0	0	0	0	0	9	1	0	10	4	0	18	0	22	68
% Single-Unit	78.9	80.8	0.0	0.0	80.0	0.0	0.0	0.0	0.0	0.0	0.0	45.0	33.3	0.0	43.5	50.0	0.0	85.7	0.0	75.9	70.1
Exiting Leg Total	27					0					25					16					68
Articulated Trucks	2	1	0	0	3	0	0	0	0	0	0	0	1	0	1	3	0	1	0	4	8
% Articulated	10.5	3.8	0.0	0.0	6.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	0.0	4.3	37.5	0.0	4.8	0.0	13.8	8.2
Exiting Leg Total	1					0					4					3					8

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:45 AM	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:45 AM	2	4	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	2	0	2	12
8:00 AM	4	4	0	0	8	0	0	0	0	0	0	1	1	0	2	2	0	2	0	4	14
8:15 AM	4	5	0	0	9	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	11
8:30 AM	3	2	0	0	5	0	0	0	0	0	0	3	1	0	4	1	0	4	0	5	14
Total Volume	13	15	0	0	28	0	0	0	0	0	0	8	2	0	10	3	0	10	0	13	51
% Approach Total	46.4	53.6	0.0	0.0		0.0	0.0	0.0	0.0		0.0	80.0	20.0	0.0		23.1	0.0	76.9	0.0		
PHF	0.813	0.750	0.000	0.000	0.778	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.500	0.000	0.625	0.375	0.000	0.625	0.000	0.650	0.911
Buses	2	2	0	0	4	0	0	0	0	0	0	3	0	0	3	1	0	1	0	2	9
Buses %	15.4	13.3	0.0	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	37.5	0.0	0.0	30.0	33.3	0.0	10.0	0.0	15.4	17.6
Single-Unit Trucks	9	13	0	0	22	0	0	0	0	0	0	5	1	0	6	1	0	8	0	9	37
Single-Unit %	69.2	86.7	0.0	0.0	78.6	0.0	0.0	0.0	0.0	0.0	0.0	62.5	50.0	0.0	60.0	33.3	0.0	80.0	0.0	69.2	72.5
Articulated Trucks	2	0	0	0	2	0	0	0	0	0	0	0	1	0	1	1	0	1	0	2	5
Articulated %	15.4	0.0	0.0	0.0	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	10.0	33.3	0.0	10.0	0.0	15.4	9.8
Buses	2	2	0	0	4	0	0	0	0	0	0	3	0	0	3	1	0	1	0	2	9
Single-Unit Trucks	9	13	0	0	22	0	0	0	0	0	0	5	1	0	6	1	0	8	0	9	37
Articulated Trucks	2	0	0	0	2	0	0	0	0	0	0	0	1	0	1	1	0	1	0	2	5
Total Entering Leg	13	15	0	0	28	0	0	0	0	0	0	8	2	0	10	3	0	10	0	13	51
Buses	4					0					3					2					9
Single-Unit Trucks	13					0					14					10					37
Articulated Trucks	1					0					1					3					5
Total Exiting Leg	18					0					18					15					51

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Buses

	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	4
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	5
7:45 AM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
Total	0	4	0	0	4	0	0	0	0	0	0	10	1	0	11	0	0	0	0	0	15
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	1	0	2	4
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
Total	2	0	0	0	2	0	0	0	0	0	0	1	0	0	1	1	0	2	0	3	6
Grand Total	2	4	0	0	6	0	0	0	0	0	0	11	1	0	12	1	0	2	0	3	21
Approach %	33.3	66.7	0.0	0.0		0.0	0.0	0.0	0.0		0.0	91.7	8.3	0.0		33.3	0.0	66.7	0.0		
Total %	9.5	19.0	0.0	0.0	28.6	0.0	0.0	0.0	0.0	0.0	0.0	52.4	4.8	0.0	57.1	4.8	0.0	9.5	0.0	14.3	
Exiting Leg Total	13					0					5					3					21

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	0	0	0	0	0	4
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	5
7:45 AM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
Total Volume	0	4	0	0	4	0	0	0	0	0	0	10	1	0	11	0	0	0	0	0	15
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	90.9	9.1	0.0		0.0	0.0	0.0	0.0		
PHF	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.250	0.000	0.688	0.000	0.000	0.000	0.000	0.000	0.750
Entering Leg	0	4	0	0	4	0	0	0	0	0	0	10	1	0	11	0	0	0	0	0	15
Exiting Leg	10					0					4					1					15
Total	14					0					15					1					30

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Single-Unit Trucks

	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	1	5	0	0	6	0	0	0	0	0	0	1	0	0	1	0	0	3	0	3	10
7:15 AM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	7
7:30 AM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3
7:45 AM	2	2	0	0	4	0	0	0	0	0	0	2	0	0	2	0	0	2	0	2	8
Total	5	9	0	0	14	0	0	0	0	0	0	3	0	0	3	1	0	10	0	11	28
8:00 AM	4	4	0	0	8	0	0	0	0	0	0	1	0	0	1	1	0	2	0	3	12
8:15 AM	1	5	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	8
8:30 AM	2	2	0	0	4	0	0	0	0	0	0	2	1	0	3	0	0	2	0	2	9
8:45 AM	3	1	0	0	4	0	0	0	0	0	0	3	0	0	3	2	0	2	0	4	11
Total	10	12	0	0	22	0	0	0	0	0	0	6	1	0	7	3	0	8	0	11	40
Grand Total	15	21	0	0	36	0	0	0	0	0	0	9	1	0	10	4	0	18	0	22	68
Approach %	41.7	58.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	90.0	10.0	0.0		18.2	0.0	81.8	0.0		
Total %	22.1	30.9	0.0	0.0	52.9	0.0	0.0	0.0	0.0	0.0	0.0	13.2	1.5	0.0	14.7	5.9	0.0	26.5	0.0	32.4	
Exiting Leg Total	27					0					25					16					68

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	4	4	0	0	8	0	0	0	0	0	0	1	0	0	1	1	0	2	0	3	12
8:15 AM	1	5	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	8
8:30 AM	2	2	0	0	4	0	0	0	0	0	0	2	1	0	3	0	0	2	0	2	9
8:45 AM	3	1	0	0	4	0	0	0	0	0	0	3	0	0	3	2	0	2	0	4	11
Total Volume	10	12	0	0	22	0	0	0	0	0	0	6	1	0	7	3	0	8	0	11	40
% Approach Total	45.5	54.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	85.7	14.3	0.0		27.3	0.0	72.7	0.0		
PHF	0.625	0.600	0.000	0.000	0.688	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.583	0.375	0.000	1.000	0.000	0.688	0.833
Entering Leg	10	12	0	0	22	0	0	0	0	0	0	6	1	0	7	3	0	8	0	11	40
Exiting Leg	14					0					15					11					40
Total	36					0					22					22					80

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Articulated Trucks

	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	1
8:15 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2	0	0	0	2	0	0	0	0	0	0	0	1	0	1	1	0	1	0	0	2
Grand Total	2	1	0	0	3	0	0	0	0	0	0	0	1	0	1	3	0	1	0	0	4
Approach %	66.7	33.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		75.0	0.0	25.0	0.0		
Total %	25.0	12.5	0.0	0.0	37.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	0.0	12.5	37.5	0.0	12.5	0.0	50.0	
Exiting Leg Total	1					0					4					3					8

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:45 AM	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	2
8:15 AM	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
Total Volume	2	0	0	0	2	0	0	0	0	0	0	0	1	0	1	1	0	1	0	2	5
% Approach Total	100.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0		50.0	0.0	50.0	0.0		
PHF	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.250	0.000	0.250	0.000	0.500	0.625
Entering Leg	2	0	0	0	2	0	0	0	0	0	0	0	1	0	1	1	0	1	0	2	5
Exiting Leg					1					0					1					3	5
Total	3					0					2					5					10

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Water Street							NE Home for the Deaf Drive							Margin Street							South Liberty Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	50.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0		
Exiting Leg Total	1							1							0							0							2

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Water Street							NE Home for the Deaf Drive							Margin Street							South Liberty Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	100.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	
Exiting Leg	1							0							0							0							1
Total	1							0							0							1							2

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Pedestrians

	Water Street							NE Home for the Deaf Drive							Margin Street							South Liberty Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	0	0	0	0	0	0	0	0	2	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Grand Total	0	0	0	0	0	0	0	0	0	0	0	2	7	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Approach %	0	0	0	0	0	0	0	0	0	0	0	22.2	77.8		0	0	0	0	0	0	0	0	0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	22.2	77.8	100	0	0	0	0	0	0	0	0	0	0	0	0	0		
Exiting Leg Total	0							9							0							0							9

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Water Street							NE Home for the Deaf Drive							Margin Street							South Liberty Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total Volume	0	0	0	0	0	0	0	0	0	0	0	2	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.0	60.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.417	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.417
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	2	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Exiting Leg	0							5							0							0							5
Total	0							10							0							0							10

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Cars and Heavy Vehicles (Combined)

	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	43	130	2	0	175	1	1	1	0	3	0	104	2	0	106	3	0	44	0	47	331
2:15 PM	53	160	1	0	214	2	0	1	0	3	2	123	1	0	126	3	0	56	0	59	402
2:30 PM	73	165	1	0	239	0	2	0	0	2	1	222	3	0	226	3	0	46	0	49	516
2:45 PM	75	156	2	0	233	0	2	0	0	2	0	149	3	0	152	4	1	49	0	54	441
Total	244	611	6	0	861	3	5	2	0	10	3	598	9	0	610	13	1	195	0	209	1690
3:00 PM	93	193	1	0	287	0	1	2	0	3	1	148	3	0	152	1	1	47	0	49	491
3:15 PM	85	189	0	0	274	1	2	2	0	5	1	155	0	0	156	3	0	45	0	48	483
3:30 PM	74	196	0	0	270	1	2	0	0	3	0	145	3	0	148	5	0	66	0	71	492
3:45 PM	75	194	1	0	270	3	0	0	0	3	1	146	1	0	148	4	1	47	0	52	473
Total	327	772	2	0	1101	5	5	4	0	14	3	594	7	0	604	13	2	205	0	220	1939
4:00 PM	71	220	1	0	292	6	0	1	0	7	0	159	5	0	164	3	2	56	0	61	524
4:15 PM	76	205	5	0	286	2	1	0	0	3	0	141	1	0	142	4	0	40	0	44	475
4:30 PM	62	232	1	0	295	1	0	0	0	1	0	151	4	0	155	3	0	50	0	53	504
4:45 PM	53	231	0	0	284	2	0	0	0	2	1	128	2	0	131	1	0	30	0	31	448
Total	262	888	7	0	1157	11	1	1	0	13	1	579	12	0	592	11	2	176	0	189	1951
5:00 PM	76	210	1	0	287	1	1	0	0	2	0	165	7	0	172	1	0	48	0	49	510
5:15 PM	60	242	2	0	304	2	0	1	0	3	1	146	5	0	152	1	1	43	0	45	504
5:30 PM	60	232	1	0	293	2	0	0	0	2	0	154	5	0	159	1	0	35	0	36	490
5:45 PM	49	189	0	0	238	0	1	0	0	1	1	109	2	0	112	2	1	37	0	40	391
Total	245	873	4	0	1122	5	2	1	0	8	2	574	19	0	595	5	2	163	0	170	1895
Grand Total	1078	3144	19	0	4241	24	13	8	0	45	9	2345	47	0	2401	42	7	739	0	788	7475
Approach %	25.4	74.1	0.4	0.0		53.3	28.9	17.8	0.0		0.4	97.7	2.0	0.0		5.3	0.9	93.8	0.0		
Total %	14.4	42.1	0.3	0.0	56.7	0.3	0.2	0.1	0.0	0.6	0.1	31.4	0.6	0.0	32.1	0.6	0.1	9.9	0.0	10.5	
Exiting Leg Total	3108					35					3194					1138					7475
Cars	1047	3103	18	0	4168	23	13	8	0	44	9	2317	40	0	2366	39	7	724	0	770	7348
% Cars	97.1	98.7	94.7	0.0	98.3	95.8	100.0	100.0	0.0	97.8	100.0	98.8	85.1	0.0	98.5	92.9	100.0	98.0	0.0	97.7	98.3
Exiting Leg Total	3064					34					3150					1100					7348
Heavy Vehicles	31	41	1	0	73	1	0	0	0	1	0	28	7	0	35	3	0	15	0	18	127
% Heavy Vehicles	2.9	1.3	5.3	0.0	1.7	4.2	0.0	0.0	0.0	2.2	0.0	1.2	14.9	0.0	1.5	7.1	0.0	2.0	0.0	2.3	1.7
Exiting Leg Total	44					1					44					38					127

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

3:45 PM	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
3:45 PM	75	194	1	0	270	3	0	0	0	3	1	146	1	0	148	4	1	47	0	52	473
4:00 PM	71	220	1	0	292	6	0	1	0	7	0	159	5	0	164	3	2	56	0	61	524
4:15 PM	76	205	5	0	286	2	1	0	0	3	0	141	1	0	142	4	0	40	0	44	475
4:30 PM	62	232	1	0	295	1	0	0	0	1	0	151	4	0	155	3	0	50	0	53	504
Total Volume	284	851	8	0	1143	12	1	1	0	14	1	597	11	0	609	14	3	193	0	210	1976
% Approach Total	24.8	74.5	0.7	0.0		85.7	7.1	7.1	0.0		0.2	98.0	1.8	0.0		6.7	1.4	91.9	0.0		
PHF	0.934	0.917	0.400	0.000	0.969	0.500	0.250	0.250	0.000	0.500	0.250	0.939	0.550	0.000	0.928	0.875	0.375	0.862	0.000	0.861	0.943
Cars	273	844	7	0	1124	11	1	1	0	13	1	592	10	0	603	14	3	191	0	208	1948
Cars %	96.1	99.2	87.5	0.0	98.3	91.7	100.0	100.0	0.0	92.9	100.0	99.2	90.9	0.0	99.0	100.0	100.0	99.0	0.0	99.0	98.6
Heavy Vehicles	11	7	1	0	19	1	0	0	0	1	0	5	1	0	6	0	0	2	0	2	28
Heavy Vehicles %	3.9	0.8	12.5	0.0	1.7	8.3	0.0	0.0	0.0	7.1	0.0	0.8	9.1	0.0	1.0	0.0	0.0	1.0	0.0	1.0	1.4
Cars Enter Leg	273	844	7	0	1124	11	1	1	0	13	1	592	10	0	603	14	3	191	0	208	1948
Heavy Enter Leg	11	7	1	0	19	1	0	0	0	1	0	5	1	0	6	0	0	2	0	2	28
Total Entering Leg	284	851	8	0	1143	12	1	1	0	14	1	597	11	0	609	14	3	193	0	210	1976
Cars Exiting Leg	794					11					859					284					1948
Heavy Exiting Leg	8					1					7					12					28
Total Exiting Leg	802					12					866					296					1976

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Cars

	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	40	128	2	0	170	1	1	1	0	3	0	102	1	0	103	2	0	43	0	45	321
2:15 PM	51	156	1	0	208	2	0	1	0	3	2	120	1	0	123	2	0	53	0	55	389
2:30 PM	71	163	1	0	235	0	2	0	0	2	1	222	3	0	226	3	0	46	0	49	512
2:45 PM	74	154	2	0	230	0	2	0	0	2	0	145	2	0	147	4	1	49	0	54	433
Total	236	601	6	0	843	3	5	2	0	10	3	589	7	0	599	11	1	191	0	203	1655
3:00 PM	88	186	1	0	275	0	1	2	0	3	1	144	3	0	148	1	1	46	0	48	474
3:15 PM	85	189	0	0	274	1	2	2	0	5	1	153	0	0	154	3	0	44	0	47	480
3:30 PM	71	191	0	0	262	1	2	0	0	3	0	142	2	0	144	4	0	64	0	68	477
3:45 PM	70	192	1	0	263	3	0	0	0	3	1	145	1	0	147	4	1	47	0	52	465
Total	314	758	2	0	1074	5	5	4	0	14	3	584	6	0	593	12	2	201	0	215	1896
4:00 PM	70	219	1	0	290	6	0	1	0	7	0	156	4	0	160	3	2	54	0	59	516
4:15 PM	72	203	5	0	280	2	1	0	0	3	0	140	1	0	141	4	0	40	0	44	468
4:30 PM	61	230	0	0	291	0	0	0	0	0	0	151	4	0	155	3	0	50	0	53	499
4:45 PM	52	226	0	0	278	2	0	0	0	2	1	125	2	0	128	1	0	29	0	30	438
Total	255	878	6	0	1139	10	1	1	0	12	1	572	11	0	584	11	2	173	0	186	1921
5:00 PM	75	207	1	0	283	1	1	0	0	2	0	164	7	0	171	1	0	48	0	49	505
5:15 PM	59	241	2	0	302	2	0	1	0	3	1	146	4	0	151	1	1	41	0	43	499
5:30 PM	60	229	1	0	290	2	0	0	0	2	0	154	3	0	157	1	0	34	0	35	484
5:45 PM	48	189	0	0	237	0	1	0	0	1	1	108	2	0	111	2	1	36	0	39	388
Total	242	866	4	0	1112	5	2	1	0	8	2	572	16	0	590	5	2	159	0	166	1876
Grand Total	1047	3103	18	0	4168	23	13	8	0	44	9	2317	40	0	2366	39	7	724	0	770	7348
Approach %	25.1	74.4	0.4	0.0		52.3	29.5	18.2	0.0		0.4	97.9	1.7	0.0		5.1	0.9	94.0	0.0		
Total %	14.2	42.2	0.2	0.0	56.7	0.3	0.2	0.1	0.0	0.6	0.1	31.5	0.5	0.0	32.2	0.5	0.1	9.9	0.0	10.5	
Exiting Leg Total	3064					34					3150					1100					7348

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

3:45 PM	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
3:45 PM	70	192	1	0	263	3	0	0	0	3	1	145	1	0	147	4	1	47	0	52	465
4:00 PM	70	219	1	0	290	6	0	1	0	7	0	156	4	0	160	3	2	54	0	59	516
4:15 PM	72	203	5	0	280	2	1	0	0	3	0	140	1	0	141	4	0	40	0	44	468
4:30 PM	61	230	0	0	291	0	0	0	0	0	0	151	4	0	155	3	0	50	0	53	499
Total Volume	273	844	7	0	1124	11	1	1	0	13	1	592	10	0	603	14	3	191	0	208	1948
% Approach Total	24.3	75.1	0.6	0.0		84.6	7.7	7.7	0.0		0.2	98.2	1.7	0.0		6.7	1.4	91.8	0.0		
PHF	0.948	0.917	0.350	0.000	0.966	0.458	0.250	0.250	0.000	0.464	0.250	0.949	0.625	0.000	0.942	0.875	0.375	0.884	0.000	0.881	0.944
Entering Leg	273	844	7	0	1124	11	1	1	0	13	1	592	10	0	603	14	3	191	0	208	1948
Exiting Leg	794					11					859					284					1948
Total	1918					24					1462					492					3896

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	3	2	0	0	5	0	0	0	0	0	0	2	1	0	3	1	0	1	0	2	10
2:15 PM	2	4	0	0	6	0	0	0	0	0	0	3	0	0	3	1	0	3	0	4	13
2:30 PM	2	2	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
2:45 PM	1	2	0	0	3	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	8
Total	8	10	0	0	18	0	0	0	0	0	0	9	2	0	11	2	0	4	0	6	35
3:00 PM	5	7	0	0	12	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	17
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	3
3:30 PM	3	5	0	0	8	0	0	0	0	0	0	3	1	0	4	1	0	2	0	3	15
3:45 PM	5	2	0	0	7	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	8
Total	13	14	0	0	27	0	0	0	0	0	0	10	1	0	11	1	0	4	0	5	43
4:00 PM	1	1	0	0	2	0	0	0	0	0	0	3	1	0	4	0	0	2	0	2	8
4:15 PM	4	2	0	0	6	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	7
4:30 PM	1	2	1	0	4	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	5
4:45 PM	1	5	0	0	6	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	10
Total	7	10	1	0	18	1	0	0	0	1	0	7	1	0	8	0	0	3	0	3	30
5:00 PM	1	3	0	0	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
5:15 PM	1	1	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	2	0	2	5
5:30 PM	0	3	0	0	3	0	0	0	0	0	0	0	2	0	2	0	0	1	0	1	6
5:45 PM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	3
Total	3	7	0	0	10	0	0	0	0	0	0	2	3	0	5	0	0	4	0	4	19
Grand Total	31	41	1	0	73	1	0	0	0	1	0	28	7	0	35	3	0	15	0	18	127
Approach %	42.5	56.2	1.4	0.0		100.0	0.0	0.0	0.0		0.0	80.0	20.0	0.0		16.7	0.0	83.3	0.0		
Total %	24.4	32.3	0.8	0.0	57.5	0.8	0.0	0.0	0.0	0.8	0.0	22.0	5.5	0.0	27.6	2.4	0.0	11.8	0.0	14.2	
Exiting Leg Total	44					1					44					38					127
Buses	2	12	0	0	14	0	0	0	0	0	0	10	0	0	10	0	0	2	0	2	26
% Buses	6.5	29.3	0.0	0.0	19.2	0.0	0.0	0.0	0.0	0.0	0.0	35.7	0.0	0.0	28.6	0.0	0.0	13.3	0.0	11.1	20.5
Exiting Leg Total	12					0					12					2					26
Single-Unit Trucks	22	27	1	0	50	1	0	0	0	1	0	13	5	0	18	2	0	10	0	12	81
% Single-Unit	71.0	65.9	100.0	0.0	68.5	100.0	0.0	0.0	0.0	100.0	0.0	46.4	71.4	0.0	51.4	66.7	0.0	66.7	0.0	66.7	63.8
Exiting Leg Total	24					1					29					27					81
Articulated Trucks	7	2	0	0	9	0	0	0	0	0	0	5	2	0	7	1	0	3	0	4	20
% Articulated	22.6	4.9	0.0	0.0	12.3	0.0	0.0	0.0	0.0	0.0	0.0	17.9	28.6	0.0	20.0	33.3	0.0	20.0	0.0	22.2	15.7
Exiting Leg Total	8					0					3					9					20

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:45 PM	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:45 PM	1	2	0	0	3	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	8
3:00 PM	5	7	0	0	12	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	17
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	3
3:30 PM	3	5	0	0	8	0	0	0	0	0	0	3	1	0	4	1	0	2	0	3	15
Total Volume	9	14	0	0	23	0	0	0	0	0	0	13	2	0	15	1	0	4	0	5	43
% Approach Total	39.1	60.9	0.0	0.0		0.0	0.0	0.0	0.0		0.0	86.7	13.3	0.0		20.0	0.0	80.0	0.0		
PHF	0.450	0.500	0.000	0.000	0.479	0.000	0.000	0.000	0.000	0.000	0.000	0.813	0.500	0.000	0.750	0.250	0.000	0.500	0.000	0.417	0.632
Buses	1	4	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	9
Buses %	11.1	28.6	0.0	0.0	21.7	0.0	0.0	0.0	0.0	0.0	0.0	23.1	0.0	0.0	20.0	0.0	0.0	25.0	0.0	20.0	20.9
Single-Unit Trucks	6	9	0	0	15	0	0	0	0	0	0	7	0	0	7	0	0	2	0	2	24
Single-Unit %	66.7	64.3	0.0	0.0	65.2	0.0	0.0	0.0	0.0	0.0	0.0	53.8	0.0	0.0	46.7	0.0	0.0	50.0	0.0	40.0	55.8
Articulated Trucks	2	1	0	0	3	0	0	0	0	0	0	3	2	0	5	1	0	1	0	2	10
Articulated %	22.2	7.1	0.0	0.0	13.0	0.0	0.0	0.0	0.0	0.0	0.0	23.1	100.0	0.0	33.3	100.0	0.0	25.0	0.0	40.0	23.3
Buses	1	4	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	1	0	1	9
Single-Unit Trucks	6	9	0	0	15	0	0	0	0	0	0	7	0	0	7	0	0	2	0	2	24
Articulated Trucks	2	1	0	0	3	0	0	0	0	0	0	3	2	0	5	1	0	1	0	2	10
Total Entering Leg	9	14	0	0	23	0	0	0	0	0	0	13	2	0	15	1	0	4	0	5	43
Buses	4					0					4					1					9
Single-Unit Trucks	9					0					9					6					24
Articulated Trucks	4					0					2					4					10
Total Exiting Leg	17					0					15					11					43

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Buses

	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
2:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
2:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	2	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	6
3:00 PM	1	4	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	2
3:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total	1	5	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	11
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
4:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5
5:00 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
Grand Total	2	12	0	0	14	0	0	0	0	0	0	10	0	0	10	0	0	2	0	2	26
Approach %	14.3	85.7	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		
Total %	7.7	46.2	0.0	0.0	53.8	0.0	0.0	0.0	0.0	0.0	0.0	38.5	0.0	0.0	38.5	0.0	0.0	7.7	0.0	7.7	
Exiting Leg Total	12					0					12					2					26

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

3:00 PM	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
3:00 PM	1	4	0	0	5	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	7
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	2
3:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
Total Volume	1	5	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	11
% Approach Total	16.7	83.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		0.0	0.0	100.0	0.0		
PHF	0.250	0.313	0.000	0.000	0.300	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.000	0.000	0.250	0.000	0.250	0.393
Entering Leg	1	5	0	0	6	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	11
Exiting Leg	5					0					5					1					11
Total	11					0					9					2					22

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Single-Unit Trucks

	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	3	1	0	0	4	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	6
2:15 PM	2	3	0	0	5	0	0	0	0	0	0	3	0	0	3	1	0	2	0	3	11
2:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
2:45 PM	1	2	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7
Total	6	8	0	0	14	0	0	0	0	0	0	7	1	0	8	2	0	2	0	4	26
3:00 PM	3	2	0	0	5	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	7
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
3:30 PM	2	5	0	0	7	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	9
3:45 PM	4	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
Total	9	7	0	0	16	0	0	0	0	0	0	3	0	0	3	0	0	2	0	2	21
4:00 PM	1	1	0	0	2	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	5
4:15 PM	3	1	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
4:30 PM	0	2	1	0	3	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	4
4:45 PM	1	4	0	0	5	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	7
Total	5	8	1	0	14	1	0	0	0	1	0	2	1	0	3	0	0	2	0	2	20
5:00 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	2	0	2	4
5:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	2	0	2	0	0	1	0	1	5
5:45 PM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	3
Total	2	4	0	0	6	0	0	0	0	0	0	1	3	0	4	0	0	4	0	4	14
Grand Total	22	27	1	0	50	1	0	0	0	1	0	13	5	0	18	2	0	10	0	12	81
Approach %	44.0	54.0	2.0	0.0		100.0	0.0	0.0	0.0		0.0	72.2	27.8	0.0		16.7	0.0	83.3	0.0		
Total %	27.2	33.3	1.2	0.0	61.7	1.2	0.0	0.0	0.0	1.2	0.0	16.0	6.2	0.0	22.2	2.5	0.0	12.3	0.0	14.8	
Exiting Leg Total	24					1					29					27					81

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:15 PM	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:15 PM	2	3	0	0	5	0	0	0	0	0	0	3	0	0	3	1	0	2	0	3	11
2:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
2:45 PM	1	2	0	0	3	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	7
3:00 PM	3	2	0	0	5	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	7
Total Volume	6	9	0	0	15	0	0	0	0	0	0	8	0	0	8	1	0	3	0	4	27
% Approach Total	40.0	60.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0		25.0	0.0	75.0	0.0		
PHF	0.500	0.750	0.000	0.000	0.750	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.000	0.500	0.250	0.000	0.375	0.000	0.333	0.614
Entering Leg	6	9	0	0	15	0	0	0	0	0	0	8	0	0	8	1	0	3	0	4	27
Exiting Leg	11					0					10					6					27
Total	26					0					18					10					54

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Articulated Trucks

	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Total	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	3
3:00 PM	1	1	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
3:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	1	0	2	4
3:45 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	3	2	0	0	5	0	0	0	0	0	0	3	1	0	4	1	0	1	0	2	11
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
4:15 PM	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
4:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	2	0	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	5
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	7	2	0	0	9	0	0	0	0	0	0	5	2	0	7	1	0	3	0	4	20
Approach %	77.8	22.2	0.0	0.0		0.0	0.0	0.0	0.0		0.0	71.4	28.6	0.0		25.0	0.0	75.0	0.0		
Total %	35.0	10.0	0.0	0.0	45.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	10.0	0.0	35.0	5.0	0.0	15.0	0.0	20.0	
Exiting Leg Total	8					0					3					9					20

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

3:00 PM	Water Street					NE Home for the Deaf Drive					Margin Street					South Liberty Street					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
3:00 PM	1	1	0	0	2	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	3
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2	
3:30 PM	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	1	0	2	4	
3:45 PM	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
Total Volume	3	2	0	0	5	0	0	0	0	0	0	3	1	0	4	1	0	1	0	2	11	
% Approach Total	60.0	40.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	75.0	25.0	0.0		50.0	0.0	50.0	0.0			
PHF	0.750	0.500	0.000	0.000	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.250	0.000	0.500	0.250	0.000	0.250	0.000	0.250	0.688	
Entering Leg	3	2	0	0	5	0	0	0	0	0	0	3	1	0	4	1	0	1	0	2	11	
Exiting Leg					4						0				3					4	11	
Total	9					0					7					6					22	

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Water Street							NE Home for the Deaf Drive							Margin Street							South Liberty Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	2
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	3
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	1	1	0	0	0	0	2	0	0	0	0	0	0	0	0	4	0	0	0	0	0	4	0	0	0	0	0	0	6
Approach %	50.0	50.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	16.7	16.7	0.0	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7	0.0	0.0	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	4							0							1							1							6

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:30 PM	Water Street							NE Home for the Deaf Drive							Margin Street							South Liberty Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	
Exiting Leg	3							0							0							0							3
Total	3							0							3							0							6

PDI File #: **228478 C**
 Location: **N: Water Street S: Margin Street**
 Location: **E: NE Home for the Deaf Drive W: South Liberty Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Pedestrians

	Water Street							NE Home for the Deaf Drive							Margin Street							South Liberty Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	1	4	5	0	0	0	0	0	0	0	0	0	0	0	1	0	1	6
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	4	10	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	13	4	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	0	0	0	0	0	0	0	0	20	16	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	4	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Grand Total	0	0	0	0	0	0	0	0	0	0	0	25	21	46	0	0	0	0	0	0	0	0	0	0	0	1	1	2	48
Approach %	0	0	0	0	0	0	0	0	0	0	0	54.3	45.7		0	0	0	0	0	0	0	0	0	0	0	50	50		
Total %	0	0	0	0	0	0	0	0	0	0	0	52.1	43.8	95.8	0	0	0	0	0	0	0	0	0	0	0	2.08	2.08	4.17	
Exiting Leg Total	0							46							0							2							48

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

3:00 PM	Water Street							NE Home for the Deaf Drive							Margin Street							South Liberty Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	4	10	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	14
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	13	4	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total Volume	0	0	0	0	0	0	0	0	0	0	0	20	16	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.6	44.4		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.385	0.400	0.529	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.529
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	20	16	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
Exiting Leg	0							36							0							0							36
Total	0							72							0							0							72

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars and Heavy Vehicles (Combined)

	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	10	73	0	0	83	0	0	0	0	0	0	110	55	0	165	34	0	13	0	47	295
7:15 AM	19	100	0	0	119	0	0	0	0	0	0	114	59	0	173	63	0	6	0	69	361
7:30 AM	14	99	0	0	113	0	0	0	0	0	0	123	74	0	197	145	0	16	0	161	471
7:45 AM	20	80	0	0	100	0	0	0	0	0	0	116	105	0	221	62	0	13	0	75	396
Total	63	352	0	0	415	0	0	0	0	0	0	463	293	0	756	304	0	48	0	352	1523
8:00 AM	33	94	0	0	127	0	0	0	0	0	0	117	87	0	204	47	0	11	0	58	389
8:15 AM	24	87	0	0	111	0	0	0	0	0	0	90	76	0	166	55	0	14	0	69	346
8:30 AM	29	82	0	0	111	0	0	0	0	0	0	104	79	0	183	60	0	12	0	72	366
8:45 AM	27	76	0	0	103	0	0	0	0	0	0	120	94	0	214	63	0	24	0	87	404
Total	113	339	0	0	452	0	0	0	0	0	0	431	336	0	767	225	0	61	0	286	1505
Grand Total	176	691	0	0	867	0	0	0	0	0	0	894	629	0	1523	529	0	109	0	638	3028
Approach %	20.3	79.7	0.0	0.0		0.0	0.0	0.0	0.0		0.0	58.7	41.3	0.0		82.9	0.0	17.1	0.0		
Total %	5.8	22.8	0.0	0.0	28.6	0.0	0.0	0.0	0.0	0.0	0.0	29.5	20.8	0.0	50.3	17.5	0.0	3.6	0.0	21.1	
Exiting Leg Total	1003					0					1220					805					3028
Cars	173	667	0	0	840	0	0	0	0	0	0	858	607	0	1465	509	0	108	0	617	2922
% Cars	98.3	96.5	0.0	0.0	96.9	0.0	0.0	0.0	0.0	0.0	0.0	96.0	96.5	0.0	96.2	96.2	0.0	99.1	0.0	96.7	96.5
Exiting Leg Total	966					0					1176					780					2922
Heavy Vehicles	3	24	0	0	27	0	0	0	0	0	0	36	22	0	58	20	0	1	0	21	106
% Heavy Vehicles	1.7	3.5	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	4.0	3.5	0.0	3.8	3.8	0.0	0.9	0.0	3.3	3.5
Exiting Leg Total	37					0					44					25					106

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:15 AM	19	100	0	0	119	0	0	0	0	0	0	114	59	0	173	63	0	6	0	69	361
7:30 AM	14	99	0	0	113	0	0	0	0	0	0	123	74	0	197	145	0	16	0	161	471
7:45 AM	20	80	0	0	100	0	0	0	0	0	0	116	105	0	221	62	0	13	0	75	396
8:00 AM	33	94	0	0	127	0	0	0	0	0	0	117	87	0	204	47	0	11	0	58	389
Total Volume	86	373	0	0	459	0	0	0	0	0	0	470	325	0	795	317	0	46	0	363	1617
% Approach Total	18.7	81.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	59.1	40.9	0.0		87.3	0.0	12.7	0.0		
PHF	0.652	0.933	0.000	0.000	0.904	0.000	0.000	0.000	0.000	0.000	0.000	0.955	0.774	0.000	0.899	0.547	0.000	0.719	0.000	0.564	0.858
Cars	84	362	0	0	446	0	0	0	0	0	0	451	312	0	763	307	0	45	0	352	1561
Cars %	97.7	97.1	0.0	0.0	97.2	0.0	0.0	0.0	0.0	0.0	0.0	96.0	96.0	0.0	96.0	96.8	0.0	97.8	0.0	97.0	96.5
Heavy Vehicles	2	11	0	0	13	0	0	0	0	0	0	19	13	0	32	10	0	1	0	11	56
Heavy Vehicles %	2.3	2.9	0.0	0.0	2.8	0.0	0.0	0.0	0.0	0.0	0.0	4.0	4.0	0.0	4.0	3.2	0.0	2.2	0.0	3.0	3.5
Cars Enter Leg	84	362	0	0	446	0	0	0	0	0	0	451	312	0	763	307	0	45	0	352	1561
Heavy Enter Leg	2	11	0	0	13	0	0	0	0	0	0	19	13	0	32	10	0	1	0	11	56
Total Entering Leg	86	373	0	0	459	0	0	0	0	0	0	470	325	0	795	317	0	46	0	363	1617
Cars Exiting Leg	496					0					669					396					1561
Heavy Exiting Leg	20					0					21					15					56
Total Exiting Leg	516					0					690					411					1617

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Cars

	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	10	70	0	0	80	0	0	0	0	0	0	102	54	0	156	31	0	13	0	44	280
7:15 AM	19	97	0	0	116	0	0	0	0	0	0	108	55	0	163	61	0	6	0	67	346
7:30 AM	14	98	0	0	112	0	0	0	0	0	0	116	70	0	186	143	0	16	0	159	457
7:45 AM	19	78	0	0	97	0	0	0	0	0	0	113	101	0	214	59	0	13	0	72	383
Total	62	343	0	0	405	0	0	0	0	0	0	439	280	0	719	294	0	48	0	342	1466
8:00 AM	32	89	0	0	121	0	0	0	0	0	0	114	86	0	200	44	0	10	0	54	375
8:15 AM	24	80	0	0	104	0	0	0	0	0	0	86	75	0	161	50	0	14	0	64	329
8:30 AM	29	80	0	0	109	0	0	0	0	0	0	102	76	0	178	58	0	12	0	70	357
8:45 AM	26	75	0	0	101	0	0	0	0	0	0	117	90	0	207	63	0	24	0	87	395
Total	111	324	0	0	435	0	0	0	0	0	0	419	327	0	746	215	0	60	0	275	1456
Grand Total	173	667	0	0	840	0	0	0	0	0	0	858	607	0	1465	509	0	108	0	617	2922
Approach %	20.6	79.4	0.0	0.0		0.0	0.0	0.0	0.0		0.0	58.6	41.4	0.0		82.5	0.0	17.5	0.0		
Total %	5.9	22.8	0.0	0.0	28.7	0.0	0.0	0.0	0.0	0.0	0.0	29.4	20.8	0.0	50.1	17.4	0.0	3.7	0.0	21.1	
Exiting Leg Total	966					0					1176					780					2922

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:15 AM	19	97	0	0	116	0	0	0	0	0	0	108	55	0	163	61	0	6	0	67	346
7:30 AM	14	98	0	0	112	0	0	0	0	0	0	116	70	0	186	143	0	16	0	159	457
7:45 AM	19	78	0	0	97	0	0	0	0	0	0	113	101	0	214	59	0	13	0	72	383
8:00 AM	32	89	0	0	121	0	0	0	0	0	0	114	86	0	200	44	0	10	0	54	375
Total Volume	84	362	0	0	446	0	0	0	0	0	0	451	312	0	763	307	0	45	0	352	1561
% Approach Total	18.8	81.2	0.0	0.0		0.0	0.0	0.0	0.0		0.0	59.1	40.9	0.0		87.2	0.0	12.8	0.0		
PHF	0.656	0.923	0.000	0.000	0.921	0.000	0.000	0.000	0.000	0.000	0.000	0.972	0.772	0.000	0.891	0.537	0.000	0.703	0.000	0.553	0.854
Entering Leg	84	362	0	0	446	0	0	0	0	0	0	451	312	0	763	307	0	45	0	352	1561
Exiting Leg	496					0					669					396					1561
Total	942					0					1432					748					3122

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	3	0	0	3	0	0	0	0	0	0	8	1	0	9	3	0	0	0	3	15
7:15 AM	0	3	0	0	3	0	0	0	0	0	0	6	4	0	10	2	0	0	0	2	15
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	7	4	0	11	2	0	0	0	2	14
7:45 AM	1	2	0	0	3	0	0	0	0	0	0	3	4	0	7	3	0	0	0	3	13
Total	1	9	0	0	10	0	0	0	0	0	0	24	13	0	37	10	0	0	0	10	57
8:00 AM	1	5	0	0	6	0	0	0	0	0	0	3	1	0	4	3	0	1	0	4	14
8:15 AM	0	7	0	0	7	0	0	0	0	0	0	4	1	0	5	5	0	0	0	5	17
8:30 AM	0	2	0	0	2	0	0	0	0	0	0	2	3	0	5	2	0	0	0	2	9
8:45 AM	1	1	0	0	2	0	0	0	0	0	0	3	4	0	7	0	0	0	0	0	9
Total	2	15	0	0	17	0	0	0	0	0	0	12	9	0	21	10	0	1	0	11	49
Grand Total	3	24	0	0	27	0	0	0	0	0	0	36	22	0	58	20	0	1	0	21	106
Approach %	11.1	88.9	0.0	0.0		0.0	0.0	0.0	0.0		0.0	62.1	37.9	0.0		95.2	0.0	4.8	0.0		
Total %	2.8	22.6	0.0	0.0	25.5	0.0	0.0	0.0	0.0	0.0	0.0	34.0	20.8	0.0	54.7	18.9	0.0	0.9	0.0	19.8	
Exiting Leg Total	37					0					44					25					106
Buses	1	3	0	0	4	0	0	0	0	0	0	9	5	0	14	4	0	0	0	4	22
% Buses	33.3	12.5	0.0	0.0	14.8	0.0	0.0	0.0	0.0	0.0	0.0	25.0	22.7	0.0	24.1	20.0	0.0	0.0	0.0	19.0	20.8
Exiting Leg Total	9					0					7					6					22
Single-Unit Trucks	1	20	0	0	21	0	0	0	0	0	0	25	15	0	40	14	0	1	0	15	76
% Single-Unit	33.3	83.3	0.0	0.0	77.8	0.0	0.0	0.0	0.0	0.0	0.0	69.4	68.2	0.0	69.0	70.0	0.0	100.0	0.0	71.4	71.7
Exiting Leg Total	26					0					34					16					76
Articulated Trucks	1	1	0	0	2	0	0	0	0	0	0	2	2	0	4	2	0	0	0	2	8
% Articulated	33.3	4.2	0.0	0.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0	5.6	9.1	0.0	6.9	10.0	0.0	0.0	0.0	9.5	7.5
Exiting Leg Total	2					0					3					3					8

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	7	4	0	11	2	0	0	0	2	14
7:45 AM	1	2	0	0	3	0	0	0	0	0	0	3	4	0	7	3	0	0	0	3	13
8:00 AM	1	5	0	0	6	0	0	0	0	0	0	3	1	0	4	3	0	1	0	4	14
8:15 AM	0	7	0	0	7	0	0	0	0	0	0	4	1	0	5	5	0	0	0	5	17
Total Volume	2	15	0	0	17	0	0	0	0	0	0	17	10	0	27	13	0	1	0	14	58
% Approach Total	11.8	88.2	0.0	0.0		0.0	0.0	0.0	0.0		0.0	63.0	37.0	0.0		92.9	0.0	7.1	0.0		
PHF	0.500	0.536	0.000	0.000	0.607	0.000	0.000	0.000	0.000	0.000	0.000	0.607	0.625	0.000	0.614	0.650	0.000	0.250	0.000	0.700	0.853
Buses	1	1	0	0	2	0	0	0	0	0	0	4	2	0	6	3	0	0	0	3	11
Buses %	50.0	6.7	0.0	0.0	11.8	0.0	0.0	0.0	0.0	0.0	0.0	23.5	20.0	0.0	22.2	23.1	0.0	0.0	0.0	21.4	19.0
Single-Unit Trucks	0	13	0	0	13	0	0	0	0	0	0	13	8	0	21	9	0	1	0	10	44
Single-Unit %	0.0	86.7	0.0	0.0	76.5	0.0	0.0	0.0	0.0	0.0	0.0	76.5	80.0	0.0	77.8	69.2	0.0	100.0	0.0	71.4	75.9
Articulated Trucks	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3
Articulated %	50.0	6.7	0.0	0.0	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	0.0	0.0	0.0	7.1	5.2
Buses	1	1	0	0	2	0	0	0	0	0	0	4	2	0	6	3	0	0	0	3	11
Single-Unit Trucks	0	13	0	0	13	0	0	0	0	0	0	13	8	0	21	9	0	1	0	10	44
Articulated Trucks	1	1	0	0	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	3
Total Entering Leg	2	15	0	0	17	0	0	0	0	0	0	17	10	0	27	13	0	1	0	14	58
Buses	4					0					4					3					11
Single-Unit Trucks	14					0					22					8					44
Articulated Trucks	0					0					2					1					3
Total Exiting Leg	18					0					28					12					58

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Buses

	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	5
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	1	0	0	0	1	5
7:45 AM	1	0	0	0	1	0	0	0	0	0	0	1	1	0	2	2	0	0	0	2	5
Total	1	1	0	0	2	0	0	0	0	0	0	9	2	0	11	4	0	0	0	4	17
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Total	0	2	0	0	2	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	5
Grand Total	1	3	0	0	4	0	0	0	0	0	0	9	5	0	14	4	0	0	0	4	22
Approach %	25.0	75.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	64.3	35.7	0.0		100.0	0.0	0.0	0.0		
Total %	4.5	13.6	0.0	0.0	18.2	0.0	0.0	0.0	0.0	0.0	0.0	40.9	22.7	0.0	63.6	18.2	0.0	0.0	0.0	18.2	
Exiting Leg Total	9					0					7					6					22

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:00 AM	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	5
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	1	0	0	0	1	5
7:45 AM	1	0	0	0	1	0	0	0	0	0	0	1	1	0	2	2	0	0	0	2	5
Total Volume	1	1	0	0	2	0	0	0	0	0	0	9	2	0	11	4	0	0	0	4	17
% Approach Total	50.0	50.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	81.8	18.2	0.0		100.0	0.0	0.0	0.0		
PHF	0.250	0.250	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.563	0.500	0.000	0.688	0.500	0.000	0.000	0.000	0.500	0.850
Entering Leg	1	1	0	0	2	0	0	0	0	0	0	9	2	0	11	4	0	0	0	4	17
Exiting Leg	9					0					5					3					17
Total	11					0					16					7					34

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Single-Unit Trucks

	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	3	0	0	0	3	9
7:15 AM	0	3	0	0	3	0	0	0	0	0	0	5	4	0	9	0	0	0	0	0	12
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	4	3	0	7	1	0	0	0	1	9
7:45 AM	0	2	0	0	2	0	0	0	0	0	0	2	3	0	5	1	0	0	0	1	8
Total	0	8	0	0	8	0	0	0	0	0	0	15	10	0	25	5	0	0	0	5	38
8:00 AM	0	5	0	0	5	0	0	0	0	0	0	3	1	0	4	3	0	1	0	4	13
8:15 AM	0	5	0	0	5	0	0	0	0	0	0	4	1	0	5	4	0	0	0	4	14
8:30 AM	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	2	0	0	0	2	5
8:45 AM	1	1	0	0	2	0	0	0	0	0	0	2	2	0	4	0	0	0	0	0	6
Total	1	12	0	0	13	0	0	0	0	0	0	10	5	0	15	9	0	1	0	10	38
Grand Total	1	20	0	0	21	0	0	0	0	0	0	25	15	0	40	14	0	1	0	15	76
Approach %	4.8	95.2	0.0	0.0		0.0	0.0	0.0	0.0		0.0	62.5	37.5	0.0		93.3	0.0	6.7	0.0		
Total %	1.3	26.3	0.0	0.0	27.6	0.0	0.0	0.0	0.0	0.0	0.0	32.9	19.7	0.0	52.6	18.4	0.0	1.3	0.0	19.7	
Exiting Leg Total	26					0					34					16					76

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:30 AM	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:30 AM	0	1	0	0	1	0	0	0	0	0	0	4	3	0	7	1	0	0	0	1	9
7:45 AM	0	2	0	0	2	0	0	0	0	0	0	2	3	0	5	1	0	0	0	1	8
8:00 AM	0	5	0	0	5	0	0	0	0	0	0	3	1	0	4	3	0	1	0	4	13
8:15 AM	0	5	0	0	5	0	0	0	0	0	0	4	1	0	5	4	0	0	0	4	14
Total Volume	0	13	0	0	13	0	0	0	0	0	0	13	8	0	21	9	0	1	0	10	44
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	61.9	38.1	0.0		90.0	0.0	10.0	0.0		
PHF	0.000	0.650	0.000	0.000	0.650	0.000	0.000	0.000	0.000	0.000	0.000	0.813	0.667	0.000	0.750	0.563	0.000	0.250	0.000	0.625	0.786
Entering Leg	0	13	0	0	13	0	0	0	0	0	0	13	8	0	21	9	0	1	0	10	44
Exiting Leg	14					0					22					8					44
Total	27					0					43					18					88

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Articulated Trucks

	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	0	2
8:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2
Total	1	1	0	0	2	0	0	0	0	0	0	2	1	0	3	1	0	0	0	1	6
Grand Total	1	1	0	0	2	0	0	0	0	0	0	2	2	0	4	2	0	0	0	2	8
Approach %	50.0	50.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	50.0	50.0	0.0		100.0	0.0	0.0	0.0		
Total %	12.5	12.5	0.0	0.0	25.0	0.0	0.0	0.0	0.0	0.0	0.0	25.0	25.0	0.0	50.0	25.0	0.0	0.0	0.0	25.0	
Exiting Leg Total	2					0					3					3					8

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
8:00 AM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2
Total Volume	1	1	0	0	2	0	0	0	0	0	0	2	1	0	3	1	0	0	0	1	6
% Approach Total	50.0	50.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	66.7	33.3	0.0		100.0	0.0	0.0	0.0		
PHF	0.250	0.250	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.375	0.250	0.000	0.000	0.000	0.250	0.750
Entering Leg	1	1	0	0	2	0	0	0	0	0	0	2	1	0	3	1	0	0	0	1	6
Exiting Leg	2					0					2					2					6
Total	4					0					5					3					12

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Water Street							Driveway							Water Street							Endicott Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2	0	0	0	0	0	0	3
Approach %	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	33.3	33.3	0.0	66.7	0.0	0.0	0.0	0.0	66.7	0.0	0.0	0.0	0.0	0.0	0.0		
Exiting Leg Total	2							1							0							0							3

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

8:00 AM	Water Street							Driveway							Water Street							Endicott Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	100.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250		0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0	0	0	2
Exiting Leg	1							1							0							0							2
Total	1							2							1							0							4

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **7:00 AM**
 End Time: **9:00 AM**
 Class:



Pedestrians

	Water Street							Driveway							Water Street							Endicott Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	1	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Grand Total	0	0	0	0	0	0	0	0	0	0	0	3	3	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Approach %	0	0	0	0	0	0	0	0	0	0	0	50	50	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50
Total %	0	0	0	0	0	0	0	0	0	0	0	50	50	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100
Exiting Leg Total	0							6							0							0							6

Peak Hour Analysis from 07:00 AM to 09:00 AM begins at:

7:15 AM	Water Street							Driveway							Water Street							Endicott Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	0	0	3	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0	40.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.250	0.625	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.625
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	3	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Exiting Leg	0							5							0							0							5
Total	0							10							0							0							10

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Cars and Heavy Vehicles (Combined)

	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	27	81	0	0	108	0	0	0	0	0	0	83	69	0	152	119	0	35	0	154	414
2:15 PM	31	86	0	0	117	0	0	0	0	0	0	100	84	0	184	139	0	39	0	178	479
2:30 PM	40	108	0	0	148	0	0	0	0	0	0	128	116	0	244	137	0	40	0	177	569
2:45 PM	39	114	0	0	153	0	0	0	0	0	0	127	99	0	226	131	0	27	0	158	537
Total	137	389	0	0	526	0	0	0	0	0	0	438	368	0	806	526	0	141	0	667	1999
3:00 PM	17	131	0	0	148	0	0	0	0	0	0	113	93	0	206	160	0	33	0	193	547
3:15 PM	32	115	0	0	147	0	0	0	0	0	0	98	104	0	202	167	0	33	0	200	549
3:30 PM	23	122	0	0	145	0	0	0	0	0	0	135	91	0	226	149	0	37	0	186	557
3:45 PM	39	111	0	0	150	0	0	0	0	0	0	110	83	0	193	165	0	35	0	200	543
Total	111	479	0	0	590	0	0	0	0	0	0	456	371	0	827	641	0	138	0	779	2196
4:00 PM	30	116	0	0	146	0	0	0	0	0	0	119	108	0	227	180	0	32	0	212	585
4:15 PM	35	111	0	0	146	0	0	0	0	0	0	129	90	0	219	169	0	29	0	198	563
4:30 PM	28	111	0	0	139	0	0	0	0	0	0	115	91	0	206	189	0	38	0	227	572
4:45 PM	17	123	0	0	140	0	0	1	0	1	0	96	73	0	169	168	0	56	0	224	534
Total	110	461	0	0	571	0	0	1	0	1	0	459	362	0	821	706	0	155	0	861	2254
5:00 PM	27	111	0	0	138	0	0	0	0	0	0	135	84	0	219	170	0	49	0	219	576
5:15 PM	23	133	1	0	157	0	0	0	0	0	0	118	83	0	201	186	0	38	0	224	582
5:30 PM	21	126	0	0	147	0	0	0	0	0	0	118	90	0	208	170	0	42	0	212	567
5:45 PM	16	92	0	0	108	0	0	0	0	0	0	85	78	0	163	154	0	25	0	179	450
Total	87	462	1	0	550	0	0	0	0	0	0	456	335	0	791	680	0	154	0	834	2175
Grand Total	445	1791	1	0	2237	0	0	1	0	1	0	1809	1436	0	3245	2553	0	588	0	3141	8624
Approach %	19.9	80.1	0.0	0.0		0.0	0.0	100.0	0.0		0.0	55.7	44.3	0.0		81.3	0.0	18.7	0.0		
Total %	5.2	20.8	0.0	0.0	25.9	0.0	0.0	0.0	0.0	0.0	0.0	21.0	16.7	0.0	37.6	29.6	0.0	6.8	0.0	36.4	
Exiting Leg Total	2397					1					4345					1881					8624
Cars	443	1736	1	0	2180	0	0	1	0	1	0	1772	1405	0	3177	2511	0	580	0	3091	8449
% Cars	99.6	96.9	100.0	0.0	97.5	0.0	0.0	100.0	0.0	100.0	0.0	98.0	97.8	0.0	97.9	98.4	0.0	98.6	0.0	98.4	98.0
Exiting Leg Total	2352					1					4248					1848					8449
Heavy Vehicles	2	55	0	0	57	0	0	0	0	0	0	37	31	0	68	42	0	8	0	50	175
% Heavy Vehicles	0.4	3.1	0.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.2	0.0	2.1	1.6	0.0	1.4	0.0	1.6	2.0
Exiting Leg Total	45					0					97					33					175

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

4:30 PM	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:30 PM	28	111	0	0	139	0	0	0	0	0	0	115	91	0	206	189	0	38	0	227	572
4:45 PM	17	123	0	0	140	0	0	1	0	1	0	96	73	0	169	168	0	56	0	224	534
5:00 PM	27	111	0	0	138	0	0	0	0	0	0	135	84	0	219	170	0	49	0	219	576
5:15 PM	23	133	1	0	157	0	0	0	0	0	0	118	83	0	201	186	0	38	0	224	582
Total Volume	95	478	1	0	574	0	0	1	0	1	0	464	331	0	795	713	0	181	0	894	2264
% Approach Total	16.6	83.3	0.2	0.0		0.0	0.0	100.0	0.0		0.0	58.4	41.6	0.0		79.8	0.0	20.2	0.0		
PHF	0.848	0.898	0.250	0.000	0.914	0.000	0.000	0.250	0.000	0.250	0.000	0.859	0.909	0.000	0.908	0.943	0.000	0.808	0.000	0.985	0.973
Cars	95	470	1	0	566	0	0	1	0	1	0	456	323	0	779	704	0	181	0	885	2231
Cars %	100.0	98.3	100.0	0.0	98.6	0.0	0.0	100.0	0.0	100.0	0.0	98.3	97.6	0.0	98.0	98.7	0.0	100.0	0.0	99.0	98.5
Heavy Vehicles	0	8	0	0	8	0	0	0	0	0	0	8	8	0	16	9	0	0	0	9	33
Heavy Vehicles %	0.0	1.7	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.0	0.0	1.7	2.4	0.0	2.0	1.3	0.0	0.0	0.0	1.0	1.5
Cars Enter Leg	95	470	1	0	566	0	0	1	0	1	0	456	323	0	779	704	0	181	0	885	2231
Heavy Enter Leg	0	8	0	0	8	0	0	0	0	0	0	8	8	0	16	9	0	0	0	9	33
Total Entering Leg	95	478	1	0	574	0	0	1	0	1	0	464	331	0	795	713	0	181	0	894	2264
Cars Exiting Leg	637					1					1175					418					2231
Heavy Exiting Leg	8					0					17					8					33
Total Exiting Leg	645					1					1192					426					2264

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Cars

	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	27	78	0	0	105	0	0	0	0	0	0	81	67	0	148	116	0	35	0	151	404
2:15 PM	31	85	0	0	116	0	0	0	0	0	0	93	83	0	176	136	0	38	0	174	466
2:30 PM	40	105	0	0	145	0	0	0	0	0	0	126	115	0	241	134	0	40	0	174	560
2:45 PM	39	111	0	0	150	0	0	0	0	0	0	126	96	0	222	131	0	26	0	157	529
Total	137	379	0	0	516	0	0	0	0	0	0	426	361	0	787	517	0	139	0	656	1959
3:00 PM	17	121	0	0	138	0	0	0	0	0	0	111	90	0	201	154	0	33	0	187	526
3:15 PM	32	109	0	0	141	0	0	0	0	0	0	96	101	0	197	164	0	33	0	197	535
3:30 PM	23	116	0	0	139	0	0	0	0	0	0	130	88	0	218	145	0	37	0	182	539
3:45 PM	38	107	0	0	145	0	0	0	0	0	0	108	82	0	190	162	0	34	0	196	531
Total	110	453	0	0	563	0	0	0	0	0	0	445	361	0	806	625	0	137	0	762	2131
4:00 PM	30	113	0	0	143	0	0	0	0	0	0	116	105	0	221	177	0	30	0	207	571
4:15 PM	34	106	0	0	140	0	0	0	0	0	0	128	89	0	217	165	0	28	0	193	550
4:30 PM	28	109	0	0	137	0	0	0	0	0	0	114	91	0	205	185	0	38	0	223	565
4:45 PM	17	120	0	0	137	0	0	1	0	1	0	93	68	0	161	166	0	56	0	222	521
Total	109	448	0	0	557	0	0	1	0	1	0	451	353	0	804	693	0	152	0	845	2207
5:00 PM	27	109	0	0	136	0	0	0	0	0	0	134	83	0	217	168	0	49	0	217	570
5:15 PM	23	132	1	0	156	0	0	0	0	0	0	115	81	0	196	185	0	38	0	223	575
5:30 PM	21	123	0	0	144	0	0	0	0	0	0	118	88	0	206	169	0	41	0	210	560
5:45 PM	16	92	0	0	108	0	0	0	0	0	0	83	78	0	161	154	0	24	0	178	447
Total	87	456	1	0	544	0	0	0	0	0	0	450	330	0	780	676	0	152	0	828	2152
Grand Total	443	1736	1	0	2180	0	0	1	0	1	0	1772	1405	0	3177	2511	0	580	0	3091	8449
Approach %	20.3	79.6	0.0	0.0		0.0	0.0	100.0	0.0		0.0	55.8	44.2	0.0		81.2	0.0	18.8	0.0		
Total %	5.2	20.5	0.0	0.0	25.8	0.0	0.0	0.0	0.0	0.0	0.0	21.0	16.6	0.0	37.6	29.7	0.0	6.9	0.0	36.6	
Exiting Leg Total	2352					1					4248					1848					8449

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

4:30 PM	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
4:30 PM	28	109	0	0	137	0	0	0	0	0	0	114	91	0	205	185	0	38	0	223	565
4:45 PM	17	120	0	0	137	0	0	1	0	1	0	93	68	0	161	166	0	56	0	222	521
5:00 PM	27	109	0	0	136	0	0	0	0	0	0	134	83	0	217	168	0	49	0	217	570
5:15 PM	23	132	1	0	156	0	0	0	0	0	0	115	81	0	196	185	0	38	0	223	575
Total Volume	95	470	1	0	566	0	0	1	0	1	0	456	323	0	779	704	0	181	0	885	2231
% Approach Total	16.8	83.0	0.2	0.0		0.0	0.0	100.0	0.0		0.0	58.5	41.5	0.0		79.5	0.0	20.5	0.0		
PHF	0.848	0.890	0.250	0.000	0.907	0.000	0.000	0.250	0.000	0.250	0.000	0.851	0.887	0.000	0.897	0.951	0.000	0.808	0.000	0.992	0.970
Entering Leg	95	470	1	0	566	0	0	1	0	1	0	456	323	0	779	704	0	181	0	885	2231
Exiting Leg	637					1					1175					418					2231
Total	1203					2					1954					1303					4462

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**



	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	3	0	0	3	0	0	0	0	0	0	2	2	0	4	3	0	0	0	3	10
2:15 PM	0	1	0	0	1	0	0	0	0	0	0	7	1	0	8	3	0	1	0	4	13
2:30 PM	0	3	0	0	3	0	0	0	0	0	0	2	1	0	3	3	0	0	0	3	9
2:45 PM	0	3	0	0	3	0	0	0	0	0	0	1	3	0	4	0	0	1	0	1	8
Total	0	10	0	0	10	0	0	0	0	0	0	12	7	0	19	9	0	2	0	11	40
3:00 PM	0	10	0	0	10	0	0	0	0	0	0	2	3	0	5	6	0	0	0	6	21
3:15 PM	0	6	0	0	6	0	0	0	0	0	0	2	3	0	5	3	0	0	0	3	14
3:30 PM	0	6	0	0	6	0	0	0	0	0	0	5	3	0	8	4	0	0	0	4	18
3:45 PM	1	4	0	0	5	0	0	0	0	0	0	2	1	0	3	3	0	1	0	4	12
Total	1	26	0	0	27	0	0	0	0	0	0	11	10	0	21	16	0	1	0	17	65
4:00 PM	0	3	0	0	3	0	0	0	0	0	0	3	3	0	6	3	0	2	0	5	14
4:15 PM	1	5	0	0	6	0	0	0	0	0	0	1	1	0	2	4	0	1	0	5	13
4:30 PM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	4	0	0	0	4	7
4:45 PM	0	3	0	0	3	0	0	0	0	0	0	3	5	0	8	2	0	0	0	2	13
Total	1	13	0	0	14	0	0	0	0	0	0	8	9	0	17	13	0	3	0	16	47
5:00 PM	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	2	0	0	0	2	6
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	3	2	0	5	1	0	0	0	1	7
5:30 PM	0	3	0	0	3	0	0	0	0	0	0	0	2	0	2	1	0	1	0	2	7
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	3
Total	0	6	0	0	6	0	0	0	0	0	0	6	5	0	11	4	0	2	0	6	23
Grand Total	2	55	0	0	57	0	0	0	0	0	0	37	31	0	68	42	0	8	0	50	175
Approach %	3.5	96.5	0.0	0.0		0.0	0.0	0.0	0.0		0.0	54.4	45.6	0.0		84.0	0.0	16.0	0.0		
Total %	1.1	31.4	0.0	0.0	32.6	0.0	0.0	0.0	0.0	0.0	0.0	21.1	17.7	0.0	38.9	24.0	0.0	4.6	0.0	28.6	
Exiting Leg Total	45					0					97					33					175
Buses	0	9	0	0	9	0	0	0	0	0	0	5	8	0	13	6	0	2	0	8	30
% Buses	0.0	16.4	0.0	0.0	15.8	0.0	0.0	0.0	0.0	0.0	0.0	13.5	25.8	0.0	19.1	14.3	0.0	25.0	0.0	16.0	17.1
Exiting Leg Total	7					0					15					8					30
Single-Unit Trucks	1	43	0	0	44	0	0	0	0	0	0	28	14	0	42	26	0	5	0	31	117
% Single-Unit	50.0	78.2	0.0	0.0	77.2	0.0	0.0	0.0	0.0	0.0	0.0	75.7	45.2	0.0	61.8	61.9	0.0	62.5	0.0	62.0	66.9
Exiting Leg Total	33					0					69					15					117
Articulated Trucks	1	3	0	0	4	0	0	0	0	0	0	4	9	0	13	10	0	1	0	11	28
% Articulated	50.0	5.5	0.0	0.0	7.0	0.0	0.0	0.0	0.0	0.0	0.0	10.8	29.0	0.0	19.1	23.8	0.0	12.5	0.0	22.0	16.0
Exiting Leg Total	5					0					13					10					28

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

3:00 PM	Water Street					Driveway					Water Street					Endicott Street					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
3:00 PM	0	10	0	0	10	0	0	0	0	0	0	2	3	0	5	6	0	0	0	0	6	21
3:15 PM	0	6	0	0	6	0	0	0	0	0	0	2	3	0	5	3	0	0	0	0	3	14
3:30 PM	0	6	0	0	6	0	0	0	0	0	0	5	3	0	8	4	0	0	0	0	4	18
3:45 PM	1	4	0	0	5	0	0	0	0	0	0	2	1	0	3	3	0	1	0	0	4	12
Total Volume	1	26	0	0	27	0	0	0	0	0	0	11	10	0	21	16	0	1	0	0	17	65
% Approach Total	3.7	96.3	0.0	0.0		0.0	0.0	0.0	0.0		0.0	52.4	47.6	0.0		94.1	0.0	5.9	0.0			
PHF	0.250	0.650	0.000	0.000	0.675	0.000	0.000	0.000	0.000	0.000	0.000	0.550	0.833	0.000	0.656	0.667	0.000	0.250	0.000	0.708	0.774	
Buses	0	5	0	0	5	0	0	0	0	0	0	3	2	0	5	1	0	0	0	0	1	11
Buses %	0.0	19.2	0.0	0.0	18.5	0.0	0.0	0.0	0.0	0.0	0.0	27.3	20.0	0.0	23.8	6.3	0.0	0.0	0.0	5.9	16.9	
Single-Unit Trucks	0	20	0	0	20	0	0	0	0	0	0	7	5	0	12	9	0	1	0	10	42	
Single-Unit %	0.0	76.9	0.0	0.0	74.1	0.0	0.0	0.0	0.0	0.0	0.0	63.6	50.0	0.0	57.1	56.3	0.0	100.0	0.0	58.8	64.6	
Articulated Trucks	1	1	0	0	2	0	0	0	0	0	0	1	3	0	4	6	0	0	0	0	6	12
Articulated %	100.0	3.8	0.0	0.0	7.4	0.0	0.0	0.0	0.0	0.0	0.0	9.1	30.0	0.0	19.0	37.5	0.0	0.0	0.0	35.3	18.5	
Buses	0	5	0	0	5	0	0	0	0	0	0	3	2	0	5	1	0	0	0	0	1	11
Single-Unit Trucks	0	20	0	0	20	0	0	0	0	0	0	7	5	0	12	9	0	1	0	10	42	
Articulated Trucks	1	1	0	0	2	0	0	0	0	0	0	1	3	0	4	6	0	0	0	0	6	12
Total Entering Leg	1	26	0	0	27	0	0	0	0	0	0	11	10	0	21	16	0	1	0	17	65	
Buses	3					0					6					2					11	
Single-Unit Trucks	8					0					29					5					42	
Articulated Trucks	1					0					7					4					12	
Total Exiting Leg	12					0					42					11					65	

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Buses

	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	4
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	2	3
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	2
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	1	3	0	4	2	0	1	0	3	9
3:00 PM	0	5	0	0	5	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	7
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	2
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
Total	0	5	0	0	5	0	0	0	0	0	0	3	2	0	5	1	0	0	0	1	11
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	1	2	0	3	2	0	1	0	3	6
5:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	4
Grand Total	0	9	0	0	9	0	0	0	0	0	0	5	8	0	13	6	0	2	0	8	30
Approach %	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	38.5	61.5	0.0		75.0	0.0	25.0	0.0		
Total %	0.0	30.0	0.0	0.0	30.0	0.0	0.0	0.0	0.0	0.0	0.0	16.7	26.7	0.0	43.3	20.0	0.0	6.7	0.0	26.7	
Exiting Leg Total	7					0					15					8					30

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:15 PM	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	1	0	2	3
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	2
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	5	0	0	5	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	7
Total Volume	0	5	0	0	5	0	0	0	0	0	0	1	3	0	4	2	0	1	0	3	12
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	25.0	75.0	0.0		66.7	0.0	33.3	0.0		
PHF	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.375	0.000	0.500	0.500	0.000	0.250	0.000	0.375	0.429
Entering Leg	0	5	0	0	5	0	0	0	0	0	0	1	3	0	4	2	0	1	0	3	12
Exiting Leg	2					0					7					3					12
Total	7					0					11					6					24

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Single-Unit Trucks

	Water Street					Driveway					Water Street					Endicott Street					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
2:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	3	0	0	0	0	3	5
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	5	1	0	6	2	0	0	0	0	2	8
2:30 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	2	0	0	0	0	2	6
2:45 PM	0	3	0	0	3	0	0	0	0	0	0	1	3	0	4	0	0	1	0	0	1	8
Total	0	6	0	0	6	0	0	0	0	0	0	9	4	0	13	7	0	1	0	0	8	27
3:00 PM	0	4	0	0	4	0	0	0	0	0	0	2	1	0	3	3	0	0	0	0	3	10
3:15 PM	0	6	0	0	6	0	0	0	0	0	0	1	2	0	3	2	0	0	0	0	2	11
3:30 PM	0	6	0	0	6	0	0	0	0	0	0	3	1	0	4	4	0	0	0	0	4	14
3:45 PM	0	4	0	0	4	0	0	0	0	0	0	1	1	0	2	0	0	1	0	0	1	7
Total	0	20	0	0	20	0	0	0	0	0	0	7	5	0	12	9	0	1	0	0	10	42
4:00 PM	0	3	0	0	3	0	0	0	0	0	0	2	1	0	3	2	0	1	0	0	3	9
4:15 PM	1	5	0	0	6	0	0	0	0	0	0	1	1	0	2	2	0	0	0	0	2	10
4:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	4
4:45 PM	0	3	0	0	3	0	0	0	0	0	0	3	2	0	5	2	0	0	0	0	2	10
Total	1	13	0	0	14	0	0	0	0	0	0	6	4	0	10	8	0	1	0	0	9	33
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	0	1	2
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	3	1	0	4	1	0	0	0	0	1	6
5:30 PM	0	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	0	0	1	3
Total	0	4	0	0	4	0	0	0	0	0	0	6	1	0	7	2	0	2	0	0	4	15
Grand Total	1	43	0	0	44	0	0	0	0	0	0	28	14	0	42	26	0	5	0	0	31	117
Approach %	2.3	97.7	0.0	0.0		0.0	0.0	0.0	0.0		0.0	66.7	33.3	0.0		83.9	0.0	16.1	0.0			
Total %	0.9	36.8	0.0	0.0	37.6	0.0	0.0	0.0	0.0	0.0	0.0	23.9	12.0	0.0	35.9	22.2	0.0	4.3	0.0	26.5		
Exiting Leg Total	33					0					69					15					117	

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:45 PM	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:45 PM	0	3	0	0	3	0	0	0	0	0	0	1	3	0	4	0	0	1	0	1	8
3:00 PM	0	4	0	0	4	0	0	0	0	0	0	2	1	0	3	3	0	0	0	3	10
3:15 PM	0	6	0	0	6	0	0	0	0	0	0	1	2	0	3	2	0	0	0	2	11
3:30 PM	0	6	0	0	6	0	0	0	0	0	0	3	1	0	4	4	0	0	0	4	14
Total Volume	0	19	0	0	19	0	0	0	0	0	0	7	7	0	14	9	0	1	0	10	43
% Approach Total	0.0	100.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	50.0	50.0	0.0		90.0	0.0	10.0	0.0		
PHF	0.000	0.792	0.000	0.000	0.792	0.000	0.000	0.000	0.000	0.000	0.000	0.583	0.583	0.000	0.875	0.563	0.000	0.250	0.000	0.625	0.768
Entering Leg	0	19	0	0	19	0	0	0	0	0	0	7	7	0	14	9	0	1	0	10	43
Exiting Leg	8					0					28					7					43
Total	27					0					42					17					86

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Articulated Trucks

	Water Street					Driveway					Water Street					Endicott Street					Total
	from North					from East					from South					from West					
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
2:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
2:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
3:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	4
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	3
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
3:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3
Total	1	1	0	0	2	0	0	0	0	0	0	1	3	0	4	6	0	0	0	6	12
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	1	3	0	4	3	0	1	0	4	8
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3	1	0	0	0	1	4
Grand Total	1	3	0	0	4	0	0	0	0	0	0	4	9	0	13	10	0	1	0	11	28
Approach %	25.0	75.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	30.8	69.2	0.0		90.9	0.0	9.1	0.0		
Total %	3.6	10.7	0.0	0.0	14.3	0.0	0.0	0.0	0.0	0.0	0.0	14.3	32.1	0.0	46.4	35.7	0.0	3.6	0.0	39.3	
Exiting Leg Total	5					0					13					10					28

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

3:00 PM	Water Street					Driveway					Water Street					Endicott Street					Total	
	from North					from East					from South					from West						
	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total	Right	Thru	Left	U-Turn	Total		
3:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3	4
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	0	0	1	3
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
3:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	3
Total Volume	1	1	0	0	2	0	0	0	0	0	0	1	3	0	4	6	0	0	0	0	6	12
% Approach Total	50.0	50.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	25.0	75.0	0.0		100.0	0.0	0.0	0.0			
PHF	0.250	0.250	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.375	0.000	0.500	0.500	0.000	0.000	0.000	0.500	0.750	
Entering Leg	1	1	0	0	2	0	0	0	0	0	0	1	3	0	4	6	0	0	0	0	6	12
Exiting Leg	1					0					7					4					12	
Total	3					0					11					10					24	

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Bicycles (on Roadway and Crosswalks)

	Water Street							Driveway							Water Street							Endicott Street							Total	
	from North							from East							from South							from West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	
3:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	1	3
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2	0	0	0	0	0	0	2	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Grand Total	0	1	0	0	0	0	1	0	1	0	0	0	1	2	0	3	0	0	0	0	3	1	0	0	0	0	0	1	7	
Approach %	0.0	100.0	0.0	0.0	0.0	0.0		0.0	50.0	0.0	0.0	0.0	50.0		0.0	100.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0			
Total %	0.0	14.3	0.0	0.0	0.0	0.0	14.3	0.0	14.3	0.0	0.0	0.0	14.3	28.6	0.0	42.9	0.0	0.0	0.0	0.0	42.9	14.3	0.0	0.0	0.0	0.0	0.0	14.3		
Exiting Leg Total	3							1							2							1							7	

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

3:15 PM	Water Street							Driveway							Water Street							Endicott Street							Total	
	from North							from East							from South							from West								
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total		
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	
3:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	1	
Total Volume	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	0	0	0	0	0	2	1	0	0	0	0	0	1	4
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		0.0	100.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	0.0	0.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.500	0.000	0.000	0.000	0.000	0.500	0.250	0.000	0.000	0.000	0.000	0.000	0.250	1.000	
Entering Leg	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0	2	0	0	0	0	2	1	0	0	0	0	0	1	4	
Exiting Leg	2							0							1							1							1	4
Total	2							1							3							2							8	

PDI File #: **228478 D**
 Location: **N: Water Street S: Water Street**
 Location: **E: Driveway W: Endicott Street**
 City, State: **Danvers, MA**
 Client: **TEC/ S. Gregorio**
 Site Code: **1219**
 Count Date: **Wednesday, March 23, 2022**
 Start Time: **2:00 PM**
 End Time: **6:00 PM**
 Class:



Pedestrians

	Water Street							Driveway							Water Street							Endicott Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	2	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
4:00 PM	0	0	0	0	1	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Total	0	0	0	0	1	0	1	0	0	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
Grand Total	0	0	0	0	1	0	1	0	0	0	0	3	8	11	0	0	0	0	0	0	0	0	0	0	0	2	2		14
Approach %	0	0	0	0	100	0		0	0	0	0	27.3	72.7		0	0	0	0	0	0	0	0	0	0	0	0	100		
Total %	0	0	0	0	7.14	0	7.14	0	0	0	0	21.4	57.1	78.6	0	0	0	0	0	0	0	0	0	0	0	14.3	14.3		
Exiting Leg Total	1							11							0							2							14

Peak Hour Analysis from 02:00 PM to 06:00 PM begins at:

2:45 PM	Water Street							Driveway							Water Street							Endicott Street							Total
	from North							from East							from South							from West							
	Right	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Thru	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Thru	Left	U-Turn	CW-NB	CW-SB	Total	
2:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	1	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3
Total Volume	0	0	0	0	0	0	0	0	0	0	0	2	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	33.3	66.7		0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	1.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	2	4	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
Exiting Leg	0							6							0							0							6
Total	0							12							0							0							12



282 Merrimack Street, 2nd Floor

Lawrence, MA 01843

www.theengineeringcorp.com or 978-794-1792

N/S: Margin Street
E: Gardner Street
City, State: Peabody, Massachusetts
Analyst: TEC, Inc. / Shania Ruiz

Alternative: School Peaks
Project #: T1219
State Date: Tuesday May 4, 2022
Page No: 1

Group - Cars and Trucks

	Margin Street Northbound					Margin Street Southbound					Driveway Westbound					Gardner Street Eastbound					
Start Time	Left	Thru	Right	Ped	Tot	Left	Thru	Right	Ped	Tot	Left	Thru	Right	Ped	Tot	Left	Thru	Right	Ped	Tot	Int. Total
7:00 - 7:15	131	97	0	0	228	1	69	12	0	82	1	2	1	0	4	9	0	70	1	79	393
7:15 - 7:30	129	117	1	0	247	0	90	16	0	106	0	2	0	0	2	15	0	74	0	89	444
7:30 - 7:45	104	137	0	0	241	0	93	27	0	120	0	0	0	0	0	26	0	76	0	102	463
7:45 - 8:00	133	149	1	0	283	0	109	16	0	125	0	0	1	0	1	10	0	58	0	68	477
Total PHF	497	500	2	0	999	1	361	71	0	433	1	4	2	0	7	60	0	278	1	338	1777
			88.3%					86.6%					43.8%					82.8%			93.1%
Grand Total	497	500	2	0	999	1	361	71	0	433	1	4	2	0	7	60	0	278	1	338	1777
Cars	493	483	2		978	1	353	71		425	1	4	2		7	58	0	272		330	1740
Cars %	99%	97%	100%		98%	100%	98%	100%		98%	100%	100%	100%		100%	97%	#DIV/0!	98%		98%	98%
HV	4	17	0		21	0	8	0		8	0	0	0		0	2	0	6		8	37
HV %	1%	3%	0%		2%	0%	2%	0%		2%	0%	0%	0%		0%	3%	#DIV/0!	2%		2%	2%

1 Cyclist NBT at :45

Group - Cars and Trucks

	Margin Street Northbound					Margin Street Southbound					Driveway Westbound					Gardner Street Eastbound					
Start Time	Left	Thru	Right	Ped	Tot	Left	Thru	Right	Ped	Tot	Left	Thru	Right	Ped	Tot	Left	Thru	Right	Ped	Tot	Int. Total
3:00 - 3:15	118	111	0	0	229	0	177	7	0	184	0	0	0	0	0	12	1	70	1	83	496
3:15 - 3:30	136	133	0	0	269	0	174	15	0	189	0	0	0	0	0	7	0	86	0	93	551
3:30 - 3:45	95	131	0	0	226	0	169	3	0	172	0	0	0	0	0	9	0	72	1	81	479
3:45 - 4:00	124	130	1	0	255	0	161	8	0	169	1	1	0	0	2	16	0	75	1	91	517
Total PHF	473	505	1	0	979	0	681	33	0	714	1	1	0	0	2	44	1	303	3	348	2043
			91.0%					94.4%					25.0%					93.5%			92.7%
Grand Total	473	505	1	0	979	0	681	33	0	714	1	1	0	0	2	44	1	303	3	348	2043
Cars	463	496	1		960	0	671	32		703	1	1	0		2	42	1	302		345	2010
Cars %	98%	98%	100%		98%	#DIV/0!	99%	97%		98%	100%	100%	#DIV/0!		100%	95%	100%	100%		99%	98%
HV	10	9	0		19	0	10	1		11	0	0	0		0	2	0	1		3	33
HV %	2%	2%	0%		2%	#DIV/0!	1%	3%		2%	0%	0%	#DIV/0!		0%	5%	0%	0%		1%	2%

1 Cyclist NBT at :45, 1 Cyclist SBT at :45

Group - Cars and Trucks

	Margin Street Northbound					Margin Street Southbound					Driveway Westbound					Gardner Street Eastbound					
Start Time	Left	Thru	Right	Ped	Tot	Left	Thru	Right	Ped	Tot	Left	Thru	Right	Ped	Tot	Left	Thru	Right	Ped	Tot	Int. Total
4:00 - 4:15	101	120	0	0	221	0	223	3	0	226	0	0	0	0	0	6	0	98	0	104	551
4:15 - 4:30	105	112	0	0	217	0	172	9	0	181	1	0	0	0	1	3	0	83	0	86	485
4:30 - 4:45	103	131	0	0	234	0	165	11	0	176	0	0	0	0	0	14	0	79	0	93	503
4:45 - 5:00	100	124	2	0	226	0	195	10	0	205	1	0	0	0	1	13	0	69	0	82	514
Total PHF	409	487	2	0	898	0	755	33	0	788	2	0	0	0	2	36	0	329	0	365	2053
			95.9%					87.2%					50.0%					87.7%			93.1%
Grand Total	409	487	2	0	898	0	755	33	0	788	2	0	0	0	2	36	0	329	0	365	2053
Cars	406	474	2		882	0	751	32		783	2	0	0		2	36	0	329		365	2032
Cars %	99%	97%	100%		98%	#DIV/0!	99%	97%		99%	100%	#DIV/0!	#DIV/0!		100%	100%	#DIV/0!	100%		100%	99%
HV	3	13	0		16	0	4	1		5	0	0	0		0	0	0	0		0	21
HV %	1%	3%	0%		2%	#DIV/0!	1%	3%		1%	0%	#DIV/0!	#DIV/0!		0%	0%	#DIV/0!	0%		0%	1%

1 Cyclist NBT at :30, 1 Cyclist NBL at :45, 2 Cyclist NBT at :45

Attachment C

Automatic Traffic Recorder (ATR) Counts

Pulaski Street
north of Dobbs Road
City, State: Peabody, MA
Client: TEC/ S. Gregorio
Site Code: 1219



PDI File #: 228478 ATR-A

Count Date: Wednesday, March 23, 2022
Direction: NB

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	2	0	0	0	2
12:15 AM	0	0	0	0	0	0	0
12:30 AM	0	0	1	0	0	0	1
12:45 AM	0	0	0	0	0	0	0
1:00 AM	0	0	1	0	0	1	2
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	2	0	0	0	2
2:15 AM	0	0	0	1	0	0	1
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	1	0	0	0	1
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	0	0	0	0	0
4:15 AM	0	0	2	0	0	0	2
4:30 AM	0	0	1	0	0	0	1
4:45 AM	0	0	4	0	0	0	4
5:00 AM	0	0	8	0	0	0	8
5:15 AM	0	0	5	0	0	4	9
5:30 AM	0	0	20	0	0	0	20
5:45 AM	0	0	19	0	1	2	22
6:00 AM	0	0	18	0	1	1	20
6:15 AM	0	0	28	0	1	1	30
6:30 AM	0	0	30	0	1	1	32
6:45 AM	0	0	52	2	2	0	56
7:00 AM	0	0	41	0	4	1	46
7:15 AM	0	0	35	0	5	1	41
7:30 AM	1	0	44	0	3	0	48
7:45 AM	0	0	48	0	3	0	51
8:00 AM	0	0	58	0	5	0	63
8:15 AM	0	0	62	0	2	0	64
8:30 AM	0	0	56	2	2	1	61
8:45 AM	0	0	50	1	4	0	55
9:00 AM	0	1	39	0	1	0	41
9:15 AM	0	0	40	0	4	0	44
9:30 AM	0	0	40	1	1	0	42
9:45 AM	0	0	37	0	2	0	39
10:00 AM	0	0	52	0	0	0	52
10:15 AM	0	0	56	0	1	0	57
10:30 AM	0	0	45	0	1	2	48
10:45 AM	0	0	57	0	0	2	59
11:00 AM	0	0	44	1	0	4	49
11:15 AM	0	0	47	0	4	0	51
11:30 AM	0	0	56	0	2	0	58
11:45 AM	0	0	49	0	1	1	51

AM Total	1	1	1153	8	51	22	1236
Percentage	0.08%	0.08%	93.28%	0.65%	4.13%	1.78%	

AM Peak Volume	6:45 AM	8:15 AM	8:00 AM	8:00 AM	7:15 AM	10:15 AM	8:00 AM
	1	1	226	3	16	8	243

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	67	0	3	0	70
12:15 PM	0	0	50	0	0	0	50
12:30 PM	0	0	47	0	1	1	49
12:45 PM	0	0	56	0	1	1	58
1:00 PM	0	1	46	0	1	0	48
1:15 PM	0	1	51	0	3	0	55
1:30 PM	0	0	55	0	1	0	56
1:45 PM	0	0	45	0	1	0	46
2:00 PM	0	0	47	0	3	1	51
2:15 PM	0	0	53	1	2	0	56
2:30 PM	0	0	49	0	0	0	49
2:45 PM	0	0	54	0	0	0	54
3:00 PM	0	1	44	0	2	0	47
3:15 PM	0	0	49	0	1	1	51
3:30 PM	0	1	62	1	0	1	65
3:45 PM	0	0	51	0	0	0	51
4:00 PM	0	0	58	0	2	1	61
4:15 PM	0	0	48	0	0	0	48
4:30 PM	0	1	46	0	0	0	47
4:45 PM	0	0	32	0	1	0	33
5:00 PM	0	1	47	0	0	0	48
5:15 PM	0	0	45	0	2	0	47
5:30 PM	0	0	32	0	1	0	33
5:45 PM	0	0	39	0	1	0	40
6:00 PM	0	0	36	0	1	0	37
6:15 PM	0	0	38	0	1	0	39
6:30 PM	0	0	33	0	0	0	33
6:45 PM	0	0	33	0	1	0	34
7:00 PM	0	0	26	0	0	0	26
7:15 PM	0	0	33	0	0	0	33
7:30 PM	0	0	25	0	0	0	25
7:45 PM	0	0	20	0	0	0	20
8:00 PM	0	0	8	1	0	0	9
8:15 PM	0	0	21	0	0	0	21
8:30 PM	0	0	12	0	0	0	12
8:45 PM	0	0	13	0	0	0	13
9:00 PM	0	0	9	0	0	0	9
9:15 PM	0	0	8	0	0	0	8
9:30 PM	0	0	14	0	0	0	14
9:45 PM	0	0	10	0	0	0	10
10:00 PM	0	0	6	0	0	0	6
10:15 PM	0	0	6	0	0	0	6
10:30 PM	0	0	6	0	0	0	6
10:45 PM	0	0	12	0	0	0	12
11:00 PM	0	0	6	0	0	0	6
11:15 PM	0	0	2	0	0	0	2
11:30 PM	0	0	2	0	0	0	2
11:45 PM	0	0	3	0	0	0	3

PM Total	0	6	1555	3	29	6	1599
Percentage	0.00%	0.38%	97.25%	0.19%	1.81%	0.38%	

PM Peak Volume	12:00 PM	12:30 PM	12:00 PM	1:30 PM	1:15 PM	3:15 PM	3:15 PM
	0	2	220	1	8	3	228

Day Total	1	7	2708	11	80	28	2835
Percentage	0.04%	0.25%	95.52%	0.39%	2.82%	0.99%	

Pulaski Street
north of Dobbs Road
City, State: Peabody, MA
Client: TEC/ S. Gregorio
Site Code: 1219



PDI File #: 228478 ATR-A

Count Date: Thursday, March 24, 2022
Direction: NB

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	3	0	0	0	3
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	3	0	0	0	3
12:45 AM	0	0	4	0	0	0	4
1:00 AM	0	0	1	0	0	0	1
1:15 AM	0	0	1	0	0	0	1
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	1	0	0	1
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	1	0	0	0	1
3:00 AM	0	0	1	0	0	0	1
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	1	1
3:45 AM	0	0	1	0	0	0	1
4:00 AM	0	0	0	0	0	0	0
4:15 AM	0	0	2	0	1	0	3
4:30 AM	0	0	4	0	1	0	5
4:45 AM	0	0	4	0	0	1	5
5:00 AM	0	0	7	0	0	0	7
5:15 AM	0	0	7	0	1	0	8
5:30 AM	0	0	19	0	0	0	19
5:45 AM	0	0	22	0	0	4	26
6:00 AM	0	0	15	0	0	1	16
6:15 AM	0	0	23	0	1	1	25
6:30 AM	0	0	35	0	2	0	37
6:45 AM	0	0	35	2	2	0	39
7:00 AM	0	0	36	0	0	1	37
7:15 AM	0	0	41	0	2	0	43
7:30 AM	0	0	35	0	5	1	41
7:45 AM	0	0	47	0	0	0	47
8:00 AM	0	0	52	0	2	1	55
8:15 AM	0	0	37	0	5	0	42
8:30 AM	0	0	40	2	1	0	43
8:45 AM	0	0	45	0	2	0	47
9:00 AM	0	0	44	1	2	1	48
9:15 AM	0	0	38	0	2	0	40
9:30 AM	0	0	35	1	3	0	39
9:45 AM	0	0	49	0	1	0	50
10:00 AM	0	0	28	0	4	0	32
10:15 AM	0	0	38	0	1	1	40
10:30 AM	0	0	48	0	3	0	51
10:45 AM	0	0	36	0	3	1	40
11:00 AM	0	0	34	3	1	0	38
11:15 AM	0	0	34	0	1	1	36
11:30 AM	0	0	57	0	4	0	61
11:45 AM	0	0	41	0	1	0	42

AM Total 0 0 1005 10 51 15 1081
Percentage 0.00% 0.00% 92.97% 0.93% 4.72% 1.39%

AM Peak 12:00 AM 12:00 AM 7:45 AM 8:15 AM 7:30 AM 5:30 AM 7:45 AM
Volume 0 0 176 3 12 6 187

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	63	1	1	0	65
12:15 PM	0	0	36	0	3	1	40
12:30 PM	0	0	60	1	0	1	62
12:45 PM	0	0	37	0	0	1	38
1:00 PM	0	0	43	0	2	0	45
1:15 PM	0	0	38	0	0	0	38
1:30 PM	0	0	49	0	1	0	50
1:45 PM	0	0	36	0	4	2	42
2:00 PM	0	0	46	0	1	1	48
2:15 PM	0	0	53	0	1	1	55
2:30 PM	0	0	53	0	1	0	54
2:45 PM	0	0	62	0	0	1	63
3:00 PM	0	0	44	0	0	0	44
3:15 PM	0	0	56	0	2	0	58
3:30 PM	0	0	46	1	2	0	49
3:45 PM	0	0	39	0	1	0	40
4:00 PM	0	0	61	0	1	0	62
4:15 PM	0	0	58	0	0	0	58
4:30 PM	0	0	44	0	0	1	45
4:45 PM	0	0	49	0	0	0	49
5:00 PM	0	0	65	0	0	0	65
5:15 PM	0	0	40	0	0	0	40
5:30 PM	0	0	48	0	0	0	48
5:45 PM	0	0	37	0	0	0	37
6:00 PM	0	0	36	0	0	0	36
6:15 PM	0	0	35	0	0	0	35
6:30 PM	0	0	1	0	0	0	1
6:45 PM	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0

PM Total 0 0 1235 3 20 9 1267
Percentage 0.00% 0.00% 97.47% 0.24% 1.58% 0.71%

PM Peak 12:00 PM 12:00 PM 4:15 PM 12:00 PM 1:00 PM 1:30 PM 2:00 PM
Volume 0 0 216 2 7 4 220

Day Total 0 0 2240 13 71 24 2348
Percentage 0.00% 0.00% 95.40% 0.55% 3.02% 1.02%

Pulaski Street
north of Dobbs Road
City, State: Peabody, MA
Client: TEC/ S. Gregorio
Site Code: 1219



PDI File #: 228478 ATR-A

Count Date: Wednesday, March 23, 2022
Direction: SB

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	0	0	0	0	0
12:15 AM	0	0	1	0	0	0	1
12:30 AM	0	0	1	0	0	0	1
12:45 AM	0	0	2	0	0	0	2
1:00 AM	0	0	0	0	0	0	0
1:15 AM	0	0	0	0	0	0	0
1:30 AM	0	0	1	0	0	0	1
1:45 AM	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	1	0	0	0	1
2:45 AM	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0
4:00 AM	0	0	2	0	0	0	2
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	0	0	0	0	0
4:45 AM	0	0	3	0	0	0	3
5:00 AM	0	0	5	0	0	0	5
5:15 AM	0	0	3	0	0	0	3
5:30 AM	0	0	6	0	0	0	6
5:45 AM	0	0	13	1	0	1	15
6:00 AM	0	0	11	0	1	1	13
6:15 AM	0	0	16	0	0	0	16
6:30 AM	0	0	23	0	0	0	23
6:45 AM	0	0	23	0	0	0	23
7:00 AM	0	0	24	1	0	2	27
7:15 AM	0	0	35	0	1	0	36
7:30 AM	0	0	37	0	1	0	38
7:45 AM	0	1	28	0	3	0	32
8:00 AM	0	0	36	0	4	1	41
8:15 AM	0	0	30	1	1	2	34
8:30 AM	0	0	41	1	3	0	45
8:45 AM	0	0	46	0	4	0	50
9:00 AM	0	0	52	1	3	0	56
9:15 AM	0	0	41	0	2	2	45
9:30 AM	0	0	30	0	2	0	32
9:45 AM	0	0	37	0	1	0	38
10:00 AM	0	1	44	0	1	0	46
10:15 AM	0	0	42	0	0	0	42
10:30 AM	0	0	49	0	1	0	50
10:45 AM	0	0	53	0	1	0	54
11:00 AM	0	0	52	1	4	0	57
11:15 AM	0	0	42	1	2	0	45
11:30 AM	0	0	40	0	3	0	43
11:45 AM	0	0	50	0	2	1	53

AM Total	0	2	920	7	40	10	979
Percentage	0.00%	0.20%	93.97%	0.72%	4.09%	1.02%	

AM Peak	12:00 AM	7:00 AM	10:15 AM	8:15 AM	8:00 AM	7:30 AM	10:30 AM
Volume	0	1	196	3	12	3	206

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	49	0	0	2	51
12:15 PM	0	0	55	0	3	0	58
12:30 PM	0	0	58	0	1	0	59
12:45 PM	0	0	50	0	2	1	53
1:00 PM	0	0	61	1	4	0	66
1:15 PM	0	0	44	0	1	0	45
1:30 PM	0	0	49	1	4	0	54
1:45 PM	0	0	58	0	1	0	59
2:00 PM	0	0	46	0	3	0	49
2:15 PM	0	0	52	0	1	1	54
2:30 PM	0	0	77	1	0	1	79
2:45 PM	0	0	76	0	2	0	78
3:00 PM	0	0	91	1	4	2	98
3:15 PM	0	1	82	0	0	0	83
3:30 PM	0	0	78	0	2	2	82
3:45 PM	0	0	69	0	3	1	73
4:00 PM	0	0	69	0	1	0	70
4:15 PM	0	0	77	0	5	1	83
4:30 PM	0	0	67	0	1	0	68
4:45 PM	0	0	52	0	1	0	53
5:00 PM	0	1	84	0	1	0	86
5:15 PM	1	0	59	0	0	1	61
5:30 PM	0	0	68	0	2	0	70
5:45 PM	0	0	50	0	1	0	51
6:00 PM	0	1	71	0	0	0	72
6:15 PM	0	0	37	0	2	0	39
6:30 PM	0	0	41	0	0	0	41
6:45 PM	0	0	35	0	0	0	35
7:00 PM	0	0	29	0	0	0	29
7:15 PM	0	0	34	0	0	0	34
7:30 PM	0	0	38	0	0	0	38
7:45 PM	0	0	24	0	0	0	24
8:00 PM	0	0	29	0	0	0	29
8:15 PM	0	0	22	0	0	0	22
8:30 PM	0	0	18	0	0	0	18
8:45 PM	0	0	13	0	0	0	13
9:00 PM	0	0	15	0	0	0	15
9:15 PM	0	0	14	0	0	0	14
9:30 PM	0	0	18	0	0	0	18
9:45 PM	0	0	19	0	0	0	19
10:00 PM	0	0	13	1	0	0	14
10:15 PM	1	0	10	0	0	0	11
10:30 PM	0	0	14	0	0	0	14
10:45 PM	0	0	5	0	0	2	7
11:00 PM	0	0	4	0	0	0	4
11:15 PM	0	0	9	0	0	0	9
11:30 PM	0	0	7	0	0	0	7
11:45 PM	0	0	5	0	0	0	5

PM Total	2	3	2045	5	45	14	2114
Percentage	0.09%	0.14%	96.74%	0.24%	2.13%	0.66%	

PM Peak	4:30 PM	2:30 PM	2:45 PM	12:45 PM	12:45 PM	3:00 PM	2:45 PM
Volume	1	1	327	2	11	5	341

Day Total	2	5	2965	12	85	24	3093
Percentage	0.06%	0.16%	95.86%	0.39%	2.75%	0.78%	

Pulaski Street
north of Dobbs Road
City, State: Peabody, MA
Client: TEC/ S. Gregorio
Site Code: 1219



PDI File #: 228478 ATR-A

Count Date: Thursday, March 24, 2022
Direction: SB

AM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 AM	0	0	3	0	0	0	3
12:15 AM	0	0	4	0	0	0	4
12:30 AM	0	0	0	0	0	0	0
12:45 AM	0	0	1	0	0	0	1
1:00 AM	0	0	2	0	0	0	2
1:15 AM	0	0	1	0	0	1	2
1:30 AM	0	0	0	0	0	0	0
1:45 AM	0	0	1	0	0	0	1
2:00 AM	0	0	0	0	0	0	0
2:15 AM	0	0	0	0	0	0	0
2:30 AM	0	0	0	0	0	0	0
2:45 AM	0	0	2	0	0	0	2
3:00 AM	0	0	0	0	0	0	0
3:15 AM	0	0	0	0	0	0	0
3:30 AM	0	0	0	0	0	0	0
3:45 AM	0	0	0	0	0	0	0
4:00 AM	0	0	1	0	0	0	1
4:15 AM	0	0	0	0	0	0	0
4:30 AM	0	0	1	0	0	0	1
4:45 AM	0	0	0	0	0	0	0
5:00 AM	0	0	8	0	0	0	8
5:15 AM	0	0	1	0	0	0	1
5:30 AM	0	0	3	0	0	0	3
5:45 AM	0	0	10	0	0	0	10
6:00 AM	0	0	9	1	0	0	10
6:15 AM	0	0	19	0	0	0	19
6:30 AM	0	0	16	0	2	0	18
6:45 AM	0	0	30	1	0	0	31
7:00 AM	0	0	23	1	2	0	26
7:15 AM	0	0	35	0	2	0	37
7:30 AM	0	0	41	0	0	0	41
7:45 AM	0	0	35	0	3	0	38
8:00 AM	0	0	31	0	1	0	32
8:15 AM	0	0	34	0	1	0	35
8:30 AM	0	0	27	0	2	2	31
8:45 AM	0	0	41	1	2	0	44
9:00 AM	0	0	45	0	2	1	48
9:15 AM	0	0	32	1	4	0	37
9:30 AM	0	0	36	0	0	0	36
9:45 AM	0	0	42	0	2	0	44
10:00 AM	0	0	44	0	2	1	47
10:15 AM	0	0	37	0	2	0	39
10:30 AM	0	0	33	0	2	0	35
10:45 AM	0	0	24	0	0	1	25
11:00 AM	0	0	39	0	4	1	44
11:15 AM	0	0	42	1	1	1	45
11:30 AM	0	0	33	0	0	1	34
11:45 AM	0	0	39	0	1	1	41

AM Total	0	0	825	6	35	10	876
Percentage	0.00%	0.00%	94.18%	0.68%	4.00%	1.14%	

AM Peak Volume	12:00 AM	12:00 AM	9:30 AM	6:00 AM	8:30 AM	10:45 AM	9:30 AM
	0	0	159	2	10	4	166

PM	Bicycles	Motorcycle	Cars & Light Goods	Buses	Single Unit Heavy	Multi Unit Heavy	Total
12:00 PM	0	0	44	0	5	0	49
12:15 PM	0	0	44	1	0	1	46
12:30 PM	0	0	49	0	2	1	52
12:45 PM	0	0	49	2	1	0	52
1:00 PM	0	0	49	0	4	1	54
1:15 PM	0	0	53	0	2	2	57
1:30 PM	0	0	50	0	1	0	51
1:45 PM	0	0	46	0	1	1	48
2:00 PM	0	0	64	0	3	0	67
2:15 PM	0	0	55	0	1	1	57
2:30 PM	0	0	54	1	1	0	56
2:45 PM	0	0	62	0	2	1	65
3:00 PM	0	0	66	1	5	2	74
3:15 PM	0	0	75	0	1	2	78
3:30 PM	0	0	59	0	1	0	60
3:45 PM	0	0	62	0	4	0	66
4:00 PM	0	0	64	0	2	0	66
4:15 PM	0	0	63	0	0	2	65
4:30 PM	0	0	56	0	0	0	56
4:45 PM	0	0	70	0	0	0	70
5:00 PM	0	0	64	0	0	0	64
5:15 PM	0	0	75	0	0	0	75
5:30 PM	0	0	66	0	1	0	67
5:45 PM	0	0	38	0	1	1	40
6:00 PM	0	0	40	0	0	0	40
6:15 PM	0	0	38	0	0	0	38
6:30 PM	0	0	2	0	0	0	2
6:45 PM	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0
7:15 PM	0	0	0	0	0	0	0
7:30 PM	0	0	0	0	0	0	0
7:45 PM	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0
8:15 PM	0	0	0	0	0	0	0
8:30 PM	0	0	0	0	0	0	0
8:45 PM	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0
9:15 PM	0	0	0	0	0	0	0
9:30 PM	0	0	0	0	0	0	0
9:45 PM	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0
10:15 PM	0	0	0	0	0	0	0
10:30 PM	0	0	0	0	0	0	0
10:45 PM	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0
11:15 PM	0	0	0	0	0	0	0
11:30 PM	0	0	0	0	0	0	0
11:45 PM	0	0	0	0	0	0	0

PM Total	0	0	1457	5	38	15	1515
Percentage	0.00%	0.00%	96.17%	0.33%	2.51%	0.99%	

PM Peak Volume	12:00 PM	12:00 PM	4:45 PM	12:00 PM	3:00 PM	2:30 PM	3:00 PM
	0	0	275	3	11	5	278

Day Total	0	0	2282	11	73	25	2391
Percentage	0.00%	0.00%	95.44%	0.46%	3.05%	1.05%	



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Weekly Report

Day	Wednesday		Thursday												Week	
Date	03/23/22		03/24/22												Ave	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	2	70	3	65	0	0	0	0	0	0	0	0	0	0	3	68
12:15	0	50	1	40	0	0	0	0	0	0	0	0	0	0	1	45
12:30	1	49	3	62	0	0	0	0	0	0	0	0	0	0	2	56
12:45	0	58	4	38	0	0	0	0	0	0	0	0	0	0	2	48
1:00	2	48	1	45	0	0	0	0	0	0	0	0	0	0	2	47
1:15	1	55	1	38	0	0	0	0	0	0	0	0	0	0	1	47
1:30	0	56	1	50	0	0	0	0	0	0	0	0	0	0	1	53
1:45	0	46	0	42	0	0	0	0	0	0	0	0	0	0	0	44
2:00	2	51	0	48	0	0	0	0	0	0	0	0	0	0	1	50
2:15	1	56	1	55	0	0	0	0	0	0	0	0	0	0	1	56
2:30	0	49	0	54	0	0	0	0	0	0	0	0	0	0	0	52
2:45	1	54	1	63	0	0	0	0	0	0	0	0	0	0	1	59
3:00	0	47	1	44	0	0	0	0	0	0	0	0	0	0	1	46
3:15	0	51	0	58	0	0	0	0	0	0	0	0	0	0	0	55
3:30	1	65	1	49	0	0	0	0	0	0	0	0	0	0	1	57
3:45	1	51	1	40	0	0	0	0	0	0	0	0	0	0	1	46
4:00	0	61	0	62	0	0	0	0	0	0	0	0	0	0	0	62
4:15	2	48	3	58	0	0	0	0	0	0	0	0	0	0	3	53
4:30	1	47	5	45	0	0	0	0	0	0	0	0	0	0	3	46
4:45	4	33	5	49	0	0	0	0	0	0	0	0	0	0	5	41
5:00	8	48	7	65	0	0	0	0	0	0	0	0	0	0	8	57
5:15	9	47	8	40	0	0	0	0	0	0	0	0	0	0	9	44
5:30	20	33	19	48	0	0	0	0	0	0	0	0	0	0	20	41
5:45	22	40	26	37	0	0	0	0	0	0	0	0	0	0	24	39
6:00	20	37	16	36	0	0	0	0	0	0	0	0	0	0	18	37
6:15	30	39	25	35	0	0	0	0	0	0	0	0	0	0	28	37
6:30	32	33	37	1	0	0	0	0	0	0	0	0	0	0	35	17
6:45	56	34	39	0	0	0	0	0	0	0	0	0	0	0	48	17
7:00	46	26	37	0	0	0	0	0	0	0	0	0	0	0	42	13
7:15	41	33	43	0	0	0	0	0	0	0	0	0	0	0	42	17
7:30	48	25	41	0	0	0	0	0	0	0	0	0	0	0	45	13
7:45	51	20	47	0	0	0	0	0	0	0	0	0	0	0	49	10
8:00	63	9	55	0	0	0	0	0	0	0	0	0	0	0	59	5
8:15	64	21	42	0	0	0	0	0	0	0	0	0	0	0	53	11
8:30	61	12	43	0	0	0	0	0	0	0	0	0	0	0	52	6
8:45	55	13	47	0	0	0	0	0	0	0	0	0	0	0	51	7
9:00	41	9	48	0	0	0	0	0	0	0	0	0	0	0	45	5
9:15	44	8	40	0	0	0	0	0	0	0	0	0	0	0	42	4
9:30	42	14	39	0	0	0	0	0	0	0	0	0	0	0	41	7
9:45	39	10	50	0	0	0	0	0	0	0	0	0	0	0	45	5
10:00	52	6	32	0	0	0	0	0	0	0	0	0	0	0	42	3
10:15	57	6	40	0	0	0	0	0	0	0	0	0	0	0	49	3
10:30	48	6	51	0	0	0	0	0	0	0	0	0	0	0	50	3
10:45	59	12	40	0	0	0	0	0	0	0	0	0	0	0	50	6
11:00	49	6	38	0	0	0	0	0	0	0	0	0	0	0	44	3
11:15	51	2	36	0	0	0	0	0	0	0	0	0	0	0	44	1
11:30	58	2	61	0	0	0	0	0	0	0	0	0	0	0	60	1
11:45	51	3	42	0	0	0	0	0	0	0	0	0	0	0	47	2
Total	1236	1599	1081	1267	0	0	0	0	0	0	0	0	0	0	1159	1433
Day Total	2835		2348		0		0		0		0		0		2592	
Peak HR	8:00 AM	3:15 PM	7:45 AM	2:00 PM												
Volume	243	228	187	220												



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Hudson, MA 01749
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Weekly Report

Day	Wednesday		Thursday												Week	
Date	03/23/22		03/24/22												Ave	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
12:00	0	51	3	49	0	0	0	0	0	0	0	0	0	0	2	50
12:15	1	58	4	46	0	0	0	0	0	0	0	0	0	0	3	52
12:30	1	59	0	52	0	0	0	0	0	0	0	0	0	0	1	56
12:45	2	53	1	52	0	0	0	0	0	0	0	0	0	0	2	53
1:00	0	66	2	54	0	0	0	0	0	0	0	0	0	0	1	60
1:15	0	45	2	57	0	0	0	0	0	0	0	0	0	0	1	51
1:30	1	54	0	51	0	0	0	0	0	0	0	0	0	0	1	53
1:45	0	59	1	48	0	0	0	0	0	0	0	0	0	0	1	54
2:00	0	49	0	67	0	0	0	0	0	0	0	0	0	0	0	58
2:15	0	54	0	57	0	0	0	0	0	0	0	0	0	0	0	56
2:30	1	79	0	56	0	0	0	0	0	0	0	0	0	0	1	68
2:45	0	78	2	65	0	0	0	0	0	0	0	0	0	0	1	72
3:00	0	98	0	74	0	0	0	0	0	0	0	0	0	0	0	86
3:15	0	83	0	78	0	0	0	0	0	0	0	0	0	0	0	81
3:30	0	82	0	60	0	0	0	0	0	0	0	0	0	0	0	71
3:45	0	73	0	66	0	0	0	0	0	0	0	0	0	0	0	70
4:00	2	70	1	66	0	0	0	0	0	0	0	0	0	0	2	68
4:15	0	83	0	65	0	0	0	0	0	0	0	0	0	0	0	74
4:30	0	68	1	56	0	0	0	0	0	0	0	0	0	0	1	62
4:45	3	53	0	70	0	0	0	0	0	0	0	0	0	0	2	62
5:00	5	86	8	64	0	0	0	0	0	0	0	0	0	0	7	75
5:15	3	61	1	75	0	0	0	0	0	0	0	0	0	0	2	68
5:30	6	70	3	67	0	0	0	0	0	0	0	0	0	0	5	69
5:45	15	51	10	40	0	0	0	0	0	0	0	0	0	0	13	46
6:00	13	72	10	40	0	0	0	0	0	0	0	0	0	0	12	56
6:15	16	39	19	38	0	0	0	0	0	0	0	0	0	0	18	39
6:30	23	41	18	2	0	0	0	0	0	0	0	0	0	0	21	22
6:45	23	35	31	0	0	0	0	0	0	0	0	0	0	0	27	18
7:00	27	29	26	0	0	0	0	0	0	0	0	0	0	0	27	15
7:15	36	34	37	0	0	0	0	0	0	0	0	0	0	0	37	17
7:30	38	38	41	0	0	0	0	0	0	0	0	0	0	0	40	19
7:45	32	24	38	0	0	0	0	0	0	0	0	0	0	0	35	12
8:00	41	29	32	0	0	0	0	0	0	0	0	0	0	0	37	15
8:15	34	22	35	0	0	0	0	0	0	0	0	0	0	0	35	11
8:30	45	18	31	0	0	0	0	0	0	0	0	0	0	0	38	9
8:45	50	13	44	0	0	0	0	0	0	0	0	0	0	0	47	7
9:00	56	15	48	0	0	0	0	0	0	0	0	0	0	0	52	8
9:15	45	14	37	0	0	0	0	0	0	0	0	0	0	0	41	7
9:30	32	18	36	0	0	0	0	0	0	0	0	0	0	0	34	9
9:45	38	19	44	0	0	0	0	0	0	0	0	0	0	0	41	10
10:00	46	14	47	0	0	0	0	0	0	0	0	0	0	0	47	7
10:15	42	11	39	0	0	0	0	0	0	0	0	0	0	0	41	6
10:30	50	14	35	0	0	0	0	0	0	0	0	0	0	0	43	7
10:45	54	7	25	0	0	0	0	0	0	0	0	0	0	0	40	4
11:00	57	4	44	0	0	0	0	0	0	0	0	0	0	0	51	2
11:15	45	9	45	0	0	0	0	0	0	0	0	0	0	0	45	5
11:30	43	7	34	0	0	0	0	0	0	0	0	0	0	0	39	4
11:45	53	5	41	0	0	0	0	0	0	0	0	0	0	0	47	3
Total	979	2114	876	1515	0	0	0	0	0	0	0	0	0	0	928	1815
Day Total	3093		2391		0		0		0		0		0		2742	
Peak HR	10:30 AM	2:45 PM	9:30 AM	3:00 PM												
Volume	206	341	166	278												

Pulaski Street
north of Dobbs Road
City, State: Peabody, MA
Client: TEC/ S. Gregorio
Site Code: 1219



PDI File #: 228478 ATR-A (Speed)

Count Date:
Wednesday, March 23, 2022

SB						NB						Combined					
Start Time:	15 min	60 min	15 min	60 min		Start Time:	15 min	60 min	15 min	60 min		Start Time:	15 min	60 min	15 min	60 min	
12:00 AM	0		12:00 PM	51		12:00 AM	2		12:00 PM	68		12:00 AM	2		12:00 PM	119	
12:15 AM	2		12:15 PM	60		12:15 AM	0		12:15 PM	48		12:15 AM	2		12:15 PM	108	
12:30 AM	1		12:30 PM	58		12:30 AM	1		12:30 PM	49		12:30 AM	2		12:30 PM	107	
12:45 AM	2	5	12:45 PM	55	224	12:45 AM	0	3	12:45 PM	59	224	12:45 AM	2	8	12:45 PM	114	448
1:00 AM	0		1:00 PM	71		1:00 AM	3		1:00 PM	49		1:00 AM	3		1:00 PM	120	
1:15 AM	0		1:15 PM	46		1:15 AM	1		1:15 PM	56		1:15 AM	1		1:15 PM	102	
1:30 AM	1		1:30 PM	51		1:30 AM	0		1:30 PM	61		1:30 AM	1		1:30 PM	112	
1:45 AM	0	1	1:45 PM	59	227	1:45 AM	0	4	1:45 PM	43	209	1:45 AM	0	5	1:45 PM	102	436
2:00 AM	0		2:00 PM	48		2:00 AM	2		2:00 PM	51		2:00 AM	2		2:00 PM	99	
2:15 AM	0		2:15 PM	57		2:15 AM	1		2:15 PM	57		2:15 AM	1		2:15 PM	114	
2:30 AM	1		2:30 PM	80		2:30 AM	0		2:30 PM	42		2:30 AM	1		2:30 PM	122	
2:45 AM	0	1	2:45 PM	77	262	2:45 AM	1	4	2:45 PM	53	203	2:45 AM	1	5	2:45 PM	130	465
3:00 AM	0		3:00 PM	99		3:00 AM	0		3:00 PM	42		3:00 AM	0		3:00 PM	141	
3:15 AM	0		3:15 PM	82		3:15 AM	0		3:15 PM	53		3:15 AM	0		3:15 PM	135	
3:30 AM	0		3:30 PM	81		3:30 AM	1		3:30 PM	64		3:30 AM	1		3:30 PM	145	
3:45 AM	0	0	3:45 PM	73	335	3:45 AM	2	3	3:45 PM	48	207	3:45 AM	2	3	3:45 PM	121	542
4:00 AM	4		4:00 PM	75		4:00 AM	0		4:00 PM	61		4:00 AM	4		4:00 PM	136	
4:15 AM	0		4:15 PM	85		4:15 AM	2		4:15 PM	44		4:15 AM	2		4:15 PM	129	
4:30 AM	1		4:30 PM	63		4:30 AM	1		4:30 PM	44		4:30 AM	2		4:30 PM	107	
4:45 AM	2	7	4:45 PM	56	279	4:45 AM	4	7	4:45 PM	34	183	4:45 AM	6	14	4:45 PM	90	462
5:00 AM	5		5:00 PM	80		5:00 AM	9		5:00 PM	48		5:00 AM	14		5:00 PM	128	
5:15 AM	4		5:15 PM	64		5:15 AM	10		5:15 PM	50		5:15 AM	14		5:15 PM	114	
5:30 AM	5		5:30 PM	75		5:30 AM	20		5:30 PM	32		5:30 AM	25		5:30 PM	107	
5:45 AM	16	30	5:45 PM	50	269	5:45 AM	26	65	5:45 PM	41	171	5:45 AM	42	95	5:45 PM	91	440
6:00 AM	13		6:00 PM	72		6:00 AM	18		6:00 PM	36		6:00 AM	31		6:00 PM	108	
6:15 AM	17		6:15 PM	40		6:15 AM	32		6:15 PM	35		6:15 AM	49		6:15 PM	75	
6:30 AM	21		6:30 PM	40		6:30 AM	36		6:30 PM	30		6:30 AM	57		6:30 PM	70	
6:45 AM	25	76	6:45 PM	35	187	6:45 AM	56	142	6:45 PM	35	136	6:45 AM	81	218	6:45 PM	70	323
7:00 AM	27		7:00 PM	29		7:00 AM	44		7:00 PM	27		7:00 AM	71		7:00 PM	56	
7:15 AM	39		7:15 PM	32		7:15 AM	44		7:15 PM	38		7:15 AM	83		7:15 PM	70	
7:30 AM	35		7:30 PM	39		7:30 AM	54		7:30 PM	29		7:30 AM	89		7:30 PM	68	
7:45 AM	34	135	7:45 PM	26	126	7:45 AM	50	192	7:45 PM	21	115	7:45 AM	84	327	7:45 PM	47	241
8:00 AM	37		8:00 PM	28		8:00 AM	57		8:00 PM	10		8:00 AM	94		8:00 PM	38	
8:15 AM	32		8:15 PM	24		8:15 AM	67		8:15 PM	23		8:15 AM	99		8:15 PM	47	
8:30 AM	44		8:30 PM	21		8:30 AM	59		8:30 PM	14		8:30 AM	103		8:30 PM	35	
8:45 AM	49	162	8:45 PM	13	86	8:45 AM	55	238	8:45 PM	13	60	8:45 AM	104	400	8:45 PM	26	146
9:00 AM	57		9:00 PM	16		9:00 AM	42		9:00 PM	11		9:00 AM	99		9:00 PM	27	
9:15 AM	44		9:15 PM	17		9:15 AM	43		9:15 PM	8		9:15 AM	87		9:15 PM	25	
9:30 AM	33		9:30 PM	18		9:30 AM	44		9:30 PM	14		9:30 AM	77		9:30 PM	32	
9:45 AM	40	174	9:45 PM	18	69	9:45 AM	37	166	9:45 PM	9	42	9:45 AM	77	340	9:45 PM	27	111
10:00 AM	46		10:00 PM	16		10:00 AM	52		10:00 PM	6		10:00 AM	98		10:00 PM	22	
10:15 AM	41		10:15 PM	8		10:15 AM	57		10:15 PM	6		10:15 AM	98		10:15 PM	14	
10:30 AM	48		10:30 PM	16		10:30 AM	46		10:30 PM	7		10:30 AM	94		10:30 PM	23	
10:45 AM	54	189	10:45 PM	7	47	10:45 AM	62	217	10:45 PM	12	31	10:45 AM	116	406	10:45 PM	19	78
11:00 AM	57		11:00 PM	4		11:00 AM	48		11:00 PM	7		11:00 AM	105		11:00 PM	11	
11:15 AM	46		11:15 PM	9		11:15 AM	54		11:15 PM	2		11:15 AM	100		11:15 PM	11	
11:30 AM	40		11:30 PM	9		11:30 AM	54		11:30 PM	2		11:30 AM	94		11:30 PM	11	
11:45 AM	55	198	11:45 PM	6	28	11:45 AM	57	213	11:45 PM	3	14	11:45 AM	112	411	11:45 PM	9	42
Total	978			2139		Total	1254			1595		Total	2232			3734	
Percent	31.38%			68.62%		Percent	44.02%			55.98%		Percent	37.41%			62.59%	
Day Total				3117		Day Total				2849		Day Total				5966	
Peak Hour	10:30 AM			2:45 PM		Peak Hour	8:00 AM			3:15 PM		Peak Hour	10:30 AM			2:45 PM	
Volume	205			339		Volume	238			226		Volume	415			551	
P.H.F.	0.899			0.856		P.H.F.	0.888			0.883		P.H.F.	0.894			0.950	

Pulaski Street
north of Dobbs Road
City, State: Peabody, MA
Client: TEC/ S. Gregorio
Site Code: 1219



PDI File #: 228478 ATR-A (Speed)

Count Date:
Thursday, March 24, 2022

SB						NB						Combined					
Start Time:	15 min	60 min	15 min	60 min		Start Time:	15 min	60 min	15 min	60 min		Start Time:	15 min	60 min	15 min	60 min	
12:00 AM	3		12:00 PM	48		12:00 AM	4		12:00 PM	61		12:00 AM	7		12:00 PM	109	
12:15 AM	4		12:15 PM	45		12:15 AM	1		12:15 PM	44		12:15 AM	5		12:15 PM	89	
12:30 AM	0		12:30 PM	55		12:30 AM	3		12:30 PM	60		12:30 AM	3		12:30 PM	115	
12:45 AM	1	8	12:45 PM	53	201	12:45 AM	4	12	12:45 PM	38	203	12:45 AM	5	20	12:45 PM	91	404
1:00 AM	2		1:00 PM	56		1:00 AM	1		1:00 PM	41		1:00 AM	3		1:00 PM	97	
1:15 AM	2		1:15 PM	59		1:15 AM	1		1:15 PM	39		1:15 AM	3		1:15 PM	98	
1:30 AM	0		1:30 PM	50		1:30 AM	2		1:30 PM	51		1:30 AM	2		1:30 PM	101	
1:45 AM	1	5	1:45 PM	43	208	1:45 AM	0	4	1:45 PM	37	168	1:45 AM	1	9	1:45 PM	80	376
2:00 AM	0		2:00 PM	69		2:00 AM	0		2:00 PM	51		2:00 AM	0		2:00 PM	120	
2:15 AM	0		2:15 PM	55		2:15 AM	2		2:15 PM	54		2:15 AM	2		2:15 PM	109	
2:30 AM	0		2:30 PM	55		2:30 AM	0		2:30 PM	49		2:30 AM	0		2:30 PM	104	
2:45 AM	2	2	2:45 PM	65	244	2:45 AM	1	3	2:45 PM	61	215	2:45 AM	3	5	2:45 PM	126	459
3:00 AM	0		3:00 PM	72		3:00 AM	1		3:00 PM	44		3:00 AM	1		3:00 PM	116	
3:15 AM	0		3:15 PM	76		3:15 AM	0		3:15 PM	57		3:15 AM	0		3:15 PM	133	
3:30 AM	0		3:30 PM	60		3:30 AM	2		3:30 PM	51		3:30 AM	2		3:30 PM	111	
3:45 AM	0	0	3:45 PM	66	274	3:45 AM	1	4	3:45 PM	42	194	3:45 AM	1	4	3:45 PM	108	468
4:00 AM	1		4:00 PM	68		4:00 AM	0		4:00 PM	57		4:00 AM	1		4:00 PM	125	
4:15 AM	0		4:15 PM	61		4:15 AM	3		4:15 PM	55		4:15 AM	3		4:15 PM	116	
4:30 AM	1		4:30 PM	55		4:30 AM	5		4:30 PM	44		4:30 AM	6		4:30 PM	99	
4:45 AM	1	3	4:45 PM	69	253	4:45 AM	5	13	4:45 PM	48	204	4:45 AM	6	16	4:45 PM	117	457
5:00 AM	9		5:00 PM	63		5:00 AM	5		5:00 PM	61		5:00 AM	14		5:00 PM	124	
5:15 AM	2		5:15 PM	74		5:15 AM	8		5:15 PM	41		5:15 AM	10		5:15 PM	115	
5:30 AM	4		5:30 PM	64		5:30 AM	19		5:30 PM	44		5:30 AM	23		5:30 PM	108	
5:45 AM	13	28	5:45 PM	41	242	5:45 AM	30	62	5:45 PM	33	179	5:45 AM	43	90	5:45 PM	74	421
6:00 AM	11		6:00 PM	39		6:00 AM	18		6:00 PM	36		6:00 AM	29		6:00 PM	75	
6:15 AM	18		6:15 PM	39		6:15 AM	25		6:15 PM	35		6:15 AM	43		6:15 PM	74	
6:30 AM	18		6:30 PM	33		6:30 AM	37		6:30 PM	18		6:30 AM	55		6:30 PM	51	
6:45 AM	32	79	6:45 PM	34	145	6:45 AM	41	121	6:45 PM	34	123	6:45 AM	73	200	6:45 PM	68	268
7:00 AM	27		7:00 PM	45		7:00 AM	39		7:00 PM	28		7:00 AM	66		7:00 PM	73	
7:15 AM	37		7:15 PM	27		7:15 AM	43		7:15 PM	34		7:15 AM	80		7:15 PM	61	
7:30 AM	43		7:30 PM	31		7:30 AM	42		7:30 PM	33		7:30 AM	85		7:30 PM	64	
7:45 AM	37	144	7:45 PM	23	126	7:45 AM	46	170	7:45 PM	10	105	7:45 AM	83	314	7:45 PM	33	231
8:00 AM	32		8:00 PM	29		8:00 AM	57		8:00 PM	21		8:00 AM	89		8:00 PM	50	
8:15 AM	35		8:15 PM	24		8:15 AM	42		8:15 PM	15		8:15 AM	77		8:15 PM	39	
8:30 AM	32		8:30 PM	22		8:30 AM	42		8:30 PM	16		8:30 AM	74		8:30 PM	38	
8:45 AM	43	142	8:45 PM	30	105	8:45 AM	49	190	8:45 PM	14	66	8:45 AM	92	332	8:45 PM	44	171
9:00 AM	46		9:00 PM	20		9:00 AM	53		9:00 PM	9		9:00 AM	99		9:00 PM	29	
9:15 AM	36		9:15 PM	13		9:15 AM	41		9:15 PM	10		9:15 AM	77		9:15 PM	23	
9:30 AM	35		9:30 PM	17		9:30 AM	39		9:30 PM	12		9:30 AM	74		9:30 PM	29	
9:45 AM	45	162	9:45 PM	14	64	9:45 AM	49	182	9:45 PM	6	37	9:45 AM	94	344	9:45 PM	20	101
10:00 AM	47		10:00 PM	12		10:00 AM	32		10:00 PM	10		10:00 AM	79		10:00 PM	22	
10:15 AM	37		10:15 PM	10		10:15 AM	39		10:15 PM	9		10:15 AM	76		10:15 PM	19	
10:30 AM	34		10:30 PM	10		10:30 AM	52		10:30 PM	8		10:30 AM	86		10:30 PM	18	
10:45 AM	25	143	10:45 PM	8	40	10:45 AM	41	164	10:45 PM	7	34	10:45 AM	66	307	10:45 PM	15	74
11:00 AM	45		11:00 PM	13		11:00 AM	37		11:00 PM	6		11:00 AM	82		11:00 PM	19	
11:15 AM	45		11:15 PM	6		11:15 AM	42		11:15 PM	4		11:15 AM	87		11:15 PM	10	
11:30 AM	35		11:30 PM	11		11:30 AM	64		11:30 PM	6		11:30 AM	99		11:30 PM	17	
11:45 AM	41	166	11:45 PM	2	32	11:45 AM	44	187	11:45 PM	3	19	11:45 AM	85	353	11:45 PM	5	51
Total	882			1934		Total	1112			1547		Total	1994			3481	
Percent	31.32%			68.68%		Percent	41.82%			58.18%		Percent	36.42%			63.58%	
Day Total				2816		Day Total				2659		Day Total				5475	
Peak Hour	11:00 AM			3:00 PM		Peak Hour	8:00 AM			2:00 PM		Peak Hour	11:00 AM			2:45 PM	
Volume	166			274		Volume	190			215		Volume	353			486	
P.H.F.	0.922			0.901		P.H.F.	0.833			0.881		P.H.F.	0.891			0.914	

Pulaski Street
north of Dobbs Road
City, State: Peabody, MA
Client: TEC/ S. Gregorio
Site Code: 1219



PDI File #: 228478 ATR-A (Speed)

Count Date
Wednesday, March 23, 2022

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	1	2	1	1	0	0	0	0	0	0	5	37.4	34.0
1:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	38.0	38.0
2:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31.0	31.0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
4:00 AM	0	0	0	0	2	3	2	0	0	0	0	0	0	7	43.1	37.3
5:00 AM	0	0	0	1	16	11	1	1	0	0	0	0	0	30	37.7	34.3
6:00 AM	0	0	0	7	29	34	6	0	0	0	0	0	0	76	38.0	34.5
7:00 AM	0	0	4	7	50	57	14	3	0	0	0	0	0	135	38.9	34.8
8:00 AM	0	0	2	13	66	61	19	1	0	0	0	0	0	162	39.0	34.5
9:00 AM	0	1	1	23	74	62	11	2	0	0	0	0	0	174	38.0	33.8
10:00 AM	1	0	1	23	89	62	12	1	0	0	0	0	0	189	38.0	33.6
11:00 AM	3	2	2	31	93	55	11	1	0	0	0	0	0	198	37.0	32.7
12:00 PM	0	0	3	33	97	74	12	4	1	0	0	0	0	224	37.0	33.5
1:00 PM	0	2	4	34	107	62	15	3	0	0	0	0	0	227	38.0	33.2
2:00 PM	1	1	2	25	129	89	15	0	0	0	0	0	0	262	38.0	33.7
3:00 PM	2	1	3	61	176	72	17	2	1	0	0	0	0	335	37.0	32.6
4:00 PM	2	4	5	46	112	95	15	0	0	0	0	0	0	279	38.0	32.9
5:00 PM	0	0	8	27	106	104	23	1	0	0	0	0	0	269	38.0	33.8
6:00 PM	0	0	2	16	84	72	10	3	0	0	0	0	0	187	38.0	34.2
7:00 PM	0	0	1	12	64	41	7	1	0	0	0	0	0	126	37.0	33.7
8:00 PM	0	0	2	13	39	24	6	2	0	0	0	0	0	86	37.0	33.4
9:00 PM	0	0	2	12	31	21	3	0	0	0	0	0	0	69	36.8	32.7
10:00 PM	0	0	1	7	18	18	3	0	0	0	0	0	0	47	38.0	33.6
11:00 PM	0	0	0	3	9	12	4	0	0	0	0	0	0	28	38.0	34.7
Total	9	11	43	395	1394	1031	207	25	2	0	0	0	0	3117	38.0	33.5
Percent	0.29%	0.35%	1.38%	12.67%	44.72%	33.08%	6.64%	0.80%	0.06%	0.00%	0.00%	0.00%	0.00%			

AM Peak	11:00 AM	11:00 AM	7:00 AM	11:00 AM	11:00 AM	9:00 AM	8:00 AM	7:00 AM							11:00 AM	
Volume	3	2	4	31	93	62	19	3	0	0	0	0	0	0	198	
PM Peak	3:00 PM	4:00 PM	5:00 PM	3:00 PM	3:00 PM	5:00 PM	5:00 PM	12:00 PM	12:00 PM						3:00 PM	
Volume	2	4	8	61	176	104	23	4	1	0	0	0	0	0	335	

15th Percentile:	30.0 MPH	Average Speed:	33.5 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	34.0 MPH	10 MPH Pace:	29 to 38 MPH	Number of Vehicles > 25 MPH:	3021
85th Percentile:	38.0 MPH	Number in Pace:	2443	Percent of Vehicles > 25 MPH:	96.9%
95th Percentile:	41.0 MPH	Percent in Pace:	78.4%		

Pulaski Street
north of Dobbs Road
City, State: Peabody, MA
Client: TEC/ S. Gregorio
Site Code: 1219



PDI File #: 228478 ATR-A (Speed)

Count Date
Wednesday, March 23, 2022

Speed (60-minute)

NB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	2	0	1	0	0	0	0	0	0	0	3	33.6	30.0
1:00 AM	0	1	0	1	0	1	0	0	1	0	0	0	0	4	44.2	32.8
2:00 AM	0	0	1	0	1	1	1	0	0	0	0	0	0	4	38.3	33.5
3:00 AM	0	0	0	1	0	1	1	0	0	0	0	0	0	3	39.8	35.7
4:00 AM	0	0	0	1	1	2	2	0	1	0	0	0	0	7	42.8	38.1
5:00 AM	0	0	2	11	26	16	7	0	2	1	0	0	0	65	39.4	34.0
6:00 AM	0	2	9	33	60	28	5	3	0	1	1	0	0	142	37.0	32.4
7:00 AM	1	1	3	34	99	41	9	3	1	0	0	0	0	192	37.0	32.7
8:00 AM	1	4	10	48	114	48	11	0	1	0	1	0	0	238	36.0	32.1
9:00 AM	0	0	3	29	83	40	4	6	0	0	1	0	0	166	37.3	33.1
10:00 AM	0	0	6	54	103	47	5	1	1	0	0	0	0	217	36.0	31.9
11:00 AM	1	0	3	45	105	46	8	2	1	1	1	0	0	213	36.2	32.4
12:00 PM	0	0	1	35	120	52	14	0	1	0	1	0	0	224	37.0	33.3
1:00 PM	1	0	6	26	99	63	10	3	0	0	0	1	0	209	38.0	33.3
2:00 PM	0	0	2	43	90	56	11	1	0	0	0	0	0	203	37.0	32.9
3:00 PM	0	2	3	40	98	49	11	1	0	2	1	0	0	207	37.0	33.0
4:00 PM	1	0	7	24	94	46	11	0	0	0	0	0	0	183	36.0	32.6
5:00 PM	0	0	2	24	78	53	10	2	0	0	1	0	1	171	37.0	33.8
6:00 PM	0	0	3	35	67	27	2	0	0	1	1	0	0	136	35.0	31.9
7:00 PM	0	1	3	15	53	32	11	0	0	0	0	0	0	115	38.0	33.2
8:00 PM	0	0	1	10	35	11	2	1	0	0	0	0	0	60	36.2	32.8
9:00 PM	0	0	2	6	15	16	2	1	0	0	0	0	0	42	37.0	33.7
10:00 PM	0	0	0	6	10	12	2	1	0	0	0	0	0	31	36.5	34.0
11:00 PM	0	0	0	2	5	4	3	0	0	0	0	0	0	14	43.0	34.8
Total	5	11	67	525	1356	693	142	25	9	6	8	1	1	2849	37.0	32.8
Percent	0.18%	0.39%	2.35%	18.43%	47.60%	24.32%	4.98%	0.88%	0.32%	0.21%	0.28%	0.04%	0.04%			

AM Peak	7:00 AM	8:00 AM	8:00 AM	10:00 AM	8:00 AM	8:00 AM	8:00 AM	9:00 AM	5:00 AM	5:00 AM	6:00 AM			8:00 AM
Volume	1	4	10	54	114	48	11	6	2	1	1	0	0	238
PM Peak	1:00 PM	3:00 PM	4:00 PM	2:00 PM	12:00 PM	1:00 PM	12:00 PM	1:00 PM	12:00 PM	3:00 PM	12:00 PM	1:00 PM	5:00 PM	12:00 PM
Volume	1	2	7	43	120	63	14	3	1	2	1	1	1	224

15th Percentile:	29.0 MPH	Average Speed:	32.8 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	32.0 MPH	10 MPH Pace:	28 to 37 MPH	Number of Vehicles > 25 MPH:	2736
85th Percentile:	37.0 MPH	Number in Pace:	2254	Percent of Vehicles > 25 MPH:	96.0%
95th Percentile:	40.0 MPH	Percent in Pace:	79.1%		

Pulaski Street
north of Dobbs Road
City, State: Peabody, MA
Client: TEC/ S. Gregorio
Site Code: 1219



PDI File #: 228478 ATR-A (Speed)

Count Date
Wednesday, March 23, 2022

Speed (60-minute)

Combined SB and NB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	3	2	2	1	0	0	0	0	0	0	8	36.0	32.5
1:00 AM	0	1	0	1	0	2	0	0	1	0	0	0	0	5	42.8	33.8
2:00 AM	0	0	1	0	2	1	1	0	0	0	0	0	0	5	37.4	33.0
3:00 AM	0	0	0	1	0	1	1	0	0	0	0	0	0	3	39.8	35.7
4:00 AM	0	0	0	1	3	5	4	0	1	0	0	0	0	14	43.1	37.7
5:00 AM	0	0	2	12	42	27	8	1	2	1	0	0	0	95	38.0	34.1
6:00 AM	0	2	9	40	89	62	11	3	0	1	1	0	0	218	37.5	33.1
7:00 AM	1	1	7	41	149	98	23	6	1	0	0	0	0	327	38.0	33.5
8:00 AM	1	4	12	61	180	109	30	1	1	0	1	0	0	400	38.0	33.0
9:00 AM	0	1	4	52	157	102	15	8	0	0	1	0	0	340	38.0	33.5
10:00 AM	1	0	7	77	192	109	17	2	1	0	0	0	0	406	37.0	32.7
11:00 AM	4	2	5	76	198	101	19	3	1	1	1	0	0	411	37.0	32.6
12:00 PM	0	0	4	68	217	126	26	4	2	0	1	0	0	448	37.0	33.4
1:00 PM	1	2	10	60	206	125	25	6	0	0	0	1	0	436	38.0	33.2
2:00 PM	1	1	4	68	219	145	26	1	0	0	0	0	0	465	37.0	33.3
3:00 PM	2	3	6	101	274	121	28	3	1	2	1	0	0	542	37.0	32.8
4:00 PM	3	4	12	70	206	141	26	0	0	0	0	0	0	462	37.0	32.8
5:00 PM	0	0	10	51	184	157	33	3	0	0	1	0	1	440	38.0	33.8
6:00 PM	0	0	5	51	151	99	12	3	0	1	1	0	0	323	37.0	33.2
7:00 PM	0	1	4	27	117	73	18	1	0	0	0	0	0	241	37.0	33.5
8:00 PM	0	0	3	23	74	35	8	3	0	0	0	0	0	146	37.0	33.1
9:00 PM	0	0	4	18	46	37	5	1	0	0	0	0	0	111	37.0	33.1
10:00 PM	0	0	1	13	28	30	5	1	0	0	0	0	0	78	37.5	33.7
11:00 PM	0	0	0	5	14	16	7	0	0	0	0	0	0	42	39.7	34.7
Total	14	22	110	920	2750	1724	349	50	11	6	8	1	1	5966	37.0	33.2
Percent	0.23%	0.37%	1.84%	15.42%	46.09%	28.90%	5.85%	0.84%	0.18%	0.10%	0.13%	0.02%	0.02%			

AM Peak	11:00 AM	8:00 AM	8:00 AM	10:00 AM	11:00 AM	8:00 AM	8:00 AM	9:00 AM	5:00 AM	5:00 AM	6:00 AM			11:00 AM
Volume	4	4	12	77	198	109	30	8	2	1	1	0	0	411
PM Peak	4:00 PM	4:00 PM	4:00 PM	3:00 PM	3:00 PM	5:00 PM	5:00 PM	1:00 PM	12:00 PM	3:00 PM	12:00 PM	1:00 PM	5:00 PM	3:00 PM
Volume	3	4	12	101	274	157	33	6	2	2	1	1	1	542

15th Percentile:	29.0 MPH	Average Speed:	33.2 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	33.0 MPH	10 MPH Pace:	28 to 37 MPH	Number of Vehicles > 25 MPH:	5757
85th Percentile:	37.0 MPH	Number in Pace:	4633	Percent of Vehicles > 25 MPH:	96.5%
95th Percentile:	41.0 MPH	Percent in Pace:	77.7%		

Pulaski Street
north of Dobbs Road
City, State: Peabody, MA
Client: TEC/ S. Gregorio
Site Code: 1219



PDI File #: 228478 ATR-A (Speed)

Count Date
Thursday, March 24, 2022

Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	2	3	2	1	0	0	0	0	0	0	8	37.9	33.6
1:00 AM	0	0	0	1	1	1	1	1	0	0	0	0	0	5	45.0	37.2
2:00 AM	0	0	0	0	0	1	0	1	0	0	0	0	0	2	45.4	41.5
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
4:00 AM	0	0	0	2	1	0	0	0	0	0	0	0	0	3	30.6	27.7
5:00 AM	0	0	0	3	12	9	4	0	0	0	0	0	0	28	37.0	34.2
6:00 AM	0	0	0	11	34	28	5	1	0	0	0	0	0	79	37.0	33.5
7:00 AM	0	1	3	22	57	52	7	2	0	0	0	0	0	144	38.0	33.7
8:00 AM	0	0	1	18	60	53	8	2	0	0	0	0	0	142	38.0	34.0
9:00 AM	0	1	2	31	73	47	7	0	1	0	0	0	0	162	37.0	32.6
10:00 AM	0	0	2	22	72	42	4	1	0	0	0	0	0	143	36.0	32.9
11:00 AM	0	1	4	27	88	40	5	0	0	1	0	0	0	166	36.0	32.4
12:00 PM	1	1	7	37	91	54	8	1	1	0	0	0	0	201	37.0	32.5
1:00 PM	1	10	4	35	87	62	8	1	0	0	0	0	0	208	37.0	32.1
2:00 PM	0	0	3	38	106	80	12	5	0	0	0	0	0	244	37.0	33.5
3:00 PM	0	0	3	39	131	83	14	4	0	0	0	0	0	274	37.0	33.3
4:00 PM	0	0	2	39	113	79	19	1	0	0	0	0	0	253	38.0	33.6
5:00 PM	0	0	1	27	90	105	17	1	1	0	0	0	0	242	39.0	34.4
6:00 PM	0	0	1	16	65	54	7	2	0	0	0	0	0	145	37.0	33.8
7:00 PM	2	0	4	14	65	32	8	1	0	0	0	0	0	126	37.0	32.9
8:00 PM	0	0	2	15	43	38	7	0	0	0	0	0	0	105	38.0	33.6
9:00 PM	0	0	0	11	25	17	8	3	0	0	0	0	0	64	40.0	34.5
10:00 PM	0	0	0	9	14	12	4	1	0	0	0	0	0	40	38.2	33.4
11:00 PM	0	0	0	2	16	12	2	0	0	0	0	0	0	32	38.0	34.1
Total	4	14	39	421	1247	903	156	28	3	1	0	0	0	2816	37.0	33.3
Percent	0.14%	0.50%	1.38%	14.95%	44.28%	32.07%	5.54%	0.99%	0.11%	0.04%	0.00%	0.00%	0.00%			

AM Peak	7:00 AM	11:00 AM	9:00 AM	11:00 AM	8:00 AM	8:00 AM	7:00 AM	9:00 AM	11:00 AM					11:00 AM
Volume	0	1	4	31	88	53	8	2	1	1	0	0	0	166
PM Peak	7:00 PM	1:00 PM	12:00 PM	3:00 PM	3:00 PM	5:00 PM	4:00 PM	2:00 PM	12:00 PM					3:00 PM
Volume	2	10	7	39	131	105	19	5	1	0	0	0	0	274

15th Percentile:	29.0 MPH	Average Speed:	33.3 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	33.0 MPH	10 MPH Pace:	28 to 37 MPH	Number of Vehicles > 25 MPH:	2722
85th Percentile:	37.0 MPH	Number in Pace:	2172	Percent of Vehicles > 25 MPH:	96.7%
95th Percentile:	40.0 MPH	Percent in Pace:	77.1%		

Pulaski Street
north of Dobbs Road
City, State: Peabody, MA
Client: TEC/ S. Gregorio
Site Code: 1219



PDI File #: 228478 ATR-A (Speed)

Count Date
Thursday, March 24, 2022

Speed (60-minute)

NB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	3	3	4	0	2	0	0	0	0	0	12	40.8	35.2
1:00 AM	0	0	1	0	2	1	0	0	0	0	0	0	0	4	36.2	31.5
2:00 AM	0	0	0	0	1	1	0	0	0	0	1	0	0	3	54.2	43.3
3:00 AM	0	0	0	3	1	0	0	0	0	0	0	0	0	4	31.3	29.0
4:00 AM	0	0	0	3	5	2	2	0	1	0	0	0	0	13	41.0	35.1
5:00 AM	0	1	3	7	24	22	4	0	0	1	0	0	0	62	37.0	33.3
6:00 AM	0	0	1	25	68	14	8	2	2	0	1	0	0	121	37.0	33.0
7:00 AM	2	1	5	31	81	45	5	0	0	0	0	0	0	170	36.0	32.0
8:00 AM	2	0	4	38	87	44	13	0	1	1	0	0	0	190	37.0	32.6
9:00 AM	0	1	4	30	88	47	11	0	1	0	0	0	0	182	37.0	32.9
10:00 AM	0	1	5	31	77	45	4	0	1	0	0	0	0	164	36.6	32.6
11:00 AM	0	2	6	44	82	43	8	1	0	0	0	0	1	187	37.0	32.5
12:00 PM	0	1	6	54	96	37	6	2	1	0	0	0	0	203	36.0	31.8
1:00 PM	0	2	5	24	89	40	4	2	1	1	0	0	0	168	36.0	32.7
2:00 PM	0	2	10	59	87	42	13	2	0	0	0	0	0	215	36.0	31.8
3:00 PM	0	0	6	35	94	43	13	0	2	1	0	0	0	194	37.0	32.8
4:00 PM	0	3	6	34	97	56	7	0	0	0	1	0	0	204	37.0	32.5
5:00 PM	0	0	4	24	88	53	9	1	0	0	0	0	0	179	37.0	33.3
6:00 PM	0	0	4	21	62	30	3	3	0	0	0	0	0	123	36.0	32.6
7:00 PM	0	0	3	22	61	15	3	0	0	1	0	0	0	105	36.0	31.9
8:00 PM	0	0	1	18	32	8	7	0	0	0	0	0	0	66	36.0	32.0
9:00 PM	0	0	1	5	14	15	2	0	0	0	0	0	0	37	38.0	33.4
10:00 PM	0	0	0	7	10	10	5	0	0	2	0	0	0	34	40.1	35.3
11:00 PM	0	0	0	3	8	5	3	0	0	0	0	0	0	19	38.6	34.0
Total	4	14	75	521	1257	622	130	15	10	7	3	0	1	2659	37.0	32.6
Percent	0.15%	0.53%	2.82%	19.59%	47.27%	23.39%	4.89%	0.56%	0.38%	0.26%	0.11%	0.00%	0.04%			

AM Peak	7:00 AM	11:00 AM	11:00 AM	11:00 AM	9:00 AM	9:00 AM	8:00 AM	12:00 AM	6:00 AM	5:00 AM	2:00 AM		11:00 AM	8:00 AM
Volume	2	2	6	44	88	47	13	2	2	1	1	0	1	190
PM Peak		4:00 PM	2:00 PM	2:00 PM	4:00 PM	4:00 PM	2:00 PM	6:00 PM	3:00 PM	10:00 PM	4:00 PM			2:00 PM
Volume	0	3	10	59	97	56	13	3	2	2	1	0	0	215

15th Percentile:	28.0 MPH	Average Speed:	32.6 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	32.0 MPH	10 MPH Pace:	28 to 37 MPH	Number of Vehicles > 25 MPH:	2541
85th Percentile:	37.0 MPH	Number in Pace:	2102	Percent of Vehicles > 25 MPH:	95.6%
95th Percentile:	40.0 MPH	Percent in Pace:	79.1%		

Pulaski Street
north of Dobbs Road
City, State: Peabody, MA
Client: TEC/ S. Gregorio
Site Code: 1219



PDI File #: 228478 ATR-A (Speed)

Count Date
Thursday, March 24, 2022

Speed (60-minute)																
Combined SB and NB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	5	6	6	1	2	0	0	0	0	0	20	38.9	34.6
1:00 AM	0	0	1	1	3	2	1	1	0	0	0	0	0	9	42.0	34.7
2:00 AM	0	0	0	0	1	2	0	1	0	0	1	0	0	5	53.0	42.6
3:00 AM	0	0	0	3	1	0	0	0	0	0	0	0	0	4	31.3	29.0
4:00 AM	0	0	0	5	6	2	2	0	1	0	0	0	0	16	40.3	33.7
5:00 AM	0	1	3	10	36	31	8	0	0	1	0	0	0	90	37.0	33.6
6:00 AM	0	0	1	36	102	42	13	3	2	0	1	0	0	200	37.0	33.2
7:00 AM	2	2	8	53	138	97	12	2	0	0	0	0	0	314	37.0	32.8
8:00 AM	2	0	5	56	147	97	21	2	1	1	0	0	0	332	38.0	33.2
9:00 AM	0	2	6	61	161	94	18	0	2	0	0	0	0	344	37.0	32.7
10:00 AM	0	1	7	53	149	87	8	1	1	0	0	0	0	307	36.1	32.7
11:00 AM	0	3	10	71	170	83	13	1	0	1	0	0	1	353	36.0	32.4
12:00 PM	1	2	13	91	187	91	14	3	2	0	0	0	0	404	36.0	32.1
1:00 PM	1	12	9	59	176	102	12	3	1	1	0	0	0	376	36.8	32.4
2:00 PM	0	2	13	97	193	122	25	7	0	0	0	0	0	459	37.0	32.7
3:00 PM	0	0	9	74	225	126	27	4	2	1	0	0	0	468	37.0	33.1
4:00 PM	0	3	8	73	210	135	26	1	0	0	1	0	0	457	37.0	33.1
5:00 PM	0	0	5	51	178	158	26	2	1	0	0	0	0	421	38.0	34.0
6:00 PM	0	0	5	37	127	84	10	5	0	0	0	0	0	268	37.0	33.2
7:00 PM	2	0	7	36	126	47	11	1	0	1	0	0	0	231	36.0	32.4
8:00 PM	0	0	3	33	75	46	14	0	0	0	0	0	0	171	38.0	33.0
9:00 PM	0	0	1	16	39	32	10	3	0	0	0	0	0	101	39.0	34.1
10:00 PM	0	0	0	16	24	22	9	1	0	2	0	0	0	74	40.0	34.3
11:00 PM	0	0	0	5	24	17	5	0	0	0	0	0	0	51	38.0	34.1
Total	8	28	114	942	2504	1525	286	43	13	8	3	0	1	5475	37.0	33.0
Percent	0.15%	0.51%	2.08%	17.21%	45.74%	27.85%	5.22%	0.79%	0.24%	0.15%	0.05%	0.00%	0.02%			

AM Peak	7:00 AM	11:00 AM	11:00 AM	11:00 AM	11:00 AM	7:00 AM	8:00 AM	6:00 AM	6:00 AM	5:00 AM	2:00 AM		11:00 AM	11:00 AM
Volume	2	3	10	71	170	97	21	3	2	1	1	0	1	353
PM Peak	7:00 PM	1:00 PM	12:00 PM	2:00 PM	3:00 PM	5:00 PM	3:00 PM	2:00 PM	12:00 PM	10:00 PM	4:00 PM			3:00 PM
Volume	2	12	13	97	225	158	27	7	2	2	1	0	0	468

15th Percentile:	29.0 MPH	Average Speed:	33.0 MPH	Posted Speed Limit:	25 MPH
50th Percentile:	33.0 MPH	10 MPH Pace:	28 to 37 MPH	Number of Vehicles > 25 MPH:	5263
85th Percentile:	37.0 MPH	Number in Pace:	4274	Percent of Vehicles > 25 MPH:	96.1%
95th Percentile:	40.0 MPH	Percent in Pace:	78.1%		

Attachment D

MassDOT Seasonal Adjustment Data

Massachusetts Highway Department
Statewide Traffic Data Collection
2019 Weekday Seasonal Factors

Factor Group	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Axle Factor
R1	1.22	1.14	1.12	1.06	1.00	0.96	0.87	0.85	0.96	0.99	1.04	1.12	0.85
R2	0.95	0.96	0.98	0.97	0.97	0.93	0.97	0.94	0.96	0.90	0.92	0.93	0.96
R3	1.15	1.06	1.07	1.00	0.89	0.88	0.89	0.89	0.95	0.92	1.02	1.01	0.97
R4-R7	1.09	1.09	1.11	1.02	0.96	0.92	0.89	0.89	0.99	0.98	1.09	1.13	0.98
U1-Boston	1.03	1.01	0.98	0.94	0.94	0.92	0.95	0.93	0.94	0.94	0.97	1.04	0.96
U1-Essex	1.09	1.06	1.03	0.99	0.94	0.90	0.88	0.86	0.93	0.94	0.99	1.06	0.93
U1-Southeast	1.06	1.05	1.01	0.97	0.95	0.93	0.93	0.90	0.94	0.94	0.98	1.04	0.98
U1-West	1.19	1.14	1.09	0.95	0.92	0.89	0.89	0.86	0.91	0.95	0.97	1.07	0.84
U1-Worcester	1.02	1.04	0.97	0.94	0.93	0.91	0.95	0.91	0.93	0.92	0.95	1.10	0.88
U2	1.01	1.00	0.94	0.93	0.91	0.89	0.93	0.90	0.90	0.91	0.94	1.02	0.99
U3	1.06	1.03	0.98	0.94	0.93	0.91	0.95	0.91	0.92	0.93	0.97	1.00	0.98
U4-U7	1.01	1.00	0.95	0.92	0.88	0.86	0.92	0.91	0.92	0.94	0.99	1.04	0.99
Rec - East	1.04	1.16	1.12	0.98	0.92	0.88	0.77	0.81	0.94	1.02	1.08	1.12	0.99
Rec - West	1.30	1.23	1.32	1.18	0.95	0.82	0.70	0.69	0.97	0.96	1.16	1.15	0.98

Round off:

0-999 = 10

>1000 = 100

U = Urban

R = Rural

1 - Interstate

2 - Freeway and Expressway

3 - Other Principal Arterial

4 - Minor Arterial

5 - Major Collector

6 - Minor Collector

7 - Local Road and Street

Recreational - East Group - Cape Cod (all towns) including the town of Plymouth south of Route 3A (stations 7014,7079,7080,7090,7091,7092,7093,7094,7095,7096,7097,7108 and 7178), Martha's Vineyard and Nantucket.
Recreational - West Group - Continuous Stations 2 and 189 including stations 1066,1067,1083,1084,1085,1086,1087,1088,1089,1090,1091,1092,1093,1094,1095,1096,1097,1098,1099,1100,1101,1102,1103,1104,1105,1106,1107,1108,1113,1114,1116,2196,2197 and 2198.

Attachment E

Crash Data

Crash Data Summary Tables
Pulaski Street @ Gardner Street - Peabody, MA
01/01/2017 - 12/31/2021

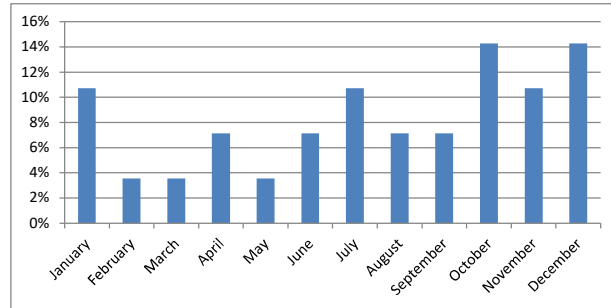
Collision Diagram	Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
1	4340103	3/14/2017	7:00:00 PM	Dark - Lighted	Snow	Snow	2	Property Damage Only	0	Sideswipe	No Improper Driving	
2	4352276	4/5/2017	7:57:00 AM	Daylight	Cloudy	Dry	2	Property Damage Only	0	Rear-end	Not Reported	
3	4380395	6/18/2017	9:41:00 AM	Daylight	Clear	Dry	2	Property Damage Only	0	Rear-end	Not Reported	
4	4397032	7/24/2017	5:39:00 PM	Daylight	Rain	Wet	2	Property Damage Only	0	Angled	Erratic / Aggressive / Reckless Driving	
5	4417530	9/3/2017	8:02:00 AM	Daylight	Cloudy	Wet	1	Property Damage Only	0	Single Vehicle	Over-Steering / Over-Correcting	
6	4446989	10/31/2017	4:54:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Angled	Not Reported	
7	4460730	11/22/2017	7:20:00 PM	Dark - Lighted	Rain	Wet	2	Property Damage Only	0	Rear-end	No Improper Driving	
8	4474000	12/24/2017	3:58:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Angled	Not Reported	
9	4485594	1/14/2018	7:34:00 PM	Dark - Lighted	Clear	Dry	2	Property Damage Only	0	Rear-end	Not Reported	
10	4489286	1/20/2018	10:29:00 AM	Daylight	Cloudy	Dry	3	Property Damage Only	0	Rear-end	Inattention / Distracted	
11	4570239	4/15/2018	3:14:00 PM	Daylight	Cloudy	Dry	2	Property Damage Only	0	Rear-end	Inattention / Distracted	
12	4606984	10/5/2018	12:28:00 AM	Dark - Lighted	Clear	Dry	1	Property Damage Only	0	Single Vehicle	Not Reported	
13	4610748	10/13/2018	7:26:00 PM	Dark - Lighted	Clear	Dry	3	Property Damage Only	0	Rear-end	Inattention / Distracted	
14	4621777	11/6/2018	10:25:00 AM	Daylight	Cloudy	Wet	2	Property Damage Only	0	Rear-end	Inattention / Distracted	
15	4680584	8/25/2017	9:47:00 PM	Dark - Lighted	Clear	Dry	1	Property Damage Only	0	Single Vehicle	Inattention / Distracted	
16	4680643	8/29/2017	3:54:00 PM	Daylight	Cloudy	Dry	2	Property Damage Only	0	Rear-end	Not Reported	
17	4680668	10/17/2017	2:48:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Angled	Inattention / Distracted	
18	4698867	5/3/2019	7:31:00 AM	Daylight	Cloudy	Dry	1	Non-fatal injury	1	Single Vehicle	Inattention / Distracted	
19	4718014	1/21/2019	8:04:00 AM	Daylight	Snow	Ice	1	Property Damage Only	0	Single Vehicle	No Improper Driving	
20	4780313	11/20/2019	6:58:00 PM	Dark - Lighted	Rain	Wet	2	Property Damage Only	0	Rear-end	Swerving / Avoiding	
21	4791015	12/13/2019	7:32:00 AM	Daylight	Clear	Dry	2	Non-fatal injury	0	Angled	No Improper Driving	
22	4791023	12/17/2019	9:33:00 AM	Daylight	Snow	Ice	1	Property Damage Only	0	Single Vehicle	Not Reported	
23	4855115	6/24/2020	5:39:00 AM	Dusk	Clear	Dry	1	Not Reported	0	Angled	Not Reported	
24	4862769	7/22/2020	9:52:00 PM	Dark - Lighted	Rain	Wet	2	Property Damage Only	0	Rear-end	Not Reported	
25	4864712	7/29/2020	10:41:00 AM	Daylight	Clear	Dry	3	Non-fatal injury	1	Rear-end	Inattention / Distracted	
26	4904421	12/1/2020	2:53:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Rear-end	Inattention / Distracted	
27	4927176	2/1/2021	8:09:00 PM	Dark - Lighted	Snow	Snow	1	Property Damage Only	0	Single Vehicle	Excessive Speed	
28	5006561	9/4/2021	7:43:00 PM	Dark - Lighted	Clear	Dry	2	Property Damage Only	0	Rear-end	No Improper Driving	

Crash Data Summary Charts
Pulaski Street @ Gardner Street - Peabody, MA
01/01/2017 - 12/31/2021

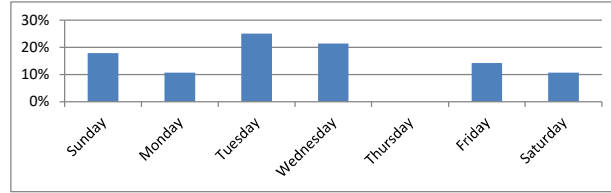
Pulaski Street @ Gardner Street

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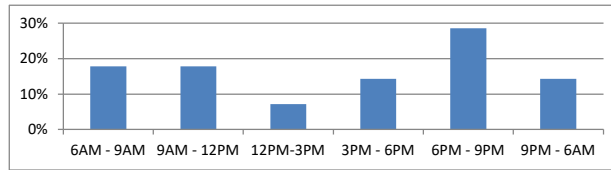
Month	#	%
January	3	11%
February	1	4%
March	1	4%
April	2	7%
May	1	4%
June	2	7%
July	3	11%
August	2	7%
September	2	7%
October	4	14%
November	3	11%
December	4	14%



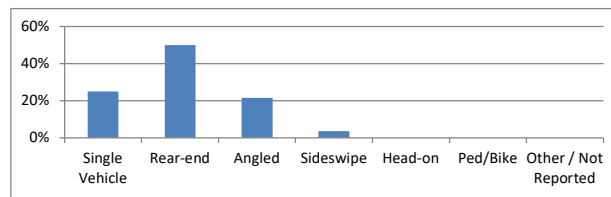
Day of Week	#	%
Sunday	5	18%
Monday	3	11%
Tuesday	7	25%
Wednesday	6	21%
Thursday	0	0%
Friday	4	14%
Saturday	3	11%



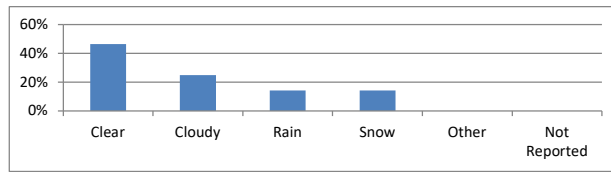
Time of Day	#	%
6AM - 9AM	5	18%
9AM - 12PM	5	18%
12PM-3PM	2	7%
3PM - 6PM	4	14%
6PM - 9PM	8	29%
9PM - 6AM	4	14%



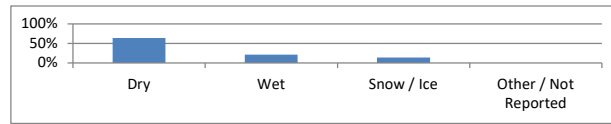
Manner of Collision	#	%
Single Vehicle	7	25%
Rear-end	14	50%
Angled	6	21%
Sideswipe	1	4%
Head-on	0	0%
Ped/Bike	0	0%
Other / Not Reported	0	0%



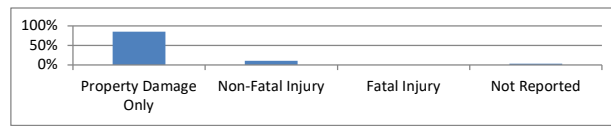
Weather Conditions	#	%
Clear	13	46%
Cloudy	7	25%
Rain	4	14%
Snow	4	14%
Other	0	0%
Not Reported	0	0%



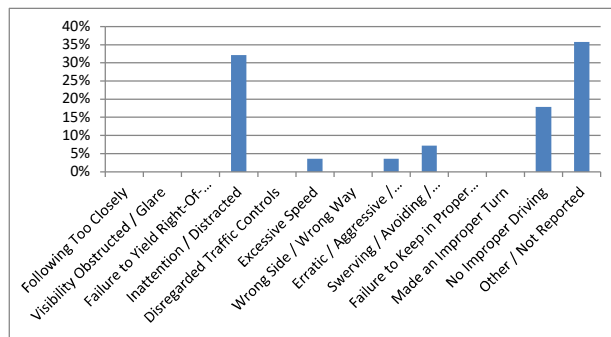
Road Surface	#	%
Dry	18	64%
Wet	6	21%
Snow / Ice	4	14%
Other / Not Reported	0	0%



Crash Severity	#	%
Property Damage Only	24	86%
Non-Fatal Injury	3	11%
Fatal Injury	0	0%
Not Reported	1	4%



Main Contributing Factor from Narrative	#	%
Following Too Closely	0	0%
Visibility Obstructed / Glare	0	0%
Failure to Yield Right-Of-Way	0	0%
Inattention / Distracted	9	32%
Disregarded Traffic Controls	0	0%
Excessive Speed	1	4%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	1	4%
Swerving / Avoiding / Over-Steering / Over-Correcting	2	7%
Failure to Keep in Proper Lane	0	0%
Made an Improper Turn	0	0%
No Improper Driving	5	18%
Other / Not Reported	10	36%



Crash Data Summary Tables
Pulaski Street @ Andover Street @ Central Street @ Endicott Street - Peabody, MA
01/01/2017 - 12/31/2021

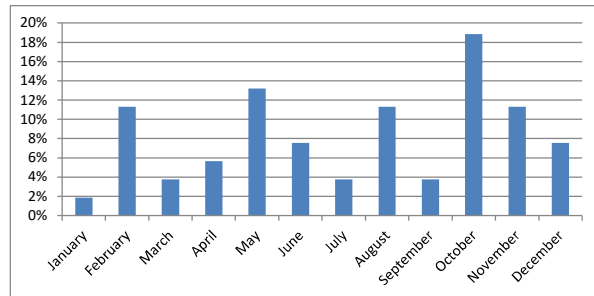
Collision Diagram	Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
1	4309904	1/2/2017	7:56:00 PM	Dark - Lighted	Clear	Dry	2	Non-fatal Injury	1	Angled	Failure to Yield Right-of-Way	
2	4323248	2/1/2017	4:56:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Angled	Failure to Yield Right-of-Way	
3	4332991	2/22/2017	7:43:00 PM	Dark - Lighted	Clear	Dry	2	Property Damage Only	0	Rear-end	Erratic / Aggressive / Reckless Driving	
4	4352281	4/6/2017	4:46:00 PM	Daylight	Rain	Wet	2	Property Damage Only	0	Angled	Failure to Yield Right-of-Way	
5	4441084	10/15/2017	12:31:00 PM	Daylight	Cloudy	Dry	2	Property Damage Only	0	Rear-end	Failure to Yield Right-of-Way	
6	4443883	10/20/2017	9:52:00 AM	Daylight	Clear	Dry	2	Property Damage Only	0	Angled	No Improper Driving	
7	4446987	10/30/2017	1:43:00 AM	Dark - Lighted	Rain	Wet	2	Property Damage Only	0	Rear-end	No Improper Driving	
8	4451181	10/31/2017	8:13:00 AM	Daylight	Clear	Dry	2	Property Damage Only	0	Sideswipe	Failure to Yield Right-of-Way	
9	4464316	11/30/2017	5:07:00 PM	Dark - Lighted	Clear	Dry	2	Non-fatal injury	1	Angled	Not Reported	
10	4525599	4/5/2018	4:05:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Angled	No Improper Driving	
11	4538900	5/12/2018	11:29:00 AM	Daylight	Rain	Wet	2	Property Damage Only	0	Angled	Not Reported	
12	4562319	6/27/2018	12:04:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Sideswipe	Other	
13	4570182	5/11/2018	10:38:00 PM	Not Reported	Clear	Dry	2	Non-fatal injury	2	Sideswipe	Not Reported	
14	4570241	4/19/2018	2:41:00 PM	Daylight	Rain	Wet	3	Property Damage Only	0	Rear-end	No Improper Driving	
15	4578145	8/3/2018	8:57:00 AM	Daylight	Clear	Dry	3	Property Damage Only	0	Rear-end	Followed Too Closely	
16	4584276	8/9/2018	12:18:00 AM	Dark - Lighted	Clear	Dry	2	Property Damage Only	0	Angled	No Improper Driving	
17	4584281	8/11/2018	9:08:00 PM	Dark - Lighted	Clear	Dry	2	Non-fatal injury	2	Rear-end	Not Reported	
18	4589114	8/30/2018	3:31:00 PM	Daylight	Cloudy	Dry	2	Property Damage Only	0	Angled	Inattention / Distracted	
19	4606989	10/7/2018	6:18:00 PM	Dusk	Rain	Wet	2	Property Damage Only	0	Angled	Failure to Keep in Proper Lane	
20	4618613	11/1/2018	6:22:00 PM	Dark - Lighted	Clear	Dry	4	Property Damage Only	0	Not Reported	Not Reported	
21	4621783	11/8/2018	5:14:00 PM	Dark - Lighted	Clear	Dry	2	Non-fatal injury	1	Rear-end	Inattention / Distracted	
22	4639165	11/9/2018	12:06:00 PM	Daylight	Cloudy	Dry	2	Property Damage Only	0	Rear-end	Followed Too Closely	
23	4639191	12/2/2018	5:45:00 PM	Dark - Lighted	Rain	Wet	2	Property Damage Only	0	Angled	No Improper Driving	
24	4644498	12/27/2018	9:27:00 PM	Dark - Lighted	Clear	Dry	2	Non-fatal injury	1	Rear-end	Other	
25	4663576	2/7/2019	7:08:00 PM	Dark - Lighted	Clear	Dry	2	Property Damage Only	0	Sideswipe	Failure to Yield Right-of-Way	
26	4680582	8/24/2017	1:16:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Angled	Inattention / Distracted	
27	4680609	10/20/2017	4:52:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Rear-end	Followed Too Closely	
28	4680612	10/22/2017	7:45:00 AM	Daylight	Clear	Dry	2	Property Damage Only	0	Sideswipe	Not Reported	
29	4680655	10/2/2017	8:43:00 AM	Daylight	Clear	Dry	2	Not Reported	0	Sideswipe	Inattention / Distracted	
30	4704248	5/17/2019	5:18:00 PM	Daylight	Clear	Wet	3	Property Damage Only	0	Rear-end	Followed Too Closely	
31	4704250	5/17/2019	7:06:00 AM	Daylight	Clear	Dry	2	Property Damage Only	0	Angled	No Improper Driving	
32	4706679	5/28/2019	11:14:00 AM	Daylight	Rain	Wet	2	Property Damage Only	0	Sideswipe	Inattention / Distracted	
33	4722074	7/3/2019	7:59:00 AM	Daylight	Clear	Dry	2	Property Damage Only	0	Rear-end	Glare	
34	4739498	8/14/2019	8:05:00 PM	Dark - Lighted	Clear	Dry	2	Property Damage Only	0	Sideswipe	Failure to Keep in Proper Lane	
35	4751197	9/11/2019	3:11:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Sideswipe	No Improper Driving	
36	4761780	10/11/2019	2:55:00 PM	Daylight	Rain	Wet	2	Property Damage Only	0	Rear-end	No Improper Driving	
37	4821444	2/13/2020	9:17:00 PM	Dark - Lighted	Clear	Wet	2	Property Damage Only	0	Rear-end	No Improper Driving	
38	4821822	2/20/2020	8:21:00 AM	Daylight	Clear	Dry	2	Property Damage Only	0	Rear-end	Inattention / Distracted	
39	4846649	5/27/2020	5:02:00 AM	Dawn	Clear	Dry	2	Property Damage Only	0	Sideswipe	Not Reported	
40	4851147	6/12/2020	9:12:00 AM	Daylight	Clear	Dry	2	Property Damage Only	0	Rear-end	Inattention / Distracted	
41	4855120	6/26/2020	11:34 AM	Daylight	Clear	Dry	2	Property Damage Only	0	Rear-end	Followed Too Closely	
42	4862554	2/24/2020	3:41:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Angled	Not Reported	
43	4862664	3/2/2020	7:05:00 PM	Dark - Lighted	Clear	Dry	2	Property Damage Only	0	Sideswipe	Failure to Keep in Proper Lane	
44	4862743	6/10/2020	12:31:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Sideswipe	Inattention / Distracted	
45	4862762	7/14/2020	10:21:00 PM	Dark - Lighted	Clear	Dry	2	Property Damage Only	0	Rear-end	Inattention / Distracted	
46	4880786	9/17/2020	1:56:00 PM	Daylight	Clear	Dry	2	Non-fatal injury	0	Angled	Visibility Obstructed	
47	4885695	10/2/2020	2:09:00 PM	Daylight	Cloudy	Dry	2	Non-fatal injury	1	Rear-end	Not Reported	
48	4904591	11/30/2020	9:10:00 PM	Dark - Lighted	Rain	Wet	2	Property Damage Only	0	Angled	No Improper Driving	
49	4917694	12/31/2020	5:27:00 PM	Dark - Lighted	Clear	Dry	2	Property Damage Only	0	Angled	No Improper Driving	
50	4945065	3/20/2021	3:26:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Rear-end	Inattention / Distracted	
51	4964012	5/15/2021	6:04:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Rear-end	No Improper Driving	
52	5032295	11/6/2021	10:46:00 PM	Dark - Not Lighted	Clear	Dry	2	Property Damage Only	0	Angled	Not Reported	
53	5051270	12/25/2021	9:35:00 AM	Daylight	Rain	Ice	2	Non-fatal injury	0	Angled	Not Reported	

Crash Data Summary Charts
Pulaski Street @ Andover Street @ Central Street @ Endicott Street - Peabody, MA
01/01/2017 - 12/31/2021

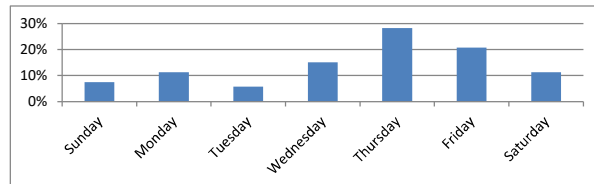
Pulaski Street @ Andover Street @ Central Street @ Endicott Street

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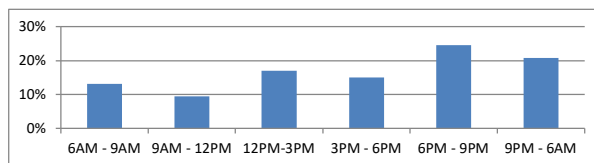
Month	#	%
January	1	2%
February	6	11%
March	2	4%
April	3	6%
May	7	13%
June	4	8%
July	2	4%
August	6	11%
September	2	4%
October	10	19%
November	6	11%
December	4	8%



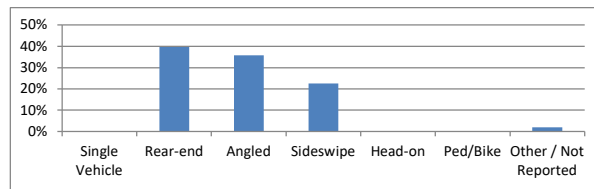
Day of Week	#	%
Sunday	4	8%
Monday	6	11%
Tuesday	3	6%
Wednesday	8	15%
Thursday	15	28%
Friday	11	21%
Saturday	6	11%



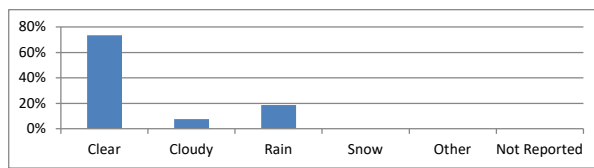
Time of Day	#	%
6AM - 9AM	7	13%
9AM - 12PM	5	9%
12PM-3PM	9	17%
3PM - 6PM	8	15%
6PM - 9PM	13	25%
9PM - 6AM	11	21%



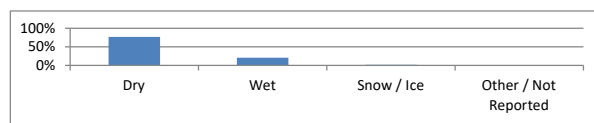
Manner of Collision	#	%
Single Vehicle	0	0%
Rear-end	21	40%
Angled	19	36%
Sideswipe	12	23%
Head-on	0	0%
Ped/Bike	0	0%
Other / Not Reported	1	2%



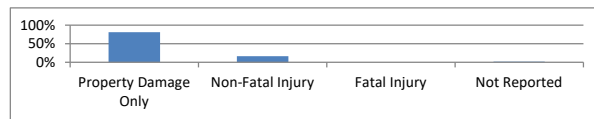
Weather Conditions	#	%
Clear	39	74%
Cloudy	4	8%
Rain	10	19%
Snow	0	0%
Other	0	0%
Not Reported	0	0%



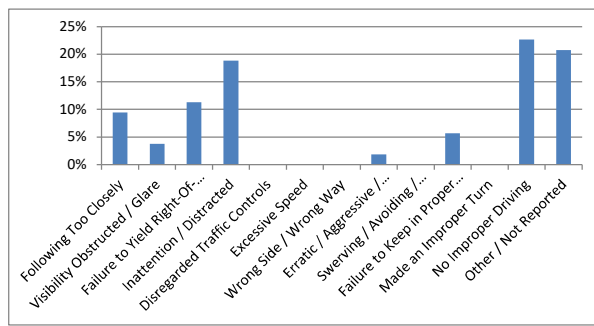
Road Surface	#	%
Dry	41	77%
Wet	11	21%
Snow / Ice	1	2%
Other / Not Reported	0	0%



Crash Severity	#	%
Property Damage Only	43	81%
Non-Fatal Injury	9	17%
Fatal Injury	0	0%
Not Reported	1	2%



Main Contributing Factor from Narrative	#	%
Following Too Closely	5	9%
Visibility Obstructed / Glare	2	4%
Failure to Yield Right-Of-Way	6	11%
Inattention / Distracted	10	19%
Disregarded Traffic Controls	0	0%
Excessive Speed	0	0%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	1	2%
Swerving / Avoiding / Over-Steering / Over-Correcting	0	0%
Failure to Keep in Proper Lane	3	6%
Made an Improper Turn	0	0%
No Improper Driving	12	23%
Other / Not Reported	11	21%



Crash Data Summary Tables
Water Street @ Endicott Street - Danvers, MA
01/01/2017 - 21/31/2021

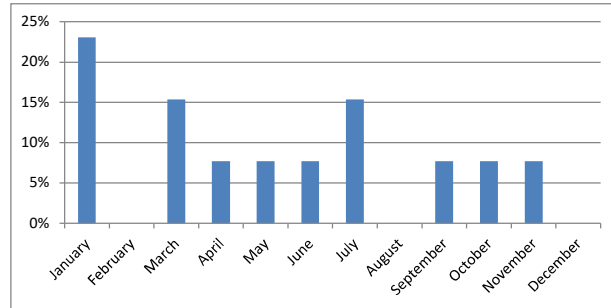
Collision Diagram	Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
1	4314452	1/4/2017	6:56:00 PM	Dark - Lighted	Cloudy	Dry	1	Property Damage Only	0	Single Vehicle	Failure to Keep in Proper Lane	
2	4334289	1/28/2017	3:23:00 PM	Not reported	Not Reported	Not reported	2	Not Reported	0	Not reported	Not Reported	
3	4447915	10/29/2017	8:24:00 PM	Dark - Lighted	Rain	Wet	2	Property Damage Only	0	Rear-end	Inattention / Distracted	
4	4576854	7/16/2018	8:47:00 AM	Daylight	Clear	Dry	2	Property Damage Only	0	Angled	Failure to Yield Right-of-Way	
5	4709001	4/16/2019	1:28:00 PM	Daylight	Clear	Dry	1	Property Damage Only	0	Single Vehicle	Not Reported	
6	4721370	6/5/2019	3:34:00 PM	Daylight	Clear	Dry	3	Property Damage Only	0	Rear-end	Inattention / Distracted	
7	4738005	7/9/2019	11:00:00 AM	Daylight	Clear	Dry	2	Property Damage Only	0	Sideswipe	Disregarded Traffic Controls	
8	4753461	9/18/2019	5:55:00 PM	Daylight	Clear	Dry	3	Non-fatal injury	1	Sideswipe	Erratic / Aggressive / Reckless Driving	
9	4833367	3/12/2020	5:25:00 AM	Dark - Lighted	Clear	Dry	1	Property Damage Only	0	Single Vehicle	Not Reported	
10	4850306	5/21/2020	5:45:00 PM	Daylight	Clear	Dry	1	Non-fatal injury	1	Angled	Not Reported	
11	4894588	11/1/2020	1:29:00 AM	Dark - Lighted	Clear	Wet	1	Non-fatal injury	1	Single Vehicle	Erratic / Aggressive / Reckless Driving	
12	4925456	1/16/2021	11:19:00 AM	Daylight	Rain	Wet	1	Non-fatal injury	1	Single Vehicle	Excessive Speed	
13	4951594	3/25/2021	12:37:00 AM	Dark - Lighted	Rain	Wet	2	Non-fatal injury	1	Head-on	Not Reported	

Crash Data Summary Charts
 Water Street @ Endicott Street - Danvers, MA
 01/01/2017 - 12/31/2021

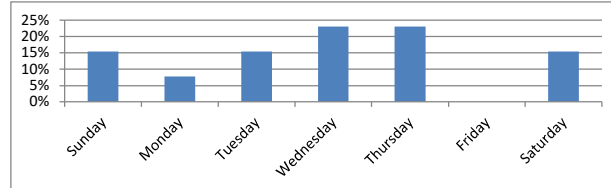
Water Street @ Endicott Street

13

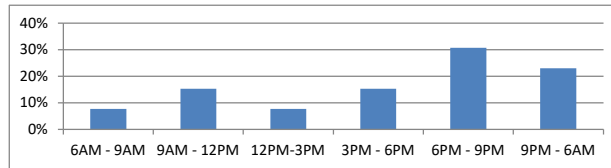
Month	#	%
January	3	23%
February	0	0%
March	2	15%
April	1	8%
May	1	8%
June	1	8%
July	2	15%
August	0	0%
September	1	8%
October	1	8%
November	1	8%
December	0	0%



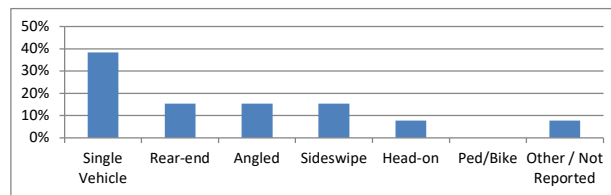
Day of Week	#	%
Sunday	2	15%
Monday	1	8%
Tuesday	2	15%
Wednesday	3	23%
Thursday	3	23%
Friday	0	0%
Saturday	2	15%



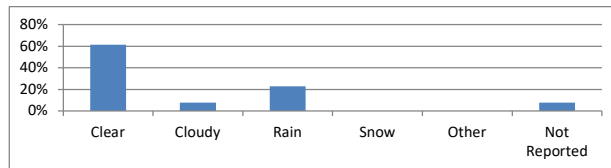
Time of Day	#	%
6AM - 9AM	1	8%
9AM - 12PM	2	15%
12PM-3PM	1	8%
3PM - 6PM	2	15%
6PM - 9PM	4	31%
9PM - 6AM	3	23%



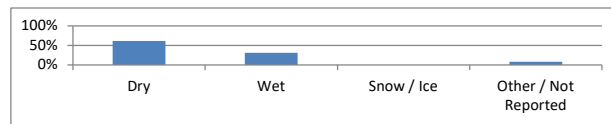
Manner of Collision	#	%
Single Vehicle	5	38%
Rear-end	2	15%
Angled	2	15%
Sideswipe	2	15%
Head-on	1	8%
Ped/Bike	0	0%
Other / Not Reported	1	8%



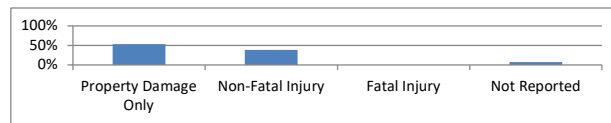
Weather Conditions	#	%
Clear	8	62%
Cloudy	1	8%
Rain	3	23%
Snow	0	0%
Other	0	0%
Not Reported	1	8%



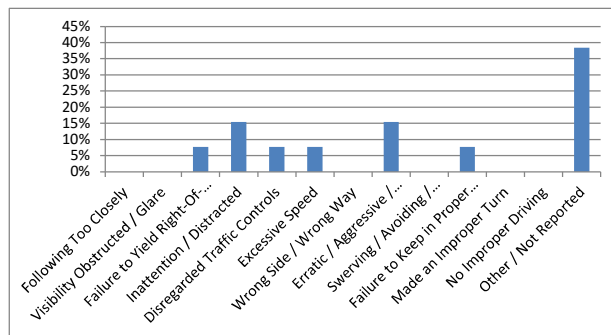
Road Surface	#	%
Dry	8	62%
Wet	4	31%
Snow / Ice	0	0%
Other / Not Reported	1	8%



Crash Severity	#	%
Property Damage Only	7	54%
Non-Fatal Injury	5	38%
Fatal Injury	0	0%
Not Reported	1	8%



Main Contributing Factor from Narrative	#	%
Following Too Closely	0	0%
Visibility Obstructed / Glare	0	0%
Failure to Yield Right-Of-Way	1	8%
Inattention / Distracted	2	15%
Disregarded Traffic Controls	1	8%
Excessive Speed	1	8%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	2	15%
Swerving / Avoiding / Over-Steering / Over-Correcting	0	0%
Failure to Keep in Proper Lane	1	8%
Made an Improper Turn	0	0%
No Improper Driving	0	0%
Other / Not Reported	5	38%



Crash Data Summary Tables
Water Street @ South Liberty Street - Danvers, MA
01/01/2017 - 12/31/2021

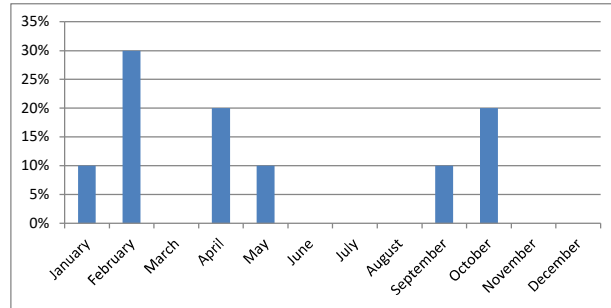
Collision Diagram	Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
1	4518294	2/6/2018	2:56:00 PM	Daylight	Clear	Dry	3	Property Damage Only	0	Rear-end	Inattention / Distracted	
2	4559745	4/30/2018	8:47:00 PM	Dark - Lighted	Rain	Wet	2	Non-fatal injury	2	Angled	Failure to Yield Right-of-Way	
3	4645467	10/27/2018	1:44:00 PM	Daylight	Rain	Wet	2	Property Damage Only	0	Rear-end	Inattention / Distracted	
4	4697073	4/10/2019	3:35:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Angled	No Improper Driving	
5	4757780	9/29/2019	1:10:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Rear-end	Inattention / Distracted	
6	4821491	1/25/2020	11:45:00 AM	Daylight	Not Reported	Wet	2	Property Damage Only	0	Rear-end	Not Reported	
7	4894867	10/8/2020	7:30:00 PM	Dark - Lighted	Clear	Dry	2	Property Damage Only	0	Rear-end	No Improper Driving	
8	4934118	2/7/2021	2:46:00 PM	Daylight	Snow	Snow	1	Non-fatal injury	1	Single Vehicle	No Improper Driving	
9	4983161	5/22/2021	9:42:00 PM	Dark - Lighted	Clear	Dry	2	Property Damage Only	0	Rear-end	No Improper Driving	
10	5077003	2/15/2022	3:05:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Rear-end	Inattention / Distracted	

Crash Data Summary Charts
 Water Street @ South Liberty Street - Danvers, MA
 01/01/2017 - 12/31/2021

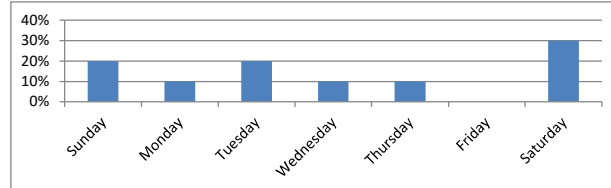
Water Street @ South Liberty Street

10

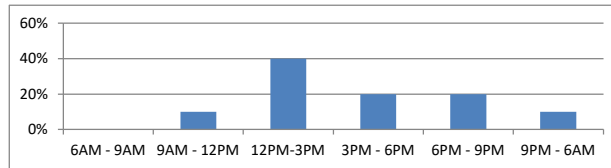
Month	#	%
January	1	10%
February	3	30%
March	0	0%
April	2	20%
May	1	10%
June	0	0%
July	0	0%
August	0	0%
September	1	10%
October	2	20%
November	0	0%
December	0	0%



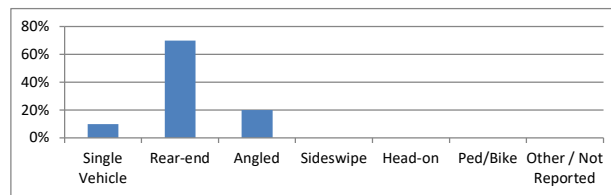
Day of Week	#	%
Sunday	2	20%
Monday	1	10%
Tuesday	2	20%
Wednesday	1	10%
Thursday	1	10%
Friday	0	0%
Saturday	3	30%



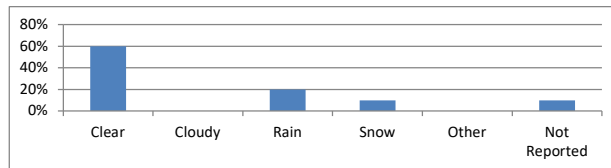
Time of Day	#	%
6AM - 9AM	0	0%
9AM - 12PM	1	10%
12PM-3PM	4	40%
3PM - 6PM	2	20%
6PM - 9PM	2	20%
9PM - 6AM	1	10%



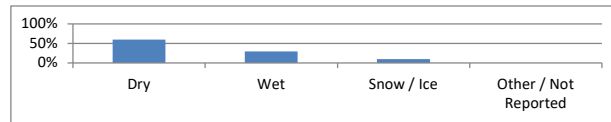
Manner of Collision	#	%
Single Vehicle	1	10%
Rear-end	7	70%
Angled	2	20%
Sideswipe	0	0%
Head-on	0	0%
Ped/Bike	0	0%
Other / Not Reported	0	0%



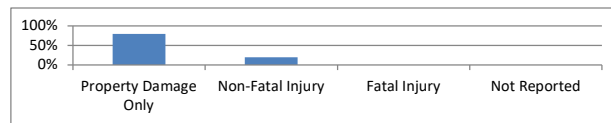
Weather Conditions	#	%
Clear	6	60%
Cloudy	0	0%
Rain	2	20%
Snow	1	10%
Other	0	0%
Not Reported	1	10%



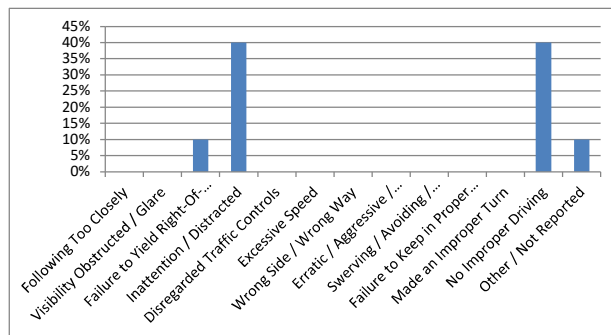
Road Surface	#	%
Dry	6	60%
Wet	3	30%
Snow / Ice	1	10%
Other / Not Reported	0	0%



Crash Severity	#	%
Property Damage Only	8	80%
Non-Fatal Injury	2	20%
Fatal Injury	0	0%
Not Reported	0	0%



Main Contributing Factor from Narrative	#	%
Following Too Closely	0	0%
Visibility Obstructed / Glare	0	0%
Failure to Yield Right-Of-Way	1	10%
Inattention / Distracted	4	40%
Disregarded Traffic Controls	0	0%
Excessive Speed	0	0%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	0	0%
Swerving / Avoiding / Over-Steering / Over-Correcting	0	0%
Failure to Keep in Proper Lane	0	0%
Made an Improper Turn	0	0%
No Improper Driving	4	40%
Other / Not Reported	1	10%



Crash Data Summary Tables
Margin Street @ Gardenr Street - Danvers, MA
01/01/2017 - 12/31/2021

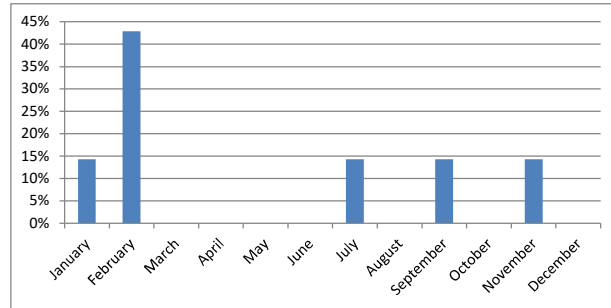
Collision Diagram	Crash Number	Crash Date	Crash Time	Ambient Light	Weather Condition	Road Surface	Number of Vehicles	Crash Severity	Number of NonFatal Injuries	Manner of Collision	Driver Contributing Codes	Detailed Narrative (from Crash Report)
1	4420644	09/08/2017	5:52:00 PM	Daylight	Clear	Dry	2	Property Damage Only	0	Sideswipe	Erratic / Aggressive / Reckless Driving	
2	4500024	02/07/2018	1:18:00 PM	Daylight	Snow	Snow	2	Property Damage Only	2	Rear-end	Excessive Speed	
3	4570144	02/27/2018	6:57:00 AM	Daylight	Clear	Dry	2	Property Damage Only	0	Angled	Not Reported	
4	4680625	07/06/2017	7:58:00 AM	Daylight	Clear	Dry	2	Property Damage Only	0	Rear-end	Inattention / Distracted	
5	4718012	01/21/2019	2:46:00 PM	Daylight	Other	Ice	2	Property Damage Only	0	Angled	No Improper Driving	
6	4727514	02/18/2019	2:25:00 AM	Dark - Lighted	Snow	Not Reported	1	Property Damage Only	0	Single Vehicle	Not Reported	
7	4774013	11/12/2019	10:44:00 AM	Daylight	Rain	Wet	2	Non-fatal Injury	1	Angled	Inattention / Distracted	

Crash Data Summary Charts
Margin Street @ Gardner Street - Danvers, MA
01/01/2017 - 12/31/2021

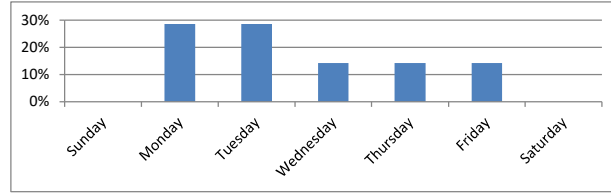
Water Street @ South Liberty Street

7

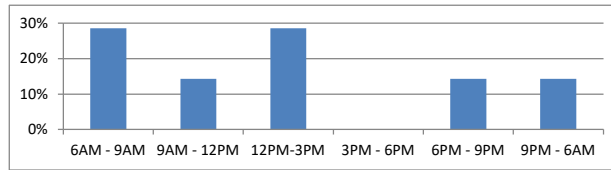
Month	#	%
January	1	14%
February	3	43%
March	0	0%
April	0	0%
May	0	0%
June	0	0%
July	1	14%
August	0	0%
September	1	14%
October	0	0%
November	1	14%
December	0	0%



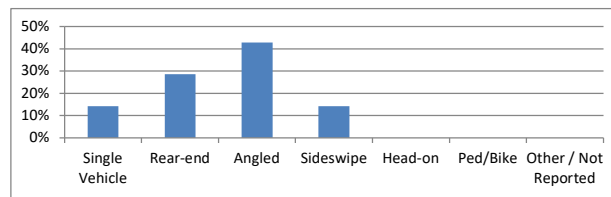
Day of Week	#	%
Sunday	0	0%
Monday	2	29%
Tuesday	2	29%
Wednesday	1	14%
Thursday	1	14%
Friday	1	14%
Saturday	0	0%



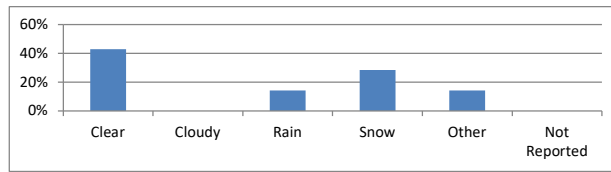
Time of Day	#	%
6AM - 9AM	2	29%
9AM - 12PM	1	14%
12PM-3PM	2	29%
3PM - 6PM	0	0%
6PM - 9PM	1	14%
9PM - 6AM	1	14%



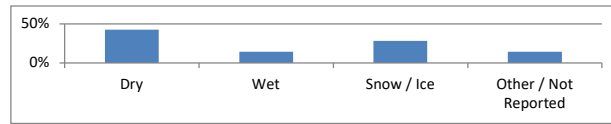
Manner of Collision	#	%
Single Vehicle	1	14%
Rear-end	2	29%
Angled	3	43%
Sideswipe	1	14%
Head-on	0	0%
Ped/Bike	0	0%
Other / Not Reported	0	0%



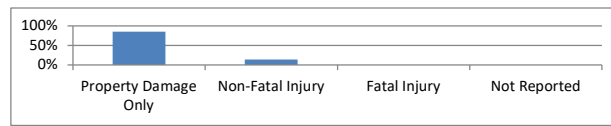
Weather Conditions	#	%
Clear	3	43%
Cloudy	0	0%
Rain	1	14%
Snow	2	29%
Other	1	14%
Not Reported	0	0%



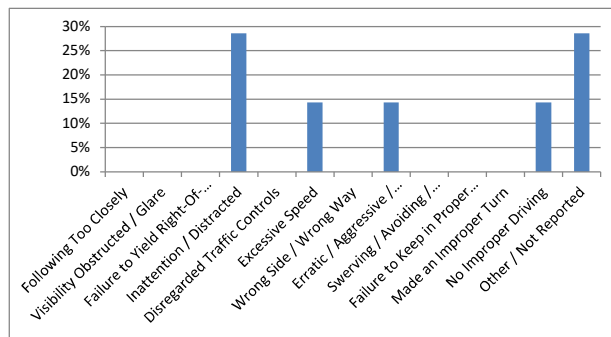
Road Surface	#	%
Dry	3	43%
Wet	1	14%
Snow / Ice	2	29%
Other / Not Reported	1	14%



Crash Severity	#	%
Property Damage Only	6	86%
Non-Fatal Injury	1	14%
Fatal Injury	0	0%
Not Reported	0	0%



Main Contributing Factor from Narrative	#	%
Following Too Closely	0	0%
Visibility Obstructed / Glare	0	0%
Failure to Yield Right-Of-Way	0	0%
Inattention / Distracted	2	29%
Disregarded Traffic Controls	0	0%
Excessive Speed	1	14%
Wrong Side / Wrong Way	0	0%
Erratic / Aggressive / Reckless Driving	1	14%
Swerving / Avoiding / Over-Steering / Over-Correcting	0	0%
Failure to Keep in Proper Lane	0	0%
Made an Improper Turn	0	0%
No Improper Driving	1	14%
Other / Not Reported	2	29%



INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Peabody COUNT DATE : Mar-21

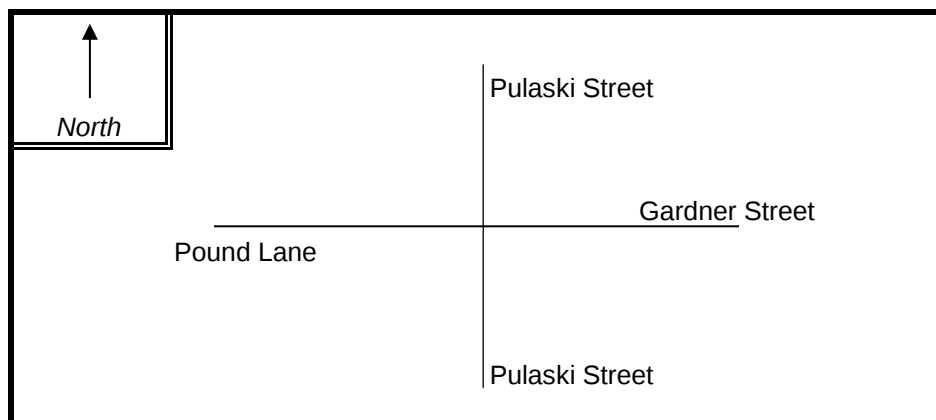
DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒ Y

~ INTERSECTION DATA ~

MAJOR STREET : Pulaski Street

MINOR STREET(S) : Gardner Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	57	510	645	383		1,595

" K " FACTOR :

0.077

INTERSECTION ADT (V) = TOTAL DAILY
APPROACH VOLUME :

20,714

TOTAL # OF CRASHES :

22

OF
YEARS :

3

AVERAGE # OF
CRASHES PER YEAR (A) :

7.33

CRASH RATE CALCULATION :

0.97

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

Comments : K factor based on Pulaski Street ATR

Project Title & Date : Pioneer Charter School of Sciences - Peabody, MA

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Peabody COUNT DATE : Mar-21

DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒ Y

~ INTERSECTION DATA ~

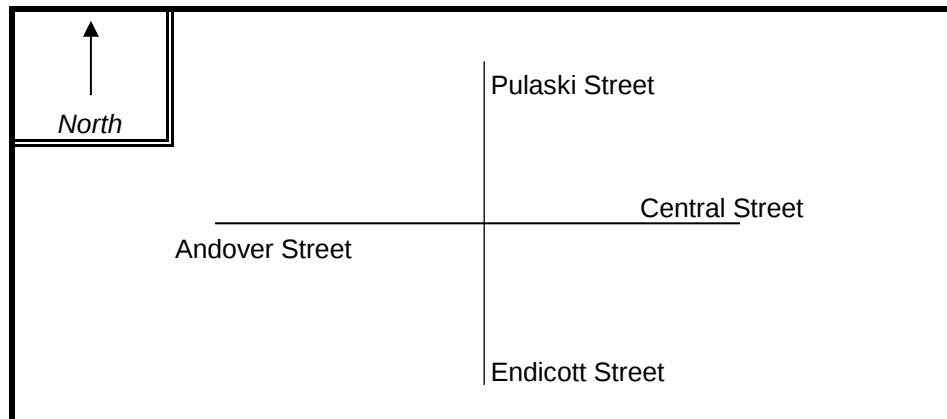
MAJOR STREET : Pulaski Street

MINOR STREET(S) : Central Street

Endicott Street

Andover Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	1,297	866	235	891		3,289

" K " FACTOR :

0.077

INTERSECTION ADT (V) = TOTAL DAILY
APPROACH VOLUME :

42,714

TOTAL # OF CRASHES :

36

OF
YEARS :

3

AVERAGE # OF
CRASHES PER YEAR (A) :

12.00

CRASH RATE CALCULATION :

0.77

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

Comments : K factor based on Pulaski Street ATR

Project Title & Date : Pioneer Charter School of Sciences - Peabody, MA

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Peabody COUNT DATE : May-21

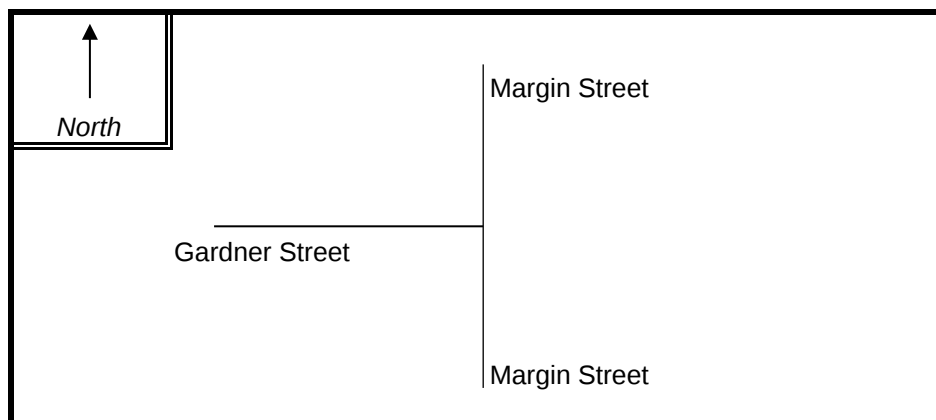
DISTRICT : 4 UNSIGNALIZED : ☒ Y SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : Margin Street

MINOR STREET(S) : Gardner Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	365		898	788		2,051

" K " FACTOR :

0.077

INTERSECTION ADT (V) = TOTAL DAILY
APPROACH VOLUME :

26,636

TOTAL # OF CRASHES :

7

OF
YEARS :

3

AVERAGE # OF
CRASHES PER YEAR (A) :

2.33

CRASH RATE CALCULATION :

0.24

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

Comments : K factor based on Pulaski Street ATR

Project Title & Date : Pioneer Charter School of Sciences - Peabody, MA

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Danvers COUNT DATE : Mar-21

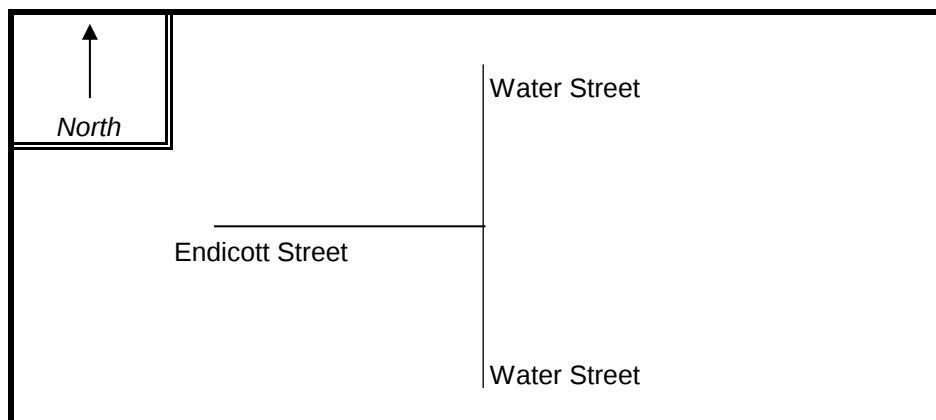
DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒ Y

~ INTERSECTION DATA ~

MAJOR STREET : Water Street

MINOR STREET(S) : Endicott Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	894		795	573		2,262

" K " FACTOR :

0.077

INTERSECTION ADT (V) = TOTAL DAILY
APPROACH VOLUME :

29,377

TOTAL # OF CRASHES :

8

OF
YEARS :

3

AVERAGE # OF
CRASHES PER YEAR (A) :

2.67

CRASH RATE CALCULATION :

0.25

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

Comments : K factor based on Pulaski Street ATR

Project Title & Date : Pioneer Charter School of Sciences - Peabody, MA

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Danvers COUNT DATE : Mar-21

DISTRICT : 4 UNSIGNALIZED : ☐ SIGNALIZED : ☒ Y

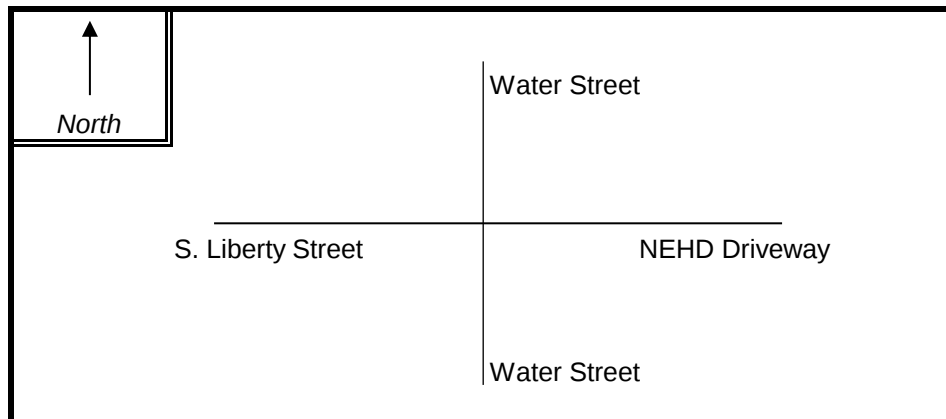
~ INTERSECTION DATA ~

MAJOR STREET : Water Street

MINOR STREET(S) : S. Liberty Street

New England Home for the Deaf Dwy

**INTERSECTION
DIAGRAM
(Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	EB	WB	NB	SB		
PEAK HOURLY VOLUMES (AM/PM) :	178	4	610	1,170		1,962

" K " FACTOR :

0.077

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

25,481

TOTAL # OF CRASHES :

5

OF YEARS :

3

AVERAGE # OF CRASHES PER YEAR (A) :

1.67

CRASH RATE CALCULATION :

0.18

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

Comments : K factor based on Pulaski Street ATR

Project Title & Date : Pioneer Charter School of Sciences - Peabody, MA

Attachment F

MassDOT Yearly Growth Rates

MassDOT Yearly Growth Rates

for data from 2014 to 2018

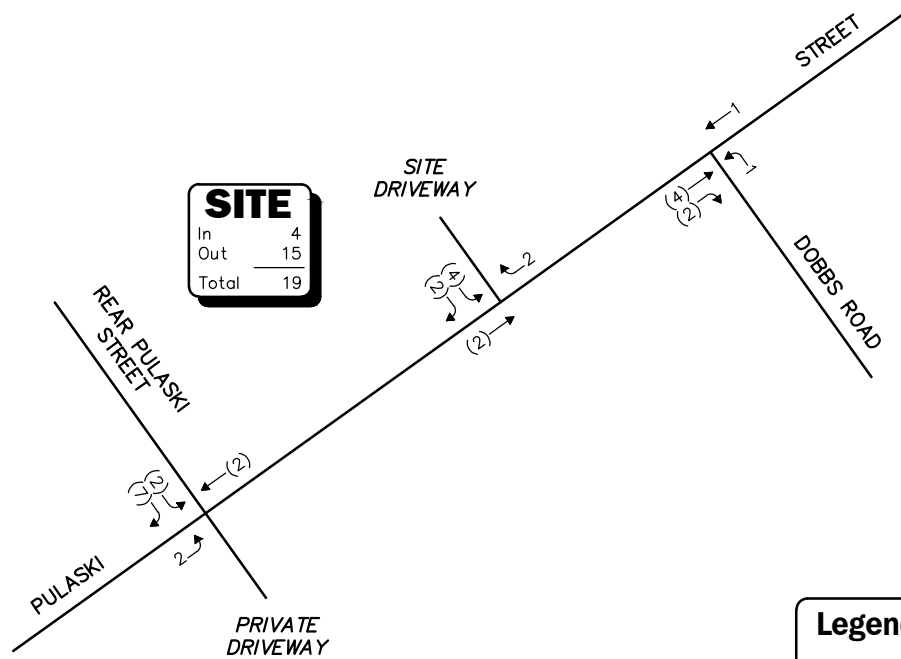
Growth					
Group	Grow 2014 to 2015	Grow 2015 to 2016	Grow 2016 to 2017	Grow 2017 to 2018	Grow 2018 to 2019
R1	0	0.023	0.004	0.018	0.016
R2	0.05	0.068	0.004	0.014	0.014
R3	-0.038	0.002	0.008	0.011	0.06
R4-7	-0.01	0.003	0.001	0.011	0.012
Rec - East		0.032	0.02	0.041	0.025
Rec - West		0.051	-0.008	0.029	0
U1-Boston	0.061	0.07	-0.003	0.012	0.006
U1-Essex	0.024	0.025	0.007	0.014	0.011
U1-Southeast	0.05	0.062	0.021	0.014	0
U1-West	0.03	-0.027	0.02	0.028	0.013
U1-Worcester	0.042	0.005	0.018	0.01	0.01
U2	0.04	0.048	0.008	0.01	0.02
U3	0.011	0.013	0.011	0.014	0.004
U4-7	0.023	0.062	0.017	0.003	-0.004

updated 5/1/2020

Attachment G

Specific Developments by Others

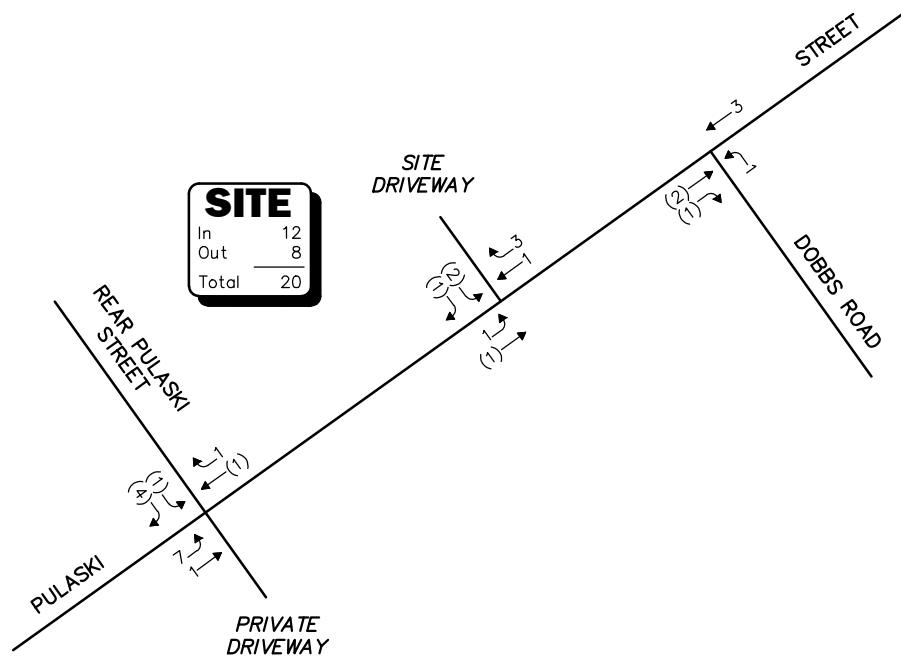
WEEKDAY MORNING PEAK HOUR



Legend:

XX Entering Trips
(XX) Exiting Trips

WEEKDAY EVENING PEAK HOUR



Not To Scale



Figure 6

Project-Generated
Peak-Hour Traffic Volumes

Attachment H

Trip Generation & Distribution

Trip Generation and Distribution

Project: T1219 - Pioneer Charter School - Peabody, Massachusetts
Date: April 6, 2022
Analyst: TEC, Inc. / Samuel W. Gregorio, PE, PTOE, RSP1
Source: Pioneer Charter School of Sciences Enrollment Projection

Student / Teacher / Bus Breakdown

TOWN/CITY	BUSED	# of Students (594)	# of Extracurricular Students (100)	# of Staff (85)	Bus # (8)
Peabody	Yes	160	27	23	2
Danvers	Yes	160	27	23	2
Salem	Yes	8	1	1	0
Lynn	Yes	100	17	14	2
Saugus	Yes	100	17	14	2
OTHERS	No	66	11	10	0
TOTAL		594	100	85	

Sibling Rate: 25%

TOWN/CITY		Weekday Morning		Weekday Dismissal		Weekday Evening	
		Total Number of Trips IN	Total Number of Trips OUT	Total Number of Trips IN	Total Number of Trips OUT	Total Number of Trips IN	Total Number of Trips OUT
Peabody	STUDENT DROP-OFF (194 w/ 25% Sibling Rate)	30	30	25	25	20	20
Danvers		30	30	25	25	20	20
Salem		2	2	1	1	1	1
Lynn		19	19	16	16	13	13
Saugus		19	19	16	16	13	13
OTHERS		50	50	42	42	8	8
Peabody	SCHOOL STAFF (85)	23					23
Danvers		23					23
Salem		1					1
Lynn		14					14
Saugus		14					14
OTHERS		10					10
Peabody	BUS DROP-OFF (6)	3	8	8	3		
Danvers		3			3		
Salem		0			0		
Lynn		1			1		
Saugus		1			1		
TOTAL		243	158	133	133	75	160

401

266

235

Trip Distribution Gravity Model

TOWN/CITY	To/From Endicott Street [West]	To/From Water Street [North]	To/From Water Street [South]	To/From Andover Street [West]	To/From Endicott Street [South]	To/From Central Street [South]	TOTAL
Peabody			10%	20%	35%	35%	100%
Danvers	50%	50%					100%
Salem			100%				100%
Lynn			66%		34%		100%
Saugus				100%			100%
OTHERS	30%	25%	15%	30.0%			100%

Weekday Morning

TOWN / CITY	Total AM Entering	From Endicott Street [West]	From Water Street [North]	From Water Street [South]	From Andover Street [West]	From Endicott Street [South]	From Central Street [South]	TOTAL
Peabody	53	0	0	5	11	19	18	53
Danvers	53	27	26	0	0	0	0	53
Salem	3	0	0	3	0	0	0	3
Lynn	33	0	0	22	0	11	0	33
Saugus	33	0	0	0	33	0	0	33
OTHERS	60	18	15	9	18	0	0	60
TOTAL	235	45	41	39	62	30	18	235

TOWN/CITY	Total AM Exiting	To Endicott Street [West]	To Water Street [North]	To Water Street [South]	To Andover Street [South]	To Endicott Street [South]	To Central Street [South]	TOTAL
Peabody	30	0	0	3	6	10	11	30
Danvers	30	15	15	0	0	0	0	30
Salem	2	0	0	2	0	0	0	2
Lynn	19	0	0	13	0	6	0	19
Saugus	19	0	0	0	19	0	0	19
OTHERS	50	15	13	7	15	0	0	50
TOTAL	150	30	28	25	40	16	11	150

Weekday Dismissal

TOWN / CITY	Total AM Entering	From Endicott Street [West]	From Water Street [North]	From Water Street [South]	From Andover Street [West]	From Endicott Street [South]	From Central Street [South]	TOTAL
Peabody	25	0	0	3	5	8	9	25
Danvers	25	12	13	0	0	0	0	25
Salem	1	0	0	1	0	0	0	1
Lynn	16	0	0	11	0	5	0	16
Saugus	16	0	0	0	16	0	0	16
OTHERS	42	13	11	6	12	0	0	42
TOTAL	125	25	24	21	33	13	9	125

TOWN/CITY	Total AM Exiting	To Endicott Street [West]	To Water Street [North]	To Water Street [South]	To Andover Street [South]	To Endicott Street [South]	To Central Street [South]	TOTAL
Peabody	25	0	0	3	5	9	8	25
Danvers	25	13	12	0	0	0	0	25
Salem	1	0	0	1	0	0	0	1
Lynn	16	0	0	11	0	5	0	16
Saugus	16	0	0	0	16	0	0	16
OTHERS	42	13	11	6	12	0	0	42
TOTAL	125	26	23	21	33	14	8	125

Weekday Evening

TOWN / CITY	Total AM Entering	From Endicott Street [West]	From Water Street [North]	From Water Street [South]	From Andover Street [West]	From Endicott Street [South]	From Central Street [South]	TOTAL
Peabody	20	0	0	2	4	7	7	20
Danvers	20	10	10	0	0	0	0	20
Salem	1	0	0	1	0	0	0	1
Lynn	13	0	0	9	0	4	0	13
Saugus	13	0	0	0	13	0	0	13
OTHERS	8	2	2	2	2	0	0	8
TOTAL	75	12	12	14	19	11	7	75

TOWN/CITY	Total AM Exiting	To Endicott Street [West]	To Water Street [North]	To Water Street [South]	To Andover Street [South]	To Endicott Street [South]	To Central Street [South]	TOTAL
Peabody	43	0	0	4	9	15	15	43
Danvers	43	21	22	0	0	0	0	43
Salem	2	0	0	2	0	0	0	2
Lynn	27	0	0	18	0	9	0	27
Saugus	27	0	0	0	27	0	0	27
OTHERS	18	5	5	3	5	0	0	18
TOTAL	160	26	27	27	41	24	15	160

Attachment I

Capacity and Queue Analysis

Lanes, Volumes, Timings

1: Water Street & Endicott Street

2022 Existing Condition
Weekday Arrival

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	48	304	293	463	352	63
Future Volume (vph)	48	304	293	463	352	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Storage Length (ft)	0	0	280			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			2200	1000	
Travel Time (s)	22.7			50.0	22.7	
Peak Hour Factor	0.55	0.55	0.86	0.86	0.87	0.87
Heavy Vehicles (%)	0%	3%	4%	5%	3%	2%
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Detector Phase	5	1	1	3	3	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	11.0	11.0	11.0	20.0	20.0	
Total Split (s)	25.0	35.0	35.0	45.0	45.0	
Total Split (%)	23.8%	33.3%	33.3%	42.9%	42.9%	
Maximum Green (s)	20.0	30.0	30.0	40.0	40.0	
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max	Max	None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 86.1
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Water Street & Endicott Street



Queues
1: Water Street & Endicott Street

2022 Existing Condition
Weekday Arrival

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	87	553	341	538	477
v/c Ratio	0.43	0.73	0.56	0.81	0.62
Control Delay	45.8	25.3	30.5	35.1	25.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	25.3	30.5	35.1	25.7
Queue Length 50th (ft)	48	248	167	265	208
Queue Length 95th (ft)	57	185	270	391	314
Internal Link Dist (ft)	920			2120	920
Turn Bay Length (ft)			280		
Base Capacity (vph)	419	755	605	841	963
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.21	0.73	0.56	0.64	0.50
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

1: Water Street & Endicott Street

2022 Existing Condition
Weekday Arrival

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	48	304	293	463	352	63
Future Volume (vph)	48	304	293	463	352	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	15	15
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1745	1516	1678	1749	1991	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1745	1516	1678	1749	1991	
Peak-hour factor, PHF	0.55	0.55	0.86	0.86	0.87	0.87
Adj. Flow (vph)	87	553	341	538	405	72
RTOR Reduction (vph)	0	0	0	0	6	0
Lane Group Flow (vph)	87	553	341	538	471	0
Heavy Vehicles (%)	0%	3%	4%	5%	3%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Actuated Green, G (s)	8.1	39.2	31.1	32.8	32.8	
Effective Green, g (s)	8.1	39.2	31.1	32.8	32.8	
Actuated g/C Ratio	0.09	0.45	0.36	0.38	0.38	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	162	770	599	659	750	
v/s Ratio Prot	0.05	c0.26	0.20	c0.31	0.24	
v/s Ratio Perm		0.11				
v/c Ratio	0.54	0.72	0.57	0.82	0.63	
Uniform Delay, d1	37.7	19.4	22.5	24.4	22.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.4	3.2	3.9	7.7	1.7	
Delay (s)	41.1	22.6	26.4	32.1	23.8	
Level of Service	D	C	C	C	C	
Approach Delay (s)	25.1			29.9	23.8	
Approach LOS	C			C	C	
Intersection Summary						
HCM 2000 Control Delay			26.9		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.81			
Actuated Cycle Length (s)			87.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			56.1%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

2: Water Street & South Liberty Street/NEHD Driveway

2022 Existing Condition
Weekday Arrival

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	4	16	4	3	6	2	574	2	0	521	125
Future Volume (vph)	166	4	16	4	3	6	2	574	2	0	521	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	15	15	15	12	12	12	13	13	15
Storage Length (ft)	60		0	0		0	120		0	0		150
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1225			500			700			2200	
Travel Time (s)		27.8			11.4			15.9			50.0	
Peak Hour Factor	0.93	0.93	0.93	0.65	0.65	0.65	0.82	0.82	0.82	0.67	0.67	0.67
Heavy Vehicles (%)	6%	0%	19%	0%	0%	0%	50%	2%	0%	0%	3%	4%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Detector Phase	2	2		2	2		1	1		1	1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	10.0	10.0		10.0	10.0		21.0	21.0		21.0	21.0	21.0
Total Split (s)	20.0	20.0		20.0	20.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	35.7%	35.7%		35.7%	35.7%		64.3%	64.3%		64.3%	64.3%	64.3%
Maximum Green (s)	15.0	15.0		15.0	15.0		31.0	31.0		31.0	31.0	31.0
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.5		2.5	2.5	2.5
Recall Mode	None	None		None	None		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other
Cycle Length: 56
Actuated Cycle Length: 48.8
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Water Street & South Liberty Street/NEHD Driveway



Queues

2022 Existing Condition

2: Water Street & South Liberty Street/NEHD Driveway

Weekday Arrival

							
Lane Group	EBL	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	178	21	20	2	702	778	187
v/c Ratio	0.58	0.06	0.05	0.01	0.58	0.63	0.16
Control Delay	25.8	9.7	12.3	6.0	10.2	11.1	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.8	9.7	12.3	6.0	10.2	11.1	1.6
Queue Length 50th (ft)	50	1	3	0	126	147	0
Queue Length 95th (ft)	102	14	10	2	212	170	8
Internal Link Dist (ft)		1145	420		620	2120	
Turn Bay Length (ft)	60			120			150
Base Capacity (vph)	422	469	580	216	1270	1299	1224
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	0.42	0.04	0.03	0.01	0.55	0.60	0.15
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

2: Water Street & South Liberty Street/NEHD Driveway

2022 Existing Condition
Weekday Arrival

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	166	4	16	4	3	6	2	574	2	0	521	125
Future Volume (vph)	166	4	16	4	3	6	2	574	2	0	521	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	15	15	15	12	12	12	13	13	15
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.88			0.94		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1703	1447			1934		1203	1862			1906	1708
Flt Permitted	0.74	1.00			0.92		0.25	1.00			1.00	1.00
Satd. Flow (perm)	1334	1447			1816		317	1862			1906	1708
Peak-hour factor, PHF	0.93	0.93	0.93	0.65	0.65	0.65	0.82	0.82	0.82	0.67	0.67	0.67
Adj. Flow (vph)	178	4	17	6	5	9	2	700	2	0	778	187
RTOR Reduction (vph)	0	14	0	0	7	0	0	0	0	0	0	73
Lane Group Flow (vph)	178	7	0	0	13	0	2	702	0	0	778	114
Heavy Vehicles (%)	6%	0%	19%	0%	0%	0%	50%	2%	0%	0%	3%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Actuated Green, G (s)	9.5	9.5			9.5		30.3	30.3			30.3	30.3
Effective Green, g (s)	9.5	9.5			9.5		30.3	30.3			30.3	30.3
Actuated g/C Ratio	0.19	0.19			0.19		0.61	0.61			0.61	0.61
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		2.5	2.5			2.5	2.5
Lane Grp Cap (vph)	254	276			346		192	1132			1159	1039
v/s Ratio Prot		0.01						0.38			c0.41	
v/s Ratio Perm	c0.13				0.01		0.01					0.07
v/c Ratio	0.70	0.03			0.04		0.01	0.62			0.67	0.11
Uniform Delay, d1	18.8	16.4			16.4		3.8	6.1			6.5	4.1
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	8.4	0.0			0.0		0.0	0.9			1.4	0.0
Delay (s)	27.3	16.4			16.5		3.9	7.1			7.9	4.1
Level of Service	C	B			B		A	A			A	A
Approach Delay (s)		26.1			16.5			7.0			7.1	
Approach LOS		C			B			A			A	

Intersection Summary

HCM 2000 Control Delay	9.2	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.68		
Actuated Cycle Length (s)	49.8	Sum of lost time (s)	10.0
Intersection Capacity Utilization	60.3%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
4: Margin Street & Gardner Street

2022 Existing Condition
Weekday Arrival

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	60	278	497	500	361	71
Future Volume (vph)	60	278	497	500	361	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	15
Storage Length (ft)	360	0	250			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			1000	2330	
Travel Time (s)	22.7			22.7	53.0	
Confl. Peds. (#/hr)	1	1	1			1
Peak Hour Factor	0.83	0.83	0.88	0.88	0.87	0.87
Heavy Vehicles (%)	3%	2%	1%	3%	2%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
4: Margin Street & Gardner Street

2022 Existing Condition
Weekday Arrival

Intersection

Int Delay, s/veh 50.6

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	60	278	497	500	361	71
Future Vol, veh/h	60	278	497	500	361	71
Conflicting Peds, #/hr	1	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	360	0	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	88	88	87	87
Heavy Vehicles, %	3	2	1	3	2	0
Mvmt Flow	72	335	565	568	415	82

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	2156	458	498	0	-	0
Stage 1	457	-	-	-	-	-
Stage 2	1699	-	-	-	-	-
Critical Hdwy	6.43	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	~ 52	603	1071	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	162	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 24	602	1070	-	-	-
Mov Cap-2 Maneuver	~ 24	-	-	-	-	-
Stage 1	300	-	-	-	-	-
Stage 2	162	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	236.3	6	0
HCM LOS	F		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	1070	-	24	602	-	-
HCM Lane V/C Ratio	0.528	-	3.012	0.556	-	-
HCM Control Delay (s)	12.1	\$	1246.7	18.2	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	3.2	-	9	3.4	-	-

Notes

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

Lanes, Volumes, Timings
6: Pulaski Street & Pound Lane/Gardner Street

2022 Existing Condition

Weekday Arrival

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	26	42	555	0	8	0	270	383	5	200	0
Future Volume (vph)	12	26	42	555	0	8	0	270	383	5	200	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	14	14	14	11	11	10	13	13	13
Storage Length (ft)	0		40	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			1000			650			1000	
Travel Time (s)		11.4			22.7			14.8			22.7	
Peak Hour Factor	0.80	0.80	0.80	0.82	0.82	0.82	0.89	0.89	0.89	0.84	0.84	0.84
Heavy Vehicles (%)	0%	0%	5%	1%	0%	0%	0%	4%	2%	0%	10%	0%
Shared Lane Traffic (%)												
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Detector Phase	4	4	4	2	2			1	2	1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0			12.0	8.0	12.0	12.0	
Minimum Split (s)	10.5	10.5	10.5	13.5	13.5			20.5	13.5	20.5	20.5	
Total Split (s)	15.5	15.5	15.5	45.5	45.5			35.5	45.5	35.5	35.5	
Total Split (%)	16.1%	16.1%	16.1%	47.2%	47.2%			36.8%	47.2%	36.8%	36.8%	
Maximum Green (s)	10.0	10.0	10.0	40.0	40.0			30.0	40.0	30.0	30.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5			3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0			2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lead/Lag				Lag	Lag			Lead	Lag	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0			4.0	3.0	4.0	4.0	
Recall Mode	None	None	None	None	None			Min	None	Min	Min	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								8.0		8.0	8.0	
Pedestrian Calls (#/hr)								5		5	5	

Intersection Summary

Area Type: Other
Cycle Length: 96.5
Actuated Cycle Length: 76.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Pulaski Street & Pound Lane/Gardner Street



Queues
6: Pulaski Street & Pound Lane/Gardner Street

2022 Existing Condition
Weekday Arrival

						
Lane Group	EBT	EBR	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	48	53	687	303	430	244
v/c Ratio	0.20	0.19	0.81	0.60	0.34	0.48
Control Delay	39.8	4.5	27.1	32.2	1.0	29.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.8	4.5	27.1	32.2	1.0	29.4
Queue Length 50th (ft)	24	0	263	142	0	110
Queue Length 95th (ft)	55	6	402	235	16	175
Internal Link Dist (ft)	420		920	570		920
Turn Bay Length (ft)		40				
Base Capacity (vph)	301	324	1143	775	1325	777
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.16	0.60	0.39	0.32	0.31
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

6: Pulaski Street & Pound Lane/Gardner Street

2022 Existing Condition
Weekday Arrival

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	26	42	555	0	8	0	270	383	5	200	0
Future Volume (vph)	12	26	42	555	0	8	0	270	383	5	200	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	14	14	14	11	11	10	13	13	13
Total Lost time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		1.00			1.00	0.85		1.00	
Flt Protected		0.98	1.00		0.95			1.00	1.00		1.00	
Satd. Flow (prot)		2058	1692		1909			1766	1478		1787	
Flt Permitted		0.98	1.00		0.95			1.00	1.00		0.99	
Satd. Flow (perm)		2058	1692		1909			1766	1478		1771	
Peak-hour factor, PHF	0.80	0.80	0.80	0.82	0.82	0.82	0.89	0.89	0.89	0.84	0.84	0.84
Adj. Flow (vph)	15	32	52	677	0	10	0	303	430	6	238	0
RTOR Reduction (vph)	0	0	49	0	52	0	0	0	128	0	0	0
Lane Group Flow (vph)	0	48	4	0	635	0	0	303	302	0	244	0
Heavy Vehicles (%)	0%	0%	5%	1%	0%	0%	0%	4%	2%	0%	10%	0%
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Actuated Green, G (s)		6.3	6.3		32.0			21.8	53.8		21.8	
Effective Green, g (s)		6.3	6.3		32.0			21.8	53.8		21.8	
Actuated g/C Ratio		0.08	0.08		0.42			0.28	0.70		0.28	
Clearance Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Vehicle Extension (s)		4.0	4.0		3.0			4.0	3.0		4.0	
Lane Grp Cap (vph)		169	139		797			502	1144		504	
v/s Ratio Prot		c0.02	0.00		c0.33			c0.17	0.11			
v/s Ratio Perm									0.09		0.14	
v/c Ratio		0.28	0.03		0.80			0.60	0.26		0.48	
Uniform Delay, d1		33.0	32.3		19.5			23.7	4.2		22.7	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.3	0.1		5.5			2.4	0.1		1.0	
Delay (s)		34.3	32.5		25.0			26.0	4.3		23.7	
Level of Service		C	C		C			C	A		C	
Approach Delay (s)		33.3			25.0			13.3			23.7	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			20.4									
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			76.6									
Intersection Capacity Utilization			61.6%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
7: Endicott Street/Pulaski Street & Andover Street/Central Street

2022 Existing Condition

Weekday Arrival

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	723	60	2	804	130	89	145	15	107	95	587
Future Volume (vph)	387	723	60	2	804	130	89	145	15	107	95	587
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		0	150		75	0		0	0		430
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			No			Yes			No			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			650	
Travel Time (s)		22.7			22.7			22.7			14.8	
Peak Hour Factor	0.90	0.90	0.90	0.81	0.81	0.81	0.78	0.78	0.78	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	5%	0%	2%	2%	1%	3%	0%	4%	0%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Total Split (s)	33.0	68.0		35.0	35.0	35.0	39.0	39.0		39.0	39.0	33.0
Total Split (%)	30.8%	63.6%		32.7%	32.7%	32.7%	36.4%	36.4%		36.4%	36.4%	30.8%
Maximum Green (s)	28.0	63.0		30.0	30.0	30.0	34.0	34.0		34.0	34.0	28.0
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)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 107
Actuated Cycle Length: 100.7
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Endicott Street/Pulaski Street & Andover Street/Central Street



Queues

2022 Existing Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Arrival

							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	430	870	995	160	319	215	624
v/c Ratio	0.93	0.80	0.98	0.31	0.94	0.70	0.68
Control Delay	66.2	22.9	61.5	18.4	70.8	45.7	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.7
Total Delay	66.2	22.9	61.5	18.4	70.8	45.7	18.1
Queue Length 50th (ft)	280	420	~372	45	201	125	241
Queue Length 95th (ft)	#488	#667	#434	87	258	211	364
Internal Link Dist (ft)		920	920		920	570	
Turn Bay Length (ft)				75			430
Base Capacity (vph)	478	1106	1011	523	413	370	933
Starvation Cap Reductn	0	0	0	0	0	0	100
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.79	0.98	0.31	0.77	0.58	0.75

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Endicott Street/Pulaski Street & Andover Street/Central Street

2022 Existing Condition
Weekday Arrival

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	387	723	60	2	804	130	89	145	15	107	95	587
Future Volume (vph)	387	723	60	2	804	130	89	145	15	107	95	587
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	11	11	11
Total Lost time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.99			1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98			0.97	1.00
Satd. Flow (prot)	1711	1760			3539	1583		1813			1752	1516
Flt Permitted	0.95	1.00			0.95	1.00		0.66			0.61	1.00
Satd. Flow (perm)	1711	1760			3376	1583		1216			1090	1516
Peak-hour factor, PHF	0.90	0.90	0.90	0.81	0.81	0.81	0.78	0.78	0.78	0.94	0.94	0.94
Adj. Flow (vph)	430	803	67	2	993	160	114	186	19	114	101	624
RTOR Reduction (vph)	0	0	0	0	0	50	0	0	0	0	0	9
Lane Group Flow (vph)	430	870	0	0	995	110	0	319	0	0	215	615
Heavy Vehicles (%)	2%	3%	5%	0%	2%	2%	1%	3%	0%	4%	0%	3%
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Actuated Green, G (s)	27.2	62.4			30.2	30.2		28.3			28.3	55.5
Effective Green, g (s)	27.2	62.4			30.2	30.2		28.3			28.3	55.5
Actuated g/C Ratio	0.27	0.62			0.30	0.30		0.28			0.28	0.55
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	2.0	2.0			2.0	2.0		2.0			2.0	2.0
Lane Grp Cap (vph)	462	1090			1012	474		341			306	910
v/s Ratio Prot	c0.25	0.49										0.18
v/s Ratio Perm					c0.29	0.07		c0.26			0.20	0.22
v/c Ratio	0.93	0.80			0.98	0.23		0.94			0.70	0.68
Uniform Delay, d1	35.8	14.4			35.0	26.5		35.3			32.4	16.2
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	25.3	3.9			24.0	0.1		31.9			5.9	1.6
Delay (s)	61.1	18.3			59.0	26.6		67.2			38.3	17.7
Level of Service	E	B			E	C		E			D	B
Approach Delay (s)		32.5			54.5			67.2			23.0	
Approach LOS		C			D			E			C	
Intersection Summary												
HCM 2000 Control Delay			40.4				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			100.7				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			96.6%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Water Street & Endicott Street

2022 Existing Condition
Weekday Dismissal

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	138	641	371	456	479	111
Future Volume (vph)	138	641	371	456	479	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Storage Length (ft)	0	0	280			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			2200	1000	
Travel Time (s)	22.7			50.0	22.7	
Peak Hour Factor	0.97	0.97	0.92	0.92	0.98	0.98
Heavy Vehicles (%)	1%	2%	3%	2%	5%	1%
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Detector Phase	5	1	1	3	3	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	11.0	11.0	11.0	20.0	20.0	
Total Split (s)	20.0	19.0	19.0	45.0	45.0	
Total Split (%)	23.8%	22.6%	22.6%	53.6%	53.6%	
Maximum Green (s)	15.0	14.0	14.0	40.0	40.0	
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max	Max	None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 84
 Actuated Cycle Length: 67.4
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Water Street & Endicott Street



Queues
1: Water Street & Endicott Street

2022 Existing Condition
Weekday Dismissal

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	142	661	403	496	602
v/c Ratio	0.50	1.06	1.07	0.64	0.70
Control Delay	36.1	76.4	100.8	19.9	20.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	36.1	76.4	100.8	19.9	20.7
Queue Length 50th (ft)	57	~281	~216	162	198
Queue Length 95th (ft)	124	#594	#462	277	333
Internal Link Dist (ft)	920			2120	920
Turn Bay Length (ft)			280		
Base Capacity (vph)	411	623	376	1142	1247
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.35	1.06	1.07	0.43	0.48

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Water Street & Endicott Street

2022 Existing Condition
Weekday Dismissal

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	138	641	371	456	479	111
Future Volume (vph)	138	641	371	456	479	111
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	15	15
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1728	1531	1694	1801	1954	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1728	1531	1694	1801	1954	
Peak-hour factor, PHF	0.97	0.97	0.92	0.92	0.98	0.98
Adj. Flow (vph)	142	661	403	496	489	113
RTOR Reduction (vph)	0	0	0	0	11	0
Lane Group Flow (vph)	142	661	403	496	591	0
Heavy Vehicles (%)	1%	2%	3%	2%	5%	1%
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Actuated Green, G (s)	8.8	23.8	15.0	29.2	29.2	
Effective Green, g (s)	8.8	23.8	15.0	29.2	29.2	
Actuated g/C Ratio	0.13	0.35	0.22	0.43	0.43	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	223	648	373	773	839	
v/s Ratio Prot	0.08	c0.22	0.24	0.28	c0.30	
v/s Ratio Perm		0.21				
v/c Ratio	0.64	1.02	1.08	0.64	0.70	
Uniform Delay, d1	28.1	22.1	26.5	15.3	15.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.8	40.5	69.8	1.8	2.7	
Delay (s)	33.9	62.6	96.3	17.1	18.6	
Level of Service	C	E	F	B	B	
Approach Delay (s)	57.5			52.6	18.6	
Approach LOS	E			D	B	
Intersection Summary						
HCM 2000 Control Delay			45.4		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.94			
Actuated Cycle Length (s)			68.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			80.0%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
2: Water Street & South Liberty Street/NEHD Driveway

2022 Existing Condition

Weekday Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	2	13	4	5	5	7	594	3	2	772	327
Future Volume (vph)	205	2	13	4	5	5	7	594	3	2	772	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	15	15	15	12	12	12	13	13	15
Storage Length (ft)	60		0	0		0	120		0	0		150
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1225			500			700			2200	
Travel Time (s)		27.8			11.4			15.9			50.0	
Confl. Peds. (#/hr)				36		36			36	36		
Peak Hour Factor	0.78	0.78	0.78	0.70	0.70	0.70	0.97	0.97	0.97	0.96	0.96	0.96
Heavy Vehicles (%)	2%	0%	8%	0%	0%	0%	14%	2%	0%	0%	2%	4%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Detector Phase	2	2		2	2		1	1		1	1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	10.0	10.0		10.0	10.0		21.0	21.0		21.0	21.0	21.0
Total Split (s)	20.0	20.0		20.0	20.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	35.7%	35.7%		35.7%	35.7%		64.3%	64.3%		64.3%	64.3%	64.3%
Maximum Green (s)	15.0	15.0		15.0	15.0		31.0	31.0		31.0	31.0	31.0
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.5		2.5	2.5	2.5
Recall Mode	None	None		None	None		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other
 Cycle Length: 56
 Actuated Cycle Length: 52
 Natural Cycle: 55
 Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Water Street & South Liberty Street/NEHD Driveway



Queues

2022 Existing Condition

2: Water Street & South Liberty Street/NEHD Driveway

Weekday Dismissal

							
Lane Group	EBL	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	263	20	20	7	615	806	341
v/c Ratio	0.75	0.05	0.04	0.04	0.60	0.76	0.31
Control Delay	34.1	9.3	13.0	6.6	11.2	15.6	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	34.1	9.3	13.0	6.6	11.2	15.6	1.8
Queue Length 50th (ft)	79	1	3	1	121	183	0
Queue Length 95th (ft)	#124	11	12	6	206	314	28
Internal Link Dist (ft)		1145	420		620	2120	
Turn Bay Length (ft)	60			120			150
Base Capacity (vph)	406	466	527	189	1128	1165	1169
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	0.65	0.04	0.04	0.04	0.55	0.69	0.29

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Water Street & South Liberty Street/NEHD Driveway

2022 Existing Condition
Weekday Dismissal

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	205	2	13	4	5	5	7	594	3	2	772	327
Future Volume (vph)	205	2	13	4	5	5	7	594	3	2	772	327
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	15	15	15	12	12	12	13	13	15
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00			0.97		1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00			0.98		1.00	1.00			1.00	1.00
Frt	1.00	0.87			0.95		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770	1552			1861		1583	1861			1925	1708
Flt Permitted	0.74	1.00			0.94		0.19	1.00			1.00	1.00
Satd. Flow (perm)	1386	1552			1777		311	1861			1923	1708
Peak-hour factor, PHF	0.78	0.78	0.78	0.70	0.70	0.70	0.97	0.97	0.97	0.96	0.96	0.96
Adj. Flow (vph)	263	3	17	6	7	7	7	612	3	2	804	341
RTOR Reduction (vph)	0	13	0	0	5	0	0	0	0	0	0	153
Lane Group Flow (vph)	263	7	0	0	15	0	7	615	0	0	806	188
Confl. Peds. (#/hr)				36		36			36	36		
Heavy Vehicles (%)	2%	0%	8%	0%	0%	0%	14%	2%	0%	0%	2%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Actuated Green, G (s)	13.2	13.2			13.2		28.6	28.6			28.6	28.6
Effective Green, g (s)	13.2	13.2			13.2		28.6	28.6			28.6	28.6
Actuated g/C Ratio	0.25	0.25			0.25		0.55	0.55			0.55	0.55
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		2.5	2.5			2.5	2.5
Lane Grp Cap (vph)	353	395			452		171	1027			1061	943
v/s Ratio Prot		0.00						0.33				
v/s Ratio Perm	c0.19				0.01		0.02				c0.42	0.11
v/c Ratio	0.75	0.02			0.03		0.04	0.60			0.76	0.20
Uniform Delay, d1	17.8	14.5			14.5		5.3	7.8			8.9	5.8
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	8.3	0.0			0.0		0.1	0.8			3.0	0.1
Delay (s)	26.0	14.5			14.5		5.4	8.5			12.0	5.9
Level of Service	C	B			B		A	A			B	A
Approach Delay (s)		25.2			14.5			8.5			10.2	
Approach LOS		C			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.8									
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			51.8									
Intersection Capacity Utilization			68.6%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
4: Margin Street & Gardner Street

2022 Existing Condition
Weekday Dismissal

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	44	303	473	505	681	33
Future Volume (vph)	44	303	473	505	681	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	15
Storage Length (ft)	360	0	250			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			1000	2330	
Travel Time (s)	22.7			22.7	53.0	
Confl. Peds. (#/hr)	3	3	3			3
Peak Hour Factor	0.94	0.94	0.91	0.91	0.94	0.94
Heavy Vehicles (%)	5%	0%	2%	2%	1%	3%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
4: Margin Street & Gardner Street

2022 Existing Condition
Weekday Dismissal

Intersection

Int Delay, s/veh 40.6

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	44	303	473	505	681	33
Future Vol, veh/h	44	303	473	505	681	33
Conflicting Peds, #/hr	3	3	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	360	0	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	91	91	94	94
Heavy Vehicles, %	5	0	2	2	1	3
Mvmt Flow	47	322	520	555	724	35

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	2343	748	762	0	-	0
Stage 1	745	-	-	-	-	-
Stage 2	1598	-	-	-	-	-
Critical Hdwy	6.45	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	~ 39	416	850	-	-	-
Stage 1	464	-	-	-	-	-
Stage 2	179	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 15	414	848	-	-	-
Mov Cap-2 Maneuver	~ 15	-	-	-	-	-
Stage 1	179	-	-	-	-	-
Stage 2	178	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	220.2	7.6	0
HCM LOS	F		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	848	-	15	414	-	-
HCM Lane V/C Ratio	0.613	-	3.121	0.779	-	-
HCM Control Delay (s)	15.7	\$	1473.6	38.2	-	-
HCM Lane LOS	C	-	F	E	-	-
HCM 95th %tile Q(veh)	4.3	-	6.6	6.7	-	-

Notes

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

Lanes, Volumes, Timings
6: Pulaski Street & Pound Lane/Gardner Street

2022 Existing Condition

Weekday Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	23	31	524	0	24	0	244	419	7	374	0
Future Volume (vph)	13	23	31	524	0	24	0	244	419	7	374	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	14	14	14	11	11	10	13	13	13
Storage Length (ft)	0		40	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			1000			650			1000	
Travel Time (s)		11.4			22.7			14.8			22.7	
Peak Hour Factor	0.84	0.84	0.84	0.86	0.86	0.86	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	8%	4%	0%	2%	0%	0%	0%	5%	1%	0%	2%	0%
Shared Lane Traffic (%)												
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Detector Phase	4	4	4	2	2			1	2	1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0			12.0	8.0	12.0	12.0	
Minimum Split (s)	10.5	10.5	10.5	13.5	13.5			23.5	13.5	23.5	23.5	
Total Split (s)	15.5	15.5	15.5	45.5	45.5			35.5	45.5	35.5	35.5	
Total Split (%)	16.1%	16.1%	16.1%	47.2%	47.2%			36.8%	47.2%	36.8%	36.8%	
Maximum Green (s)	10.0	10.0	10.0	40.0	40.0			30.0	40.0	30.0	30.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5			3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0			2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lead/Lag				Lag	Lag			Lead	Lag	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0			4.0	3.0	4.0	4.0	
Recall Mode	None	None	None	None	None			Min	None	Min	Min	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								8.0		8.0	8.0	
Pedestrian Calls (#/hr)								5		5	5	

Intersection Summary

Area Type: Other
 Cycle Length: 96.5
 Actuated Cycle Length: 76.5
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Pulaski Street & Pound Lane/Gardner Street



Queues
6: Pulaski Street & Pound Lane/Gardner Street

2022 Existing Condition
Weekday Dismissal

						
Lane Group	EBT	EBR	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	42	37	637	249	428	389
v/c Ratio	0.19	0.13	0.79	0.47	0.33	0.67
Control Delay	40.2	0.9	26.6	28.1	1.0	32.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.2	0.9	26.6	28.1	1.0	32.6
Queue Length 50th (ft)	21	0	244	106	0	178
Queue Length 95th (ft)	53	0	393	195	17	306
Internal Link Dist (ft)	420		920	570		920
Turn Bay Length (ft)		40				
Base Capacity (vph)	287	339	1128	775	1353	848
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.11	0.56	0.32	0.32	0.46
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

6: Pulaski Street & Pound Lane/Gardner Street

2022 Existing Condition

Weekday Dismissal

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	23	31	524	0	24	0	244	419	7	374	0
Future Volume (vph)	13	23	31	524	0	24	0	244	419	7	374	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	14	14	14	11	11	10	13	13	13
Total Lost time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		0.99			1.00	0.85		1.00	
Flt Protected		0.98	1.00		0.95			1.00	1.00		1.00	
Satd. Flow (prot)		1948	1776		1887			1749	1492		1924	
Flt Permitted		0.98	1.00		0.95			1.00	1.00		0.99	
Satd. Flow (perm)		1948	1776		1887			1749	1492		1913	
Peak-hour factor, PHF	0.84	0.84	0.84	0.86	0.86	0.86	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	27	37	609	0	28	0	249	428	7	382	0
RTOR Reduction (vph)	0	0	34	0	54	0	0	0	127	0	0	0
Lane Group Flow (vph)	0	42	3	0	583	0	0	249	301	0	389	0
Heavy Vehicles (%)	8%	4%	0%	2%	0%	0%	0%	5%	1%	0%	2%	0%
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Actuated Green, G (s)		6.2	6.2		30.7			23.2	53.9		23.2	
Effective Green, g (s)		6.2	6.2		30.7			23.2	53.9		23.2	
Actuated g/C Ratio		0.08	0.08		0.40			0.30	0.70		0.30	
Clearance Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Vehicle Extension (s)		4.0	4.0		3.0			4.0	3.0		4.0	
Lane Grp Cap (vph)		157	143		756			529	1156		579	
v/s Ratio Prot		c0.02	0.00		c0.31			0.14	0.10			
v/s Ratio Perm									0.10		c0.20	
v/c Ratio		0.27	0.02		0.77			0.47	0.26		0.67	
Uniform Delay, d1		33.1	32.4		19.9			21.7	4.1		23.4	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.3	0.1		4.9			0.9	0.1		3.3	
Delay (s)		34.3	32.5		24.8			22.6	4.2		26.7	
Level of Service		C	C		C			C	A		C	
Approach Delay (s)		33.5			24.8			11.0			26.7	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			20.4			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			76.6			Sum of lost time (s)			16.5			
Intersection Capacity Utilization			71.6%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
7: Endicott Street/Pulaski Street & Andover Street/Central Street

2022 Existing Condition

Weekday Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	384	806	58	8	664	144	88	139	20	187	178	552
Future Volume (vph)	384	806	58	8	664	144	88	139	20	187	178	552
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		0	150		75	0		0	0		430
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			No			Yes			No			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			650	
Travel Time (s)		22.7			22.7			22.7			14.8	
Peak Hour Factor	0.97	0.97	0.97	0.81	0.81	0.81	0.89	0.89	0.89	0.95	0.95	0.95
Heavy Vehicles (%)	4%	2%	2%	0%	1%	4%	1%	0%	10%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Total Split (s)	33.0	68.0		35.0	35.0	35.0	29.0	29.0		29.0	29.0	33.0
Total Split (%)	34.0%	70.1%		36.1%	36.1%	36.1%	29.9%	29.9%		29.9%	29.9%	34.0%
Maximum Green (s)	28.0	63.0		30.0	30.0	30.0	24.0	24.0		24.0	24.0	28.0
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)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	None

Intersection Summary

Area Type: Other
 Cycle Length: 97
 Actuated Cycle Length: 90.1
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Endicott Street/Pulaski Street & Andover Street/Central Street



Queues

2022 Existing Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Dismissal

							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	396	891	830	178	277	384	581
v/c Ratio	0.88	0.81	0.84	0.34	1.56	1.24	0.63
Control Delay	54.1	19.8	39.0	15.3	302.7	163.7	15.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.1	19.8	39.0	15.3	302.7	163.7	15.5
Queue Length 50th (ft)	227	347	244	40	~251	~311	208
Queue Length 95th (ft)	#380	522	276	79	#404	#490	323
Internal Link Dist (ft)		920	920		920	570	
Turn Bay Length (ft)				75			430
Base Capacity (vph)	527	1262	1133	581	178	310	991
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	0.75	0.71	0.73	0.31	1.56	1.24	0.59

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Endicott Street/Pulaski Street & Andover Street/Central Street

2022 Existing Condition
Weekday Dismissal

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	384	806	58	8	664	144	88	139	20	187	178	552
Future Volume (vph)	384	806	58	8	664	144	88	139	20	187	178	552
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	11	11	11
Total Lost time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.99			1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98			0.97	1.00
Satd. Flow (prot)	1678	1782			3573	1553		1826			1756	1531
Flt Permitted	0.95	1.00			0.94	1.00		0.36			0.64	1.00
Satd. Flow (perm)	1678	1782			3365	1553		663			1152	1531
Peak-hour factor, PHF	0.97	0.97	0.97	0.81	0.81	0.81	0.89	0.89	0.89	0.95	0.95	0.95
Adj. Flow (vph)	396	831	60	10	820	178	99	156	22	197	187	581
RTOR Reduction (vph)	0	0	0	0	0	62	0	0	0	0	0	14
Lane Group Flow (vph)	396	891	0	0	830	116	0	277	0	0	384	567
Heavy Vehicles (%)	4%	2%	2%	0%	1%	4%	1%	0%	10%	2%	2%	2%
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Actuated Green, G (s)	24.2	55.7			26.5	26.5		24.3			24.3	48.5
Effective Green, g (s)	24.2	55.7			26.5	26.5		24.3			24.3	48.5
Actuated g/C Ratio	0.27	0.62			0.29	0.29		0.27			0.27	0.54
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	2.0	2.0			2.0	2.0		2.0			2.0	2.0
Lane Grp Cap (vph)	451	1102			990	457		179			311	910
v/s Ratio Prot	0.24	c0.50										0.17
v/s Ratio Perm					0.25	0.07		c0.42			0.33	0.20
v/c Ratio	0.88	0.81			0.84	0.25		1.55			1.23	0.62
Uniform Delay, d1	31.5	13.1			29.7	24.2		32.9			32.9	14.4
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	16.8	4.2			6.0	0.1		272.1			130.3	1.0
Delay (s)	48.3	17.3			35.8	24.3		305.0			163.2	15.4
Level of Service	D	B			D	C		F			F	B
Approach Delay (s)		26.8			33.8			305.0			74.2	
Approach LOS		C			C			F			E	
Intersection Summary												
HCM 2000 Control Delay			63.5				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.10									
Actuated Cycle Length (s)			90.0				Sum of lost time (s)		15.0			
Intersection Capacity Utilization			114.3%				ICU Level of Service		H			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Water Street & Endicott Street

2022 Existing Condition
Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	181	713	331	464	478	95
Future Volume (vph)	181	713	331	464	478	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Storage Length (ft)	0	0	280			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			2200	1000	
Travel Time (s)	22.7			50.0	22.7	
Peak Hour Factor	0.99	0.99	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	1%	2%	2%	2%	0%
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Detector Phase	5	1	1	3	3	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	11.0	11.0	11.0	20.0	20.0	
Total Split (s)	25.0	35.0	35.0	45.0	45.0	
Total Split (%)	23.8%	33.3%	33.3%	42.9%	42.9%	
Maximum Green (s)	20.0	30.0	30.0	40.0	40.0	
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max	Max	None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 95.7
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Water Street & Endicott Street



Queues
1: Water Street & Endicott Street

2022 Existing Condition
Weekday Evening

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	183	720	364	510	629
v/c Ratio	0.67	0.89	0.67	0.77	0.84
Control Delay	51.8	36.1	37.9	35.8	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	51.8	36.1	37.9	35.8	39.1
Queue Length 50th (ft)	112	412	208	270	341
Queue Length 95th (ft)	185	#667	#336	422	#533
Internal Link Dist (ft)	920			2120	920
Turn Bay Length (ft)			280		
Base Capacity (vph)	368	813	542	761	856
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.50	0.89	0.67	0.67	0.73

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Water Street & Endicott Street

2022 Existing Condition
Weekday Evening

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	181	713	331	464	478	95
Future Volume (vph)	181	713	331	464	478	95
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	15	15
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1745	1546	1711	1801	2010	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1745	1546	1711	1801	2010	
Peak-hour factor, PHF	0.99	0.99	0.91	0.91	0.91	0.91
Adj. Flow (vph)	183	720	364	510	525	104
RTOR Reduction (vph)	0	0	0	0	7	0
Lane Group Flow (vph)	183	720	364	510	622	0
Heavy Vehicles (%)	0%	1%	2%	2%	2%	0%
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Actuated Green, G (s)	14.9	45.2	30.3	35.3	35.3	
Effective Green, g (s)	14.9	45.2	30.3	35.3	35.3	
Actuated g/C Ratio	0.16	0.47	0.32	0.37	0.37	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	272	812	542	665	742	
v/s Ratio Prot	0.10	c0.28	0.21	0.28	c0.31	
v/s Ratio Perm		0.18				
v/c Ratio	0.67	0.89	0.67	0.77	0.84	
Uniform Delay, d1	38.0	22.8	28.3	26.5	27.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.4	11.4	6.5	5.3	8.2	
Delay (s)	44.4	34.3	34.8	31.8	35.7	
Level of Service	D	C	C	C	D	
Approach Delay (s)	36.3			33.0	35.7	
Approach LOS	D			C	D	
Intersection Summary						
HCM 2000 Control Delay			35.0		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.92			
Actuated Cycle Length (s)			95.5		Sum of lost time (s)	15.0
Intersection Capacity Utilization			83.4%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
2: Water Street & South Liberty Street/NEHD Driveway

2022 Existing Condition
Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	1	6	1	1	6	18	590	2	4	915	251
Future Volume (vph)	171	1	6	1	1	6	18	590	2	4	915	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	15	15	15	12	12	12	13	13	15
Storage Length (ft)	60		0	0		0	120		0	0		150
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1225			500			700			2200	
Travel Time (s)		27.8			11.4			15.9			50.0	
Peak Hour Factor	0.84	0.84	0.84	0.67	0.67	0.67	0.89	0.89	0.89	0.96	0.96	0.96
Heavy Vehicles (%)	2%	0%	0%	0%	0%	17%	6%	1%	0%	25%	1%	2%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Detector Phase	2	2		2	2		1	1		1	1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	10.0	10.0		10.0	10.0		21.0	21.0		21.0	21.0	21.0
Total Split (s)	20.0	20.0		20.0	20.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	35.7%	35.7%		35.7%	35.7%		64.3%	64.3%		64.3%	64.3%	64.3%
Maximum Green (s)	15.0	15.0		15.0	15.0		31.0	31.0		31.0	31.0	31.0
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.5		2.5	2.5	2.5
Recall Mode	None	None		None	None		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other
Cycle Length: 56
Actuated Cycle Length: 50.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Water Street & South Liberty Street/NEHD Driveway



Queues

2022 Existing Condition

2: Water Street & South Liberty Street/NEHD Driveway

Weekday Evening

							
Lane Group	EBL	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	204	8	11	20	665	957	261
v/c Ratio	0.62	0.02	0.03	0.12	0.54	0.75	0.21
Control Delay	27.5	10.4	10.3	8.3	9.5	15.7	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.5	10.4	10.3	8.3	9.5	15.7	1.5
Queue Length 50th (ft)	58	0	1	3	121	222	0
Queue Length 95th (ft)	105	8	7	13	225	#501	24
Internal Link Dist (ft)		1145	420		620	2120	
Turn Bay Length (ft)	60			120			150
Base Capacity (vph)	421	502	489	166	1236	1273	1234
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	0.48	0.02	0.02	0.12	0.54	0.75	0.21

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Water Street & South Liberty Street/NEHD Driveway

2022 Existing Condition
Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	171	1	6	1	1	6	18	590	2	4	915	251
Future Volume (vph)	171	1	6	1	1	6	18	590	2	4	915	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	15	15	15	12	12	12	13	13	15
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.87			0.89		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770	1651			1625		1703	1880			1942	1742
Flt Permitted	0.75	1.00			0.98		0.14	1.00			1.00	1.00
Satd. Flow (perm)	1398	1651			1601		252	1880			1938	1742
Peak-hour factor, PHF	0.84	0.84	0.84	0.67	0.67	0.67	0.89	0.89	0.89	0.96	0.96	0.96
Adj. Flow (vph)	204	1	7	1	1	9	20	663	2	4	953	261
RTOR Reduction (vph)	0	6	0	0	7	0	0	0	0	0	0	100
Lane Group Flow (vph)	204	2	0	0	4	0	20	665	0	0	957	161
Heavy Vehicles (%)	2%	0%	0%	0%	0%	17%	6%	1%	0%	25%	1%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Actuated Green, G (s)	10.0	10.0			10.0		32.1	32.1			32.1	32.1
Effective Green, g (s)	10.0	10.0			10.0		32.1	32.1			32.1	32.1
Actuated g/C Ratio	0.19	0.19			0.19		0.62	0.62			0.62	0.62
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		2.5	2.5			2.5	2.5
Lane Grp Cap (vph)	268	316			307		155	1158			1194	1073
v/s Ratio Prot		0.00						0.35				
v/s Ratio Perm	c0.15				0.00		0.08				c0.49	0.09
v/c Ratio	0.76	0.01			0.01		0.13	0.57			0.80	0.15
Uniform Delay, d1	19.9	17.0			17.0		4.2	5.9			7.6	4.2
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	12.0	0.0			0.0		0.3	0.6			3.9	0.0
Delay (s)	31.9	17.0			17.1		4.4	6.5			11.4	4.3
Level of Service	C	B			B		A	A			B	A
Approach Delay (s)		31.4			17.1			6.4			9.9	
Approach LOS		C			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.0									
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			52.1									
Intersection Capacity Utilization			75.8%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
4: Margin Street & Gardner Street

2022 Existing Condition
Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	36	329	409	487	755	33
Future Volume (vph)	36	329	409	487	755	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	15
Storage Length (ft)	360	0	250			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			1000	2330	
Travel Time (s)	22.7			22.7	53.0	
Peak Hour Factor	0.88	0.88	0.96	0.96	0.87	0.87
Heavy Vehicles (%)	0%	0%	1%	3%	1%	3%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

Intersection

Int Delay, s/veh	36.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	36	329	409	487	755	33
Future Vol, veh/h	36	329	409	487	755	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	360	0	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	96	96	87	87
Heavy Vehicles, %	0	0	1	3	1	3
Mvmt Flow	41	374	426	507	868	38

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2246	887	906	0	-	0
Stage 1	887	-	-	-	-	-
Stage 2	1359	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	47	~ 346	755	-	-	-
Stage 1	406	-	-	-	-	-
Stage 2	241	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 20	~ 346	755	-	-	-
Mov Cap-2 Maneuver	~ 20	-	-	-	-	-
Stage 1	177	-	-	-	-	-
Stage 2	241	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	184.2	7.2	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	755	-	20	346	-	-
HCM Lane V/C Ratio	0.564	-	2.045	1.081	-	-
HCM Control Delay (s)	15.8	-	\$ 890.3	106.9	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	3.6	-	5.4	13.7	-	-

Notes

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

Lanes, Volumes, Timings
6: Pulaski Street & Pound Lane/Gardner Street

2022 Existing Condition

Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	21	24	500	0	10	0	222	423	10	373	0
Future Volume (vph)	12	21	24	500	0	10	0	222	423	10	373	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	14	14	14	11	11	10	13	13	13
Storage Length (ft)	0		40	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			1000			650			1000	
Travel Time (s)		11.4			22.7			14.8			22.7	
Peak Hour Factor	0.84	0.84	0.84	0.92	0.92	0.92	0.95	0.95	0.95	0.89	0.89	0.89
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	0%	4%	0%	0%	3%	0%
Shared Lane Traffic (%)												
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Detector Phase	4	4	4	2	2			1	2	1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0			12.0	8.0	12.0	12.0	
Minimum Split (s)	10.5	10.5	10.5	13.5	13.5			20.5	13.5	20.5	20.5	
Total Split (s)	15.5	15.5	15.5	45.5	45.5			35.5	45.5	35.5	35.5	
Total Split (%)	16.1%	16.1%	16.1%	47.2%	47.2%			36.8%	47.2%	36.8%	36.8%	
Maximum Green (s)	10.0	10.0	10.0	40.0	40.0			30.0	40.0	30.0	30.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5			3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0			2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lead/Lag				Lag	Lag			Lead	Lag	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0			4.0	3.0	4.0	4.0	
Recall Mode	None	None	None	None	None			Min	None	Min	Min	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								8.0		8.0	8.0	
Pedestrian Calls (#/hr)								5		5	5	

Intersection Summary

Area Type: Other
Cycle Length: 96.5
Actuated Cycle Length: 71.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Pulaski Street & Pound Lane/Gardner Street



Queues
6: Pulaski Street & Pound Lane/Gardner Street

2022 Existing Condition
Weekday Evening

						
Lane Group	EBT	EBR	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	39	29	554	234	445	430
v/c Ratio	0.16	0.10	0.69	0.39	0.33	0.68
Control Delay	38.6	0.7	22.0	24.4	0.9	30.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.6	0.7	22.0	24.4	0.9	30.2
Queue Length 50th (ft)	19	0	200	91	0	188
Queue Length 95th (ft)	50	0	342	183	17	342
Internal Link Dist (ft)	420		920	570		920
Turn Bay Length (ft)		40				
Base Capacity (vph)	327	359	1211	845	1400	903
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.08	0.46	0.28	0.32	0.48
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

6: Pulaski Street & Pound Lane/Gardner Street

2022 Existing Condition

Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	21	24	500	0	10	0	222	423	10	373	0
Future Volume (vph)	12	21	24	500	0	10	0	222	423	10	373	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	14	14	14	11	11	10	13	13	13
Total Lost time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		1.00			1.00	0.85		1.00	
Flt Protected		0.98	1.00		0.95			1.00	1.00		1.00	
Satd. Flow (prot)		2053	1776		1908			1766	1507		1905	
Flt Permitted		0.98	1.00		0.95			1.00	1.00		0.99	
Satd. Flow (perm)		2053	1776		1908			1766	1507		1889	
Peak-hour factor, PHF	0.84	0.84	0.84	0.92	0.92	0.92	0.95	0.95	0.95	0.89	0.89	0.89
Adj. Flow (vph)	14	25	29	543	0	11	0	234	445	11	419	0
RTOR Reduction (vph)	0	0	27	0	55	0	0	0	127	0	0	0
Lane Group Flow (vph)	0	39	2	0	499	0	0	234	318	0	430	0
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	0%	4%	0%	0%	3%	0%
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Actuated Green, G (s)		4.3	4.3		28.1			24.2	52.3		24.2	
Effective Green, g (s)		4.3	4.3		28.1			24.2	52.3		24.2	
Actuated g/C Ratio		0.06	0.06		0.38			0.33	0.72		0.33	
Clearance Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Vehicle Extension (s)		4.0	4.0		3.0			4.0	3.0		4.0	
Lane Grp Cap (vph)		120	104		733			584	1191		625	
v/s Ratio Prot		c0.02	0.00		c0.26			0.13	0.10			
v/s Ratio Perm									0.11		c0.23	
v/c Ratio		0.33	0.02		0.68			0.40	0.27		0.69	
Uniform Delay, d1		33.0	32.4		18.8			18.9	3.7		21.2	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		2.2	0.1		2.6			0.6	0.1		3.4	
Delay (s)		35.2	32.5		21.4			19.5	3.8		24.6	
Level of Service		D	C		C			B	A		C	
Approach Delay (s)		34.0			21.4			9.2			24.6	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			17.9			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			73.1			Sum of lost time (s)			16.5			
Intersection Capacity Utilization			71.8%			ICU Level of Service			C			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

7: Endicott Street/Pulaski Street & Andover Street/Central Street

2022 Existing Condition

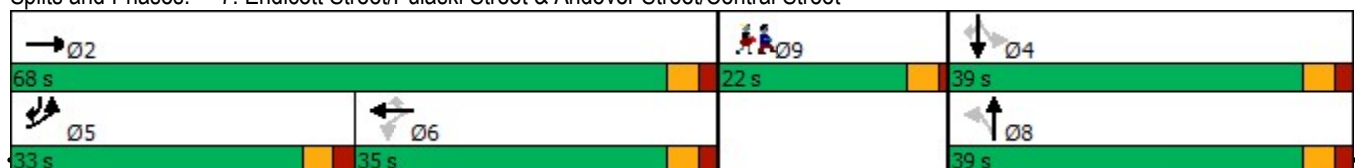
Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	392	831	74	3	736	127	82	143	10	136	168	587
Future Volume (vph)	392	831	74	3	736	127	82	143	10	136	168	587
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		0	150		75	0		0	0		430
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			No			Yes			No			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			650	
Travel Time (s)		22.7			22.7			22.7			14.8	
Peak Hour Factor	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.88	0.88	0.88
Heavy Vehicles (%)	2%	1%	0%	0%	1%	4%	1%	0%	0%	1%	4%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Total Split (s)	33.0	68.0		35.0	35.0	35.0	39.0	39.0		39.0	39.0	33.0
Total Split (%)	25.6%	52.7%		27.1%	27.1%	27.1%	30.2%	30.2%		30.2%	30.2%	25.6%
Maximum Green (s)	28.0	63.0		30.0	30.0	30.0	34.0	34.0		34.0	34.0	28.0
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)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												

Intersection Summary

Area Type: Other
 Cycle Length: 129
 Actuated Cycle Length: 111.4
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Endicott Street/Pulaski Street & Andover Street/Central Street



Lane Group Ø9

Lane Configurations
 Traffic Volume (vph)
 Future Volume (vph)
 Ideal Flow (vphpl)
 Lane Width (ft)
 Storage Length (ft)
 Storage Lanes
 Taper Length (ft)
 Right Turn on Red
 Link Speed (mph)
 Link Distance (ft)
 Travel Time (s)
 Peak Hour Factor
 Heavy Vehicles (%)
 Shared Lane Traffic (%)
 Turn Type
 Protected Phases 9
 Permitted Phases
 Detector Phase
 Switch Phase
 Minimum Initial (s) 7.0
 Minimum Split (s) 22.0
 Total Split (s) 22.0
 Total Split (%) 17%
 Maximum Green (s) 18.0
 Yellow Time (s) 3.0
 All-Red Time (s) 1.0
 Lost Time Adjust (s)
 Total Lost Time (s)
 Lead/Lag
 Lead-Lag Optimize?
 Vehicle Extension (s) 3.0
 Recall Mode None
 Walk Time (s) 7.0
 Flash Dont Walk (s) 11.0
 Pedestrian Calls (#/hr) 10

Intersection Summary

Queues

2022 Existing Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Evening

							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	404	933	794	137	264	346	667
v/c Ratio	0.94	0.91	0.86	0.28	0.96	0.93	0.61
Control Delay	71.8	37.1	50.1	14.6	85.3	71.7	8.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Total Delay	71.8	37.1	50.1	14.6	85.3	71.7	8.4
Queue Length 50th (ft)	268	512	268	22	174	226	74
Queue Length 95th (ft)	#582	#1110	#493	87	#420	#500	257
Internal Link Dist (ft)		920	920		920	570	
Turn Bay Length (ft)				75			430
Base Capacity (vph)	432	1022	921	488	274	371	1099
Starvation Cap Reductn	0	0	0	0	0	0	115
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	0.91	0.86	0.28	0.96	0.93	0.68

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Endicott Street/Pulaski Street & Andover Street/Central Street

2022 Existing Condition
Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					 							
Traffic Volume (vph)	392	831	74	3	736	127	82	143	10	136	168	587
Future Volume (vph)	392	831	74	3	736	127	82	143	10	136	168	587
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	11	11	11
Total Lost time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.99			1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98			0.98	1.00
Satd. Flow (prot)	1711	1798			3574	1553		1851			1750	1546
Flt Permitted	0.95	1.00			0.95	1.00		0.48			0.68	1.00
Satd. Flow (perm)	1711	1798			3403	1553		896			1210	1546
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.89	0.89	0.89	0.88	0.88	0.88
Adj. Flow (vph)	404	857	76	3	791	137	92	161	11	155	191	667
RTOR Reduction (vph)	0	0	0	0	0	69	0	0	0	0	0	189
Lane Group Flow (vph)	404	933	0	0	794	68	0	264	0	0	346	478
Heavy Vehicles (%)	2%	1%	0%	0%	1%	4%	1%	0%	0%	1%	4%	1%
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Actuated Green, G (s)	28.2	63.4			30.2	30.2		34.2			34.2	62.4
Effective Green, g (s)	28.2	63.4			30.2	30.2		34.2			34.2	62.4
Actuated g/C Ratio	0.25	0.55			0.26	0.26		0.30			0.30	0.54
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	2.0	2.0			2.0	2.0		2.0			2.0	2.0
Lane Grp Cap (vph)	420	993			895	408		267			360	908
v/s Ratio Prot	0.24	c0.52										0.13
v/s Ratio Perm					0.23	0.04		c0.29			0.29	0.18
v/c Ratio	0.96	0.94			0.89	0.17		0.99			0.96	0.53
Uniform Delay, d1	42.7	23.9			40.6	32.6		40.1			39.6	16.7
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	33.8	15.6			10.3	0.1		51.3			36.9	0.3
Delay (s)	76.5	39.5			50.9	32.6		91.4			76.5	17.0
Level of Service	E	D			D	C		F			E	B
Approach Delay (s)		50.7			48.2			91.4			37.3	
Approach LOS		D			D			F			D	
Intersection Summary												
HCM 2000 Control Delay			49.2				HCM 2000 Level of Service				D	
HCM 2000 Volume to Capacity ratio			0.98									
Actuated Cycle Length (s)			114.7				Sum of lost time (s)			19.0		
Intersection Capacity Utilization			114.4%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Water Street & Endicott Street

2029 No-Build Condition
Weekday Arrival

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	315	307	485	366	65
Future Volume (vph)	50	315	307	485	366	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Storage Length (ft)	0	0	280			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			2200	1000	
Travel Time (s)	22.7			50.0	22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	4%	5%	3%	2%
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Detector Phase	5	1	1	3	3	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	11.0	11.0	11.0	20.0	20.0	
Total Split (s)	25.0	35.0	35.0	45.0	45.0	
Total Split (%)	23.8%	33.3%	33.3%	42.9%	42.9%	
Maximum Green (s)	20.0	30.0	30.0	40.0	40.0	
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max	Max	None	None	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 81.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Water Street & Endicott Street



Queues
1: Water Street & Endicott Street

2029 No-Build Condition
Weekday Arrival

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	54	342	334	527	469
v/c Ratio	0.30	0.47	0.52	0.77	0.60
Control Delay	42.6	18.0	27.0	30.5	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	42.6	18.0	27.0	30.5	23.1
Queue Length 50th (ft)	28	117	149	247	196
Queue Length 95th (ft)	68	212	270	391	307
Internal Link Dist (ft)	920			2120	920
Turn Bay Length (ft)			280		
Base Capacity (vph)	446	725	644	895	1024
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.12	0.47	0.52	0.59	0.46
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

1: Water Street & Endicott Street

2029 No-Build Condition

Weekday Arrival

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	315	307	485	366	65
Future Volume (vph)	50	315	307	485	366	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	15	15
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1745	1516	1678	1749	1991	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1745	1516	1678	1749	1991	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	342	334	527	398	71
RTOR Reduction (vph)	0	0	0	0	6	0
Lane Group Flow (vph)	54	342	334	527	463	0
Heavy Vehicles (%)	0%	3%	4%	5%	3%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Actuated Green, G (s)	5.1	36.2	31.1	31.9	31.9	
Effective Green, g (s)	5.1	36.2	31.1	31.9	31.9	
Actuated g/C Ratio	0.06	0.44	0.37	0.38	0.38	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	107	751	627	671	764	
v/s Ratio Prot	0.03	c0.17	c0.20	c0.30	0.23	
v/s Ratio Perm		0.06				
v/c Ratio	0.50	0.46	0.53	0.79	0.61	
Uniform Delay, d1	37.8	16.5	20.3	22.6	20.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.7	0.4	3.2	6.0	1.4	
Delay (s)	41.5	17.0	23.5	28.6	21.9	
Level of Service	D	B	C	C	C	
Approach Delay (s)	20.3			26.6	21.9	
Approach LOS	C			C	C	
Intersection Summary						
HCM 2000 Control Delay			23.9	HCM 2000 Level of Service		C
HCM 2000 Volume to Capacity ratio			0.66			
Actuated Cycle Length (s)			83.1	Sum of lost time (s)		15.0
Intersection Capacity Utilization			57.7%	ICU Level of Service		B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
2: Water Street & South Liberty Street/NEHD Driveway

2029 No-Build Condition

Weekday Arrival

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	4	17	4	3	6	2	596	2	0	541	131
Future Volume (vph)	176	4	17	4	3	6	2	596	2	0	541	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	15	15	15	12	12	12	13	13	15
Storage Length (ft)	60		0	0		0	120		0	0		150
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1225			500			700			2200	
Travel Time (s)		27.8			11.4			15.9			50.0	
Peak Hour Factor	0.93	0.93	0.93	0.65	0.65	0.65	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	19%	0%	0%	0%	50%	2%	0%	0%	3%	4%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Detector Phase	2	2		2	2		1	1		1	1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	10.0	10.0		10.0	10.0		21.0	21.0		21.0	21.0	21.0
Total Split (s)	20.0	20.0		20.0	20.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	35.7%	35.7%		35.7%	35.7%		64.3%	64.3%		64.3%	64.3%	64.3%
Maximum Green (s)	15.0	15.0		15.0	15.0		31.0	31.0		31.0	31.0	31.0
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.5		2.5	2.5	2.5
Recall Mode	None	None		None	None		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other
Cycle Length: 56
Actuated Cycle Length: 46.7
Natural Cycle: 45
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Water Street & South Liberty Street/NEHD Driveway



Queues

2029 No-Build Condition

2: Water Street & South Liberty Street/NEHD Driveway

Weekday Arrival

							
Lane Group	EBL	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	189	22	20	2	650	588	142
v/c Ratio	0.59	0.06	0.04	0.01	0.55	0.49	0.13
Control Delay	25.0	9.5	12.1	5.5	9.9	8.9	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.0	9.5	12.1	5.5	9.9	8.9	1.7
Queue Length 50th (ft)	45	1	2	0	110	94	0
Queue Length 95th (ft)	108	15	10	3	224	189	18
Internal Link Dist (ft)		1145	420		620	2120	
Turn Bay Length (ft)	60			120			150
Base Capacity (vph)	443	490	609	336	1330	1361	1260
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	0.43	0.04	0.03	0.01	0.49	0.43	0.11
Intersection Summary							

HCM Signalized Intersection Capacity Analysis

2: Water Street & South Liberty Street/NEHD Driveway

2029 No-Build Condition

Weekday Arrival

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	176	4	17	4	3	6	2	596	2	0	541	131
Future Volume (vph)	176	4	17	4	3	6	2	596	2	0	541	131
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	15	15	15	12	12	12	13	13	15
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.88			0.94		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1703	1443			1934		1203	1862			1906	1708
Flt Permitted	0.74	1.00			0.93		0.37	1.00			1.00	1.00
Satd. Flow (perm)	1334	1443			1817		471	1862			1906	1708
Peak-hour factor, PHF	0.93	0.93	0.93	0.65	0.65	0.65	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	189	4	18	6	5	9	2	648	2	0	588	142
RTOR Reduction (vph)	0	14	0	0	7	0	0	0	0	0	0	58
Lane Group Flow (vph)	189	8	0	0	13	0	2	650	0	0	588	84
Heavy Vehicles (%)	6%	0%	19%	0%	0%	0%	50%	2%	0%	0%	3%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Actuated Green, G (s)	9.6	9.6			9.6		28.1	28.1			28.1	28.1
Effective Green, g (s)	9.6	9.6			9.6		28.1	28.1			28.1	28.1
Actuated g/C Ratio	0.20	0.20			0.20		0.59	0.59			0.59	0.59
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		2.5	2.5			2.5	2.5
Lane Grp Cap (vph)	268	290			365		277	1096			1122	1006
v/s Ratio Prot		0.01						c0.35			0.31	
v/s Ratio Perm	c0.14				0.01		0.00					0.05
v/c Ratio	0.71	0.03			0.04		0.01	0.59			0.52	0.08
Uniform Delay, d1	17.7	15.3			15.3		4.0	6.2			5.8	4.2
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	8.2	0.0			0.0		0.0	0.7			0.3	0.0
Delay (s)	25.9	15.3			15.4		4.1	6.9			6.2	4.3
Level of Service	C	B			B		A	A			A	A
Approach Delay (s)		24.8			15.4			6.9			5.8	
Approach LOS		C			B			A			A	

Intersection Summary

HCM 2000 Control Delay	8.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	47.7	Sum of lost time (s)	10.0
Intersection Capacity Utilization	61.5%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings
4: Margin Street & Gardner Street

2029 No-Build Condition
Weekday Arrival

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	62	288	516	520	377	74
Future Volume (vph)	62	288	516	520	377	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	15
Storage Length (ft)	360	0	250			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			1000	2330	
Travel Time (s)	22.7			22.7	53.0	
Confl. Peds. (#/hr)	1	1	1			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	1%	3%	2%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
4: Margin Street & Gardner Street

2029 No-Build Condition
Weekday Arrival

Intersection

Int Delay, s/veh 43

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	62	288	516	520	377	74
Future Vol, veh/h	62	288	516	520	377	74
Conflicting Peds, #/hr	1	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	360	0	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	1	3	2	0
Mvmt Flow	67	313	561	565	410	80

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	2139	452	491	0	-	0
Stage 1	451	-	-	-	-	-
Stage 2	1688	-	-	-	-	-
Critical Hdwy	6.43	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	~ 53	608	1078	-	-	-
Stage 1	640	-	-	-	-	-
Stage 2	164	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 25	607	1077	-	-	-
Mov Cap-2 Maneuver	~ 25	-	-	-	-	-
Stage 1	307	-	-	-	-	-
Stage 2	164	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	208.3	5.9	0
HCM LOS	F		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	1077	-	25	607	-	-
HCM Lane V/C Ratio	0.521	-	2.696	0.516	-	-
HCM Control Delay (s)	11.9	\$	1096.4	17.1	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	3.1	-	8.3	3	-	-

Notes

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

Lanes, Volumes, Timings
6: Pulaski Street & Pound Lane/Gardner Street

2029 No-Build Condition
Weekday Arrival

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	27	44	576	0	8	0	282	397	5	215	0
Future Volume (vph)	12	27	44	576	0	8	0	282	397	5	215	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	14	14	14	11	11	10	13	13	13
Storage Length (ft)	0		40	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			1000			650			1000	
Travel Time (s)		11.4			22.7			14.8			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	5%	1%	0%	0%	0%	4%	2%	0%	10%	0%
Shared Lane Traffic (%)												
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Detector Phase	4	4	4	2	2			1	2	1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0			12.0	8.0	12.0	12.0	
Minimum Split (s)	10.5	10.5	10.5	13.5	13.5			20.5	13.5	20.5	20.5	
Total Split (s)	15.5	15.5	15.5	45.5	45.5			35.5	45.5	35.5	35.5	
Total Split (%)	16.1%	16.1%	16.1%	47.2%	47.2%			36.8%	47.2%	36.8%	36.8%	
Maximum Green (s)	10.0	10.0	10.0	40.0	40.0			30.0	40.0	30.0	30.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5			3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0			2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lead/Lag				Lag	Lag			Lead	Lag	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0			4.0	3.0	4.0	4.0	
Recall Mode	None	None	None	None	None			Min	None	Min	Min	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								8.0		8.0	8.0	
Pedestrian Calls (#/hr)								5		5	5	

Intersection Summary

Area Type: Other
Cycle Length: 96.5
Actuated Cycle Length: 74
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Pulaski Street & Pound Lane/Gardner Street



Queues

2029 No-Build Condition

6: Pulaski Street & Pound Lane/Gardner Street

Weekday Arrival

						
Lane Group	EBT	EBR	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	42	48	635	307	432	239
v/c Ratio	0.17	0.17	0.77	0.59	0.34	0.46
Control Delay	38.8	3.3	25.0	31.0	1.0	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	38.8	3.3	25.0	31.0	1.0	28.1
Queue Length 50th (ft)	19	0	223	131	0	97
Queue Length 95th (ft)	56	9	421	242	17	187
Internal Link Dist (ft)	420		920	570		920
Turn Bay Length (ft)		40				
Base Capacity (vph)	314	334	1170	808	1347	812
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.13	0.14	0.54	0.38	0.32	0.29
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

6: Pulaski Street & Pound Lane/Gardner Street

2029 No-Build Condition

Weekday Arrival

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	27	44	576	0	8	0	282	397	5	215	0
Future Volume (vph)	12	27	44	576	0	8	0	282	397	5	215	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	14	14	14	11	11	10	13	13	13
Total Lost time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		1.00			1.00	0.85		1.00	
Flt Protected		0.98	1.00		0.95			1.00	1.00		1.00	
Satd. Flow (prot)		2058	1692		1909			1766	1478		1786	
Flt Permitted		0.98	1.00		0.95			1.00	1.00		0.99	
Satd. Flow (perm)		2058	1692		1909			1766	1478		1774	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	29	48	626	0	9	0	307	432	5	234	0
RTOR Reduction (vph)	0	0	44	0	54	0	0	0	132	0	0	0
Lane Group Flow (vph)	0	42	4	0	581	0	0	307	300	0	239	0
Heavy Vehicles (%)	0%	0%	5%	1%	0%	0%	0%	4%	2%	0%	10%	0%
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Actuated Green, G (s)		6.1	6.1		29.8			21.6	51.4		21.6	
Effective Green, g (s)		6.1	6.1		29.8			21.6	51.4		21.6	
Actuated g/C Ratio		0.08	0.08		0.40			0.29	0.69		0.29	
Clearance Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Vehicle Extension (s)		4.0	4.0		3.0			4.0	3.0		4.0	
Lane Grp Cap (vph)		169	139		768			515	1136		517	
v/s Ratio Prot		c0.02	0.00		c0.30			c0.17	0.11			
v/s Ratio Perm									0.10		0.13	
v/c Ratio		0.25	0.03		0.76			0.60	0.26		0.46	
Uniform Delay, d1		31.8	31.2		19.0			22.5	4.2		21.4	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.1	0.1		4.3			2.2	0.1		0.9	
Delay (s)		32.9	31.3		23.3			24.6	4.4		22.3	
Level of Service		C	C		C			C	A		C	
Approach Delay (s)		32.0			23.3			12.8			22.3	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			19.0			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			74.0			Sum of lost time (s)				16.5		
Intersection Capacity Utilization			63.6%			ICU Level of Service				B		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2029 No-Build Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Arrival

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	404	750	62	2	834	135	92	150	16	113	100	616
Future Volume (vph)	404	750	62	2	834	135	92	150	16	113	100	616
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		0	150		75	0		0	0		430
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			650	
Travel Time (s)		22.7			22.7			22.7			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	5%	0%	2%	2%	1%	3%	0%	4%	0%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Total Split (s)	33.0	68.0		35.0	35.0	35.0	39.0	39.0		39.0	39.0	33.0
Total Split (%)	30.8%	63.6%		32.7%	32.7%	32.7%	36.4%	36.4%		36.4%	36.4%	30.8%
Maximum Green (s)	28.0	63.0		30.0	30.0	30.0	34.0	34.0		34.0	34.0	28.0
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)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	None

Intersection Summary

Area Type: Other
 Cycle Length: 107
 Actuated Cycle Length: 96.7
 Natural Cycle: 75
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Endicott Street/Pulaski Street & Andover Street/Central Street



Queues

2029 No-Build Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Arrival

							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	439	882	909	147	280	226	655
v/c Ratio	0.89	0.78	0.90	0.28	0.96	0.80	0.72
Control Delay	57.2	20.4	46.2	16.8	79.7	54.5	18.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.6
Total Delay	57.2	20.4	46.2	16.8	79.7	54.5	19.4
Queue Length 50th (ft)	264	358	283	35	173	132	263
Queue Length 95th (ft)	#503	#698	#454	93	#306	220	398
Internal Link Dist (ft)		920	920		920	570	
Turn Bay Length (ft)				75			430
Base Capacity (vph)	499	1160	1057	544	406	395	917
Starvation Cap Reductn	0	0	0	0	0	0	67
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.76	0.86	0.27	0.69	0.57	0.77

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Endicott Street/Pulaski Street & Andover Street/Central Street

2029 No-Build Condition

Weekday Arrival

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	404	750	62	2	834	135	92	150	16	113	100	616
Future Volume (vph)	404	750	62	2	834	135	92	150	16	113	100	616
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	11	11	11
Total Lost time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.99			1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98			0.97	1.00
Satd. Flow (prot)	1711	1760			3539	1583		1813			1752	1516
Flt Permitted	0.95	1.00			0.95	1.00		0.62			0.62	1.00
Satd. Flow (perm)	1711	1760			3375	1583		1144			1114	1516
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	439	815	67	2	907	147	100	163	17	120	106	655
RTOR Reduction (vph)	0	3	0	0	0	50	0	0	0	0	0	9
Lane Group Flow (vph)	439	879	0	0	909	97	0	280	0	0	226	646
Heavy Vehicles (%)	2%	3%	5%	0%	2%	2%	1%	3%	0%	4%	0%	3%
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Actuated Green, G (s)	27.8	61.9			29.1	29.1		24.7			24.7	52.5
Effective Green, g (s)	27.8	61.9			29.1	29.1		24.7			24.7	52.5
Actuated g/C Ratio	0.29	0.64			0.30	0.30		0.26			0.26	0.54
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	2.0	2.0			2.0	2.0		2.0			2.0	2.0
Lane Grp Cap (vph)	492	1127			1016	476		292			284	902
v/s Ratio Prot	c0.26	0.50										0.21
v/s Ratio Perm					c0.27	0.06		c0.24			0.20	0.22
v/c Ratio	0.89	0.78			0.89	0.20		0.96			0.80	0.72
Uniform Delay, d1	33.0	12.5			32.3	25.1		35.4			33.6	16.5
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	17.8	3.3			10.0	0.1		40.8			13.4	2.3
Delay (s)	50.7	15.8			42.3	25.2		76.3			47.0	18.8
Level of Service	D	B			D	C		E			D	B
Approach Delay (s)		27.4			39.9			76.3			26.0	
Approach LOS		C			D			E			C	
Intersection Summary												
HCM 2000 Control Delay			34.6				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.91									
Actuated Cycle Length (s)			96.6				Sum of lost time (s)		15.0			
Intersection Capacity Utilization			99.5%				ICU Level of Service		F			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Water Street & Endicott Street

2029 No-Build Condition
Weekday Dismissal

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	143	667	386	474	498	115
Future Volume (vph)	143	667	386	474	498	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Storage Length (ft)	0	0	280			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			2200	1000	
Travel Time (s)	22.7			50.0	22.7	
Peak Hour Factor	0.97	0.97	0.92	0.92	0.98	0.98
Heavy Vehicles (%)	1%	2%	3%	2%	5%	1%
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Detector Phase	5	1	1	3	3	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	11.0	11.0	11.0	20.0	20.0	
Total Split (s)	20.0	19.0	19.0	45.0	45.0	
Total Split (%)	23.8%	22.6%	22.6%	53.6%	53.6%	
Maximum Green (s)	15.0	14.0	14.0	40.0	40.0	
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max	Max	None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 84
 Actuated Cycle Length: 68.4
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Water Street & Endicott Street



Queues
1: Water Street & Endicott Street

2029 No-Build Condition
Weekday Dismissal

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	147	688	420	515	625
v/c Ratio	0.52	1.11	1.14	0.65	0.72
Control Delay	36.9	95.1	121.8	20.2	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	36.9	95.1	121.8	20.2	21.2
Queue Length 50th (ft)	61	~342	~240	172	212
Queue Length 95th (ft)	128	#626	#485	291	352
Internal Link Dist (ft)	920			2120	920
Turn Bay Length (ft)			280		
Base Capacity (vph)	404	618	370	1124	1227
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.36	1.11	1.14	0.46	0.51

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Water Street & Endicott Street

2029 No-Build Condition

Weekday Dismissal

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	143	667	386	474	498	115
Future Volume (vph)	143	667	386	474	498	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	15	15
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.97	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1728	1531	1694	1801	1954	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1728	1531	1694	1801	1954	
Peak-hour factor, PHF	0.97	0.97	0.92	0.92	0.98	0.98
Adj. Flow (vph)	147	688	420	515	508	117
RTOR Reduction (vph)	0	0	0	0	11	0
Lane Group Flow (vph)	147	688	420	515	614	0
Heavy Vehicles (%)	1%	2%	3%	2%	5%	1%
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Actuated Green, G (s)	9.0	24.0	15.0	30.1	30.1	
Effective Green, g (s)	9.0	24.0	15.0	30.1	30.1	
Actuated g/C Ratio	0.13	0.35	0.22	0.44	0.44	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	225	642	367	784	851	
v/s Ratio Prot	0.09	c0.23	0.25	0.29	c0.31	
v/s Ratio Perm		0.22				
v/c Ratio	0.65	1.07	1.14	0.66	0.72	
Uniform Delay, d1	28.6	22.5	27.0	15.4	16.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.7	56.3	92.3	2.0	3.0	
Delay (s)	35.2	78.8	119.4	17.4	19.1	
Level of Service	D	E	F	B	B	
Approach Delay (s)	71.1			63.2	19.1	
Approach LOS	E			E	B	
Intersection Summary						
HCM 2000 Control Delay			54.5		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.98			
Actuated Cycle Length (s)			69.1		Sum of lost time (s)	15.0
Intersection Capacity Utilization			82.8%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

2029 No-Build Condition

2: Water Street & South Liberty Street/NEHD Driveway

Weekday Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	2	13	4	5	5	7	616	3	2	801	342
Future Volume (vph)	215	2	13	4	5	5	7	616	3	2	801	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	15	15	15	12	12	12	13	13	15
Storage Length (ft)	60		0	0		0	120		0	0		150
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1225			500			700			2200	
Travel Time (s)		27.8			11.4			15.9			50.0	
Confl. Peds. (#/hr)				36		36			36	36		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.97	0.97	0.96	0.96	0.96
Heavy Vehicles (%)	2%	0%	8%	0%	0%	0%	14%	2%	0%	0%	2%	4%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Detector Phase	2	2		2	2		1	1		1	1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	10.0	10.0		10.0	10.0		21.0	21.0		21.0	21.0	21.0
Total Split (s)	20.0	20.0		20.0	20.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	35.7%	35.7%		35.7%	35.7%		64.3%	64.3%		64.3%	64.3%	64.3%
Maximum Green (s)	15.0	15.0		15.0	15.0		31.0	31.0		31.0	31.0	31.0
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.5		2.5	2.5	2.5
Recall Mode	None	None		None	None		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other

Cycle Length: 56

Actuated Cycle Length: 53.2

Natural Cycle: 55

Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Water Street & South Liberty Street/NEHD Driveway



Queues

2029 No-Build Condition

2: Water Street & South Liberty Street/NEHD Driveway

Weekday Dismissal

							
Lane Group	EBL	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	234	16	14	7	638	836	356
v/c Ratio	0.70	0.04	0.03	0.04	0.60	0.76	0.32
Control Delay	31.3	9.5	13.1	6.6	10.9	15.5	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	31.3	9.5	13.1	6.6	10.9	15.5	1.7
Queue Length 50th (ft)	68	1	2	1	125	190	0
Queue Length 95th (ft)	#149	12	13	6	217	#360	28
Internal Link Dist (ft)		1145	420		620	2120	
Turn Bay Length (ft)	60			120			150
Base Capacity (vph)	395	447	511	177	1091	1127	1148
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	0.59	0.04	0.03	0.04	0.58	0.74	0.31

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Water Street & South Liberty Street/NEHD Driveway

2029 No-Build Condition

Weekday Dismissal

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	215	2	13	4	5	5	7	616	3	2	801	342
Future Volume (vph)	215	2	13	4	5	5	7	616	3	2	801	342
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	15	15	15	12	12	12	13	13	15
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00			0.97		1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00			0.98		1.00	1.00			1.00	1.00
Frt	1.00	0.87			0.95		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770	1543			1856		1583	1861			1925	1708
Flt Permitted	0.75	1.00			0.95		0.18	1.00			1.00	1.00
Satd. Flow (perm)	1394	1543			1781		301	1861			1923	1708
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.97	0.97	0.96	0.96	0.96
Adj. Flow (vph)	234	2	14	4	5	5	7	635	3	2	834	356
RTOR Reduction (vph)	0	11	0	0	4	0	0	0	0	0	0	153
Lane Group Flow (vph)	234	5	0	0	10	0	7	638	0	0	836	203
Confl. Peds. (#/hr)				36		36			36	36		
Heavy Vehicles (%)	2%	0%	8%	0%	0%	0%	14%	2%	0%	0%	2%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Actuated Green, G (s)	12.8	12.8			12.8		30.4	30.4			30.4	30.4
Effective Green, g (s)	12.8	12.8			12.8		30.4	30.4			30.4	30.4
Actuated g/C Ratio	0.24	0.24			0.24		0.57	0.57			0.57	0.57
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		2.5	2.5			2.5	2.5
Lane Grp Cap (vph)	335	371			428		172	1063			1098	976
v/s Ratio Prot		0.00						0.34				
v/s Ratio Perm	c0.17				0.01		0.02				c0.43	0.12
v/c Ratio	0.70	0.01			0.02		0.04	0.60			0.76	0.21
Uniform Delay, d1	18.4	15.4			15.4		5.0	7.4			8.6	5.5
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	6.2	0.0			0.0		0.1	0.8			3.0	0.1
Delay (s)	24.7	15.4			15.5		5.1	8.2			11.7	5.6
Level of Service	C	B			B		A	A			B	A
Approach Delay (s)		24.1			15.5			8.2			9.9	
Approach LOS		C			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.1									
HCM 2000 Volume to Capacity ratio			0.74									
Actuated Cycle Length (s)			53.2									
Intersection Capacity Utilization			70.7%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
4: Margin Street & Gardner Street

2029 No-Build Condition
Weekday Dismissal

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	46	314	491	525	708	34
Future Volume (vph)	46	314	491	525	708	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	15
Storage Length (ft)	360	0	250			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			1000	2330	
Travel Time (s)	22.7			22.7	53.0	
Confl. Peds. (#/hr)	3	3	3			3
Peak Hour Factor	0.94	0.94	0.92	0.92	0.94	0.94
Heavy Vehicles (%)	5%	0%	2%	2%	1%	3%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

Intersection

Int Delay, s/veh 54.1

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	46	314	491	525	708	34
Future Vol, veh/h	46	314	491	525	708	34
Conflicting Peds, #/hr	3	3	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	360	0	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	92	92	94	94
Heavy Vehicles, %	5	0	2	2	1	3
Mvmt Flow	49	334	534	571	753	36

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	2416	777	792	0	-	0
Stage 1	774	-	-	-	-	-
Stage 2	1642	-	-	-	-	-
Critical Hdwy	6.45	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	~ 35	400	829	-	-	-
Stage 1	450	-	-	-	-	-
Stage 2	171	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 12	398	827	-	-	-
Mov Cap-2 Maneuver	~ 12	-	-	-	-	-
Stage 1	159	-	-	-	-	-
Stage 2	170	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	297.8	8.2	0
HCM LOS	F		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	827	-	12	398	-	-
HCM Lane V/C Ratio	0.645	-	4.078	0.839	-	-
HCM Control Delay (s)	16.9	\$ 2012.5	46.6	-	-	-
HCM Lane LOS	C	-	F	E	-	-
HCM 95th %tile Q(veh)	4.8	-	7.2	7.9	-	-

Notes

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

Lanes, Volumes, Timings
6: Pulaski Street & Pound Lane/Gardner Street

2029 No-Build Condition

Weekday Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	24	32	544	0	25	0	261	435	7	393	0
Future Volume (vph)	13	24	32	544	0	25	0	261	435	7	393	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	14	14	14	11	11	10	13	13	13
Storage Length (ft)	0		40	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			1000			650			1000	
Travel Time (s)		11.4			22.7			14.8			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	8%	4%	0%	2%	0%	0%	0%	5%	1%	0%	2%	0%
Shared Lane Traffic (%)												
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Detector Phase	4	4	4	2	2			1	2	1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0			12.0	8.0	12.0	12.0	
Minimum Split (s)	10.5	10.5	10.5	13.5	13.5			23.5	13.5	23.5	23.5	
Total Split (s)	15.5	15.5	15.5	45.5	45.5			35.5	45.5	35.5	35.5	
Total Split (%)	16.1%	16.1%	16.1%	47.2%	47.2%			36.8%	47.2%	36.8%	36.8%	
Maximum Green (s)	10.0	10.0	10.0	40.0	40.0			30.0	40.0	30.0	30.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5			3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0			2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lead/Lag				Lag	Lag			Lead	Lag	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0			4.0	3.0	4.0	4.0	
Recall Mode	None	None	None	None	None			Min	None	Min	Min	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								8.0		8.0	8.0	
Pedestrian Calls (#/hr)								5		5	5	

Intersection Summary

Area Type: Other
Cycle Length: 96.5
Actuated Cycle Length: 76.9
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Pulaski Street & Pound Lane/Gardner Street



Queues
6: Pulaski Street & Pound Lane/Gardner Street

2029 No-Build Condition
Weekday Dismissal

						
Lane Group	EBT	EBR	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	40	35	618	266	444	408
v/c Ratio	0.18	0.12	0.77	0.49	0.34	0.69
Control Delay	40.3	0.9	26.0	28.3	1.0	33.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.3	0.9	26.0	28.3	1.0	33.0
Queue Length 50th (ft)	20	0	240	114	0	188
Queue Length 95th (ft)	55	0	408	209	17	324
Internal Link Dist (ft)	420		920	570		920
Turn Bay Length (ft)		40				
Base Capacity (vph)	287	338	1122	772	1357	846
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.14	0.10	0.55	0.34	0.33	0.48
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

6: Pulaski Street & Pound Lane/Gardner Street

2029 No-Build Condition

Weekday Dismissal

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	24	32	544	0	25	0	261	435	7	393	0
Future Volume (vph)	13	24	32	544	0	25	0	261	435	7	393	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	14	14	14	11	11	10	13	13	13
Total Lost time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		0.99			1.00	0.85		1.00	
Flt Protected		0.98	1.00		0.95			1.00	1.00		1.00	
Satd. Flow (prot)		1949	1776		1887			1749	1492		1924	
Flt Permitted		0.98	1.00		0.95			1.00	1.00		0.99	
Satd. Flow (perm)		1949	1776		1887			1749	1492		1913	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	14	26	35	591	0	27	0	266	444	7	401	0
RTOR Reduction (vph)	0	0	32	0	54	0	0	0	131	0	0	0
Lane Group Flow (vph)	0	40	3	0	564	0	0	266	313	0	408	0
Heavy Vehicles (%)	8%	4%	0%	2%	0%	0%	0%	5%	1%	0%	2%	0%
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Actuated Green, G (s)		6.2	6.2		30.5			23.8	54.3		23.8	
Effective Green, g (s)		6.2	6.2		30.5			23.8	54.3		23.8	
Actuated g/C Ratio		0.08	0.08		0.40			0.31	0.71		0.31	
Clearance Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Vehicle Extension (s)		4.0	4.0		3.0			4.0	3.0		4.0	
Lane Grp Cap (vph)		156	143		747			540	1158		591	
v/s Ratio Prot		c0.02	0.00		c0.30			0.15	0.11			
v/s Ratio Perm									0.10		c0.21	
v/c Ratio		0.26	0.02		0.75			0.49	0.27		0.69	
Uniform Delay, d1		33.2	32.6		20.0			21.7	4.1		23.4	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.2	0.1		4.3			1.0	0.1		3.7	
Delay (s)		34.4	32.7		24.4			22.6	4.3		27.1	
Level of Service		C	C		C			C	A		C	
Approach Delay (s)		33.6			24.4			11.1			27.1	
Approach LOS		C			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			20.2			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			77.0			Sum of lost time (s)			16.5			
Intersection Capacity Utilization			73.8%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
7: Endicott Street/Pulaski Street & Andover Street/Central Street

2029 No-Build Condition

Weekday Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	404	836	60	8	689	150	91	145	21	195	186	576
Future Volume (vph)	404	836	60	8	689	150	91	145	21	195	186	576
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		0	150		75	0		0	0		430
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			650	
Travel Time (s)		22.7			22.7			22.7			14.8	
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	4%	2%	2%	0%	1%	4%	1%	0%	10%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Total Split (s)	33.0	68.0		35.0	35.0	35.0	29.0	29.0		29.0	29.0	33.0
Total Split (%)	34.0%	70.1%		36.1%	36.1%	36.1%	29.9%	29.9%		29.9%	29.9%	34.0%
Maximum Green (s)	28.0	63.0		30.0	30.0	30.0	24.0	24.0		24.0	24.0	28.0
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)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 97
Actuated Cycle Length: 89.4
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Endicott Street/Pulaski Street & Andover Street/Central Street



							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	416	924	758	163	280	401	606
v/c Ratio	0.89	0.84	0.80	0.33	1.68	1.29	0.64
Control Delay	54.8	21.6	37.3	14.4	355.8	182.3	15.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	54.8	21.6	37.3	14.4	355.8	182.3	15.3
Queue Length 50th (ft)	229	369	218	33	~250	~316	196
Queue Length 95th (ft)	#408	563	286	84	#422	#516	341
Internal Link Dist (ft)		920	920		920	570	
Turn Bay Length (ft)				75			430
Base Capacity (vph)	531	1272	1141	585	167	312	1001
Starvation Cap Reductn	0	0	0	0	0	0	48
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.73	0.66	0.28	1.68	1.29	0.64

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Endicott Street/Pulaski Street & Andover Street/Central Street

2029 No-Build Condition

Weekday Dismissal

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	404	836	60	8	689	150	91	145	21	195	186	576
Future Volume (vph)	404	836	60	8	689	150	91	145	21	195	186	576
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	11	11	11
Total Lost time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.99			1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98			0.98	1.00
Satd. Flow (prot)	1678	1783			3573	1553		1825			1756	1531
Flt Permitted	0.95	1.00			0.94	1.00		0.33			0.64	1.00
Satd. Flow (perm)	1678	1783			3364	1553		616			1150	1531
Peak-hour factor, PHF	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	416	862	62	9	749	163	99	158	23	205	196	606
RTOR Reduction (vph)	0	3	0	0	0	63	0	0	0	0	0	19
Lane Group Flow (vph)	416	921	0	0	758	100	0	280	0	0	401	587
Heavy Vehicles (%)	4%	2%	2%	0%	1%	4%	1%	0%	10%	2%	2%	2%
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Actuated Green, G (s)	24.9	55.0			25.1	25.1		24.3			24.3	49.2
Effective Green, g (s)	24.9	55.0			25.1	25.1		24.3			24.3	49.2
Actuated g/C Ratio	0.28	0.62			0.28	0.28		0.27			0.27	0.55
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	2.0	2.0			2.0	2.0		2.0			2.0	2.0
Lane Grp Cap (vph)	467	1098			945	436		167			312	929
v/s Ratio Prot	0.25	c0.52										0.18
v/s Ratio Perm					0.23	0.06		c0.45			0.35	0.21
v/c Ratio	0.89	0.84			0.80	0.23		1.68			1.29	0.63
Uniform Delay, d1	30.9	13.6			29.8	24.7		32.5			32.5	13.8
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	18.4	5.5			4.7	0.1		329.2			150.5	1.0
Delay (s)	49.3	19.1			34.5	24.8		361.7			183.0	14.9
Level of Service	D	B			C	C		F			F	B
Approach Delay (s)		28.5			32.8			361.7			81.8	
Approach LOS		C			C			F			F	
Intersection Summary												
HCM 2000 Control Delay			71.0				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.17									
Actuated Cycle Length (s)			89.3				Sum of lost time (s)		15.0			
Intersection Capacity Utilization			118.1%				ICU Level of Service		H			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Water Street & Endicott Street

2029 No-Build Condition
Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	188	742	344	482	497	99
Future Volume (vph)	188	742	344	482	497	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Storage Length (ft)	0	0	280			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			2200	1000	
Travel Time (s)	22.7			50.0	22.7	
Peak Hour Factor	0.99	0.99	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	2%	2%	2%	0%
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Detector Phase	5	1	1	3	3	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	11.0	11.0	11.0	20.0	20.0	
Total Split (s)	25.0	35.0	35.0	45.0	45.0	
Total Split (%)	23.8%	33.3%	33.3%	42.9%	42.9%	
Maximum Green (s)	20.0	30.0	30.0	40.0	40.0	
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max	Max	None	None	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 96.9
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Water Street & Endicott Street



Queues
1: Water Street & Endicott Street

2029 No-Build Condition
Weekday Evening

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	190	749	374	524	648
v/c Ratio	0.69	0.93	0.70	0.78	0.86
Control Delay	52.7	41.8	39.6	36.7	40.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.7	41.8	39.6	36.7	40.7
Queue Length 50th (ft)	117	444	216	283	360
Queue Length 95th (ft)	192	#712	#364	438	#583
Internal Link Dist (ft)	920			2120	920
Turn Bay Length (ft)			280		
Base Capacity (vph)	363	808	534	750	843
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	0.93	0.70	0.70	0.77

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Water Street & Endicott Street

2029 No-Build Condition
Weekday Evening

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	188	742	344	482	497	99
Future Volume (vph)	188	742	344	482	497	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	15	15
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1745	1546	1711	1801	2009	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1745	1546	1711	1801	2009	
Peak-hour factor, PHF	0.99	0.99	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	749	374	524	540	108
RTOR Reduction (vph)	0	0	0	0	7	0
Lane Group Flow (vph)	190	749	374	524	641	0
Heavy Vehicles (%)	0%	1%	2%	2%	2%	0%
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Actuated Green, G (s)	15.4	45.7	30.3	36.1	36.1	
Effective Green, g (s)	15.4	45.7	30.3	36.1	36.1	
Actuated g/C Ratio	0.16	0.47	0.31	0.37	0.37	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	277	809	535	671	749	
v/s Ratio Prot	0.11	c0.29	0.22	0.29	c0.32	
v/s Ratio Perm		0.19				
v/c Ratio	0.69	0.93	0.70	0.78	0.86	
Uniform Delay, d1	38.4	24.0	29.2	26.9	28.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	6.9	16.3	7.4	5.9	9.5	
Delay (s)	45.3	40.2	36.7	32.7	37.4	
Level of Service	D	D	D	C	D	
Approach Delay (s)	41.3			34.4	37.4	
Approach LOS	D			C	D	
Intersection Summary						
HCM 2000 Control Delay			37.8		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.95			
Actuated Cycle Length (s)			96.8		Sum of lost time (s)	15.0
Intersection Capacity Utilization			86.4%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
2: Water Street & South Liberty Street/NEHD Driveway

2029 No-Build Condition

Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	1	6	1	1	6	19	612	2	4	949	263
Future Volume (vph)	179	1	6	1	1	6	19	612	2	4	949	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	15	15	15	12	12	12	13	13	15
Storage Length (ft)	60		0	0		0	120		0	0		150
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1225			500			700			2200	
Travel Time (s)		27.8			11.4			15.9			50.0	
Peak Hour Factor	0.92	0.92	0.92	0.67	0.67	0.67	0.92	0.92	0.92	0.96	0.96	0.96
Heavy Vehicles (%)	2%	0%	0%	0%	0%	17%	6%	1%	0%	25%	1%	2%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Detector Phase	2	2		2	2		1	1		1	1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	10.0	10.0		10.0	10.0		21.0	21.0		21.0	21.0	21.0
Total Split (s)	20.0	20.0		20.0	20.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	35.7%	35.7%		35.7%	35.7%		64.3%	64.3%		64.3%	64.3%	64.3%
Maximum Green (s)	15.0	15.0		15.0	15.0		31.0	31.0		31.0	31.0	31.0
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.5		2.5	2.5	2.5
Recall Mode	None	None		None	None		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other
Cycle Length: 56
Actuated Cycle Length: 51.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Water Street & South Liberty Street/NEHD Driveway



Queues

2029 No-Build Condition

2: Water Street & South Liberty Street/NEHD Driveway

Weekday Evening

							
Lane Group	EBL	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	195	8	11	21	667	993	274
v/c Ratio	0.61	0.02	0.03	0.15	0.54	0.78	0.22
Control Delay	27.0	10.4	10.3	9.3	9.5	17.0	1.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	27.0	10.4	10.3	9.3	9.5	17.0	1.5
Queue Length 50th (ft)	55	0	1	3	118	234	0
Queue Length 95th (ft)	110	8	7	14	232	#529	25
Internal Link Dist (ft)		1145	420		620	2120	
Turn Bay Length (ft)	60			120			150
Base Capacity (vph)	416	497	484	144	1239	1276	1240
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	0.47	0.02	0.02	0.15	0.54	0.78	0.22

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Water Street & South Liberty Street/NEHD Driveway

2029 No-Build Condition

Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	179	1	6	1	1	6	19	612	2	4	949	263
Future Volume (vph)	179	1	6	1	1	6	19	612	2	4	949	263
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	15	15	15	12	12	12	13	13	15
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.87			0.89		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770	1651			1625		1703	1880			1942	1742
Flt Permitted	0.75	1.00			0.98		0.12	1.00			1.00	1.00
Satd. Flow (perm)	1398	1651			1601		221	1880			1938	1742
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.67	0.67	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	195	1	7	1	1	9	21	665	2	4	989	274
RTOR Reduction (vph)	0	6	0	0	7	0	0	0	0	0	0	104
Lane Group Flow (vph)	195	2	0	0	4	0	21	667	0	0	993	170
Heavy Vehicles (%)	2%	0%	0%	0%	0%	17%	6%	1%	0%	25%	1%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Actuated Green, G (s)	9.9	9.9			9.9		32.4	32.4			32.4	32.4
Effective Green, g (s)	9.9	9.9			9.9		32.4	32.4			32.4	32.4
Actuated g/C Ratio	0.19	0.19			0.19		0.62	0.62			0.62	0.62
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		2.5	2.5			2.5	2.5
Lane Grp Cap (vph)	264	312			303		136	1164			1200	1079
v/s Ratio Prot		0.00						0.35				
v/s Ratio Perm	c0.14				0.00		0.09				c0.51	0.10
v/c Ratio	0.74	0.01			0.01		0.15	0.57			0.83	0.16
Uniform Delay, d1	20.0	17.2			17.2		4.2	5.9			7.8	4.2
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	10.3	0.0			0.0		0.4	0.6			4.7	0.0
Delay (s)	30.3	17.2			17.2		4.6	6.4			12.5	4.2
Level of Service	C	B			B		A	A			B	A
Approach Delay (s)		29.8			17.2			6.4			10.7	
Approach LOS		C			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			11.2									
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			52.3									
Intersection Capacity Utilization			78.0%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
4: Margin Street & Gardner Street

2029 No-Build Condition
Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	37	341	424	506	784	34
Future Volume (vph)	37	341	424	506	784	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	15
Storage Length (ft)	360	0	250			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			1000	2330	
Travel Time (s)	22.7			22.7	53.0	
Peak Hour Factor	0.92	0.92	0.96	0.96	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	3%	1%	3%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

HCM 6th TWSC
4: Margin Street & Gardner Street

2029 No-Build Condition
Weekday Evening

Intersection

Int Delay, s/veh 35.5

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	37	341	424	506	784	34
Future Vol, veh/h	37	341	424	506	784	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	360	0	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	96	96	92	92
Heavy Vehicles, %	0	0	1	3	1	3
Mvmt Flow	40	371	442	527	852	37

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	2282	871	889	0	-	0
Stage 1	871	-	-	-	-	-
Stage 2	1411	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	44	~ 353	766	-	-	-
Stage 1	413	-	-	-	-	-
Stage 2	228	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 19	~ 353	766	-	-	-
Mov Cap-2 Maneuver	~ 19	-	-	-	-	-
Stage 1	175	-	-	-	-	-
Stage 2	228	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	179.3	7.2	0
HCM LOS	F		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	766	-	19	353	-	-
HCM Lane V/C Ratio	0.577	-	2.117	1.05	-	-
HCM Control Delay (s)	15.9	-	\$ 939.3	96.8	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	3.7	-	5.4	12.9	-	-

Notes

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

Lanes, Volumes, Timings
6: Pulaski Street & Pound Lane/Gardner Street

2029 No-Build Condition

Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	22	25	519	0	10	0	238	439	10	392	0
Future Volume (vph)	12	22	25	519	0	10	0	238	439	10	392	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	14	14	14	11	11	10	13	13	13
Storage Length (ft)	0		40	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			1000			650			1000	
Travel Time (s)		11.4			22.7			14.8			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	0%	4%	0%	0%	3%	0%
Shared Lane Traffic (%)												
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Detector Phase	4	4	4	2	2			1	2	1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0			12.0	8.0	12.0	12.0	
Minimum Split (s)	10.5	10.5	10.5	13.5	13.5			20.5	13.5	20.5	20.5	
Total Split (s)	15.5	15.5	15.5	45.5	45.5			35.5	45.5	35.5	35.5	
Total Split (%)	16.1%	16.1%	16.1%	47.2%	47.2%			36.8%	47.2%	36.8%	36.8%	
Maximum Green (s)	10.0	10.0	10.0	40.0	40.0			30.0	40.0	30.0	30.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5			3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0			2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lead/Lag				Lag	Lag			Lead	Lag	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0			4.0	3.0	4.0	4.0	
Recall Mode	None	None	None	None	None			Min	None	Min	Min	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								8.0		8.0	8.0	
Pedestrian Calls (#/hr)								5		5	5	

Intersection Summary

Area Type: Other
Cycle Length: 96.5
Actuated Cycle Length: 72.1
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Pulaski Street & Pound Lane/Gardner Street



Queues
6: Pulaski Street & Pound Lane/Gardner Street

2029 No-Build Condition
Weekday Evening

						
Lane Group	EBT	EBR	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	37	27	575	251	462	437
v/c Ratio	0.15	0.09	0.72	0.42	0.34	0.69
Control Delay	39.1	0.6	22.7	25.1	0.9	31.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.1	0.6	22.7	25.1	0.9	31.0
Queue Length 50th (ft)	18	0	216	101	0	196
Queue Length 95th (ft)	51	0	362	196	17	354
Internal Link Dist (ft)	420		920	570		920
Turn Bay Length (ft)		40				
Base Capacity (vph)	327	358	1231	845	1395	903
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.11	0.08	0.47	0.30	0.33	0.48
Intersection Summary						

HCM Signalized Intersection Capacity Analysis

6: Pulaski Street & Pound Lane/Gardner Street

2029 No-Build Condition
Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	22	25	519	0	10	0	238	439	10	392	0
Future Volume (vph)	12	22	25	519	0	10	0	238	439	10	392	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	14	14	14	11	11	10	13	13	13
Total Lost time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		1.00			1.00	0.85		1.00	
Flt Protected		0.98	1.00		0.95			1.00	1.00		1.00	
Satd. Flow (prot)		2054	1776		1908			1766	1507		1905	
Flt Permitted		0.98	1.00		0.95			1.00	1.00		0.99	
Satd. Flow (perm)		2054	1776		1908			1766	1507		1888	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	13	24	27	564	0	11	0	251	462	11	426	0
RTOR Reduction (vph)	0	0	25	0	55	0	0	0	130	0	0	0
Lane Group Flow (vph)	0	37	2	0	520	0	0	251	332	0	437	0
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	0%	4%	0%	0%	3%	0%
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Actuated Green, G (s)		4.2	4.2		28.4			24.2	52.6		24.2	
Effective Green, g (s)		4.2	4.2		28.4			24.2	52.6		24.2	
Actuated g/C Ratio		0.06	0.06		0.39			0.33	0.72		0.33	
Clearance Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Vehicle Extension (s)		4.0	4.0		3.0			4.0	3.0		4.0	
Lane Grp Cap (vph)		117	101		739			583	1194		623	
v/s Ratio Prot		c0.02	0.00		c0.27			0.14	0.11			
v/s Ratio Perm									0.11		c0.23	
v/c Ratio		0.32	0.02		0.70			0.43	0.28		0.70	
Uniform Delay, d1		33.2	32.6		18.9			19.2	3.7		21.4	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		2.1	0.1		3.1			0.7	0.1		3.8	
Delay (s)		35.3	32.7		22.0			19.9	3.8		25.2	
Level of Service		D	C		C			B	A		C	
Approach Delay (s)		34.2			22.0			9.4			25.2	
Approach LOS		C			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			18.2			HCM 2000 Level of Service			B			
HCM 2000 Volume to Capacity ratio			0.67									
Actuated Cycle Length (s)			73.3			Sum of lost time (s)			16.5			
Intersection Capacity Utilization			73.9%			ICU Level of Service			D			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2029 No-Build Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

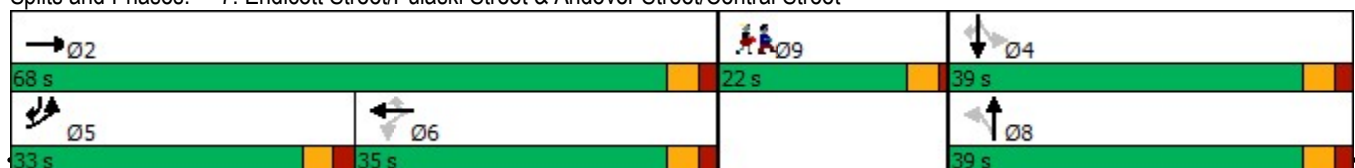
Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	413	862	77	3	764	133	85	149	10	142	175	612
Future Volume (vph)	413	862	77	3	764	133	85	149	10	142	175	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		0	150		75	0		0	0		430
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			650	
Travel Time (s)		22.7			22.7			22.7			14.8	
Peak Hour Factor	0.97	0.97	0.97	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	0%	1%	4%	1%	0%	0%	1%	4%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Total Split (s)	33.0	68.0		35.0	35.0	35.0	39.0	39.0		39.0	39.0	33.0
Total Split (%)	25.6%	52.7%		27.1%	27.1%	27.1%	30.2%	30.2%		30.2%	30.2%	25.6%
Maximum Green (s)	28.0	63.0		30.0	30.0	30.0	34.0	34.0		34.0	34.0	28.0
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)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												

Intersection Summary

Area Type: Other
 Cycle Length: 129
 Actuated Cycle Length: 111.4
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Endicott Street/Pulaski Street & Andover Street/Central Street



Lane Group Ø9

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Ideal Flow (vphpl)
Lane Width (ft)
Storage Length (ft)
Storage Lanes
Taper Length (ft)
Right Turn on Red
Link Speed (mph)
Link Distance (ft)
Travel Time (s)
Peak Hour Factor
Heavy Vehicles (%)
Shared Lane Traffic (%)
Turn Type
Protected Phases 9
Permitted Phases
Detector Phase
Switch Phase
Minimum Initial (s) 7.0
Minimum Split (s) 22.0
Total Split (s) 22.0
Total Split (%) 17%
Maximum Green (s) 18.0
Yellow Time (s) 3.0
All-Red Time (s) 1.0
Lost Time Adjust (s)
Total Lost Time (s)
Lead/Lag
Lead-Lag Optimize?
Vehicle Extension (s) 3.0
Recall Mode None
Walk Time (s) 7.0
Flash Dont Walk (s) 11.0
Pedestrian Calls (#/hr) 10

Intersection Summary

Queues

2029 No-Build Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Evening

							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	426	968	825	143	265	344	665
v/c Ratio	0.99	0.95	0.91	0.29	0.96	0.93	0.61
Control Delay	82.6	41.6	54.7	15.4	84.3	71.1	7.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.4
Total Delay	82.6	41.6	54.7	15.4	84.3	71.1	8.3
Queue Length 50th (ft)	287	551	284	26	175	224	74
Queue Length 95th (ft)	#624	#1174	#528	93	#427	#514	275
Internal Link Dist (ft)		920	920		920	570	
Turn Bay Length (ft)				75			430
Base Capacity (vph)	432	1024	908	488	276	370	1098
Starvation Cap Reductn	0	0	0	0	0	0	116
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.99	0.95	0.91	0.29	0.96	0.93	0.68

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Endicott Street/Pulaski Street & Andover Street/Central Street

2029 No-Build Condition
Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					 							
Traffic Volume (vph)	413	862	77	3	764	133	85	149	10	142	175	612
Future Volume (vph)	413	862	77	3	764	133	85	149	10	142	175	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	11	11	11
Total Lost time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.99			1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98			0.98	1.00
Satd. Flow (prot)	1711	1798			3574	1553		1851			1750	1546
Flt Permitted	0.95	1.00			0.94	1.00		0.48			0.68	1.00
Satd. Flow (perm)	1711	1798			3353	1553		903			1208	1546
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	426	889	79	3	822	143	92	162	11	154	190	665
RTOR Reduction (vph)	0	2	0	0	0	69	0	0	0	0	0	189
Lane Group Flow (vph)	426	966	0	0	825	74	0	265	0	0	344	476
Heavy Vehicles (%)	2%	1%	0%	0%	1%	4%	1%	0%	0%	1%	4%	1%
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Actuated Green, G (s)	28.2	63.4			30.2	30.2		34.2			34.2	62.4
Effective Green, g (s)	28.2	63.4			30.2	30.2		34.2			34.2	62.4
Actuated g/C Ratio	0.25	0.55			0.26	0.26		0.30			0.30	0.54
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	2.0	2.0			2.0	2.0		2.0			2.0	2.0
Lane Grp Cap (vph)	420	993			882	408		269			360	908
v/s Ratio Prot	0.25	c0.54										0.13
v/s Ratio Perm					0.25	0.05		c0.29			0.28	0.18
v/c Ratio	1.01	0.97			0.94	0.18		0.99			0.96	0.52
Uniform Delay, d1	43.2	24.8			41.3	32.7		40.0			39.5	16.7
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	47.6	21.9			16.5	0.1		50.2			35.3	0.3
Delay (s)	90.8	46.7			57.8	32.8		90.2			74.9	16.9
Level of Service	F	D			E	C		F			E	B
Approach Delay (s)		60.2			54.1			90.2			36.7	
Approach LOS		E			D			F			D	
Intersection Summary												
HCM 2000 Control Delay			54.2									
HCM 2000 Volume to Capacity ratio			1.00									
Actuated Cycle Length (s)			114.7									
Intersection Capacity Utilization			118.1%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Water Street & Endicott Street

2029 Build Condition
Weekday Arrival

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	361	337	513	409	65
Future Volume (vph)	50	361	337	513	409	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Storage Length (ft)	0	0	280			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			2200	1000	
Travel Time (s)	22.7			50.0	22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	4%	5%	3%	2%
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Detector Phase	5	1	1	3	3	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	11.0	11.0	11.0	20.0	20.0	
Total Split (s)	25.0	35.0	35.0	45.0	45.0	
Total Split (%)	23.8%	33.3%	33.3%	42.9%	42.9%	
Maximum Green (s)	20.0	30.0	30.0	40.0	40.0	
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max	Max	None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 85.3
 Natural Cycle: 60
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Water Street & Endicott Street



Queues

2029 Build Condition

1: Water Street & Endicott Street

Weekday Arrival

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	54	392	366	558	516
v/c Ratio	0.32	0.53	0.60	0.81	0.65
Control Delay	44.2	19.7	30.8	33.8	25.4
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	44.2	19.7	30.8	33.8	25.4
Queue Length 50th (ft)	30	155	180	269	224
Queue Length 95th (ft)	68	251	300	424	348
Internal Link Dist (ft)	920			2120	920
Turn Bay Length (ft)			280		
Base Capacity (vph)	421	733	607	844	967
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.13	0.53	0.60	0.66	0.53
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

1: Water Street & Endicott Street

2029 Build Condition
Weekday Arrival

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	361	337	513	409	65
Future Volume (vph)	50	361	337	513	409	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	15	15
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1745	1516	1678	1749	1994	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1745	1516	1678	1749	1994	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	392	366	558	445	71
RTOR Reduction (vph)	0	0	0	0	5	0
Lane Group Flow (vph)	54	392	366	558	511	0
Heavy Vehicles (%)	0%	3%	4%	5%	3%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Actuated Green, G (s)	6.7	37.6	30.9	33.7	33.7	
Effective Green, g (s)	6.7	37.6	30.9	33.7	33.7	
Actuated g/C Ratio	0.08	0.44	0.36	0.39	0.39	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	135	748	600	682	778	
v/s Ratio Prot	0.03	c0.19	c0.22	c0.32	0.26	
v/s Ratio Perm		0.07				
v/c Ratio	0.40	0.52	0.61	0.82	0.66	
Uniform Delay, d1	37.9	17.8	22.8	23.6	21.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	1.9	0.7	4.6	7.6	2.0	
Delay (s)	39.8	18.5	27.3	31.1	23.6	
Level of Service	D	B	C	C	C	
Approach Delay (s)	21.1			29.6	23.6	
Approach LOS	C			C	C	
Intersection Summary						
HCM 2000 Control Delay			25.9		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.72			
Actuated Cycle Length (s)			86.3		Sum of lost time (s)	15.0
Intersection Capacity Utilization			61.6%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

2: Water Street & South Liberty Street/NEHD Driveway

2029 Build Condition
Weekday Arrival

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	4	17	4	3	6	2	635	2	0	599	162
Future Volume (vph)	195	4	17	4	3	6	2	635	2	0	599	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	15	15	15	12	12	12	13	13	15
Storage Length (ft)	60		0	0		0	120		0	0		150
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1225			500			700			2200	
Travel Time (s)		27.8			11.4			15.9			50.0	
Peak Hour Factor	0.93	0.93	0.93	0.65	0.65	0.65	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	0%	19%	0%	0%	0%	50%	2%	0%	0%	3%	4%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Detector Phase	2	2		2	2		1	1		1	1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	10.0	10.0		10.0	10.0		21.0	21.0		21.0	21.0	21.0
Total Split (s)	20.0	20.0		20.0	20.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	35.7%	35.7%		35.7%	35.7%		64.3%	64.3%		64.3%	64.3%	64.3%
Maximum Green (s)	15.0	15.0		15.0	15.0		31.0	31.0		31.0	31.0	31.0
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.5		2.5	2.5	2.5
Recall Mode	None	None		None	None		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other
Cycle Length: 56
Actuated Cycle Length: 51
Natural Cycle: 50
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Water Street & South Liberty Street/NEHD Driveway



Queues

2029 Build Condition

2: Water Street & South Liberty Street/NEHD Driveway

Weekday Arrival

							
Lane Group	EBL	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	210	22	20	2	692	651	176
v/c Ratio	0.66	0.06	0.05	0.01	0.66	0.61	0.17
Control Delay	28.9	9.6	12.2	6.0	12.1	10.9	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	28.9	9.6	12.2	6.0	12.1	10.9	1.7
Queue Length 50th (ft)	58	1	3	0	134	120	0
Queue Length 95th (ft)	#122	15	10	3	248	220	20
Internal Link Dist (ft)		1145	420		620	2120	
Turn Bay Length (ft)	60			120			150
Base Capacity (vph)	397	441	553	239	1146	1172	1118
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.05	0.04	0.01	0.60	0.56	0.16

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Water Street & South Liberty Street/NEHD Driveway

2029 Build Condition

Weekday Arrival

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	195	4	17	4	3	6	2	635	2	0	599	162
Future Volume (vph)	195	4	17	4	3	6	2	635	2	0	599	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	15	15	15	12	12	12	13	13	15
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.88			0.94		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1703	1443			1934		1203	1862			1906	1708
Flt Permitted	0.74	1.00			0.94		0.31	1.00			1.00	1.00
Satd. Flow (perm)	1334	1443			1839		391	1862			1906	1708
Peak-hour factor, PHF	0.93	0.93	0.93	0.65	0.65	0.65	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	210	4	18	6	5	9	2	690	2	0	651	176
RTOR Reduction (vph)	0	14	0	0	7	0	0	0	0	0	0	76
Lane Group Flow (vph)	210	8	0	0	13	0	2	692	0	0	651	100
Heavy Vehicles (%)	6%	0%	19%	0%	0%	0%	50%	2%	0%	0%	3%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA			NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Actuated Green, G (s)	12.1	12.1			12.1		28.8	28.8			28.8	28.8
Effective Green, g (s)	12.1	12.1			12.1		28.8	28.8			28.8	28.8
Actuated g/C Ratio	0.24	0.24			0.24		0.57	0.57			0.57	0.57
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		2.5	2.5			2.5	2.5
Lane Grp Cap (vph)	317	343			437		221	1053			1078	966
v/s Ratio Prot		0.01						c0.37			0.34	
v/s Ratio Perm	c0.16				0.01		0.01					0.06
v/c Ratio	0.66	0.02			0.03		0.01	0.66			0.60	0.10
Uniform Delay, d1	17.6	14.9			14.9		4.8	7.6			7.3	5.1
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	5.1	0.0			0.0		0.0	1.3			0.8	0.0
Delay (s)	22.7	14.9			14.9		4.8	9.0			8.1	5.1
Level of Service	C	B			B		A	A			A	A
Approach Delay (s)		21.9			14.9			9.0			7.5	
Approach LOS		C			B			A			A	
Intersection Summary												
HCM 2000 Control Delay			10.0									
HCM 2000 Volume to Capacity ratio			0.66									
Actuated Cycle Length (s)			50.9									
Intersection Capacity Utilization			63.5%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
3: Margin Street/Water Street & Site Driveway East

2029 Build Condition
Weekday Arrival

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	39	33	39	600	562	58
Future Volume (vph)	39	33	39	600	562	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	250			2330	700	
Travel Time (s)	5.7			53.0	15.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	10%	2%	2%	3%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

HCM 6th TWSC
3: Margin Street/Water Street & Site Driveway East

2029 Build Condition
Weekday Arrival

Intersection

Int Delay, s/veh 2

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	39	33	39	600	562	58
Future Vol, veh/h	39	33	39	600	562	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	10	2	2	3	2
Mvmt Flow	42	36	42	652	611	63

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	1379	643	674	0	-	0
Stage 1	643	-	-	-	-	-
Stage 2	736	-	-	-	-	-
Critical Hdwy	6.42	6.3	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.39	2.218	-	-	-
Pot Cap-1 Maneuver	159	459	917	-	-	-
Stage 1	523	-	-	-	-	-
Stage 2	474	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	148	459	917	-	-	-
Mov Cap-2 Maneuver	148	-	-	-	-	-
Stage 1	485	-	-	-	-	-
Stage 2	474	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	31	0.6	0
HCM LOS	D		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	917	-	215	-	-
HCM Lane V/C Ratio	0.046	-	0.364	-	-
HCM Control Delay (s)	9.1	0	31	-	-
HCM Lane LOS	A	A	D	-	-
HCM 95th %tile Q(veh)	0.1	-	1.6	-	-

Lanes, Volumes, Timings
4: Margin Street & Gardner Street

2029 Build Condition
Weekday Arrival

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	62	288	516	559	410	74
Future Volume (vph)	62	288	516	559	410	74
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	15
Storage Length (ft)	360	0	250			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			1000	2330	
Travel Time (s)	22.7			22.7	53.0	
Confl. Peds. (#/hr)	1	1	1			1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	3%	2%	1%	3%	2%	0%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
4: Margin Street & Gardner Street

2029 Build Condition
Weekday Arrival

Intersection

Int Delay, s/veh 48.2

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	62	288	516	559	410	74
Future Vol, veh/h	62	288	516	559	410	74
Conflicting Peds, #/hr	1	1	1	0	0	1
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	360	0	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	3	2	1	3	2	0
Mvmt Flow	67	313	561	608	446	80

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	2218	488	527	0	-	0
Stage 1	487	-	-	-	-	-
Stage 2	1731	-	-	-	-	-
Critical Hdwy	6.43	6.22	4.11	-	-	-
Critical Hdwy Stg 1	5.43	-	-	-	-	-
Critical Hdwy Stg 2	5.43	-	-	-	-	-
Follow-up Hdwy	3.527	3.318	2.209	-	-	-
Pot Cap-1 Maneuver	~ 48	580	1045	-	-	-
Stage 1	616	-	-	-	-	-
Stage 2	156	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 22	579	1044	-	-	-
Mov Cap-2 Maneuver	~ 22	-	-	-	-	-
Stage 1	285	-	-	-	-	-
Stage 2	156	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	244.8	5.9	0
HCM LOS	F		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	1044	-	22	579	-	-
HCM Lane V/C Ratio	0.537	-	3.063	0.541	-	-
HCM Control Delay (s)	12.4	-	\$ 1297	18.3	-	-
HCM Lane LOS	B	-	F	C	-	-
HCM 95th %tile Q(veh)	3.3	-	8.6	3.2	-	-

Notes

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

Lanes, Volumes, Timings
5: Pulaski Street & Site Driveway West

2029 Build Condition
Weekday Arrival

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	67	19	197	110	28	139
Future Volume (vph)	67	19	197	110	28	139
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	250		1000			1225
Travel Time (s)	5.7		22.7			27.8
Peak Hour Factor	0.92	0.92	0.93	0.93	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
5: Pulaski Street & Site Driveway West

2029 Build Condition
Weekday Arrival

Intersection

Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	19	197	110	28	139
Future Vol, veh/h	67	19	197	110	28	139
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	93	93	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	73	21	212	118	30	151

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	482	271	0	0	330
Stage 1	271	-	-	-	-
Stage 2	211	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	543	768	-	-	1229
Stage 1	775	-	-	-	-
Stage 2	824	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	528	768	-	-	1229
Mov Cap-2 Maneuver	528	-	-	-	-
Stage 1	775	-	-	-	-
Stage 2	802	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	1.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	567	1229
HCM Lane V/C Ratio	-	-	0.165	0.025
HCM Control Delay (s)	-	-	12.6	8
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1

Lanes, Volumes, Timings

6: Pulaski Street & Pound Lane/Gardner Street

2029 Build Condition
Weekday Arrival

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	27	44	576	0	8	0	397	397	5	282	0
Future Volume (vph)	12	27	44	576	0	8	0	397	397	5	282	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	14	14	14	11	11	10	13	13	13
Storage Length (ft)	0		40	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			1000			650			1000	
Travel Time (s)		11.4			22.7			14.8			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	5%	1%	0%	0%	0%	4%	2%	0%	10%	0%
Shared Lane Traffic (%)												
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Detector Phase	4	4	4	2	2			1	2	1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0			12.0	8.0	12.0	12.0	
Minimum Split (s)	10.5	10.5	10.5	13.5	13.5			20.5	13.5	20.5	20.5	
Total Split (s)	15.5	15.5	15.5	45.5	45.5			35.5	45.5	35.5	35.5	
Total Split (%)	16.1%	16.1%	16.1%	47.2%	47.2%			36.8%	47.2%	36.8%	36.8%	
Maximum Green (s)	10.0	10.0	10.0	40.0	40.0			30.0	40.0	30.0	30.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5			3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0			2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lead/Lag				Lag	Lag			Lead	Lag	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0			4.0	3.0	4.0	4.0	
Recall Mode	None	None	None	None	None			Min	None	Min	Min	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								8.0		8.0	8.0	
Pedestrian Calls (#/hr)								5		5	5	

Intersection Summary

Area Type: Other
Cycle Length: 96.5
Actuated Cycle Length: 79.7
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Pulaski Street & Pound Lane/Gardner Street



Queues

2029 Build Condition

6: Pulaski Street & Pound Lane/Gardner Street

Weekday Arrival

						
Lane Group	EBT	EBR	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	42	48	635	432	432	312
v/c Ratio	0.19	0.18	0.79	0.75	0.33	0.54
Control Delay	41.0	3.4	27.5	36.7	1.0	29.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	3.4	27.5	36.7	1.0	29.2
Queue Length 50th (ft)	22	0	270	213	0	141
Queue Length 95th (ft)	56	9	421	#389	17	246
Internal Link Dist (ft)	420		920	570		920
Turn Bay Length (ft)		40				
Base Capacity (vph)	286	313	1102	737	1333	741
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.15	0.58	0.59	0.32	0.42

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

6: Pulaski Street & Pound Lane/Gardner Street

2029 Build Condition

Weekday Arrival

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	27	44	576	0	8	0	397	397	5	282	0
Future Volume (vph)	12	27	44	576	0	8	0	397	397	5	282	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	14	14	14	11	11	10	13	13	13
Total Lost time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		1.00			1.00	0.85		1.00	
Flt Protected		0.98	1.00		0.95			1.00	1.00		1.00	
Satd. Flow (prot)		2058	1692		1909			1766	1478		1786	
Flt Permitted		0.98	1.00		0.95			1.00	1.00		0.99	
Satd. Flow (perm)		2058	1692		1909			1766	1478		1774	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	13	29	48	626	0	9	0	432	432	5	307	0
RTOR Reduction (vph)	0	0	44	0	55	0	0	0	122	0	0	0
Lane Group Flow (vph)	0	42	4	0	580	0	0	432	310	0	312	0
Heavy Vehicles (%)	0%	0%	5%	1%	0%	0%	0%	4%	2%	0%	10%	0%
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Actuated Green, G (s)		6.2	6.2		31.4			26.0	57.4		26.0	
Effective Green, g (s)		6.2	6.2		31.4			26.0	57.4		26.0	
Actuated g/C Ratio		0.08	0.08		0.39			0.32	0.72		0.32	
Clearance Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Vehicle Extension (s)		4.0	4.0		3.0			4.0	3.0		4.0	
Lane Grp Cap (vph)		159	130		748			573	1160		575	
v/s Ratio Prot		c0.02	0.00		c0.30			c0.24	0.10			
v/s Ratio Perm									0.10		0.18	
v/c Ratio		0.26	0.03		0.78			0.75	0.27		0.54	
Uniform Delay, d1		34.8	34.2		21.3			24.2	4.0		22.2	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.2	0.1		5.1			5.9	0.1		1.3	
Delay (s)		36.0	34.3		26.3			30.1	4.1		23.5	
Level of Service		D	C		C			C	A		C	
Approach Delay (s)		35.1			26.3			17.1			23.5	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			22.1									
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			80.1									
Intersection Capacity Utilization			69.1%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

7: Endicott Street/Pulaski Street & Andover Street/Central Street

2029 Build Condition
Weekday Arrival

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	469	750	62	2	834	154	92	181	16	124	116	656
Future Volume (vph)	469	750	62	2	834	154	92	181	16	124	116	656
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		0	150		75	0		0	0		430
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			No			Yes			No			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			650	
Travel Time (s)		22.7			22.7			22.7			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	5%	0%	2%	2%	1%	3%	0%	4%	0%	3%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Total Split (s)	33.0	68.0		35.0	35.0	35.0	39.0	39.0		39.0	39.0	33.0
Total Split (%)	30.8%	63.6%		32.7%	32.7%	32.7%	36.4%	36.4%		36.4%	36.4%	30.8%
Maximum Green (s)	28.0	63.0		30.0	30.0	30.0	34.0	34.0		34.0	34.0	28.0
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)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 107
Actuated Cycle Length: 101.2
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Endicott Street/Pulaski Street & Andover Street/Central Street



Queues

2029 Build Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Arrival

							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	510	882	909	167	314	255	698
v/c Ratio	1.07	0.81	0.93	0.33	0.96	0.83	0.75
Control Delay	99.4	23.8	52.9	19.1	78.1	57.4	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	1.3
Total Delay	99.4	23.8	52.9	19.1	78.1	57.4	21.0
Queue Length 50th (ft)	~395	441	313	49	201	155	296
Queue Length 95th (ft)	#614	#706	#454	109	#361	#278	451
Internal Link Dist (ft)		920	920		920	570	
Turn Bay Length (ft)				75			430
Base Capacity (vph)	475	1102	1006	521	388	365	935
Starvation Cap Reductn	0	0	0	0	0	0	94
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.07	0.80	0.90	0.32	0.81	0.70	0.83

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Endicott Street/Pulaski Street & Andover Street/Central Street

2029 Build Condition

Weekday Arrival

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	469	750	62	2	834	154	92	181	16	124	116	656
Future Volume (vph)	469	750	62	2	834	154	92	181	16	124	116	656
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	11	11	11
Total Lost time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.99			1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98			0.97	1.00
Satd. Flow (prot)	1711	1760			3539	1583		1817			1754	1516
Flt Permitted	0.95	1.00			0.95	1.00		0.62			0.60	1.00
Satd. Flow (perm)	1711	1760			3375	1583		1150			1079	1516
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	510	815	67	2	907	167	100	197	17	132	123	698
RTOR Reduction (vph)	0	0	0	0	0	50	0	0	0	0	0	9
Lane Group Flow (vph)	510	882	0	0	909	117	0	314	0	0	255	689
Heavy Vehicles (%)	2%	3%	5%	0%	2%	2%	1%	3%	0%	4%	0%	3%
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Actuated Green, G (s)	28.2	62.4			29.2	29.2		28.7			28.7	56.9
Effective Green, g (s)	28.2	62.4			29.2	29.2		28.7			28.7	56.9
Actuated g/C Ratio	0.28	0.62			0.29	0.29		0.28			0.28	0.56
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	2.0	2.0			2.0	2.0		2.0			2.0	2.0
Lane Grp Cap (vph)	477	1086			974	457		326			306	928
v/s Ratio Prot	c0.30	0.50										0.21
v/s Ratio Perm					c0.27	0.07		c0.27			0.24	0.25
v/c Ratio	1.07	0.81			0.93	0.25		0.96			0.83	0.74
Uniform Delay, d1	36.4	14.9			35.0	27.6		35.7			34.0	16.6
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	60.9	4.5			15.0	0.1		39.6			16.7	2.8
Delay (s)	97.4	19.3			50.0	27.7		75.2			50.7	19.4
Level of Service	F	B			D	C		E			D	B
Approach Delay (s)		47.9			46.6			75.2			27.8	
Approach LOS		D			D			E			C	

Intersection Summary

HCM 2000 Control Delay	44.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.99		
Actuated Cycle Length (s)	101.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	101.1%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Lanes, Volumes, Timings

1: Water Street & Endicott Street

2029 Build Condition
Weekday Dismissal

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	143	692	413	499	522	115
Future Volume (vph)	143	692	413	499	522	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Storage Length (ft)	0	0	280			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			2200	1000	
Travel Time (s)	22.7			50.0	22.7	
Peak Hour Factor	0.97	0.97	0.92	0.92	0.98	0.98
Heavy Vehicles (%)	1%	2%	3%	2%	5%	1%
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Detector Phase	5	1	1	3	3	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	11.0	11.0	11.0	20.0	20.0	
Total Split (s)	20.0	19.0	19.0	45.0	45.0	
Total Split (%)	23.8%	22.6%	22.6%	53.6%	53.6%	
Maximum Green (s)	15.0	14.0	14.0	40.0	40.0	
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max	Max	None	None	

Intersection Summary

Area Type: Other
 Cycle Length: 84
 Actuated Cycle Length: 69.9
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Water Street & Endicott Street



Queues
1: Water Street & Endicott Street

2029 Build Condition
Weekday Dismissal

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	147	713	449	542	650
v/c Ratio	0.53	1.18	1.25	0.67	0.73
Control Delay	37.6	120.3	163.1	20.5	21.5
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	37.6	120.3	163.1	20.5	21.5
Queue Length 50th (ft)	63	~387	~282	187	226
Queue Length 95th (ft)	128	#657	#520	313	374
Internal Link Dist (ft)	920			2120	920
Turn Bay Length (ft)			280		
Base Capacity (vph)	393	605	360	1095	1196
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.37	1.18	1.25	0.49	0.54

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Water Street & Endicott Street

2029 Build Condition

Weekday Dismissal

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	143	692	413	499	522	115
Future Volume (vph)	143	692	413	499	522	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	15	15
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1728	1531	1694	1801	1956	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1728	1531	1694	1801	1956	
Peak-hour factor, PHF	0.97	0.97	0.92	0.92	0.98	0.98
Adj. Flow (vph)	147	713	449	542	533	117
RTOR Reduction (vph)	0	0	0	0	10	0
Lane Group Flow (vph)	147	713	449	542	640	0
Heavy Vehicles (%)	1%	2%	3%	2%	5%	1%
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Actuated Green, G (s)	9.1	24.0	14.9	31.6	31.6	
Effective Green, g (s)	9.1	24.0	14.9	31.6	31.6	
Actuated g/C Ratio	0.13	0.34	0.21	0.45	0.45	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	222	628	357	806	875	
v/s Ratio Prot	0.09	c0.24	0.27	0.30	c0.33	
v/s Ratio Perm		0.23				
v/c Ratio	0.66	1.14	1.26	0.67	0.73	
Uniform Delay, d1	29.3	23.3	27.8	15.4	16.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.2	79.4	136.8	2.2	3.2	
Delay (s)	36.5	102.7	164.7	17.6	19.2	
Level of Service	D	F	F	B	B	
Approach Delay (s)	91.4			84.3	19.2	
Approach LOS	F			F	B	
Intersection Summary						
HCM 2000 Control Delay			69.8		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			1.01			
Actuated Cycle Length (s)			70.6		Sum of lost time (s)	15.0
Intersection Capacity Utilization			85.6%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

2: Water Street & South Liberty Street/NEHD Driveway

2029 Build Condition
Weekday Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	2	13	4	5	5	7	652	3	2	834	358
Future Volume (vph)	231	2	13	4	5	5	7	652	3	2	834	358
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	15	15	15	12	12	12	13	13	15
Storage Length (ft)	60		0	0		0	120		0	0		150
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1225			500			700			2200	
Travel Time (s)		27.8			11.4			15.9			50.0	
Confl. Peds. (#/hr)				36		36			36	36		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.97	0.97	0.96	0.96	0.96
Heavy Vehicles (%)	2%	0%	8%	0%	0%	0%	14%	2%	0%	0%	2%	4%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Detector Phase	2	2		2	2		1	1		1	1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	10.0	10.0		10.0	10.0		21.0	21.0		21.0	21.0	21.0
Total Split (s)	20.0	20.0		20.0	20.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	35.7%	35.7%		35.7%	35.7%		64.3%	64.3%		64.3%	64.3%	64.3%
Maximum Green (s)	15.0	15.0		15.0	15.0		31.0	31.0		31.0	31.0	31.0
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.5		2.5	2.5	2.5
Recall Mode	None	None		None	None		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other
Cycle Length: 56
Actuated Cycle Length: 53.4
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Water Street & South Liberty Street/NEHD Driveway



Queues

2029 Build Condition

2: Water Street & South Liberty Street/NEHD Driveway

Weekday Dismissal

							
Lane Group	EBL	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	251	16	14	7	675	871	373
v/c Ratio	0.73	0.04	0.03	0.05	0.64	0.80	0.33
Control Delay	33.5	9.5	13.1	6.9	11.9	17.5	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	33.5	9.5	13.1	6.9	11.9	17.5	1.8
Queue Length 50th (ft)	75	1	2	1	140	210	0
Queue Length 95th (ft)	#164	12	13	6	239	#435	29
Internal Link Dist (ft)		1145	420		620	2120	
Turn Bay Length (ft)	60			120			150
Base Capacity (vph)	394	446	510	148	1088	1124	1153
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	0.64	0.04	0.03	0.05	0.62	0.77	0.32

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Water Street & South Liberty Street/NEHD Driveway

2029 Build Condition

Weekday Dismissal

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	231	2	13	4	5	5	7	652	3	2	834	358
Future Volume (vph)	231	2	13	4	5	5	7	652	3	2	834	358
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	15	15	15	12	12	12	13	13	15
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frpb, ped/bikes	1.00	1.00			0.97		1.00	1.00			1.00	1.00
Flpb, ped/bikes	1.00	1.00			0.98		1.00	1.00			1.00	1.00
Frt	1.00	0.87			0.95		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			0.99		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770	1543			1858		1583	1861			1925	1708
Flt Permitted	0.75	1.00			0.95		0.15	1.00			1.00	1.00
Satd. Flow (perm)	1394	1543			1785		254	1861			1923	1708
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.97	0.97	0.97	0.96	0.96	0.96
Adj. Flow (vph)	251	2	14	4	5	5	7	672	3	2	869	373
RTOR Reduction (vph)	0	11	0	0	4	0	0	0	0	0	0	162
Lane Group Flow (vph)	251	5	0	0	10	0	7	675	0	0	871	211
Confl. Peds. (#/hr)				36		36			36	36		
Heavy Vehicles (%)	2%	0%	8%	0%	0%	0%	14%	2%	0%	0%	2%	4%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Actuated Green, G (s)	13.1	13.1			13.1		30.2	30.2			30.2	30.2
Effective Green, g (s)	13.1	13.1			13.1		30.2	30.2			30.2	30.2
Actuated g/C Ratio	0.25	0.25			0.25		0.57	0.57			0.57	0.57
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		2.5	2.5			2.5	2.5
Lane Grp Cap (vph)	342	379			438		143	1054			1089	967
v/s Ratio Prot		0.00						0.36				
v/s Ratio Perm	c0.18				0.01		0.03				c0.45	0.12
v/c Ratio	0.73	0.01			0.02		0.05	0.64			0.80	0.22
Uniform Delay, d1	18.5	15.2			15.2		5.1	7.9			9.2	5.7
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	7.9	0.0			0.0		0.1	1.2			4.1	0.1
Delay (s)	26.4	15.2			15.3		5.3	9.0			13.2	5.8
Level of Service	C	B			B		A	A			B	A
Approach Delay (s)		25.8			15.3			9.0			11.0	
Approach LOS		C			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			12.2									
HCM 2000 Volume to Capacity ratio			0.78									
Actuated Cycle Length (s)			53.3									
Intersection Capacity Utilization			73.3%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
 3: Margin Street/Water Street & Site Driveway East

2029 Build Condition
 Weekday Dismissal

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	36	26	21	626	818	33
Future Volume (vph)	36	26	21	626	818	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	250			2330	700	
Travel Time (s)	5.7			53.0	15.9	
Peak Hour Factor	0.92	0.92	0.97	0.97	0.98	0.98
Heavy Vehicles (%)	10%	10%	2%	2%	2%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
 Control Type: Unsignalized

HCM 6th TWSC
3: Margin Street/Water Street & Site Driveway East

2029 Build Condition
Weekday Dismissal

Intersection

Int Delay, s/veh 1.9

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	36	26	21	626	818	33
Future Vol, veh/h	36	26	21	626	818	33
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	97	97	98	98
Heavy Vehicles, %	10	10	2	2	2	2
Mvmt Flow	39	28	22	645	835	34

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	1541	852	869	0	-	0
Stage 1	852	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Critical Hdwy	6.5	6.3	4.12	-	-	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-
Follow-up Hdwy	3.59	3.39	2.218	-	-	-
Pot Cap-1 Maneuver	122	348	775	-	-	-
Stage 1	405	-	-	-	-	-
Stage 2	484	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	117	348	775	-	-	-
Mov Cap-2 Maneuver	117	-	-	-	-	-
Stage 1	387	-	-	-	-	-
Stage 2	484	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	42.2	0.3	0
HCM LOS	E		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	775	-	162	-	-
HCM Lane V/C Ratio	0.028	-	0.416	-	-
HCM Control Delay (s)	9.8	0	42.2	-	-
HCM Lane LOS	A	A	E	-	-
HCM 95th %tile Q(veh)	0.1	-	1.8	-	-

Lanes, Volumes, Timings
4: Margin Street & Gardner Street

2029 Build Condition
Weekday Dismissal

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	46	314	499	546	729	39
Future Volume (vph)	46	314	499	546	729	39
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	15
Storage Length (ft)	360	0	250			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			1000	2330	
Travel Time (s)	22.7			22.7	53.0	
Confl. Peds. (#/hr)	3	3	3			3
Peak Hour Factor	0.94	0.94	0.92	0.92	0.94	0.94
Heavy Vehicles (%)	5%	0%	2%	2%	1%	3%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
4: Margin Street & Gardner Street

2029 Build Condition
Weekday Dismissal

Intersection

Int Delay, s/veh 63.8

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	46	314	499	546	729	39
Future Vol, veh/h	46	314	499	546	729	39
Conflicting Peds, #/hr	3	3	3	0	0	3
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	360	0	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	94	94	92	92	94	94
Heavy Vehicles, %	5	0	2	2	1	3
Mvmt Flow	49	334	542	593	776	41

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	2480	803	820	0	-	0
Stage 1	800	-	-	-	-	-
Stage 2	1680	-	-	-	-	-
Critical Hdwy	6.45	6.2	4.12	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.3	2.218	-	-	-
Pot Cap-1 Maneuver	~ 32	387	809	-	-	-
Stage 1	437	-	-	-	-	-
Stage 2	163	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 10	385	807	-	-	-
Mov Cap-2 Maneuver	~ 10	-	-	-	-	-
Stage 1	143	-	-	-	-	-
Stage 2	163	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s\$	363.5	8.6	0
HCM LOS	F		

Minor Lane/Major Mvmt NBL NBT EBLn1 EBLn2 SBT SBR

Capacity (veh/h)	807	-	10	385	-	-
HCM Lane V/C Ratio	0.672	-	4.894	0.868	-	-
HCM Control Delay (s)	18.1	\$	2490.2	51.9	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	5.3	-	7.4	8.5	-	-

Notes

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

Lanes, Volumes, Timings
5: Pulaski Street & Site Driveway West

2029 Build Condition
Weekday Dismissal

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	55	16	230	55	16	354
Future Volume (vph)	55	16	230	55	16	354
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	250		1000			1225
Travel Time (s)	5.7		22.7			27.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	2%	2%	2%	2%	4%
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

HCM 6th TWSC
5: Pulaski Street & Site Driveway West

2029 Build Condition
Weekday Dismissal

Intersection

Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	55	16	230	55	16	354
Future Vol, veh/h	55	16	230	55	16	354
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	4
Mvmt Flow	60	17	250	60	17	385

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	699	280	0	0	310
Stage 1	280	-	-	-	-
Stage 2	419	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	406	759	-	-	1250
Stage 1	767	-	-	-	-
Stage 2	664	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	399	759	-	-	1250
Mov Cap-2 Maneuver	399	-	-	-	-
Stage 1	767	-	-	-	-
Stage 2	653	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	447	1250
HCM Lane V/C Ratio	-	-	0.173	0.014
HCM Control Delay (s)	-	-	14.7	7.9
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.6	0

Lanes, Volumes, Timings
6: Pulaski Street & Pound Lane/Gardner Street

2029 Build Condition
Weekday Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	24	32	549	0	33	0	316	435	7	448	0
Future Volume (vph)	13	24	32	549	0	33	0	316	435	7	448	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	14	14	14	11	11	10	13	13	13
Storage Length (ft)	0		40	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			1000			650			1000	
Travel Time (s)		11.4			22.7			14.8			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	8%	4%	0%	2%	0%	0%	0%	5%	1%	0%	2%	0%
Shared Lane Traffic (%)												
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Detector Phase	4	4	4	2	2			1	2	1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0			12.0	8.0	12.0	12.0	
Minimum Split (s)	10.5	10.5	10.5	13.5	13.5			23.5	13.5	23.5	23.5	
Total Split (s)	15.5	15.5	15.5	45.5	45.5			35.5	45.5	35.5	35.5	
Total Split (%)	16.1%	16.1%	16.1%	47.2%	47.2%			36.8%	47.2%	36.8%	36.8%	
Maximum Green (s)	10.0	10.0	10.0	40.0	40.0			30.0	40.0	30.0	30.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5			3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0			2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lead/Lag				Lag	Lag			Lead	Lag	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0			4.0	3.0	4.0	4.0	
Recall Mode	None	None	None	None	None			Min	None	Min	Min	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								8.0		8.0	8.0	
Pedestrian Calls (#/hr)								5		5	5	

Intersection Summary

Area Type: Other
Cycle Length: 96.5
Actuated Cycle Length: 80
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Pulaski Street & Pound Lane/Gardner Street



Queues

2029 Build Condition

6: Pulaski Street & Pound Lane/Gardner Street

Weekday Dismissal

						
Lane Group	EBT	EBR	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	40	35	633	322	444	464
v/c Ratio	0.19	0.13	0.79	0.56	0.34	0.74
Control Delay	41.2	1.0	27.9	29.9	1.0	35.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	41.2	1.0	27.9	29.9	1.0	35.5
Queue Length 50th (ft)	22	0	271	148	0	230
Queue Length 95th (ft)	55	0	424	256	17	#404
Internal Link Dist (ft)	420		920	570		920
Turn Bay Length (ft)		40				
Base Capacity (vph)	270	323	1085	727	1345	796
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.11	0.58	0.44	0.33	0.58

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

6: Pulaski Street & Pound Lane/Gardner Street

2029 Build Condition

Weekday Dismissal

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	13	24	32	549	0	33	0	316	435	7	448	0
Future Volume (vph)	13	24	32	549	0	33	0	316	435	7	448	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	14	14	14	11	11	10	13	13	13
Total Lost time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		0.99			1.00	0.85		1.00	
Flt Protected		0.98	1.00		0.95			1.00	1.00		1.00	
Satd. Flow (prot)		1949	1776		1885			1749	1492		1924	
Flt Permitted		0.98	1.00		0.95			1.00	1.00		0.99	
Satd. Flow (perm)		1949	1776		1885			1749	1492		1914	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	14	26	35	597	0	36	0	322	444	7	457	0
RTOR Reduction (vph)	0	0	32	0	55	0	0	0	125	0	0	0
Lane Group Flow (vph)	0	40	3	0	578	0	0	322	319	0	464	0
Heavy Vehicles (%)	8%	4%	0%	2%	0%	0%	0%	5%	1%	0%	2%	0%
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Actuated Green, G (s)		6.2	6.2		31.6			26.1	57.7		26.1	
Effective Green, g (s)		6.2	6.2		31.6			26.1	57.7		26.1	
Actuated g/C Ratio		0.08	0.08		0.39			0.32	0.72		0.32	
Clearance Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Vehicle Extension (s)		4.0	4.0		3.0			4.0	3.0		4.0	
Lane Grp Cap (vph)		150	136		740			567	1172		621	
v/s Ratio Prot		c0.02	0.00		c0.31			0.18	0.11			
v/s Ratio Perm									0.11		c0.24	
v/c Ratio		0.27	0.02		0.78			0.57	0.27		0.75	
Uniform Delay, d1		35.0	34.3		21.4			22.5	4.0		24.2	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		1.3	0.1		5.4			1.6	0.1		5.2	
Delay (s)		36.3	34.4		26.8			24.1	4.1		29.4	
Level of Service		D	C		C			C	A		C	
Approach Delay (s)		35.4			26.8			12.5			29.4	
Approach LOS		D			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			22.1			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			80.4			Sum of lost time (s)				16.5		
Intersection Capacity Utilization			77.4%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2029 Build Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

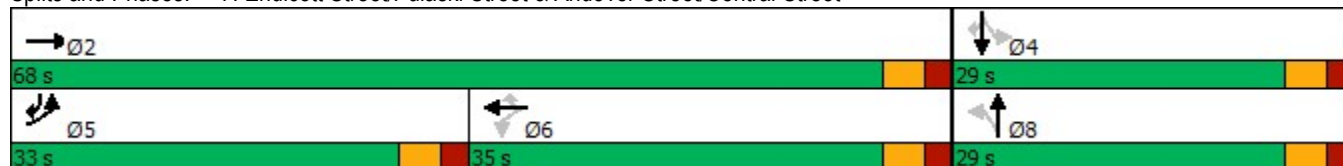
Weekday Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	836	60	8	689	159	91	158	21	204	201	612
Future Volume (vph)	437	836	60	8	689	159	91	158	21	204	201	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		0	150		75	0		0	0		430
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			No			Yes			No			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			650	
Travel Time (s)		22.7			22.7			22.7			14.8	
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	4%	2%	2%	0%	1%	4%	1%	0%	10%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Total Split (s)	33.0	68.0		35.0	35.0	35.0	29.0	29.0		29.0	29.0	33.0
Total Split (%)	34.0%	70.1%		36.1%	36.1%	36.1%	29.9%	29.9%		29.9%	29.9%	34.0%
Maximum Green (s)	28.0	63.0		30.0	30.0	30.0	24.0	24.0		24.0	24.0	28.0
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)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	None

Intersection Summary

Area Type: Other
 Cycle Length: 97
 Actuated Cycle Length: 91.4
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Endicott Street/Pulaski Street & Andover Street/Central Street



Queues

2029 Build Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Dismissal

							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	451	924	758	173	294	427	644
v/c Ratio	0.92	0.83	0.81	0.35	2.37	1.45	0.68
Control Delay	58.8	20.9	38.3	14.6	659.9	249.3	16.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.2
Total Delay	58.8	20.9	38.3	14.6	659.9	249.3	16.4
Queue Length 50th (ft)	255	373	218	36	~291	~353	218
Queue Length 95th (ft)	#460	568	286	89	#466	#559	379
Internal Link Dist (ft)		920	920		920	570	
Turn Bay Length (ft)				75			430
Base Capacity (vph)	517	1237	1111	575	124	295	976
Starvation Cap Reductn	0	0	0	0	0	0	46
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.87	0.75	0.68	0.30	2.37	1.45	0.69

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Endicott Street/Pulaski Street & Andover Street/Central Street

2029 Build Condition

Weekday Dismissal

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	836	60	8	689	159	91	158	21	204	201	612
Future Volume (vph)	437	836	60	8	689	159	91	158	21	204	201	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	11	11	11
Total Lost time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.99			1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98			0.98	1.00
Satd. Flow (prot)	1678	1783			3573	1553		1828			1756	1531
Flt Permitted	0.95	1.00			0.94	1.00		0.25			0.62	1.00
Satd. Flow (perm)	1678	1783			3364	1553		472			1119	1531
Peak-hour factor, PHF	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	451	862	62	9	749	173	99	172	23	215	212	644
RTOR Reduction (vph)	0	0	0	0	0	67	0	0	0	0	0	19
Lane Group Flow (vph)	451	924	0	0	758	106	0	294	0	0	427	625
Heavy Vehicles (%)	4%	2%	2%	0%	1%	4%	1%	0%	10%	2%	2%	2%
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Actuated Green, G (s)	26.7	57.2			25.5	25.5		24.1			24.1	50.8
Effective Green, g (s)	26.7	57.2			25.5	25.5		24.1			24.1	50.8
Actuated g/C Ratio	0.29	0.63			0.28	0.28		0.26			0.26	0.56
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	2.0	2.0			2.0	2.0		2.0			2.0	2.0
Lane Grp Cap (vph)	490	1117			939	433		124			295	935
v/s Ratio Prot	c0.27	c0.52										0.20
v/s Ratio Perm					0.23	0.07		c0.62			0.38	0.21
v/c Ratio	0.92	0.83			0.81	0.24		2.37			1.45	0.67
Uniform Delay, d1	31.3	13.2			30.6	25.5		33.6			33.6	14.3
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	22.4	4.9			4.9	0.1		641.1			219.5	1.4
Delay (s)	53.7	18.1			35.5	25.6		674.7			253.1	15.7
Level of Service	D	B			D	C		F			F	B
Approach Delay (s)		29.8			33.6			674.7			110.4	
Approach LOS		C			C			F			F	
Intersection Summary												
HCM 2000 Control Delay			105.9				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.37									
Actuated Cycle Length (s)			91.3				Sum of lost time (s)		15.0			
Intersection Capacity Utilization			120.1%				ICU Level of Service		H			
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Water Street & Endicott Street

2029 Build Condition
Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	188	754	370	509	509	99
Future Volume (vph)	188	754	370	509	509	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Storage Length (ft)	0	0	280			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			2200	1000	
Travel Time (s)	22.7			50.0	22.7	
Peak Hour Factor	0.99	0.99	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	2%	2%	2%	0%
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Detector Phase	5	1	1	3	3	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	11.0	11.0	11.0	20.0	20.0	
Total Split (s)	25.0	35.0	35.0	45.0	45.0	
Total Split (%)	23.8%	33.3%	33.3%	42.9%	42.9%	
Maximum Green (s)	20.0	30.0	30.0	40.0	40.0	
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	Max	Max	None	None	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 97.3
Natural Cycle: 90
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Water Street & Endicott Street



Queues
1: Water Street & Endicott Street

2029 Build Condition
Weekday Evening

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	190	762	402	553	661
v/c Ratio	0.69	0.95	0.76	0.82	0.87
Control Delay	52.9	45.2	42.7	39.2	41.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	45.2	42.7	39.2	41.7
Queue Length 50th (ft)	117	459	238	306	370
Queue Length 95th (ft)	192	#730	#409	#504	#602
Internal Link Dist (ft)	920			2120	920
Turn Bay Length (ft)			280		
Base Capacity (vph)	361	805	532	747	840
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.53	0.95	0.76	0.74	0.79

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Water Street & Endicott Street

2029 Build Condition
Weekday Evening

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	188	754	370	509	509	99
Future Volume (vph)	188	754	370	509	509	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	15	15
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1745	1546	1711	1801	2010	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1745	1546	1711	1801	2010	
Peak-hour factor, PHF	0.99	0.99	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	762	402	553	553	108
RTOR Reduction (vph)	0	0	0	0	7	0
Lane Group Flow (vph)	190	762	402	553	654	0
Heavy Vehicles (%)	0%	1%	2%	2%	2%	0%
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Actuated Green, G (s)	15.4	45.7	30.3	36.5	36.5	
Effective Green, g (s)	15.4	45.7	30.3	36.5	36.5	
Actuated g/C Ratio	0.16	0.47	0.31	0.38	0.38	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	276	806	533	676	754	
v/s Ratio Prot	0.11	c0.29	0.24	0.31	c0.33	
v/s Ratio Perm		0.20				
v/c Ratio	0.69	0.95	0.75	0.82	0.87	
Uniform Delay, d1	38.6	24.6	30.1	27.4	28.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.0	19.5	9.5	7.6	10.3	
Delay (s)	45.6	44.1	39.6	35.0	38.5	
Level of Service	D	D	D	C	D	
Approach Delay (s)	44.4			36.9	38.5	
Approach LOS	D			D	D	
Intersection Summary						
HCM 2000 Control Delay			40.1		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.97			
Actuated Cycle Length (s)			97.2		Sum of lost time (s)	15.0
Intersection Capacity Utilization			87.8%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings
2: Water Street & South Liberty Street/NEHD Driveway

2029 Build Condition

Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	1	6	1	1	6	19	648	2	4	965	271
Future Volume (vph)	196	1	6	1	1	6	19	648	2	4	965	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	15	15	15	12	12	12	13	13	15
Storage Length (ft)	60		0	0		0	120		0	0		150
Storage Lanes	1		0	0		0	1		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1225			500			700			2200	
Travel Time (s)		27.8			11.4			15.9			50.0	
Peak Hour Factor	0.92	0.92	0.92	0.67	0.67	0.67	0.92	0.92	0.92	0.96	0.96	0.96
Heavy Vehicles (%)	2%	0%	0%	0%	0%	17%	6%	1%	0%	25%	1%	2%
Shared Lane Traffic (%)												
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Detector Phase	2	2		2	2		1	1		1	1	1
Switch Phase												
Minimum Initial (s)	5.0	5.0		5.0	5.0		16.0	16.0		16.0	16.0	16.0
Minimum Split (s)	10.0	10.0		10.0	10.0		21.0	21.0		21.0	21.0	21.0
Total Split (s)	20.0	20.0		20.0	20.0		36.0	36.0		36.0	36.0	36.0
Total Split (%)	35.7%	35.7%		35.7%	35.7%		64.3%	64.3%		64.3%	64.3%	64.3%
Maximum Green (s)	15.0	15.0		15.0	15.0		31.0	31.0		31.0	31.0	31.0
Yellow Time (s)	4.0	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	1.0
Lost Time Adjust (s)	0.0	0.0			0.0		0.0	0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lead/Lag	Lag	Lag		Lag	Lag		Lead	Lead		Lead	Lead	Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0		3.0	3.0		2.5	2.5		2.5	2.5	2.5
Recall Mode	None	None		None	None		Min	Min		Min	Min	Min

Intersection Summary

Area Type: Other
Cycle Length: 56
Actuated Cycle Length: 55.8
Natural Cycle: 55
Control Type: Actuated-Uncoordinated

Splits and Phases: 2: Water Street & South Liberty Street/NEHD Driveway



Queues

2029 Build Condition

2: Water Street & South Liberty Street/NEHD Driveway

Weekday Evening

							
Lane Group	EBL	EBT	WBT	NBL	NBT	SBT	SBR
Lane Group Flow (vph)	213	8	11	21	706	1009	282
v/c Ratio	0.68	0.02	0.03	0.16	0.63	0.87	0.25
Control Delay	30.7	10.4	10.3	10.1	11.2	22.6	1.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	30.7	10.4	10.3	10.1	11.2	22.6	1.6
Queue Length 50th (ft)	61	0	1	3	136	254	0
Queue Length 95th (ft)	120	8	7	15	254	#541	25
Internal Link Dist (ft)		1145	420		620	2120	
Turn Bay Length (ft)	60			120			150
Base Capacity (vph)	376	450	439	128	1120	1154	1151
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	0.57	0.02	0.03	0.16	0.63	0.87	0.25

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2: Water Street & South Liberty Street/NEHD Driveway

2029 Build Condition

Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	196	1	6	1	1	6	19	648	2	4	965	271
Future Volume (vph)	196	1	6	1	1	6	19	648	2	4	965	271
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	12	12	12	15	15	15	12	12	12	13	13	15
Total Lost time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Frt	1.00	0.87			0.89		1.00	1.00			1.00	0.85
Flt Protected	0.95	1.00			1.00		0.95	1.00			1.00	1.00
Satd. Flow (prot)	1770	1651			1625		1703	1880			1942	1742
Flt Permitted	0.75	1.00			0.98		0.12	1.00			1.00	1.00
Satd. Flow (perm)	1398	1651			1607		215	1880			1938	1742
Peak-hour factor, PHF	0.92	0.92	0.92	0.67	0.67	0.67	0.92	0.92	0.92	0.96	0.96	0.96
Adj. Flow (vph)	213	1	7	1	1	9	21	704	2	4	1005	282
RTOR Reduction (vph)	0	5	0	0	7	0	0	0	0	0	0	114
Lane Group Flow (vph)	213	3	0	0	4	0	21	706	0	0	1009	168
Heavy Vehicles (%)	2%	0%	0%	0%	0%	17%	6%	1%	0%	25%	1%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	Perm
Protected Phases		2			2			1			1	
Permitted Phases	2			2			1			1		1
Actuated Green, G (s)	12.5	12.5			12.5		33.3	33.3			33.3	33.3
Effective Green, g (s)	12.5	12.5			12.5		33.3	33.3			33.3	33.3
Actuated g/C Ratio	0.22	0.22			0.22		0.60	0.60			0.60	0.60
Clearance Time (s)	5.0	5.0			5.0		5.0	5.0			5.0	5.0
Vehicle Extension (s)	3.0	3.0			3.0		2.5	2.5			2.5	2.5
Lane Grp Cap (vph)	313	369			359		128	1121			1156	1039
v/s Ratio Prot		0.00						0.38				
v/s Ratio Perm	c0.15				0.00		0.10				c0.52	0.10
v/c Ratio	0.68	0.01			0.01		0.16	0.63			0.87	0.16
Uniform Delay, d1	19.8	16.8			16.8		5.0	7.3			9.5	5.0
Progression Factor	1.00	1.00			1.00		1.00	1.00			1.00	1.00
Incremental Delay, d2	6.0	0.0			0.0		0.4	1.0			7.4	0.1
Delay (s)	25.8	16.8			16.9		5.5	8.2			16.9	5.1
Level of Service	C	B			B		A	A			B	A
Approach Delay (s)		25.5			16.9			8.2			14.3	
Approach LOS		C			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			13.4									
HCM 2000 Volume to Capacity ratio			0.82									
Actuated Cycle Length (s)			55.8									
Intersection Capacity Utilization			79.8%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings
3: Margin Street/Water Street & Site Driveway East

2029 Build Condition
Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	36	27	14	633	956	16
Future Volume (vph)	36	27	14	633	956	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30			30	30	
Link Distance (ft)	250			2330	700	
Travel Time (s)	5.7			53.0	15.9	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.94	0.94
Heavy Vehicles (%)	2%	2%	2%	1%	1%	2%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

HCM 6th TWSC
3: Margin Street/Water Street & Site Driveway East

2029 Build Condition
Weekday Evening

Intersection

Int Delay, s/veh 2.4

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations						
Traffic Vol, veh/h	36	27	14	633	956	16
Future Vol, veh/h	36	27	14	633	956	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	94	94
Heavy Vehicles, %	2	2	2	1	1	2
Mvmt Flow	39	29	15	688	1017	17

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	1744	1026	1034	0	-	0
Stage 1	1026	-	-	-	-	-
Stage 2	718	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	95	285	672	-	-	-
Stage 1	346	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	92	285	672	-	-	-
Mov Cap-2 Maneuver	92	-	-	-	-	-
Stage 1	334	-	-	-	-	-
Stage 2	483	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	60	0.2	0
HCM LOS	F		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	672	-	130	-	-
HCM Lane V/C Ratio	0.023	-	0.527	-	-
HCM Control Delay (s)	10.5	0	60	-	-
HCM Lane LOS	B	A	F	-	-
HCM 95th %tile Q(veh)	0.1	-	2.5	-	-

Lanes, Volumes, Timings
4: Margin Street & Gardner Street

2029 Build Condition
Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	37	341	424	520	811	34
Future Volume (vph)	37	341	424	520	811	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	15	15
Storage Length (ft)	360	0	250			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			1000	2330	
Travel Time (s)	22.7			22.7	53.0	
Peak Hour Factor	0.92	0.92	0.96	0.96	0.92	0.92
Heavy Vehicles (%)	0%	0%	1%	3%	1%	3%
Shared Lane Traffic (%)						
Sign Control	Stop			Free	Free	

Intersection Summary

Area Type: Other
Control Type: Unsignalized

HCM 6th TWSC
4: Margin Street & Gardner Street

2029 Build Condition
Weekday Evening

Intersection

Int Delay, s/veh	39.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	37	341	424	520	811	34
Future Vol, veh/h	37	341	424	520	811	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	360	0	250	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	96	96	92	92
Heavy Vehicles, %	0	0	1	3	1	3
Mvmt Flow	40	371	442	542	882	37

Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	2327	901	919	0	-	0
Stage 1	901	-	-	-	-	-
Stage 2	1426	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.209	-	-	-
Pot Cap-1 Maneuver	41	~ 340	747	-	-	-
Stage 1	400	-	-	-	-	-
Stage 2	224	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	~ 17	~ 340	747	-	-	-
Mov Cap-2 Maneuver	~ 17	-	-	-	-	-
Stage 1	163	-	-	-	-	-
Stage 2	224	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	206.5	7.4	0
HCM LOS	F		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	747	-	17	340	-	-
HCM Lane V/C Ratio	0.591	-	2.366	1.09	-	-
HCM Control Delay (s)	16.5	\$	1089.6	110.7	-	-
HCM Lane LOS	C	-	F	F	-	-
HCM 95th %tile Q(veh)	3.9	-	5.6	13.9	-	-

Notes

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

Lanes, Volumes, Timings
5: Pulaski Street & Site Driveway West

2029 Build Condition
Weekday Evening

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	80	17	186	37	8	283
Future Volume (vph)	80	17	186	37	8	283
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Link Speed (mph)	30		30			30
Link Distance (ft)	250		1000			1225
Travel Time (s)	5.7		22.7			27.8
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Shared Lane Traffic (%)						
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					

HCM 6th TWSC
5: Pulaski Street & Site Driveway West

2029 Build Condition
Weekday Evening

Intersection

Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	80	17	186	37	8	283
Future Vol, veh/h	80	17	186	37	8	283
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	87	18	202	40	9	308

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	548	222	0	0	242
Stage 1	222	-	-	-	-
Stage 2	326	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	497	818	-	-	1324
Stage 1	815	-	-	-	-
Stage 2	731	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	493	818	-	-	1324
Mov Cap-2 Maneuver	493	-	-	-	-
Stage 1	815	-	-	-	-
Stage 2	725	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.5	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	530	1324
HCM Lane V/C Ratio	-	-	0.199	0.007
HCM Control Delay (s)	-	-	13.5	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0

Lanes, Volumes, Timings
6: Pulaski Street & Pound Lane/Gardner Street

2029 Build Condition
Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	22	25	519	0	10	0	275	439	10	472	0
Future Volume (vph)	12	22	25	519	0	10	0	275	439	10	472	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	15	15	15	14	14	14	11	11	10	13	13	13
Storage Length (ft)	0		40	0		0	0		0	0		0
Storage Lanes	0		1	0		0	0		1	0		0
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		500			1000			650			1000	
Travel Time (s)		11.4			22.7			14.8			22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	0%	4%	0%	0%	3%	0%
Shared Lane Traffic (%)												
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Detector Phase	4	4	4	2	2			1	2	1	1	
Switch Phase												
Minimum Initial (s)	5.0	5.0	5.0	8.0	8.0			12.0	8.0	12.0	12.0	
Minimum Split (s)	10.5	10.5	10.5	13.5	13.5			20.5	13.5	20.5	20.5	
Total Split (s)	15.5	15.5	15.5	45.5	45.5			35.5	45.5	35.5	35.5	
Total Split (%)	16.1%	16.1%	16.1%	47.2%	47.2%			36.8%	47.2%	36.8%	36.8%	
Maximum Green (s)	10.0	10.0	10.0	40.0	40.0			30.0	40.0	30.0	30.0	
Yellow Time (s)	3.5	3.5	3.5	3.5	3.5			3.5	3.5	3.5	3.5	
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0			2.0	2.0	2.0	2.0	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0	0.0		0.0	
Total Lost Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lead/Lag				Lag	Lag			Lead	Lag	Lead	Lead	
Lead-Lag Optimize?												
Vehicle Extension (s)	4.0	4.0	4.0	3.0	3.0			4.0	3.0	4.0	4.0	
Recall Mode	None	None	None	None	None			Min	None	Min	Min	
Walk Time (s)								7.0		7.0	7.0	
Flash Dont Walk (s)								8.0		8.0	8.0	
Pedestrian Calls (#/hr)								5		5	5	

Intersection Summary

Area Type: Other
Cycle Length: 96.5
Actuated Cycle Length: 75.2
Natural Cycle: 65
Control Type: Actuated-Uncoordinated

Splits and Phases: 6: Pulaski Street & Pound Lane/Gardner Street



Queues

2029 Build Condition

6: Pulaski Street & Pound Lane/Gardner Street

Weekday Evening

						
Lane Group	EBT	EBR	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	37	27	575	289	462	524
v/c Ratio	0.16	0.10	0.73	0.45	0.34	0.76
Control Delay	39.6	0.7	24.2	25.2	0.9	34.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	39.6	0.7	24.2	25.2	0.9	34.2
Queue Length 50th (ft)	19	0	228	119	0	250
Queue Length 95th (ft)	51	0	362	227	17	#495
Internal Link Dist (ft)	420		920	570		920
Turn Bay Length (ft)		40				
Base Capacity (vph)	301	337	1157	778	1379	832
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.12	0.08	0.50	0.37	0.34	0.63

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

6: Pulaski Street & Pound Lane/Gardner Street

2029 Build Condition
Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	12	22	25	519	0	10	0	275	439	10	472	0
Future Volume (vph)	12	22	25	519	0	10	0	275	439	10	472	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	15	15	15	14	14	14	11	11	10	13	13	13
Total Lost time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Lane Util. Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Frt		1.00	0.85		1.00			1.00	0.85		1.00	
Flt Protected		0.98	1.00		0.95			1.00	1.00		1.00	
Satd. Flow (prot)		2054	1776		1908			1766	1507		1905	
Flt Permitted		0.98	1.00		0.95			1.00	1.00		0.99	
Satd. Flow (perm)		2054	1776		1908			1766	1507		1891	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95	0.92	0.92	0.92
Adj. Flow (vph)	13	24	27	564	0	11	0	289	462	11	513	0
RTOR Reduction (vph)	0	0	25	0	56	0	0	0	126	0	0	0
Lane Group Flow (vph)	0	37	2	0	519	0	0	289	336	0	524	0
Heavy Vehicles (%)	0%	0%	0%	1%	0%	0%	0%	4%	0%	0%	3%	0%
Turn Type	Split	NA	Prot	Split	NA			NA	pm+ov	Perm	NA	
Protected Phases	4	4	4	2	2			1	2		1	
Permitted Phases									1	1		
Actuated Green, G (s)		4.4	4.4		28.7			27.3	56.0		27.3	
Effective Green, g (s)		4.4	4.4		28.7			27.3	56.0		27.3	
Actuated g/C Ratio		0.06	0.06		0.37			0.36	0.73		0.36	
Clearance Time (s)		5.5	5.5		5.5			5.5	5.5		5.5	
Vehicle Extension (s)		4.0	4.0		3.0			4.0	3.0		4.0	
Lane Grp Cap (vph)		117	101		712			626	1205		671	
v/s Ratio Prot		c0.02	0.00		c0.27			0.16	0.10			
v/s Ratio Perm									0.12		c0.28	
v/c Ratio		0.32	0.02		0.73			0.46	0.28		0.78	
Uniform Delay, d1		34.8	34.2		20.7			19.1	3.6		22.1	
Progression Factor		1.00	1.00		1.00			1.00	1.00		1.00	
Incremental Delay, d2		2.1	0.1		3.7			0.7	0.1		6.2	
Delay (s)		36.9	34.3		24.5			19.9	3.7		28.4	
Level of Service		D	C		C			B	A		C	
Approach Delay (s)		35.8			24.5			9.9			28.4	
Approach LOS		D			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			20.2			HCM 2000 Level of Service					C	
HCM 2000 Volume to Capacity ratio			0.72									
Actuated Cycle Length (s)			76.9			Sum of lost time (s)				16.5		
Intersection Capacity Utilization			78.1%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

2029 Build Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

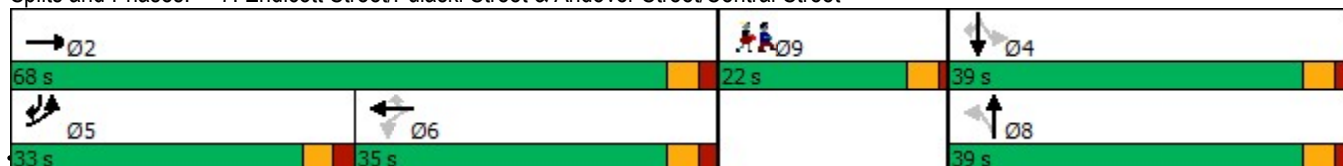
Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	432	862	77	3	764	140	85	160	10	157	199	653
Future Volume (vph)	432	862	77	3	764	140	85	160	10	157	199	653
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		0	150		75	0		0	0		430
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			No			Yes			No			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			650	
Travel Time (s)		22.7			22.7			22.7			14.8	
Peak Hour Factor	0.97	0.97	0.97	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	0%	1%	4%	1%	0%	0%	1%	4%	1%
Shared Lane Traffic (%)												
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Total Split (s)	33.0	68.0		35.0	35.0	35.0	39.0	39.0		39.0	39.0	33.0
Total Split (%)	25.6%	52.7%		27.1%	27.1%	27.1%	30.2%	30.2%		30.2%	30.2%	25.6%
Maximum Green (s)	28.0	63.0		30.0	30.0	30.0	34.0	34.0		34.0	34.0	28.0
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)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												

Intersection Summary

Area Type: Other
 Cycle Length: 129
 Actuated Cycle Length: 111.4
 Natural Cycle: 140
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Endicott Street/Pulaski Street & Andover Street/Central Street



Lane Group Ø9

Lane Configurations
Traffic Volume (vph)
Future Volume (vph)
Ideal Flow (vphpl)
Lane Width (ft)
Storage Length (ft)
Storage Lanes
Taper Length (ft)
Right Turn on Red
Link Speed (mph)
Link Distance (ft)
Travel Time (s)
Peak Hour Factor
Heavy Vehicles (%)
Shared Lane Traffic (%)
Turn Type
Protected Phases 9
Permitted Phases
Detector Phase
Switch Phase
Minimum Initial (s) 7.0
Minimum Split (s) 22.0
Total Split (s) 22.0
Total Split (%) 17%
Maximum Green (s) 18.0
Yellow Time (s) 3.0
All-Red Time (s) 1.0
Lost Time Adjust (s)
Total Lost Time (s)
Lead/Lag
Lead-Lag Optimize?
Vehicle Extension (s) 3.0
Recall Mode None
Walk Time (s) 7.0
Flash Dont Walk (s) 11.0
Pedestrian Calls (#/hr) 10

Intersection Summary

Queues

2029 Build Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Evening

							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	445	968	825	151	277	387	710
v/c Ratio	1.03	0.95	0.91	0.31	1.17	1.06	0.65
Control Delay	93.1	42.1	54.7	16.4	150.2	102.3	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	93.1	42.1	54.7	16.4	150.2	102.3	9.7
Queue Length 50th (ft)	305	554	284	30	~221	~283	98
Queue Length 95th (ft)	#659	#1172	#528	101	#484	#599	336
Internal Link Dist (ft)		920	920		920	570	
Turn Bay Length (ft)				75			430
Base Capacity (vph)	432	1022	908	488	236	365	1098
Starvation Cap Reductn	0	0	0	0	0	0	109
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.03	0.95	0.91	0.31	1.17	1.06	0.72

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

7: Endicott Street/Pulaski Street & Andover Street/Central Street

2029 Build Condition
Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	432	862	77	3	764	140	85	160	10	157	199	653
Future Volume (vph)	432	862	77	3	764	140	85	160	10	157	199	653
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	11	11	11
Total Lost time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.99			1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98			0.98	1.00
Satd. Flow (prot)	1711	1798			3574	1553		1853			1750	1546
Flt Permitted	0.95	1.00			0.94	1.00		0.41			0.67	1.00
Satd. Flow (perm)	1711	1798			3353	1553		771			1191	1546
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	445	889	79	3	822	151	92	174	11	171	216	710
RTOR Reduction (vph)	0	0	0	0	0	69	0	0	0	0	0	189
Lane Group Flow (vph)	445	968	0	0	825	82	0	277	0	0	387	521
Heavy Vehicles (%)	2%	1%	0%	0%	1%	4%	1%	0%	0%	1%	4%	1%
Turn Type	Prot	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases				6		6	8			4		4
Actuated Green, G (s)	28.2	63.4			30.2	30.2		34.2			34.2	62.4
Effective Green, g (s)	28.2	63.4			30.2	30.2		34.2			34.2	62.4
Actuated g/C Ratio	0.25	0.55			0.26	0.26		0.30			0.30	0.54
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	2.0	2.0			2.0	2.0		2.0			2.0	2.0
Lane Grp Cap (vph)	420	993			882	408		229			355	908
v/s Ratio Prot	0.26	c0.54										0.14
v/s Ratio Perm					0.25	0.05		c0.36			0.33	0.20
v/c Ratio	1.06	0.97			0.94	0.20		1.21			1.09	0.57
Uniform Delay, d1	43.2	24.9			41.3	32.9		40.2			40.2	17.3
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	60.5	22.3			16.5	0.1		127.8			74.1	0.5
Delay (s)	103.8	47.2			57.8	33.0		168.1			114.4	17.9
Level of Service	F	D			E	C		F			F	B
Approach Delay (s)		65.0			53.9			168.1			51.9	
Approach LOS		E			D			F			D	
Intersection Summary												
HCM 2000 Control Delay			65.9									
HCM 2000 Volume to Capacity ratio			1.08									
Actuated Cycle Length (s)			114.7									
Intersection Capacity Utilization			120.8%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Water Street & Endicott Street

2029 Build Mitigation Condition
Weekday Arrival

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	361	337	513	409	65
Future Volume (vph)	50	361	337	513	409	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Storage Length (ft)	0	0	280			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			2200	1000	
Travel Time (s)	22.7			50.0	22.7	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	4%	5%	3%	2%
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Detector Phase	5	1	1	3	3	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	11.0	11.0	11.0	20.0	20.0	
Total Split (s)	25.0	35.0	35.0	45.0	45.0	
Total Split (%)	23.8%	33.3%	33.3%	42.9%	42.9%	
Maximum Green (s)	20.0	30.0	30.0	40.0	40.0	
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 75.2
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Water Street & Endicott Street



Queues

2029 Build Mitigation Condition

1: Water Street & Endicott Street

Weekday Arrival

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	54	392	366	558	516
v/c Ratio	0.27	0.63	0.69	0.73	0.59
Control Delay	41.0	22.7	33.5	26.6	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	41.0	22.7	33.5	26.6	21.1
Queue Length 50th (ft)	28	152	178	242	202
Queue Length 95th (ft)	68	251	300	424	348
Internal Link Dist (ft)	920			2120	920
Turn Bay Length (ft)			280		
Base Capacity (vph)	519	820	748	1039	1188
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.10	0.48	0.49	0.54	0.43
Intersection Summary					

HCM Signalized Intersection Capacity Analysis

1: Water Street & Endicott Street

2029 Build Mitigation Condition

Weekday Arrival

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	50	361	337	513	409	65
Future Volume (vph)	50	361	337	513	409	65
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	15	15
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1745	1516	1678	1749	1994	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1745	1516	1678	1749	1994	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	54	392	366	558	445	71
RTOR Reduction (vph)	0	0	0	0	5	0
Lane Group Flow (vph)	54	392	366	558	511	0
Heavy Vehicles (%)	0%	3%	4%	5%	3%	2%
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Actuated Green, G (s)	4.7	28.5	23.8	33.1	33.1	
Effective Green, g (s)	4.7	28.5	23.8	33.1	33.1	
Actuated g/C Ratio	0.06	0.37	0.31	0.43	0.43	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	107	663	521	755	861	
v/s Ratio Prot	0.03	c0.18	c0.22	c0.32	0.26	
v/s Ratio Perm		0.07				
v/c Ratio	0.50	0.59	0.70	0.74	0.59	
Uniform Delay, d1	34.8	19.4	23.3	18.1	16.6	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	3.7	1.4	4.3	3.8	1.1	
Delay (s)	38.5	20.8	27.5	22.0	17.7	
Level of Service	D	C	C	C	B	
Approach Delay (s)	22.9			24.2	17.7	
Approach LOS	C			C	B	
Intersection Summary						
HCM 2000 Control Delay			22.1		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.74			
Actuated Cycle Length (s)			76.6		Sum of lost time (s)	15.0
Intersection Capacity Utilization			61.6%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

2029 Build Mitigation Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

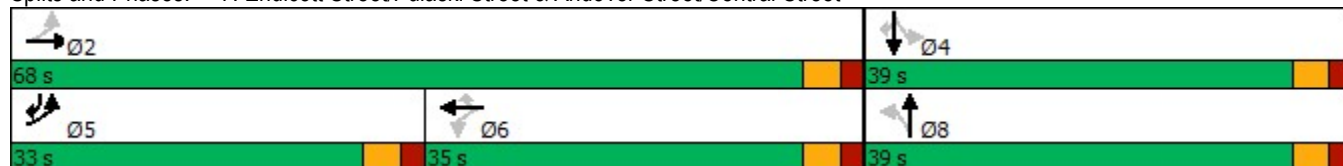
Weekday Arrival

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	469	750	62	2	834	154	92	181	16	124	116	656
Future Volume (vph)	469	750	62	2	834	154	92	181	16	124	116	656
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		0	150		75	0		0	0		430
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			650	
Travel Time (s)		22.7			22.7			22.7			14.8	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Heavy Vehicles (%)	2%	3%	5%	0%	2%	2%	1%	3%	0%	4%	0%	3%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Total Split (s)	33.0	68.0		35.0	35.0	35.0	39.0	39.0		39.0	39.0	33.0
Total Split (%)	30.8%	63.6%		32.7%	32.7%	32.7%	36.4%	36.4%		36.4%	36.4%	30.8%
Maximum Green (s)	28.0	63.0		30.0	30.0	30.0	34.0	34.0		34.0	34.0	28.0
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)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	None

Intersection Summary

Area Type: Other
 Cycle Length: 107
 Actuated Cycle Length: 101.2
 Natural Cycle: 70
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Endicott Street/Pulaski Street & Andover Street/Central Street



Queues

2029 Build Mitigation Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Arrival

							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	510	882	909	167	314	255	698
v/c Ratio	0.93	0.81	0.93	0.33	0.96	0.83	0.75
Control Delay	53.2	23.6	52.9	19.1	78.1	57.4	19.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	1.3
Total Delay	53.2	23.6	52.9	19.1	78.1	57.4	21.0
Queue Length 50th (ft)	285	437	313	49	201	155	296
Queue Length 95th (ft)	#517	#698	#454	109	#361	#278	451
Internal Link Dist (ft)		920	920		920	570	
Turn Bay Length (ft)				75			430
Base Capacity (vph)	547	1105	1006	521	388	365	935
Starvation Cap Reductn	0	0	0	0	0	0	94
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.93	0.80	0.90	0.32	0.81	0.70	0.83

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2029 Build Mitigation Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Arrival

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	469	750	62	2	834	154	92	181	16	124	116	656
Future Volume (vph)	469	750	62	2	834	154	92	181	16	124	116	656
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	11	11	11
Total Lost time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.99			1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98			0.97	1.00
Satd. Flow (prot)	1711	1760			3539	1583		1817			1754	1516
Flt Permitted	0.12	1.00			0.95	1.00		0.62			0.60	1.00
Satd. Flow (perm)	211	1760			3375	1583		1150			1079	1516
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.94	0.94	0.94
Adj. Flow (vph)	510	815	67	2	907	167	100	197	17	132	123	698
RTOR Reduction (vph)	0	3	0	0	0	50	0	0	0	0	0	9
Lane Group Flow (vph)	510	879	0	0	909	117	0	314	0	0	255	689
Heavy Vehicles (%)	2%	3%	5%	0%	2%	2%	1%	3%	0%	4%	0%	3%
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	62.4	62.4			29.2	29.2		28.7			28.7	56.9
Effective Green, g (s)	62.4	62.4			29.2	29.2		28.7			28.7	56.9
Actuated g/C Ratio	0.62	0.62			0.29	0.29		0.28			0.28	0.56
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	2.0	2.0			2.0	2.0		2.0			2.0	2.0
Lane Grp Cap (vph)	548	1086			974	457		326			306	928
v/s Ratio Prot	c0.26	0.50										0.21
v/s Ratio Perm	c0.32				0.27	0.07		c0.27			0.24	0.25
v/c Ratio	0.93	0.81			0.93	0.25		0.96			0.83	0.74
Uniform Delay, d1	27.6	14.8			35.0	27.6		35.7			34.0	16.6
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	22.4	4.3			15.0	0.1		39.6			16.7	2.8
Delay (s)	50.0	19.1			50.0	27.7		75.2			50.7	19.4
Level of Service	D	B			D	C		E			D	B
Approach Delay (s)		30.4			46.6			75.2			27.8	
Approach LOS		C			D			E			C	
Intersection Summary												
HCM 2000 Control Delay			38.2				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.97									
Actuated Cycle Length (s)			101.1				Sum of lost time (s)			15.0		
Intersection Capacity Utilization			101.1%				ICU Level of Service			G		
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Water Street & Endicott Street

2029 Build Mitigation Condition
Weekday Dismissal

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	143	692	413	499	522	115
Future Volume (vph)	143	692	413	499	522	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Storage Length (ft)	0	0	280			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			2200	1000	
Travel Time (s)	22.7			50.0	22.7	
Peak Hour Factor	0.97	0.97	0.92	0.92	0.98	0.98
Heavy Vehicles (%)	1%	2%	3%	2%	5%	1%
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Detector Phase	5	1	1	3	3	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	11.0	11.0	11.0	20.0	20.0	
Total Split (s)	20.0	34.0	34.0	45.0	45.0	
Total Split (%)	20.2%	34.3%	34.3%	45.5%	45.5%	
Maximum Green (s)	15.0	29.0	29.0	40.0	40.0	
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	

Intersection Summary

Area Type: Other
 Cycle Length: 99
 Actuated Cycle Length: 92.1
 Natural Cycle: 80
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Water Street & Endicott Street



Queues
1: Water Street & Endicott Street

2029 Build Mitigation Condition

Weekday Dismissal

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	147	713	449	542	650
v/c Ratio	0.64	0.92	0.84	0.78	0.85
Control Delay	52.3	42.5	47.3	33.9	37.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.3	42.5	47.3	33.9	37.6
Queue Length 50th (ft)	87	408	265	277	340
Queue Length 95th (ft)	151	#662	#455	418	#521
Internal Link Dist (ft)	920			2120	920
Turn Bay Length (ft)			280		
Base Capacity (vph)	284	774	538	789	865
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	0.92	0.83	0.69	0.75

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Water Street & Endicott Street

2029 Build Mitigation Condition
Weekday Dismissal

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	143	692	413	499	522	115
Future Volume (vph)	143	692	413	499	522	115
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	15	15
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1728	1531	1694	1801	1956	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1728	1531	1694	1801	1956	
Peak-hour factor, PHF	0.97	0.97	0.92	0.92	0.98	0.98
Adj. Flow (vph)	147	713	449	542	533	117
RTOR Reduction (vph)	0	0	0	0	8	0
Lane Group Flow (vph)	147	713	449	542	642	0
Heavy Vehicles (%)	1%	2%	3%	2%	5%	1%
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Actuated Green, G (s)	12.3	41.4	29.1	35.6	35.6	
Effective Green, g (s)	12.3	41.4	29.1	35.6	35.6	
Actuated g/C Ratio	0.13	0.45	0.32	0.39	0.39	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	231	772	535	696	756	
v/s Ratio Prot	0.09	c0.29	0.27	0.30	c0.33	
v/s Ratio Perm		0.17				
v/c Ratio	0.64	0.92	0.84	0.78	0.85	
Uniform Delay, d1	37.7	23.8	29.3	24.7	25.7	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	5.6	16.6	11.1	5.5	8.8	
Delay (s)	43.4	40.4	40.4	30.2	34.6	
Level of Service	D	D	D	C	C	
Approach Delay (s)	40.9			34.8	34.6	
Approach LOS	D			C	C	
Intersection Summary						
HCM 2000 Control Delay			36.9		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.95			
Actuated Cycle Length (s)			92.0		Sum of lost time (s)	15.0
Intersection Capacity Utilization			85.6%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

2029 Build Mitigation Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	836	60	8	689	159	91	158	21	204	201	612
Future Volume (vph)	437	836	60	8	689	159	91	158	21	204	201	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		0	150		75	0		0	0		430
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			650	
Travel Time (s)		22.7			22.7			22.7			14.8	
Peak Hour Factor	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Heavy Vehicles (%)	4%	2%	2%	0%	1%	4%	1%	0%	10%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Total Split (s)	33.0	63.0		30.0	30.0	30.0	34.0	34.0		34.0	34.0	33.0
Total Split (%)	34.0%	64.9%		30.9%	30.9%	30.9%	35.1%	35.1%		35.1%	35.1%	34.0%
Maximum Green (s)	28.0	58.0		25.0	25.0	25.0	29.0	29.0		29.0	29.0	28.0
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)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	None

Intersection Summary

Area Type: Other

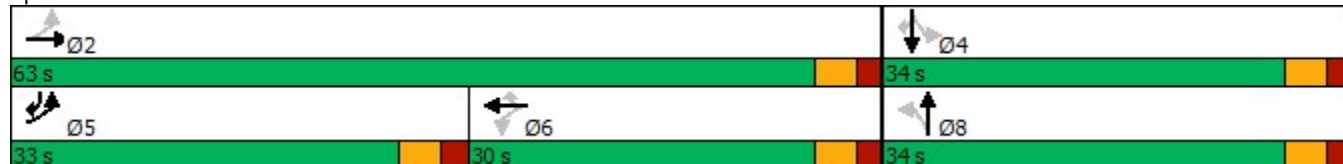
Cycle Length: 97

Actuated Cycle Length: 91.7

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Endicott Street/Pulaski Street & Andover Street/Central Street



							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	451	924	758	173	294	427	644
v/c Ratio	0.88	0.90	0.88	0.38	1.21	1.15	0.66
Control Delay	40.5	30.8	46.6	17.6	160.2	128.5	14.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total Delay	40.5	30.8	46.6	17.6	160.2	128.5	14.6
Queue Length 50th (ft)	199	436	233	41	~230	~323	215
Queue Length 95th (ft)	#359	#738	#338	100	#394	#514	333
Internal Link Dist (ft)		920	920		920	570	
Turn Bay Length (ft)				75			430
Base Capacity (vph)	581	1138	924	489	242	370	1049
Starvation Cap Reductn	0	0	0	0	0	0	83
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.78	0.81	0.82	0.35	1.21	1.15	0.67

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2029 Build Mitigation Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Dismissal

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	437	836	60	8	689	159	91	158	21	204	201	612
Future Volume (vph)	437	836	60	8	689	159	91	158	21	204	201	612
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	11	11	11
Total Lost time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.99			1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98			0.98	1.00
Satd. Flow (prot)	1678	1783			3573	1553		1828			1756	1531
Flt Permitted	0.14	1.00			0.94	1.00		0.41			0.65	1.00
Satd. Flow (perm)	249	1783			3362	1553		762			1162	1531
Peak-hour factor, PHF	0.97	0.97	0.97	0.92	0.92	0.92	0.92	0.92	0.92	0.95	0.95	0.95
Adj. Flow (vph)	451	862	62	9	749	173	99	172	23	215	212	644
RTOR Reduction (vph)	0	3	0	0	0	65	0	0	0	0	0	9
Lane Group Flow (vph)	451	921	0	0	758	108	0	294	0	0	427	635
Heavy Vehicles (%)	4%	2%	2%	0%	1%	4%	1%	0%	10%	2%	2%	2%
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	52.4	52.4			23.4	23.4		29.2			29.2	53.2
Effective Green, g (s)	52.4	52.4			23.4	23.4		29.2			29.2	53.2
Actuated g/C Ratio	0.57	0.57			0.26	0.26		0.32			0.32	0.58
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	2.0	2.0			2.0	2.0		2.0			2.0	2.0
Lane Grp Cap (vph)	516	1019			858	396		242			370	972
v/s Ratio Prot	0.23	c0.52										0.17
v/s Ratio Perm	0.27				0.23	0.07		c0.39			0.37	0.24
v/c Ratio	0.87	0.90			0.88	0.27		1.21			1.15	0.65
Uniform Delay, d1	22.9	17.4			32.8	27.3		31.2			31.2	13.0
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	14.7	10.9			10.4	0.1		128.4			95.7	1.2
Delay (s)	37.6	28.2			43.2	27.4		159.6			126.9	14.2
Level of Service	D	C			D	C		F			F	B
Approach Delay (s)		31.3			40.3			159.6			59.1	
Approach LOS		C			D			F			E	
Intersection Summary												
HCM 2000 Control Delay			52.0									
HCM 2000 Volume to Capacity ratio			1.08									
Actuated Cycle Length (s)			91.6									
Intersection Capacity Utilization			120.1%									
Analysis Period (min)			15									
c Critical Lane Group												

Lanes, Volumes, Timings

1: Water Street & Endicott Street

2029 Build Mitigation Condition
Weekday Evening

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	188	754	370	509	509	99
Future Volume (vph)	188	754	370	509	509	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	11	15	15
Storage Length (ft)	0	0	280			0
Storage Lanes	1	1	1			0
Taper Length (ft)	25		25			
Right Turn on Red		No				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	1000			2200	1000	
Travel Time (s)	22.7			50.0	22.7	
Peak Hour Factor	0.99	0.99	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	1%	2%	2%	2%	0%
Shared Lane Traffic (%)						
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Detector Phase	5	1	1	3	3	
Switch Phase						
Minimum Initial (s)	6.0	6.0	6.0	15.0	15.0	
Minimum Split (s)	11.0	11.0	11.0	20.0	20.0	
Total Split (s)	25.0	35.0	35.0	45.0	45.0	
Total Split (%)	23.8%	33.3%	33.3%	42.9%	42.9%	
Maximum Green (s)	20.0	30.0	30.0	40.0	40.0	
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	
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	
Lead/Lag						
Lead-Lag Optimize?						
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Recall Mode	None	None	None	Min	Min	

Intersection Summary

Area Type: Other
 Cycle Length: 105
 Actuated Cycle Length: 97
 Natural Cycle: 90
 Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Water Street & Endicott Street



Queues

2029 Build Mitigation Condition

1: Water Street & Endicott Street

Weekday Evening

					
Lane Group	EBL	EBR	NBL	NBT	SBT
Lane Group Flow (vph)	190	762	402	553	661
v/c Ratio	0.69	0.94	0.75	0.82	0.87
Control Delay	52.9	44.8	42.5	39.5	42.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	52.9	44.8	42.5	39.5	42.0
Queue Length 50th (ft)	117	459	238	306	370
Queue Length 95th (ft)	192	#730	#409	#504	#602
Internal Link Dist (ft)	920			2120	920
Turn Bay Length (ft)			280		
Base Capacity (vph)	363	807	534	750	843
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.52	0.94	0.75	0.74	0.78

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

1: Water Street & Endicott Street

2029 Build Mitigation Condition
Weekday Evening

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	188	754	370	509	509	99
Future Volume (vph)	188	754	370	509	509	99
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	11	15	15
Total Lost time (s)	5.0	5.0	5.0	5.0	5.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	0.98	
Flt Protected	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (prot)	1745	1546	1711	1801	2010	
Flt Permitted	0.95	1.00	0.95	1.00	1.00	
Satd. Flow (perm)	1745	1546	1711	1801	2010	
Peak-hour factor, PHF	0.99	0.99	0.92	0.92	0.92	0.92
Adj. Flow (vph)	190	762	402	553	553	108
RTOR Reduction (vph)	0	0	0	0	7	0
Lane Group Flow (vph)	190	762	402	553	654	0
Heavy Vehicles (%)	0%	1%	2%	2%	2%	0%
Turn Type	Prot	pm+ov	Prot	NA	NA	
Protected Phases	5	1	1	3	3	
Permitted Phases		5				
Actuated Green, G (s)	15.3	45.6	30.3	36.2	36.2	
Effective Green, g (s)	15.3	45.6	30.3	36.2	36.2	
Actuated g/C Ratio	0.16	0.47	0.31	0.37	0.37	
Clearance Time (s)	5.0	5.0	5.0	5.0	5.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	275	808	535	673	751	
v/s Ratio Prot	0.11	c0.30	0.24	0.31	c0.33	
v/s Ratio Perm		0.20				
v/c Ratio	0.69	0.94	0.75	0.82	0.87	
Uniform Delay, d1	38.5	24.4	29.9	27.4	28.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	7.3	19.1	5.9	8.0	10.8	
Delay (s)	45.8	43.5	35.8	35.4	38.9	
Level of Service	D	D	D	D	D	
Approach Delay (s)	43.9			35.5	38.9	
Approach LOS	D			D	D	
Intersection Summary						
HCM 2000 Control Delay			39.5		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.97			
Actuated Cycle Length (s)			96.8		Sum of lost time (s)	15.0
Intersection Capacity Utilization			87.8%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

Lanes, Volumes, Timings

2029 Build Mitigation Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

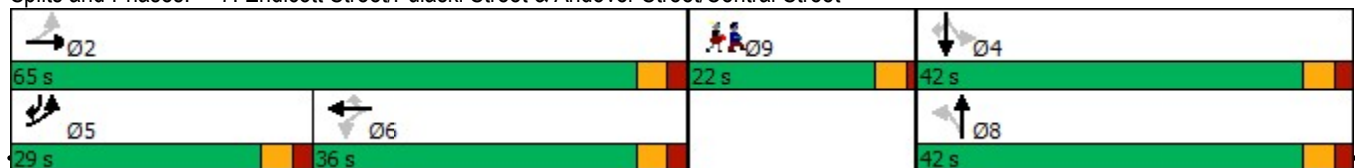
Weekday Evening

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	432	862	77	3	764	140	85	160	10	157	199	653
Future Volume (vph)	432	862	77	3	764	140	85	160	10	157	199	653
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	11	11	12	12	12	12	12	12	11	11	11
Storage Length (ft)	0		0	150		75	0		0	0		430
Storage Lanes	1		0	1		1	0		0	0		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			No			Yes
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1000			1000			1000			650	
Travel Time (s)		22.7			22.7			22.7			14.8	
Peak Hour Factor	0.97	0.97	0.97	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	1%	0%	0%	1%	4%	1%	0%	0%	1%	4%	1%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6		6	8			4		4
Detector Phase	5	2		6	6	6	8	8		4	4	5
Switch Phase												
Minimum Initial (s)	8.0	8.0		12.0	12.0	12.0	8.0	8.0		8.0	8.0	8.0
Minimum Split (s)	13.0	13.0		17.0	17.0	17.0	13.0	13.0		13.0	13.0	13.0
Total Split (s)	29.0	65.0		36.0	36.0	36.0	42.0	42.0		42.0	42.0	29.0
Total Split (%)	22.5%	50.4%		27.9%	27.9%	27.9%	32.6%	32.6%		32.6%	32.6%	22.5%
Maximum Green (s)	24.0	60.0		31.0	31.0	31.0	37.0	37.0		37.0	37.0	24.0
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)	0.0	0.0			0.0	0.0		0.0			0.0	0.0
Total Lost Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lead/Lag	Lead			Lag	Lag	Lag						Lead
Lead-Lag Optimize?												
Vehicle Extension (s)	2.0	2.0		2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Recall Mode	None	Min		Min	Min	Min	None	None		None	None	None
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												

Intersection Summary

Area Type: Other
 Cycle Length: 129
 Actuated Cycle Length: 111.4
 Natural Cycle: 150
 Control Type: Actuated-Uncoordinated

Splits and Phases: 7: Endicott Street/Pulaski Street & Andover Street/Central Street



Lane Group Ø9

Lane Configurations

Traffic Volume (vph)

Future Volume (vph)

Ideal Flow (vphpl)

Lane Width (ft)

Storage Length (ft)

Storage Lanes

Taper Length (ft)

Right Turn on Red

Link Speed (mph)

Link Distance (ft)

Travel Time (s)

Peak Hour Factor

Heavy Vehicles (%)

Shared Lane Traffic (%)

Turn Type

Protected Phases 9

Permitted Phases

Detector Phase

Switch Phase

Minimum Initial (s) 7.0

Minimum Split (s) 22.0

Total Split (s) 22.0

Total Split (%) 17%

Maximum Green (s) 18.0

Yellow Time (s) 3.0

All-Red Time (s) 1.0

Lost Time Adjust (s)

Total Lost Time (s)

Lead/Lag

Lead-Lag Optimize?

Vehicle Extension (s) 3.0

Recall Mode None

Walk Time (s) 7.0

Flash Dont Walk (s) 11.0

Pedestrian Calls (#/hr) 10

Intersection Summary

Queues

2029 Build Mitigation Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Evening

							
Lane Group	EBL	EBT	WBT	WBR	NBT	SBT	SBR
Lane Group Flow (vph)	445	968	825	151	277	387	710
v/c Ratio	1.02	0.99	0.99	0.30	0.94	0.96	0.65
Control Delay	81.8	53.5	69.7	15.9	78.0	73.5	9.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.5
Total Delay	81.8	53.5	69.7	15.9	78.0	73.5	10.3
Queue Length 50th (ft)	255	594	292	29	180	253	105
Queue Length 95th (ft)	#613	#1211	#557	100	#440	#571	350
Internal Link Dist (ft)		920	920		920	570	
Turn Bay Length (ft)				75			430
Base Capacity (vph)	435	976	833	501	294	404	1085
Starvation Cap Reductn	0	0	0	0	0	0	102
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	1.02	0.99	0.99	0.30	0.94	0.96	0.72

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis

2029 Build Mitigation Condition

7: Endicott Street/Pulaski Street & Andover Street/Central Street

Weekday Evening

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	432	862	77	3	764	140	85	160	10	157	199	653
Future Volume (vph)	432	862	77	3	764	140	85	160	10	157	199	653
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	11	11	11	12	12	12	12	12	12	11	11	11
Total Lost time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Lane Util. Factor	1.00	1.00			0.95	1.00		1.00			1.00	1.00
Frt	1.00	0.99			1.00	0.85		0.99			1.00	0.85
Flt Protected	0.95	1.00			1.00	1.00		0.98			0.98	1.00
Satd. Flow (prot)	1711	1798			3574	1553		1853			1750	1546
Flt Permitted	0.11	1.00			0.83	1.00		0.47			0.68	1.00
Satd. Flow (perm)	199	1798			2976	1553		882			1209	1546
Peak-hour factor, PHF	0.97	0.97	0.97	0.93	0.93	0.93	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	445	889	79	3	822	151	92	174	11	171	216	710
RTOR Reduction (vph)	0	2	0	0	0	68	0	0	0	0	0	189
Lane Group Flow (vph)	445	966	0	0	825	83	0	277	0	0	387	521
Heavy Vehicles (%)	2%	1%	0%	0%	1%	4%	1%	0%	0%	1%	4%	1%
Turn Type	pm+pt	NA		Perm	NA	Perm	Perm	NA		Perm	NA	pm+ov
Protected Phases	5	2			6			8			4	5
Permitted Phases	2			6		6	8			4		4
Actuated Green, G (s)	60.3	60.3			31.2	31.2		37.2			37.2	61.3
Effective Green, g (s)	60.3	60.3			31.2	31.2		37.2			37.2	61.3
Actuated g/C Ratio	0.53	0.53			0.27	0.27		0.32			0.32	0.53
Clearance Time (s)	5.0	5.0			5.0	5.0		5.0			5.0	5.0
Vehicle Extension (s)	2.0	2.0			2.0	2.0		2.0			2.0	2.0
Lane Grp Cap (vph)	422	946			810	422		286			392	894
v/s Ratio Prot	0.22	c0.54										0.12
v/s Ratio Perm	c0.33				0.28	0.05		0.31			c0.32	0.21
v/c Ratio	1.05	1.02			1.02	0.20		0.97			0.99	0.58
Uniform Delay, d1	34.6	27.1			41.7	32.1		38.1			38.5	18.0
Progression Factor	1.00	1.00			1.00	1.00		1.00			1.00	1.00
Incremental Delay, d2	58.9	34.6			36.4	0.1		43.9			41.6	0.6
Delay (s)	93.5	61.7			78.1	32.2		82.0			80.0	18.6
Level of Service	F	E			E	C		F			F	B
Approach Delay (s)		71.8			71.0			82.0			40.3	
Approach LOS		E			E			F			D	
Intersection Summary												
HCM 2000 Control Delay			63.1				HCM 2000 Level of Service			E		
HCM 2000 Volume to Capacity ratio			1.04									
Actuated Cycle Length (s)			114.6				Sum of lost time (s)			19.0		
Intersection Capacity Utilization			120.8%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												

Attachment J

Parking Demand Calculations

Middle School/Junior High School (522)

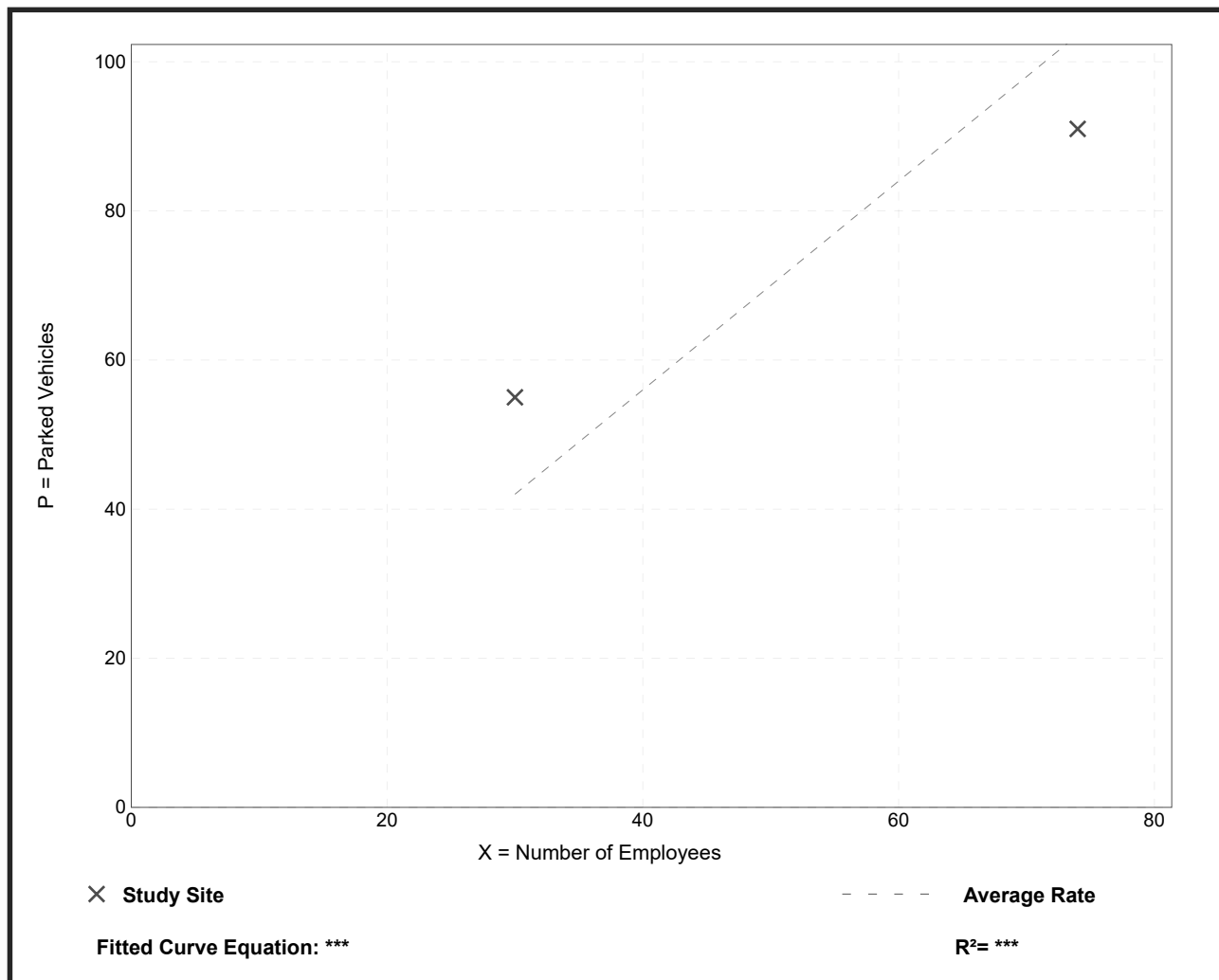
Peak Period Parking Demand vs: Employees
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban
Peak Period of Parking Demand: 10:00 a.m. - 2:00 p.m.
 Number of Studies: 2
 Avg. Num. of Employees: 52

Peak Period Parking Demand per Employee

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
1.40	1.23 - 1.83	*** / ***	***	***

Data Plot and Equation

Caution – Small Sample Size



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Middle School/Junior High School (522)

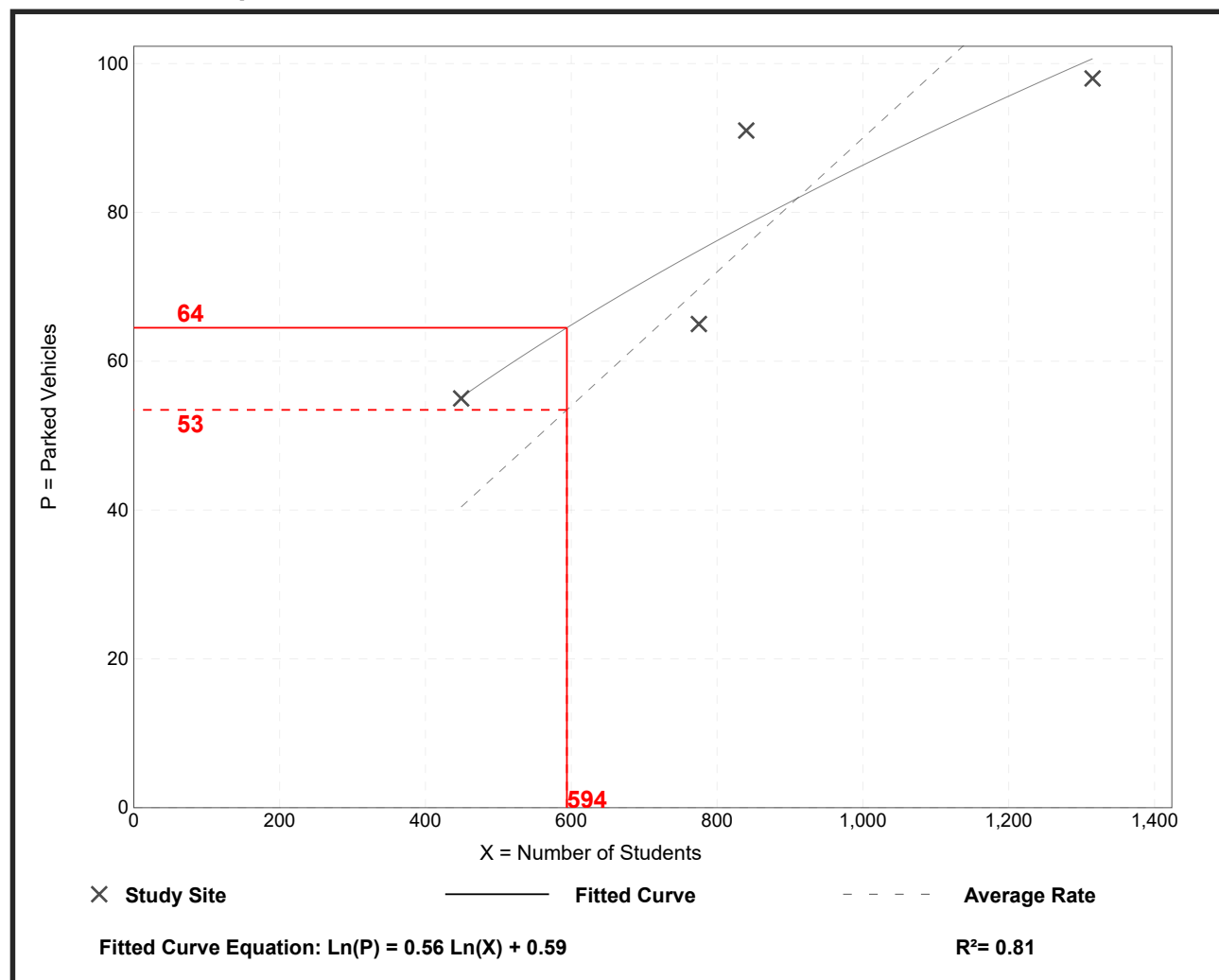
Peak Period Parking Demand vs: Students
On a: Weekday (Monday - Friday)
Setting/Location: General Urban/Suburban
Peak Period of Parking Demand: 10:00 a.m. - 2:00 p.m.
 Number of Studies: 4
 Avg. Num. of Students: 845

Peak Period Parking Demand per Student

Average Rate	Range of Rates	33rd / 85th Percentile	95% Confidence Interval	Standard Deviation (Coeff. of Variation)
0.09	0.07 - 0.12	0.08 / 0.12	***	0.02 (22%)

Data Plot and Equation

Caution – Small Sample Size



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Sam Gregorio

From: Huseyin Kara <hkara@pioneerccss.org>
Sent: Thursday, April 28, 2022 12:49 PM
To: Sam Gregorio
Subject: Parking info at Everett K-8 Campus

Sam;

Please see the information below for the parking lot at the PCSS Everett Campus for grades K-8. Please note that the max capacity of that school is 60 in each grade (540 total) versus 66 in each grade (total 594) in Peabody.

Number of parking spaces: 110
Number of staff parking daily average: 50-60
Number of buses: 6
Number of students who take buses: 220
Number of students who walk: 50
Number of students parents drive: 200
Number of students carpooled or siblings: 100

I hope this helps. Please let me know if you need more information.

Thank you;

Huseyin

Huseyin A. Kara
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Pioneer Charter School of Science
466 Broadway
Everett, MA 02149
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