Transportation Impact Assessment



Proposed Preschool School Hingham Street Rockland, Massachusetts

Prepared for:



April 2020

Prepared by:





Dear Reviewer:

This letter shall certify that this *Transportation Impact Assessment* has been prepared under my direct supervision and responsible charge. I am a Registered Professional Engineer (P.E.) in the Commonwealth of Massachusetts (Massachusetts P.E. No. 38871, Civil) and hold Certification as a Professional Traffic Operations Engineer (PTOE) from the Transportation Professional Certification Board, Inc. (TPCB), an independent affiliate of the Institute of Transportation Engineers (ITE) (PTOE Certificate No. 993). I am also a Fellow of the Institute of Transportation Engineers (FITE).

Sincerely,

VANASSE & ASSOCIATES, INC.

Grey S. Dirk

effrey S. Dirk, P.E., PTOE, FITE

Partner

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EXECUTIVE SUMMARY

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Assessment (TIA) in order to determine the potential impacts on the transportation infrastructure associated with the proposed Primrose Schools® preschool to be located off Hingham Street, north of Reservoir Park Drive and opposite the Comfort Inn, in Rockland, Massachusetts (hereafter referred to as the "Project"). This assessment was prepared in consultation with the Town of Rockland and the Massachusetts Department of Transportation (MassDOT); was performed in accordance with MassDOT's *Transportation Impact Assessment (TIA) Guidelines*; and was conducted pursuant to the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports. Based on this assessment, we have concluded the following with respect to the Project:

- 1. Using trip-generation statistics published by the Institute of Transportation Engineers (ITE)¹, the Project is expected to generate approximately 486 vehicle trips on an average weekday (two-way, 24-hour volumes), with 108 vehicle trips expected during the weekday morning peak-hour and 105 vehicle trips expected during the weekday evening peak-hour;
- 2. The Project will not have a significant impact (increase) on motorist delays or vehicle queuing over Existing or anticipated future conditions without the Project (No-Build conditions), with no movement shown to degrade below a level-of-service (LOS) D, where an LOS of "D" or better is defined as "acceptable" operating conditions, as a result of the addition of Project-related traffic;
- 3. Independent of the Project, specific movements at the signalized intersection of Hingham Street at Reservoir Park Drive were identified to be operating at or over capacity (LOS "E" or "F", respectively) during the peak hours, with Project-related impacts at the intersection defined as a predicted increase in overall average motorist delay of between 3.5 and 4.7 seconds, and in vehicle queuing of up to two (2) vehicles. A review of the existing traffic signal timing plan indicates that the intersection is currently operating under optimal conditions given the current geometry and lane use, and, as such, traffic signal timing adjustments are not recommended;
- 4. All movements exiting the Project site are predicted to operate with average delays that will exceed 50 seconds during the peak hours (LOS F conditions) as a result of the relatively large volume of conflicting traffic travelling along Hingham Street during these

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¹Trip Generation, 10th Edition; Institute of Transportation Engineers; Washington, DC; 2017.

periods, with the resulting residual vehicle queue predicted to be approximately seven (7) vehicles and can be contained within the Project site without impeding access, internal circulation or the movement of vehicles, pedestrians and bicyclists along Hingham Street;

- 5. No apparent safety deficiencies were noted with respect to the motor vehicle crash history at the study intersections; and
- 6. Lines of sight to and from the Project site driveway intersection with Hingham Street were found to exceed or could be made to exceed (with the selective trimming/removal of vegetation) the required minimum distance for the intersection to function in a safe manner based on the appropriate approach speed.

In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with implementation of the recommendations that follow.

RECOMMENDATIONS

A detailed transportation improvement program has been developed that is designed to provide safe and efficient access to the Project site and address any deficiencies identified at off-site locations evaluated in conjunction with this study. The following improvements have been recommended as a part of this evaluation and, where applicable, will be completed in conjunction with the Project subject to receipt of all necessary rights, permits, and approvals.

Project Access

Access to the Project site will be provided by way of a new driveway that will intersect the east side of Hingham Street opposite the driveway to the Comfort Inn and approximately 230 feet north of Reservoir Park Drive and 160 feet south of the Dunkin' Restaurant/Hingham Street Market Place driveways. This separation (160-feet) allows for six (6) to eight (8) vehicles to queue curbside along Hingham Street between the Project site driveway and the Dunkin' Restaurant driveway before the Project site driveway is blocked. The following recommendations are offered with respect to Project access and internal circulation, and are reflected on the Site Plans:

- ➤ The Project site driveway will be a minimum of 24-feet in width and should accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle as defined by the Rockland Fire Department.
- ➤ Vehicles exiting the Project site will be placed under STOP-sign control with a marked STOP-line provided.
- > On-site circulation should be directed in a one-way, counter-clockwise direction around the perimeter of the Project site in order to allow for safe and efficient circulation during student drop-off/pick-up periods and to accommodate the associated vehicle queueing.
- ➤ "One-Way" and "Do Not Enter" signs should be installed at appropriate locations within the Project site to regulate the one-way circulation pattern.

- ➤ All signs and pavement markings to be installed within the Project site will conform to the applicable standards of the *Manual on Uniform Traffic Control Devices* (MUTCD).²
- A sidewalk will be provided along one side of the Project site driveway extending to Hingham Street.
- Americans with Disabilities Act (ADA) compliant wheelchair ramps and marked crosswalks will be provided at internal locations within the Project site where sidewalk is present.
- > Signs and landscaping to be installed as part of the Project within intersection sight triangle areas should be designed and maintained so as not to restrict lines of sight.
- Existing trees and vegetation located along the east side of Hingham Street within intersection sight triangle areas of the Project site driveway should be selectively trimmed or removed and maintained.
- > Snow windrows within sight triangle areas shall be promptly removed where such accumulations would impede sight lines.

Transportation Demand Management

Public transportation services and sidewalks are not currently provided within the study area. That being said, in an effort to encourage the use of alternative modes of transportation to single-occupant vehicles and to promote healthy transportation options to employees of the Project, the following Transportation Demand Management (TDM) measures should be considered as a part of the Project:

- ➤ Information regarding public transportation services, maps, schedules and fare information should be posted in a central location and/or otherwise made available to employees of the project;
- A "welcome packet" should be provided to employees detailing available public transportation services, bicycle and walking alternatives, and commuter options;
- > The Project should offer specific amenities to discourage off-site trips, including providing a break-room equipped with a microwave and refrigerator; offering direct deposit of paychecks; coordinating with a dry-cleaning service for on-site pick-up and delivery; allowing flexible work schedules; and other such measures to reduce overall traffic volumes and travel during peak traffic volume periods;
- Pedestrian accommodations have been incorporated within the Project site; and
- > Secure bicycle parking should be provided in an appropriate location to encourage commuting by bicycle.

With implementation of the above recommendations, safe and efficient access will be provided to the Project site and the Project can be accommodated within the confines of the existing and improved transportation system.

²Manual on Uniform Traffic Control Devices (MUTCD); Federal Highway Administration; Washington, D.C.; 2009.

Vanasse & Associates, Inc. (VAI) has conducted a Transportation Impact Assessment (TIA) in order to determine the potential impacts on the transportation infrastructure associated with the proposed Primrose Schools® preschool to be located off Hingham Street, north of Reservoir Park Drive and opposite the Comfort Inn, in Rockland, Massachusetts (hereafter referred to as the "Project"). This study evaluates the following specific areas as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; and identifies and analyzes existing traffic conditions and future traffic conditions, both with and without the Project, along Hingham Street and at proximate intersections through which Project-related traffic will travel.

PROJECT DESCRIPTION

As proposed, the Project will entail the construction of a 13,000± square foot (sf) Primrose Schools® preschool to be located off Hingham Street, north of Reservoir Park Drive and opposite the Comfort Inn, in Rockland, Massachusetts, Massachusetts. The preschool will accommodate 24 teachers/staff and 184 students. The Project site encompasses approximately 13.12± acres of land bounded by Hingham Street and a commercial property (Dunkin' Restaurant) to the north; municipal land to the south; commercial properties to the east; and Hingham Street and municipal land to the west. Figure 1 depicts the Project site location in relation to the existing roadway network. At present, the Project site contains areas of open and wooded space.

Student drop-off and pick-up will be staggered over a three-hour period in the morning and evening, respectively, with drop-off to occur between 6:30 and 9:30 AM and pick-up to occur between 3:30 and 6:30 PM. This procedure has been developed to ensure that the arrival and departure of students occurs in a safe and efficient manner, and that vehicle queuing and parking demands are managed commensurate with the accommodations that are afforded within the Project site.

Access to the Project site will be provided by way of a new driveway that will intersect the east side of Hingham Street opposite the driveway to the Comfort Inn and approximately 230 feet north of Reservoir Park Drive and 160 feet south of the Dunkin' Restaurant/Hingham Street Market Place driveways. On-site parking will be provided in compliance with Article V § 415-35, *Off-Street Parking Requirements*, of the Town of Rockland Zoning Bylaws.





Site Location Map

STUDY METHODOLOGY

This study was prepared in consultation with the Town of Rockland and the Massachusetts Department of Transportation (MassDOT); was performed in accordance with MassDOT's *Transportation Impact Assessment (TIA) Guidelines* and the standards of the Traffic Engineering and Transportation Planning professions for the preparation of such reports; and was conducted in three distinct stages.

The first stage involved an assessment of existing conditions in the study area and included an inventory of roadway geometrics; pedestrian and bicycle facilities; public transportation services; observations of traffic flow; and collection of daily and peak period traffic counts.

In the second stage of the study, future traffic conditions were projected and analyzed. Specific travel demand forecasts for the Project were assessed along with future traffic demands due to expected traffic growth independent of the Project. A seven-year time horizon was selected for analyses consistent with MassDOT's *Transportation Impact Assessment (TIA) Guidelines*. The traffic analysis conducted in stage two identifies existing or projected future roadway capacity, traffic safety, and site access issues.

The third stage of the study presents and evaluates measures to address traffic and safety issues, if any, identified in stage two of the study.

EXISTING CONDITIONS

A comprehensive field inventory of existing conditions within the study area was conducted in February 2020. The field investigation consisted of an inventory of existing roadway geometrics; pedestrian and bicycle facilities; public transportation services; traffic volumes; and operating characteristics; as well as posted speed limits and land use information within the study area. The study area for the Project was selected to contain the major roadway providing access to the Project site, Hingham Street, as well as the following specific intersections through which Project-related traffic will travel: Hingham Street at Reservoir Park Drive; Hingham Street at the Comfort Inn/ Project site driveways (future); and Hingham Street at the Dunkin' Restaurant/Hingham Street Market Place driveways.

The following describes the study area roadway and intersections.

Roadway

Hingham Street

- Two to four-lane urban minor arterial under local jurisdiction, with the exception of the segment between the Route 3 ramps which is under MassDOT jurisdiction
- > Traverses study area in a general northeast-southwest direction between Webster Street (Route 123) and Accord Park Drive, where Hingham Street becomes Pond Street in Hingham
- ➤ Provides a full access interchange with Route 3 north of the Project site (Exit 14)
- ➤ Within the study area, provides two 12 to 15-foot wide travel lanes separated by a doubleyellow centerline with 1 to 2-foot wide marked shoulders and additional turn lanes at major intersections
- A sidewalk is provided intermittently, but not within the immediate study area
- Posted speed limit varies between 35 miles per hour (mph) and 40 mph
- > Illumination is provided by way of street lights mounted on wood poles
- ➤ Land use consists of the Project site; residential, commercial and municipal properties; and areas of open and wooded space

Intersections

Table 1 and Figure 2 summarize lane use, traffic control, and pedestrian and bicycle accommodations at the study area intersections as observed in February 2020.

Table 1 STUDY AREA INTERSECTION DESCRIPTION

Intersection	Traffic Control Type ^a	No. of Travel Lanes Provided	Shoulder Provided? (Yes/No/Width)	Pedestrian Accommodations? (Yes/No/Description)	Bicycle Accommodations? (Yes/No/Description)
Hingham St./ Reservoir Park Dr.	TS	1 left-turn lane and 1 through lane on Hingham St. northbound; 1 through lane and 1 right- turn lane on Hingham St. southbound; 1 left-turn lane and 1 right-turn lane on Reservoir Park Dr.	Yes; 1 to 2-feet on Hingham St. and Reservoir Park Dr.	Yes – sidewalk along the north side of Reservoir Park Dr.	Yes - Shared traveled- way ^b
Hingham St./ Comfort Inn Dwy.	NC	1 general-purpose lane on Hingham St. northbound; 1 through lane and 1 right- turn lane on Hingham St. southbound; 1 general- purpose lane on Comfort Inn dwy.	Yes; 1 to 2-feet on Hingham St.	No	Yes – Shared traveled way
Hingham St./ Dunkin' Rest./ Hingham St. Market Place Dwys.	NC	1 wide lane that functions as 2 travel lanes on Dunkin' dwy. and 1 lane on all other approaches	Yes; 1 to 3-feet on Hingham St.	No	Yes – Shared traveled way

^aTS = traffic signal control; S = STOP-sign control; Y = YIELD-sign control; NC = no control present.

EXISTING TRAFFIC VOLUMES

In order to determine existing traffic-volume demands and flow patterns within the study area, automatic traffic recorder (ATR) counts, manual turning movement counts (TMCs) and vehicle classification counts were completed in February 2020. The ATR counts were conducted on Hingham Street in the vicinity of the Project site from Tuesday, February 4th through Wednesday, February 5th, inclusive, in order to record weekday traffic conditions over an extended period, with weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak period manual TMCs performed at the study intersections on February 4th and February 12th (Tuesday and Wednesday, respectively). These time periods were selected for analysis purposes as they are representative of the peak traffic volume hours for both the Project and the adjacent roadway network.

^bCombined shoulder and travel lane width equal to or exceed 14 feet.

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- **(J)** Unsignalized Intersection
- Signalized Intersection
- Sidewalk
- Lane Use and Travel Lane Width

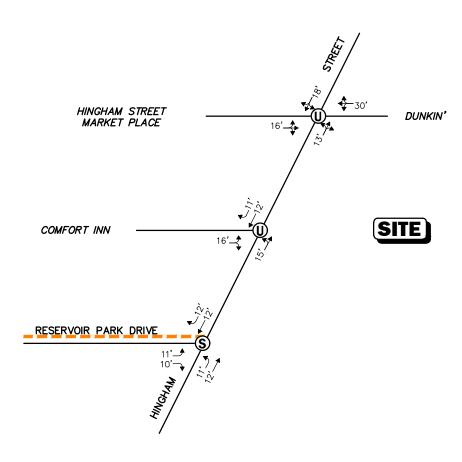




Figure 2

Existing Intersection Lane Use

Travel Lane Width and Pedestrian Facilities

Traffic Volume Adjustments

In order to evaluate the potential for seasonal fluctuation of traffic volumes within the study area, traffic volume data from MassDOT Continuous Count Station No. 7318 located on Route 3 between Exits 14 and 15 in Hingham were reviewed.³ Based on a review of this data, it was determined that traffic volumes for the month of February are approximately 6.8 percent below average-month conditions and, therefore, the raw traffic count data was adjusted upward by 6.8 percent to reflect average-month conditions in accordance with MassDOT standards. The 2020 Existing traffic volumes are summarized in Table 2, with the weekday morning and evening peakhour traffic volumes graphically depicted on Figure 3. Note that the peak-hour traffic volumes presented in Table 2 were obtained from the TMCs and are reflected on Figure 3.

Table 2 2020 EXISTING TRAFFIC VOLUMES

Location/Peak Hour	AWT ^a	VPH ^b	K Factor ^c	Directional Distribution ^d
Hingham Street, north of Reservoir Park Dr.	25,210			
Weekday Morning (7:30 – 8:30 AM)		2,348	9.3	54.3% NB
Weekday Evening (4:15 – 5:15 PM)		2,459	9.8	60.8% SB

^aAverage weekday traffic in vehicles per day.

As can be seen in Table 2, Hingham Street in the vicinity of the Project site was found to accommodate approximately 25,210 vehicles on an average weekday (two-way, 24-hour volume), with approximately 2,348 vehicles per hour (vph) during the weekday morning peak-hour and 2,459 vph during the weekday evening peak-hour.

PEDESTRIAN AND BICYCLE FACILITIES

A comprehensive field inventory of pedestrian and bicycle facilities within the study area was undertaken in February 2020. The field inventory consisted of a review of the location of sidewalks and pedestrian crossing locations along the study roadways and at the study intersections, as well as the location of existing and planned future bicycle facilities. As detailed on Figure 2, within the immediate study area, sidewalks are not currently provided along Hingham Street, but are provided along the north side of Reservoir Park Drive. Marked crosswalks are not provided at the study area intersections and pedestrian traffic signal equipment and phasing are not provided at the Hingham Street/Reservoir Park Drive intersection. Outside of the study area, a sidewalk is provided along the west side of Hingham Street between Webster Street and Weymouth Street, with a short segment provided along both sides of the roadway beneath the Route 3 overpass.

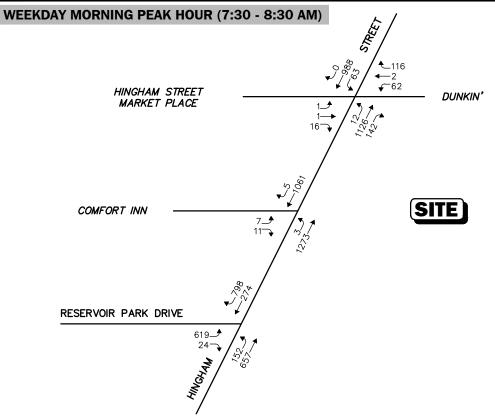
^cVehicles per hour.

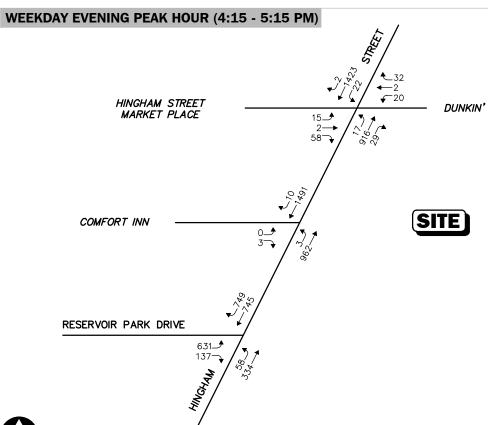
^dPercent of daily traffic occurring during the peak hour.

^ePercent traveling in peak direction.

NB = northbound; SB = southbound.

³MassDOT Traffic Volumes for the Commonwealth of Massachusetts; 2020; Continuous Count Station No. 7318, Pilgrim Highway (Route 3) between Exits 14 and 15, Hingham, MA.







2020 Existing
Peak Hour Traffic Volumes

Figure 3

Not To Scale

Formal bicycle accommodations are not provided within the study area; however, both Hingham Street and Reservoir Park Drive provide sufficient width (combined travel lane and shoulder) to support bicycle travel in a shared travelled-way configuration.⁴

PUBLIC TRANSPORTATION

Public transportation services are not currently provided within the study area; however, the Town of Rockland is served by the Brockton Area Transit Authority (BAT) by way of fixed-route bus service (Rockland Flex Service) that serves the Rockland Plaza and the Rockland Community Center approximately 3 miles to the south of the Project site. The public transportation schedules and fare information are provided in the Appendix.

SPOT SPEED MEASUREMENTS

Vehicle travel speed measurements were performed on Hingham Street in the vicinity of the Project site in conjunction with the ATR counts. Table 3 summarizes the vehicle travel speed measurements.

Table 3
VEHICLE TRAVEL SPEED MEASUREMENTS

	Hingham Street		
	Northbound Southb		
Mean Travel Speed (mph)	28	27	
85th Percentile Speed (mph)	34	32	
Posted Speed Limit (mph)	40	35	

mph = miles per hour.

As can be seen in Table 3, the mean vehicle travel speed along Hingham Street in the vicinity of the Project site was found to be approximately 28 mph in the northbound direction and 27 mph southbound. The average measured 85th percentile vehicle travel speed, or the speed at which 85 percent of the observed vehicles traveled at or below, was found to be approximately 34 mph in the northbound direction and 32 mph southbound, which is 3 to 6 mph below the posted speed limit in the vicinity of the Project site (40 mph northbound and 35 mph southbound). The 85th percentile speed is used as the basis of engineering design and in the evaluation of sight distances, and is often used in establishing posted speed limits.

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⁴A minimum combined travel lane and paved shoulder width of 14-feet is required to support bicycle travel in a shared traveled-way condition.

MOTOR VEHICLE CRASH DATA

Motor vehicle crash information for the study area intersections was provided by the MassDOT Highway Division Safety Management/Traffic Operations Unit for the most recent five-year period available (2013 through 2017, inclusive) in order to examine motor vehicle crash trends occurring within the study area. The data is summarized by intersection, type, severity, and day of occurrence, and presented in Table 4.

As can be seen in Table 4, the study area intersections were found to have experienced an average of approximately three (3) or fewer reported motor vehicle crash per year over the five-year review period, and were found to have motor vehicle crash rates <u>below</u> the MassDOT statewide and District average crash rates for a signalized or unsignalized intersection, as appropriate, for the MassDOT Highway Division District in which the intersections are located (District 5). The majority of the reported crashes within the study area occurred on a weekday; during daylight; under clear weather conditions; and involved rear-end or angle type collisions that resulted in property damage only. In addition, no fatal motor vehicle crashes were reported to have occurred at the study area intersections over the five-year review period.

A review of the MassDOT statewide High Crash Location List indicated that there are no locations within the study area that are included on MassDOT's Highway Safety Improvement Program (HSIP) listing as high crash locations. Outside of the immediate study area, the intersection of Hingham Street at Pond Street is included on MassDOT's HSIP listing as a top 200 high crash cluster location for 2014-2016.

The detailed MassDOT Crash Rate Worksheets and High Crash Location mapping are provided in the Appendix.

Table 4 MOTOR VEHICLE CRASH DATA SUMMARY^a

	Hingham St./ Reservoir Park Dr.	Hingham St./ Comfort Inn Dr.	Hingham St./ Dunkin' Dr./ Market Place Dr.
Traffic Control Type:b	TS	U	U
Year:			
2013	1	0	0
2014	2	2	1
2015	3	3	1
2016	4	1	3
<u>2017</u>	<u>_6</u>	<u>2</u>	<u>2</u>
Total	16	8	$\overline{7}$
Average	3.20	1.60	1.40
Rate ^c	0.30	0.16	0.14
MassDOT Crash Rate:d	0.78/0.75	0.57/0.57	0.57/0.57
Significant? ^e	No	No	No
Type:			
Angle	3	3	4
Rear-End	10	1	1
Head-On	0	3	2
Sideswipe	1	1	0
Fixed Object	2	0	0
Pedestrian/Bicycle	0	0	0
Unknown/Other	0	<u>0</u>	<u>0</u>
Total	$\frac{0}{16}$	8	<u>0</u> 7
Conditions:			
Clear	7	6	5
Cloudy	3	1	0
Rain	5	1	2
Snow/Ice	1	0	<u>0</u>
Total	$\frac{1}{16}$	8	<u>9</u> 7
Lighting:			
Daylight	12	7	6
Dawn/Dusk	1	1	Õ
Dark (Road Lit)	3	0	0
Dark (Road Unlit)	0	0	<u>1</u>
Total	16	8	7
Day of Week:			
Monday through Friday	13	8	6
Saturday	1	0	1
<u>Sunday</u>	2	0	<u>0</u>
Total	$\frac{2}{16}$	8	7
Severity:			
Property Damage Only	13	4	5
Personal Injury	3	4	2
Fatality	0	<u>0</u>	$\frac{0}{7}$
	$\frac{3}{16}$	8	<u>~</u>

^aSource: MassDOT Safety Management/Traffic Operations Unit records, 2013 through 2017. ^bTraffic Control Type: U = unsignalized; TS = traffic signal. ^cCrash rate per million vehicles entering the intersection.

dStatewide/District crash rate.

^eThe intersection crash rate is significant if it is found to exceed the MassDOT statewide and/or District crash rate for the MassDOT Highway Division District in which the Project is located (District 5).

Traffic volumes in the study area were projected to the year 2027, which reflects a seven-year planning horizon consistent with MassDOT's *Transportation Impact Assessment (TIA) Guidelines*. Independent of the Project, traffic volumes on the roadway network in the year 2027 under No-Build conditions include all existing traffic and new traffic resulting from background traffic growth. Anticipated Project-generated traffic volumes superimposed upon the 2027 No-Build traffic volumes reflect 2027 Build traffic volume conditions with the Project.

FUTURE TRAFFIC GROWTH

Future 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. A procedure frequently employed estimates an annual percentage increase in traffic growth and applies that percentage 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, potential population growth and development external to the study area would not be accounted for in the resulting traffic projections.

To provide a conservative analysis framework, both procedures were used, the salient components of which are described below.

Specific Development by Others

The Town of Rockland Planning Board was contacted in order to determine if there were any projects planned within the study area that would have an impact on future traffic volumes at the study intersections. Based on this discussion, the following projects were identified for inclusion in this assessment:

> Wendy's Restaurant, 1149 Hingham Street, Rockland, Massachusetts. This project will entail the construction of a Wendy's restaurant with drive-through facility to be located at 1149 Hingham Street.

- Marijuana Dispensary, 21 Commerce Road, Rockland, Massachusetts. This project will entail the construction of a marijuana dispensary to be located at 21 Commerce Road.
- > Marijuana Dispensary, 256 Weymouth Street, Rockland, Massachusetts. This proposed project will entail the construction of a marijuana dispensary to be located at 256 Weymouth Street.
- ➤ Marijuana Dispensary, 53 Airport Park Drive, Rockland, Massachusetts. This proposed project will entail the construction of a marijuana dispensary to be located at 53 Airport Park Drive.

Traffic volumes associated with the aforementioned specific development project by others were obtained using trip-generation information available from the Institute of Transportation Engineers (ITE)⁵ for the appropriate land use and were assigned onto the study area roadway network based on existing traffic patterns. No other developments were identified at this time that are expected to result in an increase in traffic within the study area beyond the general background traffic growth rate.

General Background Traffic Growth

Traffic-volume data compiled by MassDOT from Continuous Count Station No. 7318 were reviewed in order to determine general background traffic growth trends. Based on a review of this data, it was determined that traffic volumes within the study area have increased by approximately 0.5 percent per year over the past several years. In order to provide a prudent planning condition for the Project, a slightly higher 1.0 percent per year compounded annual background traffic growth rate was used in order to account for future traffic growth and presently unforeseen development within the study area.

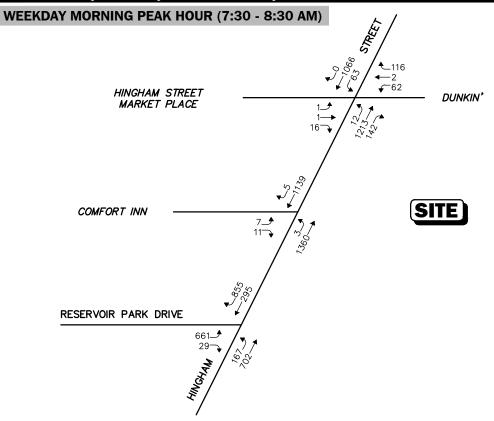
Roadway Improvement Projects

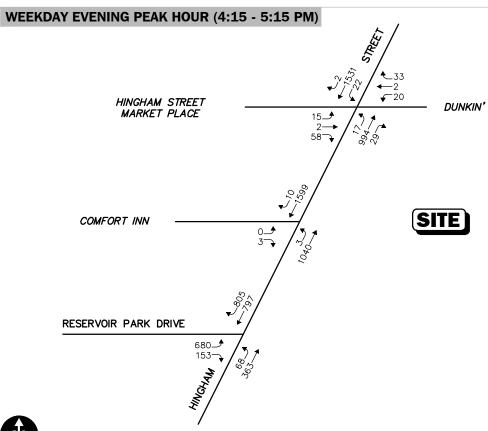
MassDOT and the Town of Rockland were contacted in order to determine if there were any planned future roadway improvement projects expected to be complete by 2027 within the study area. Based on these discussions, no roadway improvement projects aside from routine maintenance activities were identified to be planned within the study area at this time.

No-Build Traffic Volumes

The 2027 No-Build condition peak-hour traffic-volumes were developed by applying the 1.0 percent per year compounded annual background traffic growth rate to the 2020 Existing peak-hour traffic volumes and then superimposing the peak-hour traffic volumes associated with the identified specific development project by others. The resulting 2027 No-Build weekday morning and evening peak-hour traffic volumes are shown on Figure 4.

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2027 No-Build Peak Hour Traffic Volumes

Figure 4

Not To Scale

PROJECT-GENERATED TRAFFIC

Design year (2027 Build) traffic volumes for the study area roadways were determined by estimating Project-generated traffic volumes and assigning those volumes on the study roadways. The following sections describe the methodology used to develop the anticipated traffic characteristics of the Project.

As proposed, the Project will entail the construction of a 13,000± sf Primrose Schools® preschool that will accommodate 24 teachers/staff and 184 students. In order to develop the traffic characteristics of the Project, trip-generation statistics published by the ITE⁶ for a similar land use as that proposed were used. ITE Land Use Code (LUC) 565, *Day Care Center*, was used to develop the traffic characteristics of the Project, the results of which are summarized in Table 5.

Table 5
TRIP-GENERATION SUMMARY^a

	Vehicle Trips				
Time Period	Entering	Exiting	Total		
Average Weekday:	243	243	486		
Weekday Morning Peak-Hour:	57	51	108		
Weekday Evening Peak-Hour:	49	56	105		

^aBased on ITE LUC 565, Day Care Center; 24 employees.

Project-Generated Traffic Volume Summary

As can be seen in Table 5, the Project is expected to generate approximately 486 vehicle trips on an average weekday (two-way volume over the operational day of the Project, or 243 vehicles entering and 243 exiting), with 108 vehicle trips (57 vehicles entering and 51 exiting) expected during the weekday morning peak-hour and 105 vehicle trips (49 vehicles entering and 56 exiting) expected during the weekday evening peak-hour.

TRIP DISTRIBUTION AND ASSIGNMENT

The directional distribution of generated trips to and from the Project site was determined based on a review of existing traffic patterns within the study area during the peak periods. This methodology is consistent with the commercial nature of the Project and reflects traffic patterns during the peak hours. The general trip distribution for the Project is graphically depicted on Figure 5. The additional traffic expected to be generated by the Project was assigned on the study area roadway network as shown on Figure 6.

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⁶Ibid 1.

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XX Entering Trips (XX) Exiting Trips

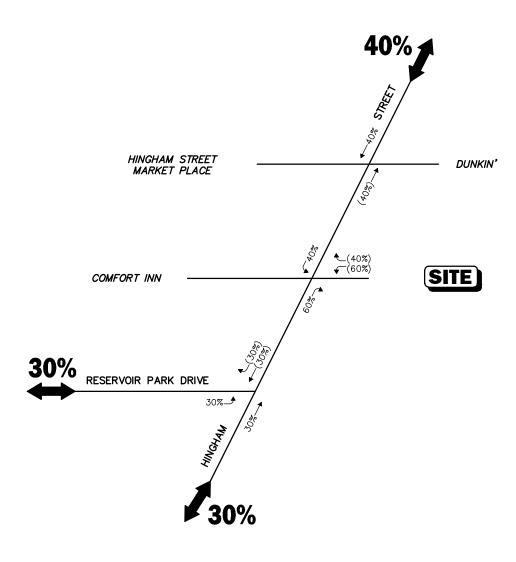
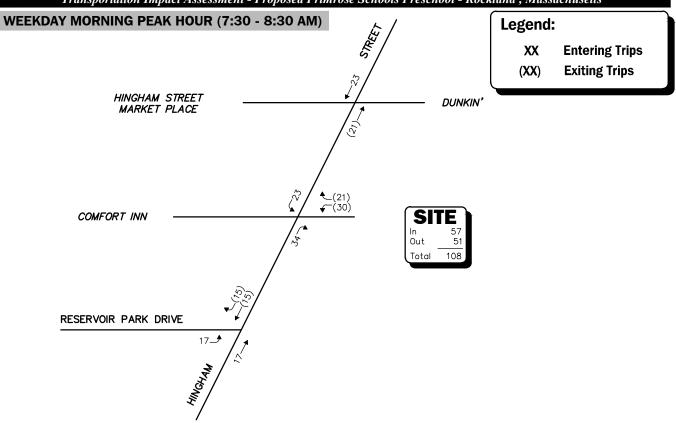
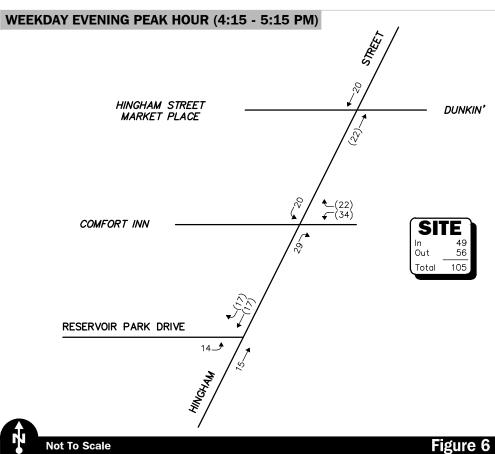




Figure 5

Trip Distribution Map







Project Generated Peak Hour Traffic Volumes

FUTURE TRAFFIC VOLUMES - BUILD CONDITION

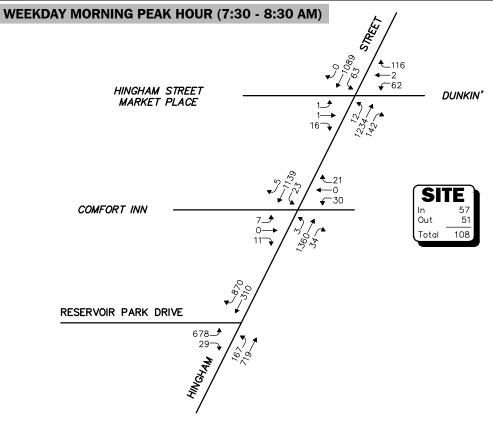
The 2027 Build condition traffic volumes were developed by adding the traffic expected to be generated by the Project to the 2027 No-Build condition traffic volumes. The resulting 2027 Build peak-hour traffic-volumes are graphically depicted on Figure 7.

A summary of peak-hour projected traffic-volume increases outside of the study area that is the subject of this assessment is shown in Table 6. These volumes are based on the expected increases from the Project.

Table 6
PEAK-HOUR TRAFFIC-VOLUME INCREASES

Location/Peak Hour	2020 Existing	2027 No-Build	2027 Build	Traffic-Volume Increase Over No-Build	Percent Increase Over No-Build
Hingham Street, north of the					
Dunkin' Restaurant Driveway:					
Weekday Morning	2,294	2,459	2,503	44	1.8
Weekday Evening	2,410	2,597	2,639	42	1.6
Hingham Street, south of Reservoir Park					
Drive:	1,107	1,193	1,225	32	2.7
Weekday Morning	1,274	1,381	1,413	32	2.3
Weekday Evening	,	,	,		
Reservoir Park Drive, west of Hingham Street:					
Weekday Morning	1,593	1,712	1,744	32	1.9
Weekday Evening	1,575	1,706	1,537	31	1.8

As shown in Table 6, Project-related traffic-volume increases outside of the study area relative to 2027 No-Build conditions are anticipated to range from 1.6 to 2.7 percent during the peak periods, with vehicle increases shown to range from 31 to 44 vehicles. The predicted traffic volume increases are relatively minor when dispersed over the peak-hour and would not result in a significant impact (increase) on motorist delays or vehicle queuing outside of the immediate study area that is the subject of this assessment.



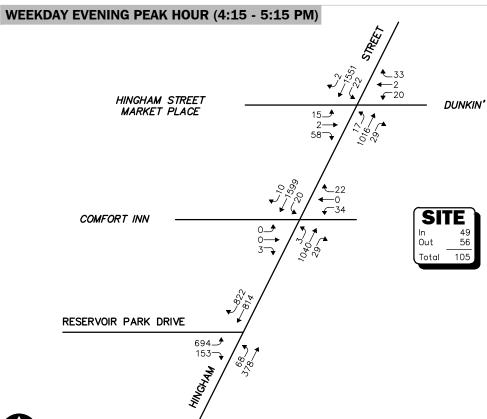




Figure 7
2027 Build

Peak Hour Traffic Volumes

Not To Scale

TRAFFIC OPERATIONS ANALYSIS

Measuring existing and future traffic volumes quantifies traffic flow within the study area. To assess quality of flow, roadway capacity and vehicle queue analyses were conducted under Existing, No-Build and Build traffic volume 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.

METHODOLOGY

Levels of Service

A primary result of capacity analyses is the assignment of level of service to traffic facilities under various traffic-flow conditions. The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers. A level-of-service definition provides an index to quality of traffic flow in terms of such factors as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility. They are given letter designations from A to F, with level-of-service (LOS) A representing the best operating conditions and LOS F representing congested or constrained operating conditions.

Since the level of service of a traffic facility is a function of the traffic flows placed upon it, such a facility may operate at a wide range of levels of service, depending on the time of day, day of week, or period of year.

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⁷The capacity analysis methodology is based on the concepts and procedures presented in the *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2010.

Signalized Intersections

The six levels of service for signalized intersections may be described as follows:

- LOS A describes operations with very low control delay; most vehicles do not stop at all.
- LOS B describes operations with relatively low control delay. However, more vehicles stop than LOS A.
- LOS C describes operations with higher control delays. Individual cycle failures may begin to appear. The number of vehicles stopping is significant at this level, although many still pass through the intersection without stopping.
- LOS D describes operations with control delay in the range where the influence of congestion becomes more noticeable. Many vehicles stop and individual cycle failures are noticeable.
- LOS E describes operations with high control delay values. Individual cycle failures are frequent occurrences.
- LOS F describes operations with high control delay values that often occur with oversaturation. Poor progression and long cycle lengths may also be major contributing causes to such delay levels.

Levels of service for signalized intersections were calculated using the operational analysis methodology of the 2000 Highway Capacity Manual and implemented as a part of the Synchro® 10 software. This method assesses the effects of signal type, timing, phasing, and progression; vehicle mix; and geometrics on delay. Level-of-service designations are based on the criterion of control or signal delay per vehicle. Control or signal delay is a measure of driver discomfort, frustration, and fuel consumption, and includes initial deceleration delay approaching the traffic signal, queue move-up time, stopped delay and final acceleration delay. Table 7 summarizes the relationship between level of service and control delay. The tabulated control delay criterion may be applied in assigning level-of-service designations to individual lane groups, to individual intersection approaches, or to entire intersections.

Table 7 LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level of Service	Control (Signal) Delay per Vehicle (Seconds)
A	<10.0
В	$10.\overline{1}$ to 20.0
C	20.1 to 35.0
D	35.1 to 55.0
E	55.1 to 80.0
F	>80.0

^aSource: *Highway Capacity Manual*, Transportation Research Board; Washington, DC; 2000; page 16-2.

Unsignalized Intersections

The six levels of service for unsignalized intersections may be described as follows:

- LOS A represents a condition with little or no control delay to minor street traffic.
- LOS B represents a condition with short control delays to minor street traffic.
- LOS C represents a condition with average control delays to minor street traffic.
- LOS D represents a condition with long control delays to minor street traffic.
- LOS E represents operating conditions at or near capacity level, with very long control delays to minor street traffic.
- LOS F represents a condition where minor street demand volume exceeds capacity of an approach lane, with extreme control delays resulting.

The levels of service of unsignalized intersections are determined by application of a procedure described in the 2010 *Highway Capacity Manual*. Level of service is measured in terms of average control delay. Mathematically, control delay is a function of the capacity and degree of saturation of the lane group and/or approach under study and is a quantification of motorist delay associated with traffic control devices such as traffic signals and STOP signs. Control delay includes the effects of initial deceleration delay approaching a STOP sign, stopped delay, queue move-up time, and final acceleration delay from a stopped condition. Definitions for level of service at unsignalized intersections are also given in the 2010 *Highway Capacity Manual*. Table 8 summarizes the relationship between level of service and average control delay for two-way stop controlled and all-way stop controlled intersections.

Table 8
LEVEL-OF-SERVICE CRITERIA FOR
UNSIGNALIZED INTERSECTIONS^a

Level-Of-Service by V	evel-Of-Service by Volume-to-Capacity Ratio		
v/c ≤ 1.0	v/c > 1.0	Average Control Delay (Seconds Per Vehicle)	
A	F	≤10.0	
В	F	10.1 to 15.0	
C	F	15.1 to 25.0	
D	F	25.1 to 35.0	
Е	F	35.1 to 50.0	
F	F	>50.0	

^aSource: *Highway Capacity Manual*; Transportation Research Board; Washington, DC; 2010; page 19-2.

⁸Highway Capacity Manual; Transportation Research Board; Washington, DC; 2010.

Vehicle Queue 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 SynchroTM intersection capacity analysis software which is based upon the methodology and procedures presented in the 2010 *Highway Capacity Manual*. The SynchroTM vehicle queue analysis methodology is a simulation based model which reports the number of vehicles that experience a delay of six seconds or more at an intersection. For signalized intersections, SynchroTM reports both the average (50th percentile) the 95th percentile vehicle queue. For unsignalized intersections, SynchroTM reports the 95th percentile vehicle queue. Vehicle queue lengths are a function of the capacity of the movement under study and the volume of traffic being processed by the intersection during the analysis period. The 95th percentile vehicle queue is the vehicle queue length that will be exceeded only 5 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).

ANALYSIS RESULTS

Level-of-service and vehicle queue analyses were conducted for 2020 Existing, 2027 No-Build and 2027 Build conditions for the intersections within the study area. The results of the intersection capacity and vehicle queue analyses are summarized in Tables 9 and 10. The detailed analysis results are presented in the Appendix.

The following is a summary of the level-of-service and vehicle queue analyses for the intersections within the study area. For context, a LOS of "D" or better is generally defined as "acceptable" operating conditions.

Signalized Intersection

Hingham Street/Reservoir Park Drive - Overall LOS was shown to degrade from LOS C to LOS D during the weekday morning peak-hour as a result of a predicted increase in average motorist delay of approximately 3.5 seconds. Vehicle queues at the intersection was shown to increase by up to two (2) vehicles with the addition of Project-related traffic. It was noted that one or more movements at the intersection were identified as operating at or over capacity during the peak hours (defined as LOS "E" or "F", respectively) independent of the Project, with vehicle queues of up to 37 vehicles.

Unsignalized Intersections

Hingham Street/Comfort Inn Driveway/Project Site Driveway - Operating conditions for all movements exiting the Project site are predicted to operate under constrained conditions (LOS F) during the peak hours as a result of the relatively large volume of conflicting traffic traveling along Hingham Street during these periods. These operating conditions are typical of other unsignalized driveways and side streets along the Hingham Street corridor. Residual vehicle queuing along the Project site driveway is predicted to be approximately seven (7) vehicles and can be contained within the Project site without impeding access, internal circulation or the movement of vehicles, pedestrians and bicyclists along Hingham Street. All movements along Hingham Street are predicted to operate at LOS A with no material vehicle queuing.

Hingham Street/Dunkin' Restaurant Driveway/Hingham Street Market Place Driveway – Nochange (degradation) in LOS over No-Build conditions, with all movements exiting the Hingham Street Market Place driveway and the left/through movements exiting the Dunkin' Restaurant driveway operating under constrained conditions (LOS F) during the peak hours independent of the Project as a result of the relatively large volume of conflicting traffic traveling along Hingham Street during these periods. Project-related impacts were defined as a predicted increase in vehicle queuing of up to one (1) vehicle.

Table 9 SIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

	2020 Existing			2027 No-Build				2027 Build				
Signalized Intersection/Peak-hour/Movement	V/C ^a	Delayb	LOS°	Queue ^d 50 th /95 th	V/C	Delay	LOS	Queue 50 th /95 th	V/C	Delay	LOS	Queue 50 th /95 th
Hingham Street at Reservoir Park Drive Weekday Morning:												
Reservoir Park Drive EB LT	0.94	45.0	D	17/27	1.02	68.3	E	21/29	1.06	78.7	E	22/29
Reservoir Park Drive EB RT	0.02	15.5	В	0/1	0.02	16.7	В	0/1	0.02	16.9	В	0/1
Hingham Street NB LT	0.43	16.1	В	1/4	0.48	16.5	В	3/4	0.49	16.5	В	3/4
Hingham Street NB TH	0.90	33.7	C	18/20	0.94	39.3	D	20/23	0.95	42.1	D	21/24
Hingham Street SB TH	0.46	24.3	C	6/9	0.48	24.4	C	6/9	0.50	24.4	C	6/10
Hingham Street SB RT	0.60	5.5	A	2/3	0.66	6.3	A	3/5	0.67	6.5	A	3/5
Overall		25.9	C			33.3	C			36.8	D	
Weekday Evening:												
Reservoir Park Drive EB LT	1.04	72.9	E	22/27	1.12	>80.0	F	25/30	1.14	>80.0	F	26/31
Reservoir Park Drive EB RT	0.12	18.0	В	1/2	0.15	18.3	В	1/2	0.15	18.3	В	1/2
Hingham Street NB LT	0.38	21.8	C	1/2	0.44	22.3	C	1/2	0.44	22.3	C	1/2
Hingham Street NB TH	0.44	15.6	В	7/8	0.48	16.0	В	7/9	0.50	16.3	В	7/9
Hingham Street SB TH	1.06	78.1	E	23/32	1.13	>80.0	F	26/35	1.15	>80.0	F	27/37
Hingham Street SB RT	0.55	4.0	A	1/2	0.61	4.7	A	2/3	0.62	4.9	A	2/3
Overall		43.7	D			57.5	\mathbf{E}			62.2	E	

^aVolume-to-capacity ratio.
^bControl (signal) delay per vehicle in seconds.
^cLevel-of-Service.
^dQueue length in vehicles.

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

Table 10 UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

	2020 Existing				2027 No-Build				2027 Build			
Unsignalized Intersection/Peak Hour/Movement	Demanda	Delay ^b	LOSc	Queue ^d 95 th	Demand	Delay	LOS	Queue 95 th	Demand	Delay	LOS	Queue 95 th
Hingham Street at Comfort Inn Driveway/												
Project Site Driveways												
Weekday Morning:												
Comfort Inn Driveway EB LT/TH/RT	18	>50.0	F	2	18	>50.0	F	2	18	>50.0	F	4
Project Site Driveway WB LT/TH/RT									51	>50.0	F	7
Hingham Street NB LT/TH/RT	1,276	0.0	A	0	1,363	0.0	A	0	1,397	0.0	A	0
Hingham Street SB LT/TH/RT	1,066	0.0	A	0	1,144	0.0	A	0	1,167	1.9	Α	0
Weekday Evening:												
Comfort Inn Driveway EB LT/TH/RT	3	16.9	C	0	3	18.1	C	0	3	18.1	C	0
Project Site Driveway WB LT/TH/RT									56	>50.0	F	6
Hingham Street NB LT/TH/RT	965	0.0	A	0	1,043	0.0	A	0	1,072	0.0	A	0
Hingham Street SB LT/TH/RT	1,501	0.0	A	0	1,609	0.0	A	0	1,629	0.1	A	0
Hingham Street at the Dunkin' Restaurant/												
Hingham Street Market Place Driveways												
Weekday Morning:												
Market Place Driveway EB LT/TH/RT	18	>50.0	F	2	18	>50.0	F	3	18	>50.0	F	3
Dunkin' Driveway WB LT/TH	64	>50.0	F	12	64	>50.0	F	12	64	>50.0	F	12
Dunkin' Driveway WB RT	116	>50.0	F	5	116	>50.0	F	6	116	>50.0	F	6
Hingham Street NB LT/TH/RT	1,280	0.1	Α	0	1,367	0.1	Α	0	1,388	0.1	Α	0
Hingham Street SB LT/TH/RT	1,051	0.8	Α	1	1,129	0.8	A	1	1,152	0.8	A	1
Weekday Evening:	,				ĺ				ĺ			
Market Place Driveway EB LT/TH/RT	75	>50.0	F	14	75	>50.0	F	16	75	>50.0	F	17
Dunkin' Driveway WB LT/TH	22	>50.0	F	6	22	>50.0	F	6	22	>50.0	F	6
Dunkin' Driveway WB RT	32	20.2	C	1	32	22.4	C	1	32	23.1	C	1
Hingham Street NB LT/TH/RT	962	0.2	Ä	0	1,040	0.2	Ā	0	1.062	0.2	Ā	0
Hingham Street SB LT/TH/RT	1,447	0.2	A	0	1,555	0.2	A	0	1,575	0.2	A	0

^aDemand in vehicles per hour. ^bAverage control delay per vehicle (in seconds).

^cLevel-of-Service.

^dQueue length in vehicles.

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

SIGHT DISTANCE EVALUATION

Sight distance measurements were performed at the Project site driveway intersection with Hingham Street in accordance with American Association of State Highway and Transportation Officials (AASHTO)⁹ requirements. Both stopping sight distance (SSD) and intersection sight distance (ISD) measurements were performed. In brief, SSD is the distance required by a vehicle traveling at the design speed of a roadway, on wet pavement, to stop prior to striking an object in its travel path. ISD or corner sight distance (CSD) is the sight distance required by a driver entering or crossing an intersecting roadway to perceive an on-coming vehicle and safely complete a turning or crossing maneuver with on-coming traffic. In accordance with AASHTO standards, if the measured ISD is at least equal to the required SSD value for the appropriate design speed, the intersection can operate in a safe manner. Table 11 presents the measured SSD and ISD at the subject intersection.

⁹A Policy on Geometric Design of Highway and Streets, 7th Edition; American Association of State Highway and Transportation Officials (AASHTO); Washington D.C.; 2018.

Table 11 SIGHT DISTANCE MEASUREMENTS^a

	Feet					
Intersection/Sight Distance Measurement	Recommended Minimum (SSD)	Desirable (ISD) ^b	Measured			
Hingham Street at the Project Site Driveway						
Stopping Sight Distance:						
Hingham Street approaching from the north	250		500+			
	250 305	 	500+ 469			
Hingham Street approaching from the north			200			
Hingham Street approaching from the north Hingham Street approaching from the south		 390	200			

^aRecommended minimum values obtained from: *A Policy on Geometric Design of Highways and Streets, 7*th Edition; American Association of State Highway and Transportation Officials (AASHTO); 2018; and based on an approach speed of 40 mph along Hingham Street northbound and 35 mph southbound.

As can be seen in Table 11, lines of sight at the Project site driveway intersection with Hingham Street were found to exceed or could be made to exceed (with the selective trimming/removal of vegetation located north of the Project site driveway) the recommended minimum sight distance to function in a safe manner (SSD) based on a 35 mph approach speed on Hingham Street to the north of the Project site (southbound) and a 40 approach speed to the south (northbound), which is consistent with the posted speed limits (35-40 mph) and is 3 to 6 mph above the measured 85th percentile vehicle travel speeds (34 mph northbound and 32 mph southbound).

^bValue shown is the intersection sight distance for a vehicle turning right or left exiting a roadway or driveway under STOP control such that motorists approaching the intersection on the major street should not need to adjust their travel speed to less than 70 percent of their initial approach speed.

^eWith the selective removal of trees/vegetation located adjacent to the Project site driveway.

CONCLUSIONS AND RECOMMENDATIONS

CONCLUSIONS

VAI has completed a detailed assessment of the potential impacts on the transportation infrastructure associated with the proposed Primrose Schools® preschool to be located off Hingham Street, north of Reservoir Park Drive and opposite the Comfort Inn, in Rockland, Massachusetts. The following specific areas have been evaluated as they relate to the Project: i) access requirements; ii) potential off-site improvements; and iii) safety considerations; under existing and future conditions, both with and without the Project. Based on this assessment, we have concluded the following with respect to the Project:

- 1. Using trip-generation statistics published by the ITE, ¹⁰ the Project is expected to generate approximately 486 vehicle trips on an average weekday (two-way, 24-hour volumes), with 108 vehicle trips expected during the weekday morning peak-hour and 105 vehicle trips expected during the weekday evening peak-hour;
- 2. The Project will not have a significant impact (increase) on motorist delays or vehicle queuing over Existing or anticipated future conditions without the Project (No-Build conditions), with no movement shown to degrade below LOS D, where an LOS of "D" or better is defined as "acceptable" operating conditions, as a result of the addition of Project-related traffic;
- 3. Independent of the Project, specific movements at the signalized intersection of Hingham Street at Reservoir Park Drive were identified to be operating at or over capacity (LOS "E" or "F", respectively) during the peak hours, with Project-related impacts at the intersection defined as a predicted increase in overall average motorist delay of between 3.5 and 4.7 seconds, and in vehicle queuing of up to two (2) vehicles. A review of the existing traffic signal timing plan indicates that the intersection is currently operating under optimal conditions given the current geometry and lane use, and, as such, traffic signal timing adjustments are not recommended;
- 4. All movements exiting the Project site are predicted to operate with average delays that will exceed 50 seconds during the peak hours (LOS F conditions) as a result of the relatively large volume of conflicting traffic travelling along Hingham Street during these

¹⁰Ibid 1.

periods, with the resulting residual vehicle queue predicted to be approximately seven (7) vehicles and can be contained within the Project site without impeding access, internal circulation or the movement of vehicles, pedestrians and bicyclists along Hingham Street;

- 5. No apparent safety deficiencies were noted with respect to the motor vehicle crash history at the study intersections; and
- 6. Lines of sight to and from the Project site driveway intersection with Hingham Street were found to exceed or could be made to exceed (with the selective trimming/removal of vegetation) the required minimum distance for the intersection to function in a safe manner based on the appropriate approach speed.

In consideration of the above, we have concluded that the Project can be accommodated within the confines of the existing transportation infrastructure in a safe and efficient manner with implementation of the recommendations that follow.

RECOMMENDATIONS

A detailed transportation improvement program has been developed that is designed to provide safe and efficient access to the Project site and address any deficiencies identified at off-site locations evaluated in conjunction with this study. The following improvements have been recommended as a part of this evaluation and, where applicable, will be completed in conjunction with the Project subject to receipt of all necessary rights, permits, and approvals.

Project Access

Access to the Project site will be provided by way of a new driveway that will intersect the east side of Hingham Street opposite the driveway to the Comfort Inn and approximately 230 feet north of Reservoir Park Drive and 160 feet south of the Dunkin'/Hingham Street Market Place driveways. This separation (160-feet) allows for six (6) to eight (8) vehicles to queue curbside along Hingham Street between the Project site driveway and the Dunkin' restaurant driveway before the Project site driveway is blocked. The following recommendations are offered with respect to Project access and internal circulation, and are reflected on the Site Plans:

- ➤ The Project site driveway will be a minimum of 24-feet in width and should accommodate the turning and maneuvering requirements of the largest anticipated responding emergency vehicle as defined by the Rockland Fire Department.
- ➤ Vehicles exiting the Project site will be placed under STOP-sign control with a marked STOP-line provided.
- > On-site circulation should be directed in a one-way, counter-clockwise direction around the perimeter of the Project site in order to allow for safe and efficient circulation during student drop-off/pick-up periods and to accommodate the associated vehicle queueing.
- > "One-Way" and "Do Not Enter" signs should be installed at appropriate locations within the Project site to regulate the one-way circulation pattern.

- ➤ All signs and pavement markings to be installed within the Project site will conform to the applicable standards of the *Manual on Uniform Traffic Control Devices* (MUTCD). 11
- A sidewalk will be provided along one side of the Project site driveway extending to Hingham Street.
- Americans with Disabilities Act (ADA) compliant wheelchair ramps and marked crosswalks will be provided at internal locations within the Project site where sidewalk is present.
- > Signs and landscaping to be installed as part of the Project within intersection sight triangle areas should be designed and maintained so as not to restrict lines of sight.
- Existing trees and vegetation located along the east side of Hingham Street within intersection sight triangle areas of the Project site driveway should be selectively trimmed or removed and maintained.
- > Snow windrows within sight triangle areas shall be promptly removed where such accumulations would impede sight lines.

Transportation Demand Management

Public transportation services and sidewalks are not currently provided within the study area. That being said, in an effort to encourage the use of alternative modes of transportation to single-occupant vehicles and to promote healthy transportation options to employees of the Project, the following Transportation Demand Management (TDM) measures should be considered as a part of the Project:

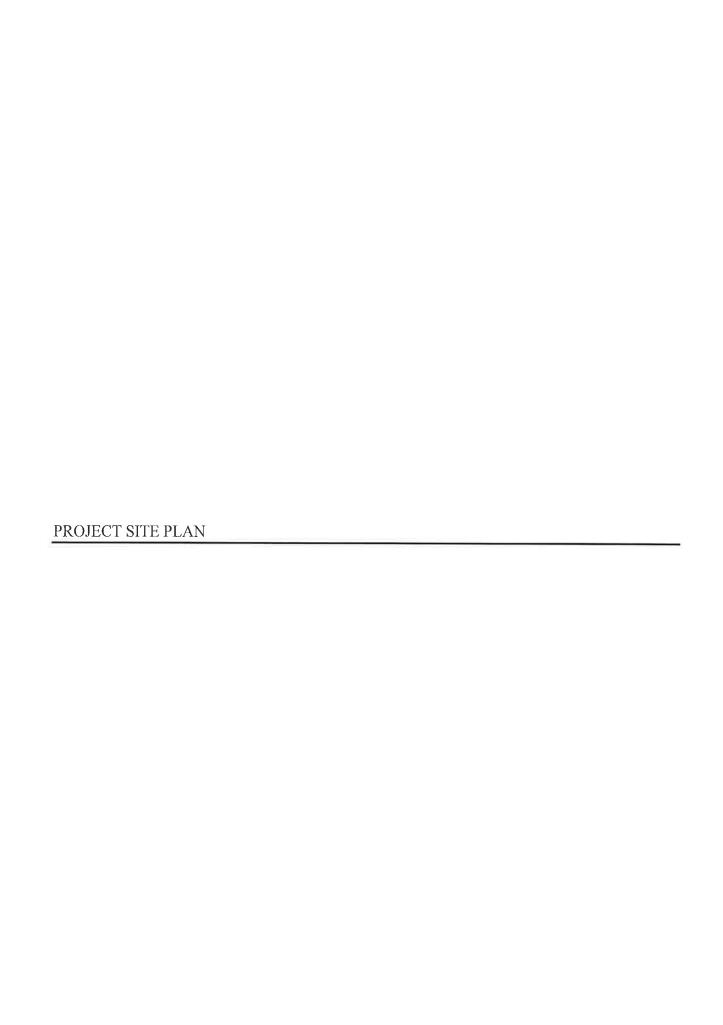
- ➤ Information regarding public transportation services, maps, schedules and fare information should be posted in a central location and/or otherwise made available to employees of the project;
- A "welcome packet" should be provided to employees detailing available public transportation services, bicycle and walking alternatives, and commuter options;
- > The Project should offer specific amenities to discourage off-site trips, including providing a break-room equipped with a microwave and refrigerator; offering direct deposit of paychecks; coordinating with a dry-cleaning service for on-site pick-up and delivery; allowing flexible work schedules; and other such measures to reduce overall traffic volumes and travel during peak traffic volume periods;
- Pedestrian accommodations have been incorporated within the Project site; and
- > Secure bicycle parking should be provided in an appropriate location to encourage commuting by bicycle.

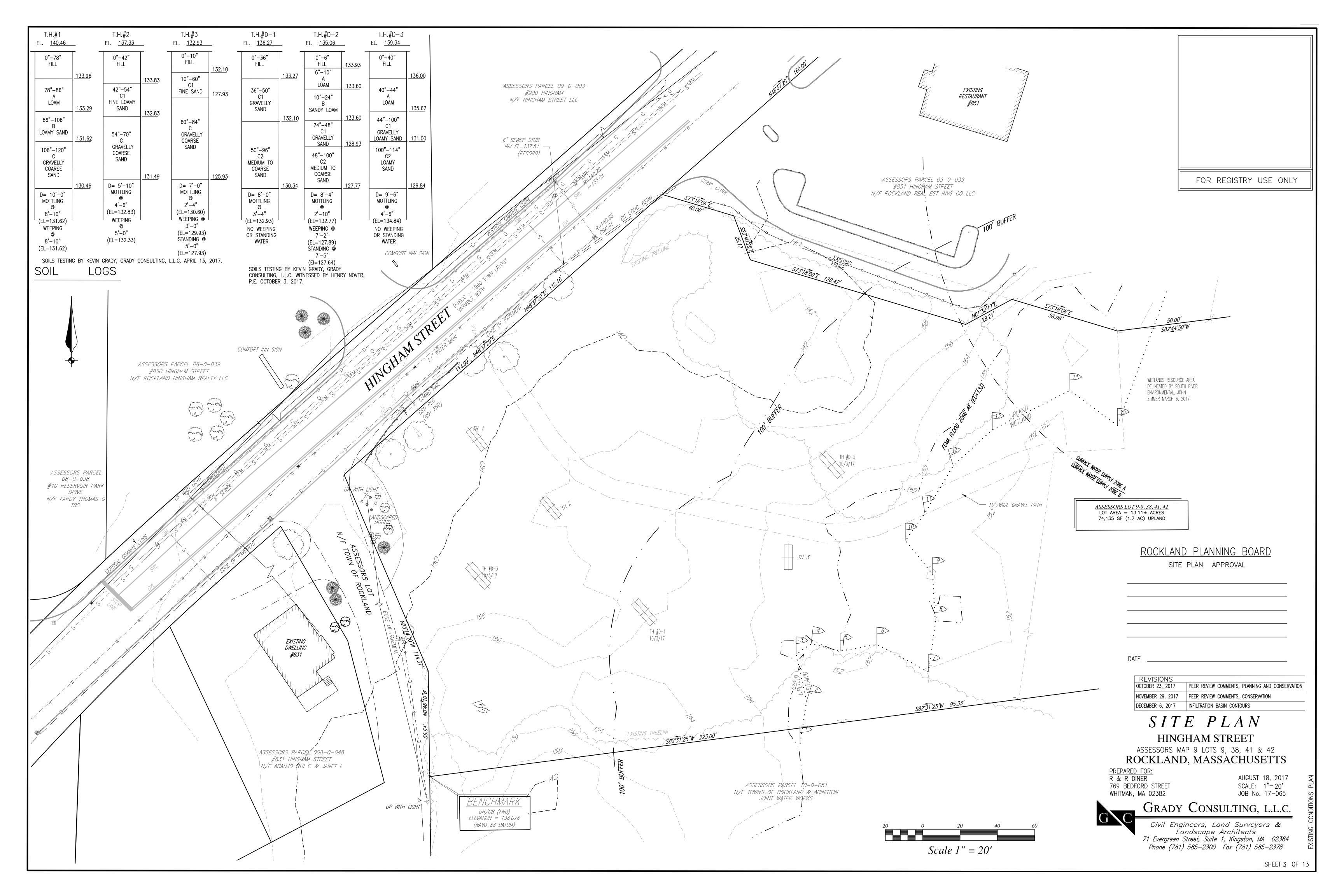
With implementation of the above recommendations, safe and efficient access will be provided to the Project site and the Project can be accommodated within the confines of the existing and improved transportation system.

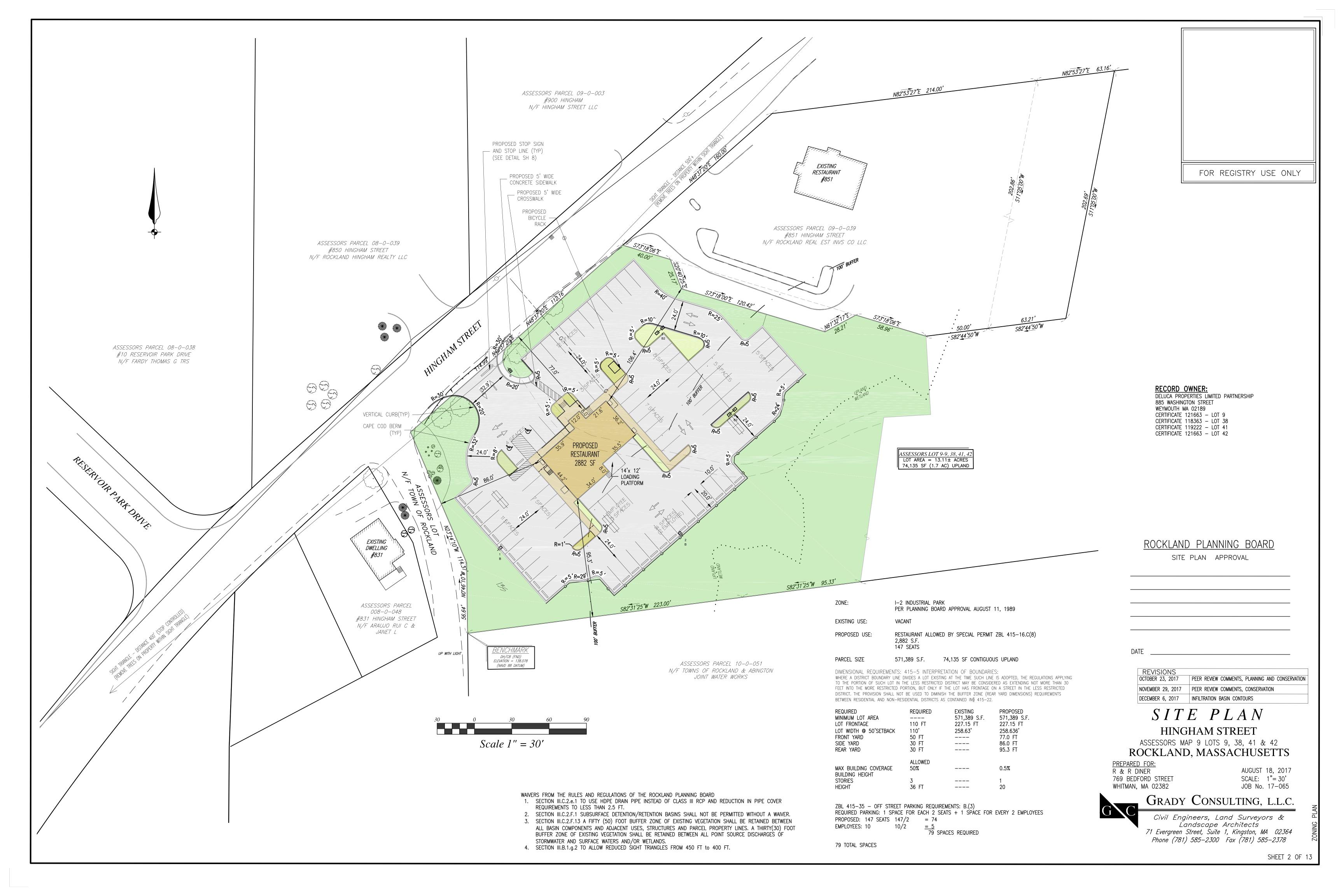
¹¹ Ibid 2.		
11bid 2.		

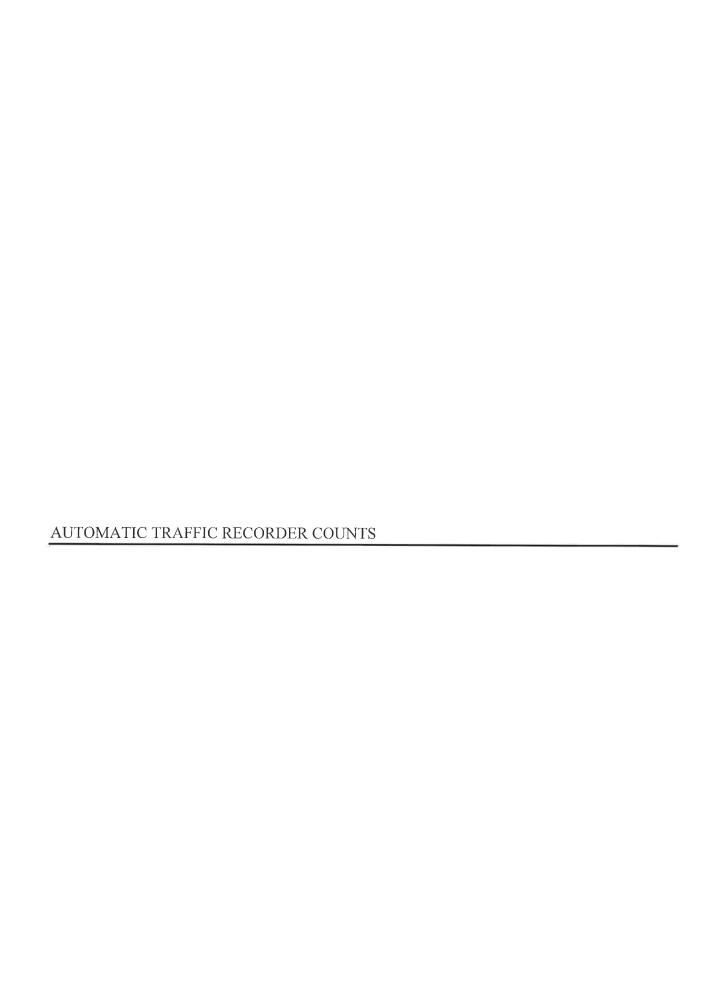
APPENDIX

PROJECT SITE PLAN
AUTOMATIC TRAFFIC RECORDER COUNTS
MANUAL TURNING MOVEMENT COUNTS
SEASONAL ADJUSTMENT DATA
VEHICLE SPEED MEASUREMENTS
PUBLIC TRANSPORTATION INFORMATION
MASSDOT CRASH RATE WORKSHEETS AND HIGH CRASH LOCATION MAPPING
BACKGROUND DEVELOPMENT TRAFFIC-VOLUME NETWORKS
GENERAL BACKGROUND TRAFFIC GROWTH
TRIP-GENERATION CALCULATIONS
CAPACITY ANALYSIS WORKSHEETS









Location: Hingham Street Location: North of Reservoir Park Drive City/State: Rockland, MA

8527VOL1

Start	2/4/2020	5	SB	Hour	Totals		NB	Hour	Totals	Combin	ed Totals
Time	Tue	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoo
12:00		25	155			10	158				
12:15		9	170			13	198				
12:30		31	147			5	194				
12:45		9	187	74	659	10	174	38	724	112	138
01:00		13	194			3	171		T T		
01:15		9	164			1	174				
01:30		8	160			3	157		1		
01:45		6	184	36	702	7	173	14	675	50	137
02:00		7	203			6	144		0,0	00	101
02:15		8	222		la la	1	158		1		
02:30		6	215		1	8	181				
02:45		2	207	23	847	5	191	20	674	43	152
03:00		2	232	25	047	6	180	20	0/4	40	132
03:15		7	255			10	210				
03:30		5	250				210				
03:45				10	007	8		0.0	700		470
03.40		5	260	19	997	12	168	36	769	55	176
04:00		5	262		4	21	162				
04:15		7	255			29	188				
04:30		12	280		11.	56	199				
04:45		27	282	51	1079	71	178	177	727	228	180
05:00		12	288			116	240				
05:15		39	282			123	213				
05:30		45	273		1	136	190		1		
05:45		67	284	163	1127	142	167	517	810	680	193
06:00		75	205		1	175	169		1		
06:15		96	218		- 1	186	177				
06:30		155	206		1	200	135		1		
06:45		138	230	464	859	261	121	822	602	1286	146
07:00		143	162	,,,,		225	141	022	002	1200	1-10
07:15		166	155			244	133				
07:30		199	154		1	295	117		1		
07:45		214	140	722	611	277	101	1041	492	1763	110
08:00		199	130	122	011	235	123	1041	492	1703	110
08:15		164	129			247	83				
08:30		165	92			219	83				
08:45		164		000	400	219	78	040	000	4000	
00.40		104	109	692	460	209	48	910	332	1602	79
09:00		145	85			179	61				
09:15		128	113			198	53				
09:30		131	54			182	41		I.		
09:45		159	70	563	322	196	41	755	196	1318	51
10:00		132	51		1	176	35				
10:15		132	56		1	169	20				
10:30		135	54			153	34				
10:45		156	40	555	201	181	27	679	116	1234	31
11:00		147	33			138	25				
11:15		149	44		1	162	22				
11:30		149	36			170	18				
11:45		156	27	601	140	168	12	638	77	1239	21
Total		3963	8004	001	Till to the last	5647	6194	000	, ,	9610	1419
Percent		33.1%	66.9%			47.7%	52.3%			40.4%	59.6%

Location: Hingham Street Location: North of Reservoir Park Drive City/State: Rockland, MA

ADT

ADT 23,606

AADT 23,606

8527VOL1

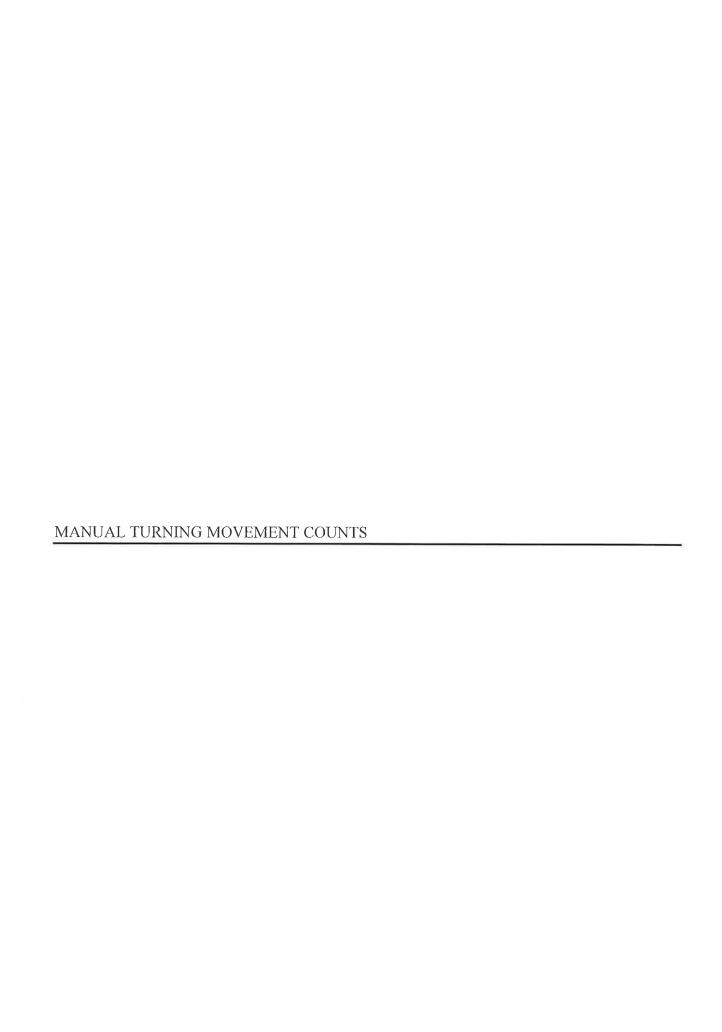
Start	2/5/2020		SB	Hour	Totals	N	1B	Hour	Totals	Combin	ed Totals
Time	Wed	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon		Afternoon	Morning	Afternoo
12:00		26	155			11	166				
12:15		25	185			7	183		1		
12:30		26	203			7	194		1		
12:45		13	168	90	711	6	160	31	703	121	1414
01:00		21	196			2	154				
01:15		8	153			10	172		1		
01:30		11	159			8	142				
01:45		6	182	46	690	2	156	22	624	68	1314
02:00		4	192	40	030	7	185	22	024	00	131
02:15		9	207			2	180				
02:30		2	215			4					
02:45		3	222	18	836	3	173	16	724	2.4	4576
03:00				10	636	3	196	16	734	34	1570
03:00		3	240			5	158		1		
03:15		4	238			10	181				
03:30		4	253		1	12	202				
03:45		4	265	15	996	14	171	41	712	56	1708
04:00		6	284			17	188				
04:15		8	281		1	26	193				
04:30		16	284		1	61	202				
04:45		21	265	51	1114	87	162	191	745	242	1859
05:00		26	267			110	235				
05:15		29	267			120	210				
05:30		55	241		1	115	212				
05:45		69	273	179	1048	154	166	499	823	678	1871
06:00		70	221	175	1040	142	160	700	023	070	107
06:15		99	215								
06:30		121	176			178	172				
00.30		121	1/0	400	700	224	131	700	500		
06:45		132	187	422	799	246	106	790	569	1212	1368
07:00		115	162			233	108				
07:15		167	161			228	116				
07:30		185	135		-	268	94				
07:45		201	137	668	595	276	99	1005	417	1673	1012
08:00		175	138			254	76		1		
08:15		151	144			239	59				
08:30		171	110		1	219	77		1		
08:45		148	117	645	509	210	71	922	283	1567	792
09:00		128	107			213	52				
09:15		131	95			191	70				
09:30		125	86			167	48		1		
09:45		142	55	526	343	195	36	766	206	1292	549
10:00		126	46	020	040	149	35	700	200	1292	348
10:15		128	58			154	33				
10:13			32				33				
10.30		141	32	504	400	169	37				
10:45		139	47	534	183	164	37	636	142	1170	325
11:00		146	45			156	28				
11:15		166	32			162	22				
11:30		132	41		0.00	176	15				
11:45		170	25	614	143	175	18	669	83	1283	226
Total		3808	7967			5588	6041			9396	14008
Percent		32.3%	67.7%			48.1%	51.9%			40.1%	59.9%
Grand											
Total		7771	15971			11235	12235			19006	28206
		32.7%	67.3%			47.9%	52.1%			40.3%	59.7%

8527VOL1

Accurate Counts 978-664-2565

Location : Hingham Street Location : North of Reservoir Park Drive City/State: Rockland, MA

		Ž		2	Ë	Sat	Sun	Week Ave
SB	e N	SB	NB	SB	SB NB			S. S.
74	38	06	31	*			*	82
36	14	46	22	*	240	*	*	7 7
23	20	13	16	*	*	*	*	- 0
19	36	15	4	*	*	*	*	77
•	177	51	191	*	*	*	*	
163	517	179	499		*	*	*	1 2 7
464	822	422	790		*	*	*	171
* 722	1041	899	1005	*	*	*	*	7 1
. 692	910	645	922	*	*	*	*	000
* 563	755	526	766	*	*		*	999
. 555	629	534	989	*	*			544
* 601	638	614	699		*	7.	8 ·	544
659	722	1 7	203	*	*		6 9	809
702	675	690	507	•			•	685
20,	77.0	000	122		- 54	120		969
047	4/0	836	7.34		к .		*	842
300	100	966	712				*	966
6/01	121	1114	745		*		*	1096
1127	810	1048	823	•		*	*	1088
829	602	799	269	*		*	*	829
611	492	595	417	•	•	*	*	603
460	332	509	283	*		*	*	484
322	196	343	206	•	*	*	*	332
201	116	183	142	•	*	*	*	192
140	22	143	83				*	142
11967		11775	11629	0	0 0	0	0	11869
238		2340		0	0	0	0	23604
- 07:00	02:00	00:20	00:20	1000	10	*	•	07:00
- 722	1041	899	1005	*		3	*	695
17:00	17:00	16:00	17:00	(III		100	•	16.00
- 1127	810	1114	823	£	**	×		1096
(1	23808	23	404	0	0	0	0	23604
	OT 23,606							
	NE SB 360	SB 16 74 36 23 23 19 163 464 722 601 601 603 603 603 603 603 603 603 603	SB NB SB 36 36 36 37 38 38 39 36 14 46 23 20 18 19 36 11 16 37 11 17 17 17 17 17 18 11 18 18	SB NB SB 38 38 38 38 38 38 38 38 38 38 38 38 38	SB NB SB NB SB THU 36	SB NB SB NB SB NB SB NB SB Fig. SB Fig. SB SB NB NB SB NB NB SB NB	SB NB NB SB NB NB SB NB NB SB NB	SB NB NB SB NB



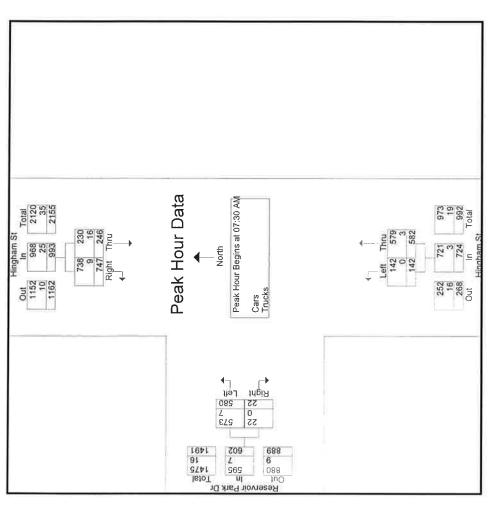
N/S Street: Hingham Street E/W Street: Reservoir Park Drive City/State: Rockland, MA Weather: Clear

							2149											
	Reservoir Park Dr From West						536 17											
	Reservo	Left	111	115	166	144	536	142	128	117	123	510	1046	96.2	24.9	1031	98.6	7,
rucks	m St outh		109	136	158	170	573	121	133	88	106	448	1021	80.8	24.4	1014	99.3	7
Groups Printed- Cars - Trucks	Hingham St From South	Left	25	29	31	55	140	26	30	18	29	103	243	19.2	5.8	242	9.66	•
	h h						664	180	171	171	171	693	1357	73.7	32.4	1339	288.7	18
	Hingham St From North	Thru	49	25	22	58	219	70	63	65	89	566	485	26,3	11.6	463	95.5	22
	1	Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total	Apprch %	Total %	Cars	% Cars	Trucks

		From North			Hingham St From South		e ∆	Reservoir Park Dr From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	the l	Right	Ann Total	Int Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1	to 08:45 AM - Pe	ak 1 of 1						in in		
Peak Hour for Entire Intersection Begins at 07:30 AM	ins at 07:30 AM									
07:30 AM	55	192	247	31	158	189	166	9	172	608
07:45 AM	58	204	262	55	170	225	144	4	148	635
08:00 AM	70	180	250	26	121	147	142	2	144	541
08:15 AM	63	171	234	30	133	163	128	10	138	535
Total Volume	246	747	993	142	582	724	580	22	602	2319
% App. Total:	24.8	75.2		19.6	80.4		96.3	3.7	1	
PHF	878.	.915	.948	.645	.856	804	.873	.550	.875	913
Cars	230	738	968	142	579	721	573	22	595	2284
% Cars	93.5	98.8	97.5	100	99.5	9.66	98.8	100	0 00	98.5
Trucks	16	6	25	0	က	ന	7	0	7	35
% Trucks	6.5	1,2	2.5	0	0.5	4.0	1.2		. 6	, τ

File Name: 85270001 Site Code: 85270001 Start Date: 2/12/2020 Page No: 2

N/S Street: Hingham Street E/W Street: Reservoir Park Drive City/State: Rockland, MA Weather: Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 Peak Hour for Each Approach Begins at:

	07:15 AN	ΔA		07:3	07:30 AM		
192	247	29	136	165	166	9	172
204	262	31	158	189	144	4	148
180	250	55	170	225	142	2	144
171	234	26	121	147	128	10	138
747	866	141	585	726	580	22	602
75.2		19.4	90.8		96.3	3.7	
.915	948	.641	.860	708.	.873	550	.875
738	896	140	583	723	573	22	595
98.8	97.5	99.3	2.66	9.66	98.8	100	98.8
თ		•	c	C	1	c	1

N/S Street: Hingham Street E/W Street: Reservoir Park Drive City/State: Rockland, MA Weather: Clear

		Int Tota	402	492	604	626	2124	531	523	456	495	2005	4129
													3.7
Reservoir Park Dr	From West	Left	107	115	164	143	529	141	125	117	119	502	1031 96.3
		Thru	107	136	158	168	569	121	132	87	105	445	1014 80.7
Hingham St	From South	Left	25	28	31	55	139	26	30	18	29	103	242 19.3
			111	153	192	201	657	178	167	167	170	682	1339 74.3
 Hingham St	From North	Thru	48	25	53	55	213	63	59	61	29	250	463 25.7
		Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total Apprch %

Hingham St From North		Hingham St From North			Hingham St From South		Re	Reservoir Park Dr From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	#de	Right	Ann Total	Int Total
beak Hour Analysis From 07:00 AM to	o 08:45 AM - Pe	ak 1 of 1				The second secon	-			1000
Peak Hour for Entire Intersection Begins at 07:30 AM	ins at 07:30 AM									
07:30 AM	53	192	245	31	158	189	164	9	170	604
07:45 AM	55	201	256	22	168	223	143	4	147	626
08:00 AM	63	178	241	26	121	147	141		143	521
08:15 AM	29	167	226	30	132	162	125	10	135	523
Total Volume	230	738	896	142	579	721	573	22	595	2284
% App. Total	23.8	76.2	1	19.7	80.3		96.3	3.7		
PHF	.913	918	.945	.645	.862	808.	.873	550	875	912

N/S Street: Hingham Street E/W Street: Reservoir Park Drive City/State: Rockland, MA Weather: Clear

	Hingham St		Hingham St		Reservoir Park Dr		
	From North		From South		From West		
art Time	Thru	Right	Left	Thru	Left	Right	Int Total
7:00 AM	-	2	0	2	4		
7:15 AM	0	2		10) C	
7:30 AM	2	0	0	0	0 0	0 0	
07:45 AM	က	က	0		1	o c	
Total	9	7	-	4	7	0	
08:00 AM	7	2	0	0	~	0	•
8:15 AM	4	4	0		· m) C	`
8:30 AM	4	4	0		0	0 0	
8:45 AM	_	_	0	· •	4) -	
Total	16	11	0	m	. ∞	-	36
Grand Total	22	18	~	7	15	-	64
pprch %	55	45	12.5	87.5	93.8	6.2	
Total %	34.4	28.1	9	10.0	7 00		

		Hingham St From North			Hingham St From South		Res	Reservoir Park Dr From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App Total	Int Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1	M to 08:45 AM - Pe	ak 1 ((Veryalphane)	The control of the co		D	in a data	
Peak Hour for Entire Intersection Begins at 07:45 AM	Begins at 07:45 AM									
07:45 AM	e	က	9	0	2	2	_	0	•	σ
08:00 AM	7	2	0	0	0	0	-		•	7
08:15 AM	4	4	00	0	-	•	· 67	o C	- er	12
08:30 AM	4	4	80	0	-		0	0	o C	Įσ
Total Volume	18	13	31	0	4	4	CO.	0	ı ıc	0.4
% App. Total	58.1	41.9		0	100	•	100	0)	2
出	.643	.813	.861	000	200	500	417	UUU	117	833

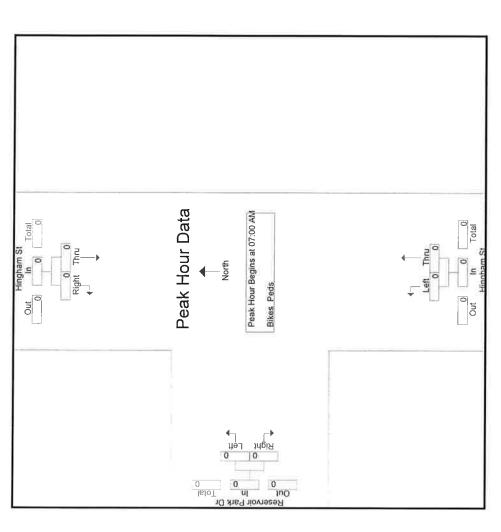
N/S Street: Hingham Street E/W Street: Reservoir Park Drive City/State: Rockland, MA Weather: Glear

		Hingham St From North		宝 品	Hingham St From South	Hingham St From South		Reservoir Park Dr From West				
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu. Total	Int Total
07:00 AM	0	0	0	0	0	0	С	0	C	_		
07:15 AM	0	0	0	0	С	C) C	0 0	o C	0 0	0 0	
07:30 AM	0	0	0	0	0		0 0	o c	> <	o c	0 0	
07:45 AM	0	0	0	0	C		0 0		0 0		00	
Total	0	0	0	0	0	0	0	0	0	00	00	
08:00 AM	0	0	0	0	0	0	C	c	_	c	c	
08:15 AM	0	0	0	0	0) C	0 0	o C	o c	0 0	0 0	
08:30 AM	0	0	0	0	0	0 0	o C	o C	o c	> C	o c	
08:45 AM	0	0	0	0	0	o C	0 0	0 0	0 0	0 0	o c	
Total	0	0	0	0	0	0	0	0	0	0:0	00	
Grand Total	0	0	0	0	0	0	0	0	0	0	С	C
Apprch %	0	0		0	0		0	0			,)

		Hingham St From North			Hingham St From South		Res	Reservoir Park Dr From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	He l	Right	Ann Total	Int Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1	M to 08:45 AM - Pe	ak 1 of 1							Sept. Orda	111.
Peak Hour for Entire Intersection Begins at 07:00 AM	segins at 07:00 AM									
07:00 AM	0	0	0	0	С	0	C	c	C	
07:15 AM	0	0	0	· C	o C	o C) C	o c	0 0	
000			•	•	>	>)	>	0	
U/:30 AM	0	0	0	0	0	0	0	С	U	
07:45 AM	0	0	0	С	C	C	C		0 0	
Total Volume	0	0	С	c	0) C	0 0	0 0	0.0	
% App. Total	0	C)	0 0	o C	•	0 0	o c	D	
HA	000	000	000	000	000	000	000	000	000	

File Name : 85270001 Site Code : 85270001 Start Date : 2/12/2020 Page No : 11

N/S Street: Hingham Street E/W Street: Reservoir Park Drive City/State: Rockland, MA Weather: Clear



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 Peak Hour for Each Approach Begins at:

J	07:00 AM		07:0	07:00 AM		02:0	07:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	_
+15 mins.	0	0	0	0	0	0	0	0 0	
+30 mins.	0	0	0	0	0	0	0	0 0	
+45 mins.	0	0	0	0	0	0	0	0 0	
Total Volume	0	0	0	0	0	0	0	0	
% App. Total	0	0		0	0		0	С	
PHF	000	000	000	000.	000	000	000	000	000

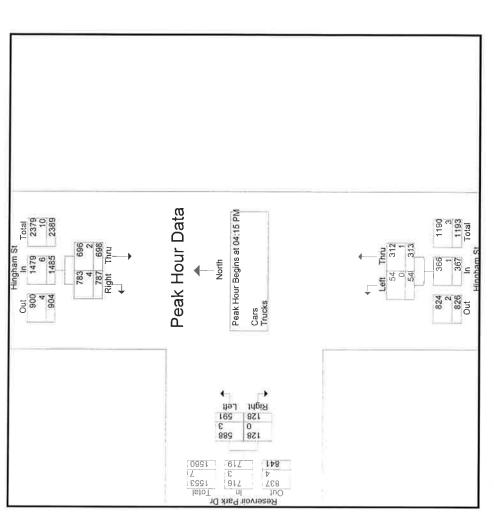
N/S Street: Hingham Street E/W Street: Reservoir Park Drive City/State: Rockland, MA Weather: Clear

	Hingham St		Hingham St		Reservoir Park Dr		
	From North		From South		From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int. Tota
04:00 PM	149	194	9	103	147	27	
04:15 PM	177	197	17	29	119	28	09
04:30 PM	184	215	14	89	142	20	97,79
04:45 PM	155	202	10	74	159	34	4.69
Total	665	808	47	312	567	109	2508
05:00 PM	182	173	13	104	171	46	œ G
05:15 PM	161	181	-	73	156	25	909
05:30 PM	136	197	8	77	137	1 4	7.74
05:45 PM	123	182	F	69	150	32	35.00
Total	602	733	43	323	614	118	243
Grand Total	1267	1541	06	635	1181	227	494
Apprch %	45.1	54.9	12.4	87.6	83.9	16.1	
Total %	25.6	31.2	1.8	12.9	23.9	4.6	
Cars	1265	1535	06	633	1175	227	492
% Cars	8.66	9.66	100	2.66	99.5	100	. 66
Trucks	2	9	0	2	တ	0	16
% Trucks	0.0	7	c	0.0			

		Hingham St			Hingham St		Re	Reservoir Park Dr		
					LIOU SOUTH			From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	Ann Total	Int Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1	M to 05:45 PM - F	eak 1 of 1					4	5	i.	
Peak Hour for Entire Intersection Begins at 04:15 PM	degins at 04:15 PN	_								
04:15 PM	177		374	17	67	84	119	28	147	605
04:30 PM	184	215	399	4	99	82	142	20	162	643
04:45 PM	155	202	357	10	74	84	159	34	193	634
05:00 PM	182	173	355	13	104	117	171	46	217	689
Total Volume	869	787	1485	54	313	367	591	128	719	2571
% App. Total	47	53		14.7	85.3		82.2	17.8		
PHF	.948	.915	.930	794	.752	.784	.864	969.	.828	933
Cars	969	783	1479	54	312	366	588	128	716	2561
% Cars	2.66	99.5	9.66	100	2.66	266	99.5	100	9.66	9.66
Trucks	2	4	9	0	_	-	n	0	m	10
% Trucks	0.3	0.5	0.4	0	0,3	0.3	0.5	0	0.4	0.4

File Name: 85270001 Site Code: 85270001 Start Date: 2/12/2020 Page No: 2

N/S Street: Hingham Street E/W Street: Reservoir Park Drive City/State: Rockland, MA Weather: Clear



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 Peak Hour for Each Approach Begins at:

97 374
173 356

N/S Street: Hingham Street E/W Street: Reservoir Park Drive City/State: Rockland, MA Weather: Clear

File Name : 85270001 Site Code : 85270001 Start Date : 2/12/2020 Page No : 4

Right From South From West From West Int. Total 625 193 Left Thru Left Int. Total 625 203 17 66 118 28 625 203 10 74 148 632 641			25	sroups Printed- Cars				
Left From West From West Left Thru Left Right Int. 17	Hingham St			Hingham St		Reservoir Park D		
100 100	100	1	142:0	FIGIII SOUTH	į	From West	i	
17 66 103 147 27 14 68 118 28 10 74 158 34 47 311 565 109 13 104 170 46 11 77 136 18 8 77 136 18 43 322 610 118 90 633 1175 227 12.4 87.6 83.8 16.2 1.8 12.9 4.6	ם	1	Right	Leπ	חוו	Lett	Right	
17 66 118 28 14 68 142 20 10 74 158 34 47 311 565 109 13 104 170 46 11 73 155 22 8 77 136 18 11 68 149 32 43 322 610 118 12.4 87.6 83.8 16.2 1.8 12.9 23.9 4.6	149		193	9	103	147	27	625
14 68 142 20 10 74 158 34 47 311 565 109 13 104 170 46 11 73 136 18 8 77 136 18 43 322 610 118 90 633 1175 227 12.4 87.6 83.8 16.2 1.8 12.9 23.9 4.6	176		195	17	99		. ««	920
10 74 158 34 47 311 565 109 13 104 170 46 11 73 136 18 8 77 136 18 11 68 149 32 43 322 610 118 90 633 1175 227 12.4 87.6 83.8 16.2 1.8 12.9 23.9 4.6	184		213	4	89	142	250	641
13 104 170 46 11 73 155 22 11 77 136 18 11 68 149 32 43 322 610 118 90 633 1175 227 12.4 87.6 83.8 16.2 1.8 12.9 23.9 4.6	154		202	10	74	158	34.	632
13 104 170 46 11 73 155 22 8 77 136 18 11 68 149 32 43 322 610 118 90 633 1175 227 12.4 87.6 83.8 16.2 1.8 12.9 23.9 4.6	663		803	47	311	565	109	2498
11 73 155 22 8 77 136 18 11 68 149 32 43 322 610 118 90 633 1175 227 12.4 87.6 83.8 16.2 1.8 12.9 4.6	182		173	13	104	170	46	888
8 77 136 18 11 68 149 32 43 322 610 118 90 633 1175 227 12.4 87.6 83.8 16.2 1.8 12.9 4.6	161		180	11	73	155	22	602
11 68 149 32 43 322 610 118 90 633 1175 227 12.4 87.6 83.8 16.2 1.8 12.9 23.9 4.6	136		197	∞	77	136		572
43 322 610 118 90 633 1175 227 12.4 87.6 83.8 16.2 1.8 12.9 23.9 4.6	123		182	11	99	149	32	565
90 633 1175 227 12.4 87.6 83.8 16.2 1.8 12.9 23.9 4.6	602		732	43	322	610	118	2427
12.4 87.6 83.8 16.2 1.8 12.9 23.9 4.6	1265		1535	06	633	1175	227	4925
1,8 12,9 23.9	45.2		54.8	12.4	87.6	83.8	16.2	
	25.7		31.2	1.8	12.9	23.9	4.6	

	Int Total			641	633	700	900	2563		1000
,	Ann Total	200		162	192	376	177	747	-	900
Reservoir Park Dr From West	Right	0		20	34	46.	22	122	16.3	863
Re	- d			142	158	170	155	625	83.7	010
	App. Total			82	84	117	84	367		784
Hingham St From South	Thru			99	74	104	73	319	86.9	787
- 1	Left			14	10	13	5 ==	48	13.1	857
	App. Total			397	356	355	341	1449		912
Hingham St From North	Right	k 1 of 1		213	202	173	180	768	53	901
	Thru	05:45 PM - Pea	ns at 04:30 PM	184	154	182	161	681	47	925
	Start Time	Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 04:30 PM	04:30 PM	04:45 PM	05:00 PM	05:15 PM	Total Volume	% App. Total	PHF
		Peak Hour An	Peak Hour for							

N/S Street: Hingham Street E/W Street: Reservoir Park Drive City/State: Rockland, MA Weather: Clear

	Hingham St From North		Hingham St From South		Reservoir Park Dr From West		
Start Time	Thru	Right	Left	Thru	Left	Right	Int Total
04:00 PM	0	_	0	0	0	0	
04:15 PM	_	2	0	_	-	0 0	4.
04:30 PM	0	2	0	0	. c	0 0	
04:45 PM	_	0	0	0		0 0	
Total	2	വ	0	-	2	0	Ψ.
05:00 PM	0	0	0	0	_	C	,
05:15 PM	0	_	C	· C		0 C	
05:30 PM	0	0	0	C		0 0	,
05:45 PM	0	0	0) (0 C	
Total	0	- Area	0	-	4	00	
Grand Total	2	9	0	2	9	0	7
Apprch %	25	75	0	100	100	C	
Total %	12.5	37 E	0		1 1		

		Hingham St From North			Hingham St From South		Re	Reservoir Park Dr From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	leff	Right	App Total	Int Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1	to 05:45 PM - Pe	ak 1 of 1								į
Peak Hour for Entire Intersection Begins at 04:00 PM	gins at 04:00 PM									
04:00 PM	0	_		0	0	0	С	С	0	
04:15 PM	-	7	ന	0	-	•		0 0	· •	
04:30 PM	0	2	2	0			. c	0 0	- c	
04:45 PM	_	0	•	0	0	0	· -	0 0	· *-	
Total Volume	2	ഹ	7	0	-		- 5	0 0		
% App. Total	28.6	71.4		0	100		100	0	ı	
HH	.500	.625	5583	000	250	250	500	000	600	

Int, Total

00000

N/S Street: Hingham Street E/W Street: Reservoir Park Drive City/State: Rockland, MA Weather: Clear

Inclu. Total 00000 0 0 Exclu. Total 00000 00000 Peds 00000 0 Reservoir Park Dr From West eff Right 00000 00000 00 00000 00000 00 Groups Printed- Bikes Peds Hingham St From South Peds 0 0 00000 Thru 00000 Left 0 0 0 00000 00 Peds 00000 0 Hingham St From North Right 0 0 0 00000 00 D14T 00000 00 Grand Total Apprch % Total % 04:00 PM 04:15 PM 04:30 PM 04:45 PM Total 05:00 PM 05:15 PM 05:30 PM 05:45 PM Total Start Time

		Hingham St From North			Hingham St From South		Re	Reservoir Park Dr From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	l eff	Right	Ann Total	Int Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1	M to 05:45 PM - Pe	ak 1 of 1						1160		III. Olai
Peak Hour for Entire Intersection Begins at 04:00 PM	egins at 04:00 PM									
04:00 PM	0	0	0	0	C	0	C	c		C
04:15 PM	0	0			o C	0 C	o c	o c	o c	
04:30 PM	C	· C	o C	o c	o c	0 0	o c	o c	> C	0
04:45 PM	0	0	0	0	0 6	0 6	0 0	0 0	0 0	
Total Volume	0	0	0	0	c	C	oc	0 0	o c	0 0
% App. Total	0	0		0	0		0	0 C	>	D
PHF	000.	000	000	000	000	000	000	000	000	000

File Name : 85270001 Site Code : 85270001 Start Date : 2/12/2020 Page No : 11

N/S Street: Hingham Street E/W Street: Reservoir Park Drive City/State: Rockland, MA Weather: Clear

Peak Hour Data Peak Hour Begins at 04:00 PM Total 0 North Right Bikes Peds Out Out 10 JhgiA 1J∋7 Reservoir Park Dr

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 Peak Hour for Each Approach Begins at:

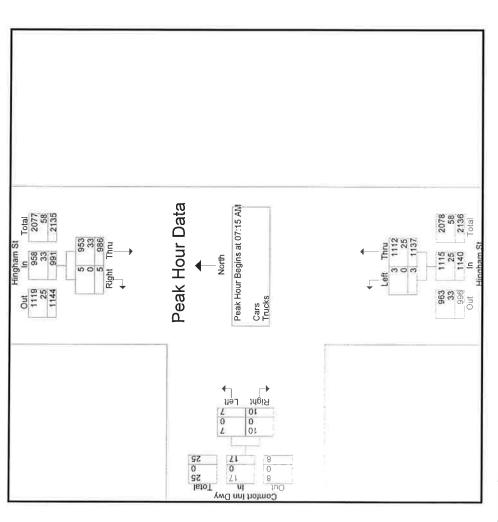
1 04:00 PM	D PM		04:0	04:00 PM		04.0	04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	
+15 mins.	0	0	0	0	0	0	0	0	
+30 mins.	0	0	0	0	0	· C	o C	0 0	
+45 mins.	0	0	0	0	0	0	0	0 0	
Total Volume	0	0	0	0	0	0	0 0); C	
% App. Total	0	0		0	· C	8	0 0	0 C	
PHF	000	000	000	000.	000	000	000	000	000

			The state of the s				
	Hingham St		Hingham St		Comfort Inn Dwy		
100 NOTES	From North		From South		From West		
Start Time	Thru	Right	Left	Thru	Left	Right	ļuļ
07:00 AM	153	0	_	227	2	2	
07:15 AM	223	_	0	267	10	10	
07:30 AM	234	က	0	316	١٥	10	
07:45 AM	291	-	0	311	ım	1 ~	
Total	901	Ŋ		1121	ာတ	o o	
08:00 AM	238	0	ო	243	0	er.	
08:15 AM	201	0	2	284		0	
08:30 AM	204	_	-	214	0	0	
08:45 AM	209	1	0	219	0	-	430
Total	852	2	9	096	_	4	
Grand Total	1753	7	7	2081	10		1785
Apprch %	9.66	0,4	0.3	2.66	43.5	56.5	
Total %	45.3	0.2	0.2	53.8	6.0	03	
Cars	1700	7	2	2033	10	13	
% Cars	26	100	100	7.79	100	100	
Trucks	53	0	0	48	0	0	
% Trucks	m	C	c	0.0) (

		From North			Hingham St From South		ပိ	Comfort Inn Dwy From West		
Start Tim	Thru	Right	App. Total	Left	Thru	App. Total	the the	Right	App Total	Int Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1	M to 08:45 AM - Pe	eak 1 of 1			The state of the s		_			
Peak Hour for Entire Intersection	in Begins at 07:15 AN									
07:15 AM	1	_	224	0	267	267	2	2	4	495
07:30 AM	1 234	က	237	0	316	316	2	2 2	. 4	557
07:45 AM		-	292	0	311	311	r	m	. 6	609
08:00 AM		0	238	က	243	246	0	ı m	m	487
Total Volume		5	991	က	1137	1140	7	10	47	2148
% App. Tota		0.5		0.3	99.7		41.2	58.8	30]
PHF	: 847	-417	.848	.250	006	.902	.583	.833	708	882
Car		5	958	က	1112	1115	7	10	17	2090
% Cars	2.96	100	2.96	100	97.8	97.8	100	100	100	97.3
Trucks	33	0	33	0	25	25	0	0	0	220
% Trucks	3.3	0	3.3	0	2.2	2.2	0	0	C	2.7

File Name : 85270002 Site Code : 85270002 Start Date : 2/4/2020 Page No : 2

N/S Street: Hingham Street E/W Street: Comfort Inn Driveway City/State: Rockland, MA Weather: Cloudy



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 Peak Hour for Each Approach Begins at:

		4	4	4	9	18		.750	100	100	0
		2	2	2	ന	o	20	.750	o	100	0
	77:00 AM	2	2	2	m	O	20	750	σ	100	0
	07:0		311	246	286	1159		.917	1131	97.6	28
		316	311	243	284	1154	93.6	.913	1126	97.6	28
	7:30 AM	0	0	m	2	5	0.4	.417	5	100	0
	:20	224	237	292	238	991		.848	958	96.7	33
		_	က	_	0	2	0.5	.417	2	100	0
al.	5 AM	223	234	291	238	986	99.5	.847	953	2.96	33
nour lor cacil Approach Begins at:	07:15	+0 mins.	+15 mins.	+30 mins.	+45 mins.	Total Volume	% App. Total	PHF	Cars	% Cars	Trucks

	Hingham Ct		Linchom Ot				
_	From North		From South		Comfort Inn Dwy From West		
rt Time	Thru	Right	Left	Thru	Left	Right	Int Total
:00 AM	149	0	_	220	2	2	374
15 AM	222	_	0	263	10	10	490
:30 AM	229	က	0	306	10	10	542
07:45 AM	276	·-	0	306	l m	ım	589
Total	876	5	-	1095	6	6	1995
08:00 AM	226	0	ო	237	0	e	469
:15 AM	196	0	2	277	. ~) C	476
:30 AM	197	_	-	208	. 0	0 0	407
:45 AM	205	qu	0	216	00) (423
Total	824	2	9	938	-	4	1775
Grand Total	1700	7	7	2033	10	13	3770
Apprch %	9.66	0.4	0.3	266	43.5	56.5	
Total %	45.1	0.0	0.0	530	0.0		

		Hingham St From North			Hingham St From South		ŏ	Comfort Inn Dwy From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	leff	Right	Ann Total	Int Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1	M to 08:45 AM - Pu	eak 1 of 1					i	300	200	Pio Cities
Peak Hour for Entire Intersection Begins at 07:15 AM	legins at 07:15 AN	4								
07:15 AM	222	_	223	0	263	263	2	2	4	490
07:30 AM	229	ო	232	0	306	306	2	۱ ۵	. 4	542
07:45 AM	276	_	277	0	306	306	l 677	l er	· 6	180
08:00 AM	226	0	226	က	237	240	0	o co		469
Total Volume	953	2	958	m	1112	1115	7	10	17	0602
% App. Total	99.5	0.5		0.3	2.66		41.2	58,8		
PHF	.863	.417	.865	.250	806	911	583	833	708	287

40.0	
	Right
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		Hingham St From North			Hingham St From South		ပိ	Comfort Inn Dwy From West		
Start Time	Thru	Right	App. Total	Left	Thru	App Total	d d	Richt	Ann Total	LetoT tel
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1	1 to 08:45 AM - Pe	ak 1 of 1					4		inio . ddl	
Peak Hour for Entire Intersection Begins at 07:30 AM	egins at 07:30 AM									
07:30 AM	2	0	S	0	10	10	0	C	0	
07:45 AM	15	0	15	0	r2	, LC		o C	o C	
08:00 AM	12	0	12	0	9	9 49	0	o c	o C	
08:15 AM	'n	0	S	0	7		0	0	o C	
Total Volume	37	0	37	0	28	28	0	C	0 0	
% App. Total	100	0		0	100	l	0	0	•	
PHF	.617	000	.617	000	700	700	000	UUU	UUU	

	ŢΨ	Hingham St From North		포	Hingham St		Cod	Comfort Inn Dwy				
me	Thru	Right	Peds	left .	Thu	Pade	T He l	Dicks	Dode	Evolu Total	Joseph Total	Total Total
AM	0	, C	C			200	5		900	ביירות. יסומו	- 101g	III. IOIAI
A 4 4) (0 0) (.	>	>	>	>	>	0	0	>
AIVI	0	0	0	0	0	0	0	0	0	0	0	C
AM	0	0	0	0	0	0	0	С	C			
AM	0	0	0	0	0	0	0	0	C	o C	0 0	
Total	0	0	0	0	0	0	0	0	0	0.0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	С	C	C
AM	0	0	0	0	0	0	0	0 0	o C	0 C	0 0	
AM	0	0	0	0	0	0	0 0	o C	o C	0 C	0 0	
08:45 AM	0	0	0	0	0	0	0	0	0 0	0 C		
Total	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total Apprch %	00	00	0	00	00	0	00	0 0	0	0	0	0
Fotal %			_							C	C	

		Hingham St From North			Hingham St From South		ŏ	Comfort Inn Dwy From West		
Start Time Thru Rig	Thru	Right	App. Total	Left	Thru	App. Total	Left	Right	App. Total	Int Total
our Analysis From 07:00 Alv	// to 08:45 AM - Pe	ak 1 of 1						D		
Peak Hour for Entire Intersection Begins at 07:00 AM	egins at 07:00 AM									
07:00 AM	0	0	0	0	0	0	0	С	C	
07:15 AM	0	0	0	0	0	0	0	· C	o C	
07:30 AM	0	0	0	0	0	0	· C) C	0 0	
07:45 AM	0	0	0	0	0	0	C	0 0	0 0	
Total Volume	0	0	0	0	0	0	0	0	0 0	
% App. Total	0	0		0	0	•	0	0		
HHA.	000	000	000	UUU	UUU	000	000	000	000	

File Name : 85270002 Site Code : 85270002 Start Date : 2/4/2020 Page No : 11

N/S Street: Hingham Street E/W Street; Comfort Inn Driveway City/State: Rockland, MA Weather: Cloudy

Peak Hour Data Peak Hour Begins at 07:00 AM Total Total 0 <u>s</u> 0 North Out Bikes Peds Out O O Right Left Comfort inn Dwy IstoT 0

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07:00 AM

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N/S Street: Hingham Street E/W Street: Comfort Inn Driveway City/State: Rockland, MA Weather: Cloudy

Int. Total 534 557 630 495 2216 614 575 539 505 2233 4425 99.5 24 0.5 4449 Right 2 0 1 3 3 6 42.9 0.1 100 0 0 Comfort Inn Dwy From West 57.1 0.2 8 100 0 Left **-0-4** Thru 187 221 226 181 815 263 229 210 168 870 1685 99.6 37.9 1678 99.6 7 Groups Printed- Cars - Trucks Hingham St From South Left 0000 07-76 000-4.00 0.3 0.0 0 0 Right 0 1 1 0 5 5 5 000000 From North
Thru
347
330
400
307 2730 99.5 61.4 2713 99.4 17 347 342 326 331 1346 05:00 PM 05:15 PM 05:30 PM 05:45 PM Total Start Time 04:00 PM 04:15 PM 04:30 PM 04:45 PM Total Grand Total
Apprch %
Total %
Cars
% Cars
Trucks
% Trucks

Hingham St Comfort Inn Dwy From South	App. Total Left Thru App. Total left Right App Total Int Total			1 226	2 181	349 0 263 263 1 1 2	0 229	3 899 902 4	7.66	.375 .855 .857 .500	897 900 4	99.8	c
Hingham St From North	Right App. Tot			1 46	3 31	2 34	3	9 140	9.0	.750 .87	9 135	100	_
	Thru	to 05:45 PM - Peak	gins at 04:30 PM	400	307	347	342	1396	99.4	.873	1390	9.66	Œ.
	Start Time	Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 04:30 PM	04:30 PM	04:45 PM	05:00 PM	05:15 PM	Total Volume	% App. Total	PHF	Cars	% Cars	Tricks

File Name | 85270002 Site Code | 85270002 Start Date | 2/4/2020 Page No | 2

978-664-256

N/S Street: Hingham Street E/W Street: Comfort Inn Driveway City/State: Rockland, MA Weather: Cloudy | Hingman St. | Total | Hindman St. | Total | Total | Hindman St. | Total | Total | Hindman St. | Total | To

Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 Peak Hour for Each Approach Begins at:

	~	00	10	10	1 0)	750	5	100	2
	0	ı —	· c	· ←	4	44.4	.500	4	100	
34:15 PM	-		2	*	22	55.6	.625	ιc	100	
04		183	263	229	902		.857	006	8,66	6
	226	181	263	229	899	99.7	.855	897	8.66	2
04:30 PM	-	2	0	0	က	0.3	.375	က	100	C
04	401	310	349	345	1405		.876	1399	9.66	9
	_	က	2	က	6	9.0	.750	o	100	0
4:30 PM	400	307	347	342	1396	99.4	.873	1390	9.66	9
O	+0 mins.	+15 mins.	+30 mins.	+45 mins.	Total Volume	% App. Total	표	Cars	% Cars	Trucks

	Lingham Ot		O morpholi				
	From North		From South		Comfort Inn Dwy From West		
tart Time	Thru	Right	Left	Thru	Left	Right	Int. Total
4:00 PM	343	0	0	185	C		
04:15 PM	327	_	2	221	ı (-	0 0	557
4:30 PM	400	_	•	226		1 ←	100
4:45 PM	307	ന	8	180	- 0	- c	000
Total	1377	2	ગ	812	1 4	, m	2206
05:00 PM	346	2	0	263		T	613
15:15 PM	337	က	0	228	· c		569
5:30 PM	322	2	0	503	o -	- C	534
15:45 PM	331	2	•	166	. 0	· -	503
Total	1336	0	-	866	14	. ო	2219
Grand Total	2713	14	9	1678	∞	Ø	4425
Apprch %	99.5	0.5	0.4	9.66	57.1	42.9	
Total %	61.3	0.3	0.1	37.9	0.0		

Hingham St From North		Hingham St From North			Hingham St From South		Ö	Comfort Inn Dwy From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	l eft	Right	Ann Total	
r Analysis From 04:00 PM to	05:45 PM - P	eak 1 of 1					1		JAK.	
r for Entire Intersection Begin	ns at 04:30 PM									
04:30 PM	400	-	401	-	226	227	-	-	2	
04:45 PM	307	က	310	2	180	182	. 2	· c	10	
05:00 PM	346	2	348	0	263	263	ı -) -	10	
05:15 PM	337	3	340	0	228	228	0		1 ~	
Total Volume	1390	6	1399	ო	897	006	4	. С	7	
% App. Total	99.4	9.0			266		57.1	42.9		
PHF	869	.750	.872	.375	853	856	200	750	875	

	Hingham St From North		Hingham St From South		Comfort Inn Dwy From West		
Start Time		Right	Left	Thru	Left	Right	Int Total
74:00 PM	4	0	0	2	0	C	
74:15 PM	ო	0	0	0	0 0	0 0	
14:30 PM	0	0	0	0	0 0	0 0	
74:45 PM	0	0	0	(a	0	0 0	
Total	7	0	0	. С	0	0,0	10
05:00 PM	_	0	0	0	C	C	
15:15 PM	5	0	0	. —) C	o C	
15:30 PM	4	0	0 0		0	0 0	
15:45 PM	0	0	0	. 6	0 0	o c	
Total	10	0	0	4	0 0	0	1 4
Grand Total	17	0	0	7	C		NC
Apprch %	100	0 0	0	100	0	0	,

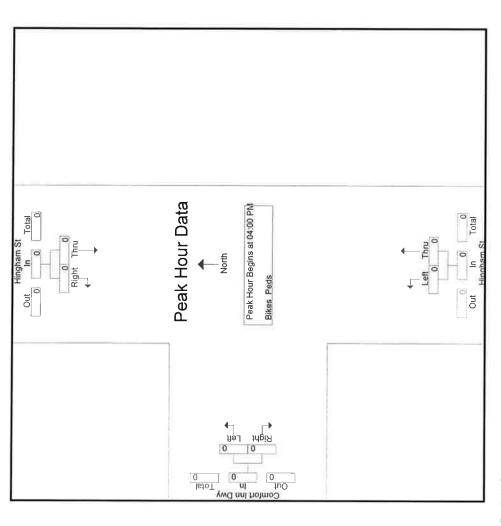
Comfort Inn Dwy From West	Right App Total Int Total			0					, ,
Comfor	eff	á.		0	0	C	0	0	. 0
	App. Total			0	•	-	2	4	•
Hingham St From South	Thru			0	-	_	7	4	100
Ι.Π.	Left			0	0	0	0	0	0
	App. Total	i !		_	ĸ	4	0	10	
Hingham St From North	Right	ık 1 of 1		0	0	0	0	0	0
<u> </u>	Thru	to 05:45 PM - Pea	ins at 05:00 PM	-	5	4	0	10	100
	Start Time	Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 05:00 PM	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total Volume	% App. Total

		Hingham St From North		Į Ľ	ngham St nm South	Hingham St From South		Comfort Inn Dwy From West				
Start Time	Thru	Right	Peds	Left	Thru	Peds	Left	Right	Peds	Exclu. Total	Inclu Total	Int Total
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	
04:15 PM	0	0	0	0	0	0	0	0	C		0 C	
04:30 PM	0	0	0	0	0	0	0	0	0 0	0 C	0 C	
04:45 PM	0	0	0	0	0	0	0) C	0 0		
Total	0	0	0	0	0	0	0	0	0	0	0	
05:00 PM	0	0	0	0	0	0	0	С	C	C	C	
05:15 PM	0	0	0	0	0	0	0	0 0	0 0	0 0	0 0	
05:30 PM	0	0	0	0	0	0) C	0 0	0 0	0 0		
05:45 PM	0	0	0	0	0	0	0	o C	0 0	0	0 0	
Total	0	0	0	0	0	0	0	0	0	0	00	
Grand Total	0 (0	0	0	0	0	0	0	0	0	0	
Appren % Total %	0	0		0	0		0	0				

		Hingham St From North			Hingham St From South		S	Comfort Inn Dwy From West		
Start Time	Thru	Right	App. Total	Left	Thru	App. Total	leff.	Right	Ann Total	Int Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1	M to 05:45 PM - Pe	ak 1 of 1					4	2	and de	
Peak Hour for Entire Intersection Begins at 04:00 PM	3egins at 04:00 PM									
04:00 PM	0	0	0	0	0	0	С	С		
04:15 PM	0	0	0	0	0	C	· C	o C	o C	
04:30 PM	0	0	0	С	C) C		o c	0 0	
04:45 PM	0	0	0	0	0	0 0	0	0 0	0 0	
Total Volume	0	0	0	0	0	0	C	o C	010	
% App. Total	0	0		0	0	•	0	o C)	
PHF	000	000	000	000	000	000	000	000	UUU	

File Name : 85270002 Site Code : 85270002 Start Date : 2/4/2020 Page No : 11

N/S Street: Hingham Street E/W Street: Comfort Inn Driveway City/State: Rockland, MA Weather: Cloudy



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 Peak Hour for Each Approach Begins at:

	0	0	0	0	C	0 0	000
04:00 PM	0	0	0	0	О	0	000
04:00	0	0	0	0	0		000
	0	0	0	0	0	0	000.
04:00 PM	0	0	0	0	0	0	000
04:0	0	0	0	0	0		000.
	0	0	0	0	0	0	000
04:00 PM	0	0	0	0	0	0	000
04:	+0 mins,	+15 mins.	+30 mins.	+45 mins.	Total Volume	% App. Total	PHF

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File Name: 85270003 Site Code: 85270003 Start Date: 2/4/2020 Page No: 1

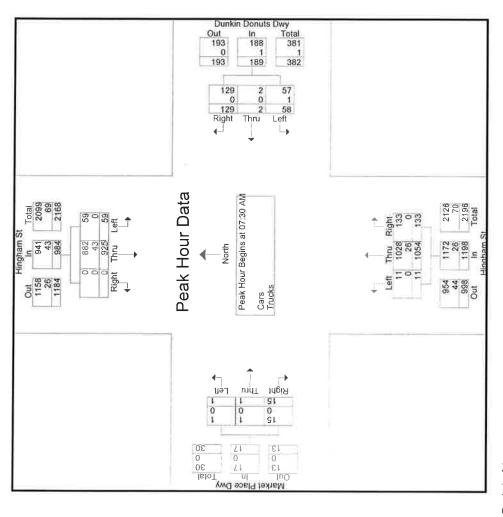
N/S Street: Hingham Street E/W Street: Dunkin Donuts /Market Place City/State: Rockland, MA

: Cloudy Weather

Int. Total 429 539 598 695 2261 4199 97.5 106 2.5 542 553 472 477 2044 4305 Right 0 3 1 1 6 6 1 1 1 6 6 1 1 1 24 88.9 0.6 23 95.8 4.2 Market Place Dwy 00000 2 2 2 0 0 0 0 0 0 0 0 From West 00000 0-00-0 0 0 0 0 Right 19 37 40 30 126 237 11.2 5.5 5.5 237 100 0 23 24 27 11 211 219 277 304 1011 1863 87.8 43.3 1817 97.5 46 2.5 219 254 194 185 852 Hingham St From South 4000 0.5 21 Groups Printed- Cars - Trucks Dunkin Donuts Dwy Right 20 20 42 32 35 35 129 30 32 27 29 118 247 68.8 5.7 247 100 0 0.1.0 00-0 - N 4 From East 106 29.5 2.5 105 99.1 15 15 15 53 6 12 12 53 Right 0 0 0 --0-00 000-Thru 150 210 220 284 864 1670 92.9 38.8 1612 96.5 58 3.5 229 192 187 198 806 Hingham St From North 14 20 14 67 Left 18 12 12 60 7.1 7.1 3 127 100 0 Start Time 07:00 AM 07:15 AM 07:30 AM 07:45 AM Grand Total Apprch % Total % 08:00 AM 08:15 AM 08:30 AM 08:45 AM Cars % Cars Trucks Total % Trucks

		Total Int Total			598	6 695					708 859				
		Ann T									19				
ace Dwy	West	Thru	n		2	ı ç	4	· m	15	88.7	625	75	100)
Market Place Dwy	From	Thru			0	0	-	0	_	5.9	.250	~	100)
		leff			0	0	0	-	_	5.9	.250	-	100		•
		App. Total			320	334	252	292	1198		788.	1172	97.8	26	ì
m St	outh	Right	9		40	30	29	34	133	1.1	.831	133	100	0	,
Hingham St	From S	Thru	and the second second		277	304	219	254	1054	88	798.	1028	97.5	26	
		Left	1		က	0	4	4	7	0.0	.688	=	100	0	
		App. Total	The second secon		44	22	42	46	189		.829	188	99.5	-	
nuts Dwy	ast	Right)		32	35	30	32	129	68.3	.921	129	100	0	
Dunkin Dor	From	Thru			0	_	0	_	7	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	.500	2	100	0	
		Left			12	21	12	13	58	30.7	069	57	98.3	_	
		App. Total	1 of 1		232	298	243	211	984		.826	941	92.6	43	
n St	orth	Right /	AM - Peak	7:30 AM	0	0	0	0	0	0	000	0	0	0	
Hingham St	From North	Thru	A to 08:45	egins at 07	220	284	229	192	925	94	.814	882	95.4	43	
		Left	m 07:00 AN	ersection B	12	14	4	19	59	9	922	59	100	0	
		Start Time	Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 07:30 AM	07:30 AM	07:45 AM	08:00 AM	08:15 AM	Total Volume	% App. Total	HH	Cars	% Cars	Trucks	

File Name : 85270003 Site Code : 85270003 Start Date : 2/4/2020 Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 Peak Hour for Each Approach Begins at:

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	9	4	'n	4	17	89.5	.708	17	100	
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07:45 AM	0	0	-	0	-	5.3	.250	_	100	
0	320	334	252	292	1198		788.	1172	97.8	ď
	40	30	29	34	133	11.1	.831	133	100	c
	277	304	219	254	1054	88	867	1028	97.5	20
7:30 AM	က	0	4	4	1	6.0	.688	Ξ	100	c
0		44	22	42	199		.873	198	99.5	-
	42	32	35	30	139	8.69	.827	139	100	_
	0	0	_	0	-	0.5	.250	-	100	C
7:15 AM	4	12	21	12	59	29.6	.702	58	98.3	_
0	226	232	298	243	666		.838	096	96.1	30
	0	0	0	0	0	0	000	0	0	_
	210	220	284	229	943	94.4	.830	904	95.9	39
07:15 AM	16	12	4	4	56	5.6	.875	56	100	_
	+0 mins.	+15 mins.	+30 mins.	+45 mins.	Total Volume	% App. Total	불	Cars	% Cars	Trucks

File Name: 85270003 Site Code: 85270003 Start Date: 2/4/2020 Page No: 4

	10+01	111. Total	4.00	2000	672	2208	523	541	459	468	1991	4199		
	40.0	116	V C	0 0	1 (0	10	7	r (*) 4	. 0	13.	23	88.5) L
Market Place Dwy	Thru		0 0	0 0) C	0	-	· c	0 0	· ~	2	2	7.7	. (
Marke	Haff.	3	o c	0 0	0	0	0	· —	· C	C		_	ري 80	
	Right	101	37	04	30	126	29	3 8	21	27	111	237	11.4	C L
gham St	Thrii	204	217	267	301	686	213	247	188	180	828	1817	87.6	0 0,
<u> </u>	t e		-	- ო	0	rc	4	4	2	9	16	21	←	ı
	Right	20	4 5	32	35	129	30	32	27	29	118	247	69	C
Dunkin Donuts Dwy From Fast	Thru	-	0	0	* ~	2	0	-	~	2	4	9	1.7	•
Dunkin	Left	9	4	12	20	52	12	13	16	12	53	105	29.3	L
	Right	0	0	0	0	0	0	0	0	_	-	_	0.1	c
Hingham St From North	Thru	147	209	214	265	835	216	187	180	194	777	1612	92.6	7.00
- - - - - - - - - - - - - - - - - - -	-	18	16	12	14	09	14	19	20	4	29	127	7.3	c
	Start Time	07:00 AM	07:15 AM	07:30 AM	07:45 AM	Total	08:00 AM	08:15 AM	08:30 AM	08:45 AM	Total	Grand Total	Apprch %	70 c+01

	Int Total			582	672	523	541	2318		.862
-	Ann Total			0	1 (2	י ער	4	17		.708
ace Dwy West				2	1 (5) 4	· (r)	, (C	88.2	.625
Market Place Dwy From West	Thru	3		0	· C) 	. 0	· -	5.9	.250
	a d			0	· C	0	· -	-	5.9	.250
	App. Total			310	331	246	285	1172		.885
Hingham St From South	Right	D		40	30	29	34	133	11.3	.831
Hingha From S	Thru	- - - - - - -		267	301	213	247	1028	87.7	.854
	Left			က	0	4	4	=	0.9	.688
	App. Total			44	26	42	46	188		.839
outs Dwy	Right			32	35	30	32	129	9.89	.921
Dunkin Donuts Dwy From East	Thru			0	-	0	_	7	1.1	.500
	Left			12	20	12	13	57	30.3	.713
	pp, Total	1 of 1		226	279	230	206	941		.843
n St orth	Right A	AM - Peak	7:30 AM	0	0	0	0	0	0	0000
Hingham St From North	Thru	A to 08:45	egins at 0	214	265	216	187	882	93.7	.832
-	Left	n 07:00 A∧	Prsection B	12	14	4	19	59	6.3	922
	Start Time	Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1	eak Hour for Entire Inte	07:30 AM	07:45 AM	08:00 AM	08:15 AM	Total Volume	% App. Total	PHF

File Name: 85270003 Site Code: 85270003 Start Date: 2/4/2020 Page No: 7

Int. Total 11 3 16 23 53

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N/S Street: Hingham Street E/W Street: Dunkin Donuts /Market Place City/State: Rockland, MA Weather: Cloudy

Right 0 0 Market Place Dwy 50000 00000 From West 00000 00000 000 Right 0 0 0 0 0 0 0 0 0 0 00000 000 Hingham St From South 7 7 2 10 3 3 22 46 100 43.4 Groups Printed- Trucks Right 0 00000 000 Dunkin Donuts Dwy o o o o o 00000 000 From East 100 000--00000 Right 0 0 0 00000 000 Hingham St From North 29 0 0 0 3 58 100 54.7 13 7 7 29 29 Left 00000 00000 000 Start Time 07:00 AM 07:15 AM 07:30 AM 07:45 AM Grand Total Apprch % Total % 08:00 AM 08:15 AM 08:30 AM 08:45 AM Total

		From North			Dunkin Donuts Dwy From East	nuts Dwy East			Hingh:	Hingham St From South			Market Place Dwy From West	ace Dwy		
Left	Thru		Right App. Total	Left	Thru	Right	Right App. Total	left	Thru		Ann. Total	d d	Thri	Right	Ann Total	Int Total
00:20 ר	AM to 08	Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1	k 1 of 1			,							3	200	1	
ersection	ר Begins	Peak Hour for Entire Intersection Begins at 07:30 AM														
0	9	0	9	0	0	0	0	0	10	0	10	0	C	0	C	16
0	19	0	19	-	0	0	_	0	c	0	er.	· C		o C	0 C	2.0
0	13	0	13	0	0	0	0	0	9	0	. C	· C	o C	o C	0 0	101
0	5	0	5	0	0	0	0	0	_	0	7	0	o C	o c	0 C	5 - 6
0	43	0	43	-	0	0	-	0	26	0	26	0	c	0	C	7.0
0	100	0		100	0	0	1	0	100	0		0	0	0)	-
000	.566	000	.566	.250	000	000	.250	000	650	000	650	000	000	000	000	761

File Name: 85270003 Site Code: 85270003 Start Date: 2/4/2020 Page No: 10

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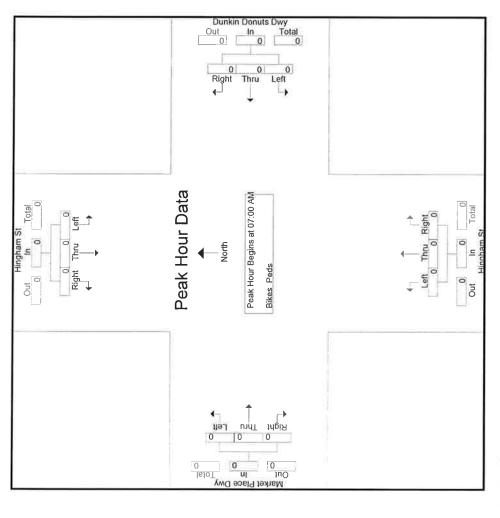
40000

N/S Street: Hingham Street E/W Street: Dunkin Donuts /Market Place City/State: Rockland, MA Weather: Cloudy

Int, Total Exclu, Total Inclu, Total 00000 00000 0 0 00000 0007 9 100 Peds 00000 00000 0 Market Place Dwy 00000 00000 00 00000 C 0 0 0 0 0000 00 70070 Right 0 0 0 00000 00 Groups Printed- Bikes Peds Hingham St From South 00000 0 0 0 0 0 00000 Peds 0 0 0 -000e Dunkin Donuts Dwy Right 0 00000 From East Thru 00000 00000 00000 00 00000 0 - 0 0:1 Right 0 00000 0 0 Hingham St From North 7hru 0 0 00000 00000 00000 Grand Total Apprch % Total % Start Time 07:00 AM 07:15 AM 07:30 AM 07:45 AM 08:00 AM 08:15 AM 08:30 AM 08:45 AM Total

	-	Hingham St From North	Hingham St From North			Dunkin Donuts Dwy From East	in Donuts Dwy From East			Hingham St From South	am St South			Market Place Dwy From West	ace Dwy West		
Start Time	Left	Thru	Right	Right App. Total	Left	Thru	Right	App, Total	Left	Thru	Right	App. Total	q.	Thru	Right	Ann. Total	Int Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1	n 07:00 A	M to 08:45	AM - Peak	1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM	rsection E	3egins at 0;	7:00 AM														
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	C	C	C	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0 0	0 0	o C) C	0 0	0 0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0 0) C) C) C	o C	0 C
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0 0	0 0) C	0 0	
Total Volume	0	0	0	0	0	0	0	0	0	0	0	С	o	· c		0 0	
% App. Total	0	0	0		0	0	0		0	0	0	>	0	0	0 0		0
PHF	000	000	000	000	000	000	000	000	000	000	UUU	000	000	000	000	000	000

File Name: 85270003 Site Code: 85270003 Start Date: 2/4/2020 Page No: 11



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1 Peak Hour for Each Approach Begins at:

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		_						.000
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		0	0	0	0	0	0	000
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ins at:		0	0	0	0	0	0	000
proach Begins at:	07:00 AM	0	0	0	0	0	0	000
Peak Hour tor Each Approact		+0 mins	+15 mins.	+30 mins.	+45 mins.	Total Volume	% App. Total	PHF

File Name: 85270003 Site Code: 85270003 Start Date: 2/4/2020 Page No: 1

Int. Total 558 556 630 508 2252

604 535 531 500 2170

4422

4393 99.3 29 0.7

N/S Street: Hingham Street E/W Street: Dunkin Donuts /Market Place

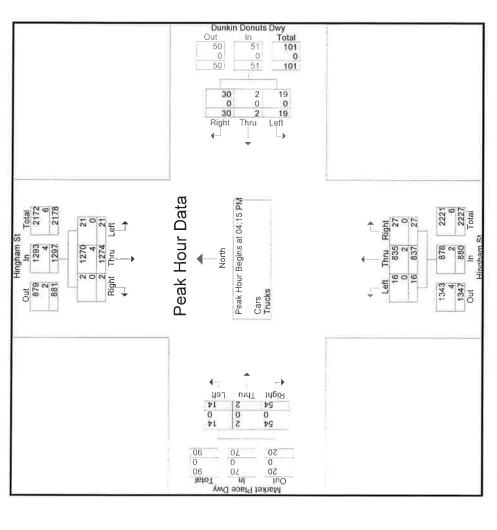
City/State: Rockland, MA Weather: Cloudy

92 78.6 2.1 92 100 0 21 8 7 7 14 Market Place Dwy 00000 2770000 From West 23 19.7 0.5 23 100 0 907-400000 Right 5 3 11 9 28 4 4 6 6 6 8 3.1 3.1 00 0 1556 95 35.2 1549 99.6 7 179 210 217 173 779 237 199 183 158 777 Hingham St From South 31 1.9 0.7 001 0 9282 ည်စေသော Groups Printed- Cars - Trucks Dunkin Donuts Dwy Right 5 8 8 8 33 8 + 8 - 6 52 1.2 1.2 52 100 0 F00000 0000000 00000 From East Left 8 6 7 7 23 23 38 0.9 38 100 0.9 Right 0 0 0 0.00 N000N From North Thru 321 321 333 352 297 1283 2532 98.3 57.3 2510 99.1 22 22 0.9 11 11 6 6 4 27 1.6 0.9 0.0 0 0 0 0 $\alpha - \alpha \otimes 4$ Start Time 04:00 PM 04:15 PM 04:30 PM 04:45 PM 05:00 PM 05:15 PM 05:30 PM 05:45 PM Total Apprch % Total % Total Grand Total Cars % Cars Trucks % Trucks

	Int Total			556	630	508	604	2298	1	912	2292	2 66	. (0	0.3
	Ann Total			7	25	7	27	100	>	648	70	100	2	0
ace Dwy West	+			4	21	i ^{cc}	21	45	77 1	.643	5.4	100	2	0
Market Place Dwy From West	Thru			0	τ-	· -	. 0	0	6.	200	2	100	0	0
	He I			c	· 60	0	1 10	4	50	.583	14	100	0	0
	App Total			219	230	185	246	880	1	.894	878	8.66	2	0.2
am St South	Right	9		က	=	6	4	27	67	.614	27	100	0	0
Hingham St From South	Thru			210	217	173	237	837	95.1	.883	835	99.8	2	0.2
	Left			9	2	ო	.co	16	<u>~</u>	799.	16	100	0	0
	App. Total			1-	17	1	12	51		.750	51	100	0	0
Donuts Dwy m East	Right	,		5	∞	6	∞	30	58.8	.833	30	100	0	0
	Thru			0	2	0	0	2	3.9	.250	2	100	0	0
	Left			9	7	2	4	19	37.3	629.	19	100	0	0
	Right App. Total	ik 1 of 1		319	358	301	319	1297		906	1293	2.66	4	0.3
Em St North	Right	PM - Pea	4:15 PM	0	0	0	7	2	0.2	.250	7	100	0	0
Hingham St From North	hru	VI to 05:45	segins at 0	313	352	297	312	1274	98.2	902	1270	99.7	4	0.3
	Left	m 04:00 Pi	ersection E	9	9	4	5	21	1.6	.875	21	100	0	0
	Start Time	Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1	Peak Hour for Entire Intersection Begins at 04:15 PM	04:15 PM	04:30 PM	04:45 PM	05:00 PM	Total Volume	% App. Total	PHF	Cars	% Cars	Trucks	% Trucks

File Name | 85270003 Site Code | 85270003 Start Date | 2/4/2020 Page No | 2

N/S Street: Hingham Street E/W Street: Dunkin Donuts /Market Place City/State: Rockland, MA Weather: Cloudy



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 Peak Hour for Each Annreach Bening 41

	04:00 PM			Ò	04:00 PM				04:15 PM			3	04:30 PM		
+0 mins.	1	321	0	332	œ	0	7	19	9	210	ო		က	-	2
+15 mins.	9	313	0	319	9	0	S	7	7	217	7	230	2	_	00
+30 mins.	9	352	0	358	7	7	œ	17	က	173	თ	185	9	0	2
+45 mins.	4	297	0	301	2	0	o	7	2	237	4	246	m	0	~
Total Volume	27	1283	0	1310	23	2	33	58	16	837	27	880	4	2	22
% App. Total	2.1	97.9	0		39.7	3.4	56.9		1.8	95.1	3.1		18.9	2.7	78,
HH.	.614	.911	000.	.915	.719	.250	.750	.763	799.	.883	.614	894	.583	500	169
Cars	27	1274	0	1301	23	2	33	58	16	835	27	878	14	2	25
% Cars	100	99.3	0	99.3	100	100	100	100	100	8368	100	8.66	100	100	101
Trucks	C	σ.	_	6	_	C	C	c	0	c	_	C	c		

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File Name: 85270003 Site Code: 85270003 Start Date: 2/4/2020 Page No: 4

	ĒĒ	Hingham St From North		Dunkin Fr	nkin Donuts Dwy From East		ΞŒ	Hingham St From South		Marke	Market Place Dwy		
Start Time		Thru	Right		Thru	Right	Left	Thru	Right	l eff	Thri	Right	
PΜ	1	315	0	00	0	11,	41	177	ı.c	4		18	
Μd	9	310	0	9	0	. ro		210) (r	r«	o c	2 <	
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PM	4	297	0	2	0	6		172	- σ	0 0	- +	- o	
Total	27	1274	0	23	2	33	12	776	28	12	7	51	
PM	2	311	2	4	0	00		236	4	9	C	27	
PM	-	307	0	_	0	_		199	· 147	m	0 C	- 00	
PM	2	305	0	7	0	8		182) o	· ·	0 0	2 1	
PM	က	313	0	က	0	7	5	156	o ro) C	- 10	
Total	14	1236	2	15	0	19	19	773	23	Ξ	0	7 1	
Grand Total Apprch %	14 1.6	2510 98.3	2 0.1	38 41.3	2.2	52 56.5	31	1549 95	3.1	23 19.7	2 7.	92 78.6	
tal %	60	57.1	0	6 C	_	1.0	0.7	25.2	7	4		7	

	Int. Total		553	630	507	603	200	1	.910
	App. Total		7	25	1 5	27	20)	.648
ace Dwy Vest			4	21	α	200	24	77.1	.643
Market Place Dwy From West	Thru		0	-	•	C	5	2.9	.500
	Left		m	ı cr.	^	9	4	20	.583
	App. Total		219	230	184	245	878		988.
Hingham St From South	Right		က	17	· 6	4	27	3.1	.614
Hingha From (Thru		210	217	172	236	835	95.1	.885
	Left		9	2	က	22	16	1.8	799.
	App. Total		11	17	7	12	51		.750
Tuts Dwy East	Right		5	œ	6	œ	30	58.8	.833
Dunkin Donuts Dwy From East	Thru		0	7	0	0	2	3.9	.250
	Left		9	7	2	4	19	37.3	629.
	pp. Total	5	316	358	301	318	1293	9	.903
im St Vorth	Right A	4:15 PM	0	0	0	2	2	0.2	.250
Hingha From N	Thru	Regins at 0	310	352	297	311	1270	98.2	.902
	Left n 04:00 PI	ersection E	9	9	4	ഗ	21	1.6	.875
Hingham St From North	Start Time	Peak Hour for Entire Inte	04:15 PM	04:30 PM	04:45 PM	05:00 PM	Total Volume	% App. Total	PHF

File Name: 85270003 Site Code: 85270003 Start Date: 2/4/2020 Page No: 7

	ĒĒ	Hingham St From North		Dunk	unkin Donuts Dwy From East		Īů	Hingham St From South		Marke	Market Place Dwy From West		
Start Time	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	eff	Thru	Right	Int Total
1:00 PM	0	9	0	0	0	0	0	2	0	0		, C	20 c
4:15 PM	0	က	0	0	0	0	0	ıc	0 0	00	0 0	o c	۳ c
4:30 PM	0	0	0	0	0	0	0	0		0 0	0 0) C	7 (
04:45 PM	0	0	0	0	0	0	0	· ~	0	00	00	0 0	7
Total	0	တ	0	0	0	0	0	က	0	0	0	0 0	12
05:00 PM	0	_	0	0	0	0	0	-	0	0	С	C	0
5:15 PM	0	7	0	0	0	0	0	0	0	C	· C) C	1
05:30 PM	0	5	0	0	0	0	0	· -) C) C) C) C	- (
05:45 PM	0	0	0	0	0	0	0	2	0	0	0 0) C	000
Total	0	13	0	0	0	0	0	4	0	0	0	0	17
Grand Total	0	22	0	0	0	0	0	_	0	С	C	O	29
Apprch %	0	100	0	0	0	0	0	100	0	0	0	C	Ì
Total %	0	75.9	_	_	c	_	c	7.70) () (

		From North	ž Ę			Dunkin Donuts From East	Donuts Dwy m East			Hingh	Hingham St From South			Market Place Dwy From West	ace Dwy		
Start Time Le	Left	Thru	Right	Thru Right App. Total	Left	Thru	ij	App. Total	Left	Thru	-	App. Total	l eff	Thri	Right	Ann Total	Int Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1	:00 PM	to 05:45 F	M - Pea	k 1 of 1							1				, ,		
Peak Hour for Entire Intersection Begins at 05:00 PM	ction Be	gins at 05	:00 PM														
05:00 PM	0	, -	0	-	0	0	0	0	0	-	0	7	C	C	C	C	•
05:15 PM	0	7	0	7	0	0	0	0	0	0	0	. 0	o C	0 0	o C	0 C	
05:30 PM	0	2	0	Ω	0	0	0	0	0	· -	0	· —) C	· C	o	0 0	
05:45 PM	0	0	0	0	0	0	0	0	0	- 2	0	2	, c) C	· c) C	
Total Volume	0	5	0	13	0	0	0	0	0	4	0	4	0	, 0	,) C	3
% App. Total	0	100	0		0	0	0		0	100	0		0	0	o C)	
PHF .000	00	464	000	464	000	000	000	000	000	.500	000	200	000	000	000	UUU	607

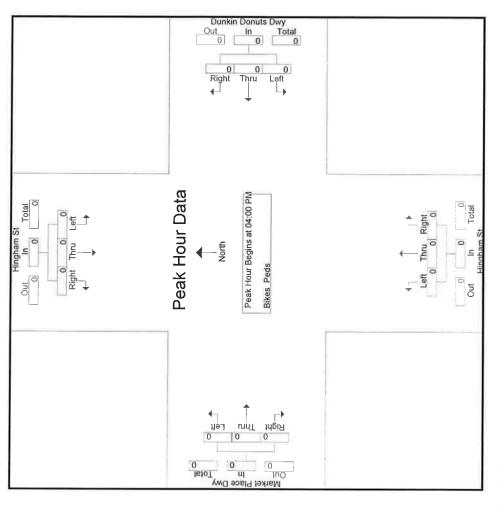
File Name: 85270003 Site Code: 85270003 Start Date: 2/4/2020 Page No: 10

		Int. Total	C	0 0	0 0	0 0	0	_		· c	o c	- C	ा <u>र</u> ू	
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	ce Dwy	Right	0	0	0	0	0	0	0	С	0	0	00	
	Market Place Dwy From West	Thru	0	0	0	0	0	0	0	0	0	0	00	
	2	Left	0	0	0	0	0	0	0	0	0	0	00	
		Peds	0	0	0	0	0	_	0	0	0	-	-	
Js	th fig	Right	0	0	0	0	0	0	0	0	0	0	0 0	
3ikes Per	Hingham St From South	Thru	0	0	0	0	0	0	0	0	0	0	00	
Groups Printed- Bikes Peds		Left	0	0	0	0	0	0	0	0	0	0	00	
Groups		Peds	0	0	0	0	0	0	0	0	0	0	0	
	ıts Dwy ast	Right	0	0	0	0	0	0	0	0	0	0	00	
	Dunkin Donuts From East	Thru	0	0	0	0	0	0	0	0	0	0	0 0	
	Π	Left	0	0	0	0	0	0	0	0	0	0	00	
		Peds	0	0	0	0	0	0	0	0	0	0	0	
	ಶ €	Right	0	0	0	0	0	0	0	0	0	0	00	
	Hingham St From North	Thru	0	0	0	0	0	0	0	0	0	0	00	
		Left	0	0	0	0	0	0	0	0	0	0	00	
		Start Time	04:00 PM	04:15 PM	04:30 PM	04:45 PM	Total	05:00 PM	05:15 PM	05:30 PM	05:45 PM	Total	Grand Total Apprch %	Total %

		Hingham St From North	am St North			Dunki	Dunkin Donuts Dwy From East	Owy			Hingham St From South	am St South			Market P From	Market Place Dwy From West		
Start Time	Left	Thru	Right	Right App. Total	al Left	Ė	u Riaht	72	App. Total	Left	Thru	4	App. Total	d H	Thru	Right	Ann Total	Int Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1	m 04:00 PI	VI to 05:45	PM - Peak	k 1 of 1								0			1	30		
Peak Hour for Entire Intersection Begins at 04:00 PM	ersection B	egins at 04	1:00 PM															
04:00 PM	0	0	0	J	_	0	0	0	0	0	0	0	C	0	0	_	0	
04:15 PM	0	0	0	J	-	0	0	0	0	0	0	0	0 0) C	0 0		
04:30 PM	0	0	0	J		0	0	0	0	0	c	0) C	· C	0 0	0 0	
04:45 PM	0	0	0	J	-	0	0	0	0	0	0	0	0	0	o	o C	0 0	
Total Volume	0	0	0	٥		0	C	0	0	0	0	0	0	0	0	0 0	0 0	
% App. Total	0	0	0			0	0	0		0	0	0	0	0	C	0 C	,	
PHF	000	000	000	000	000.	000. 0	000	00	000	000	000	000	000	000	000	000	000	000

File Name: 85270003 Site Code: 85270003 Start Date: 2/4/2020 Page No: 11

N/S Street: Hingham Street E/W Street: Dunkin Donuts /Market Place City/State: Rockland, MA Weather: Cloudy

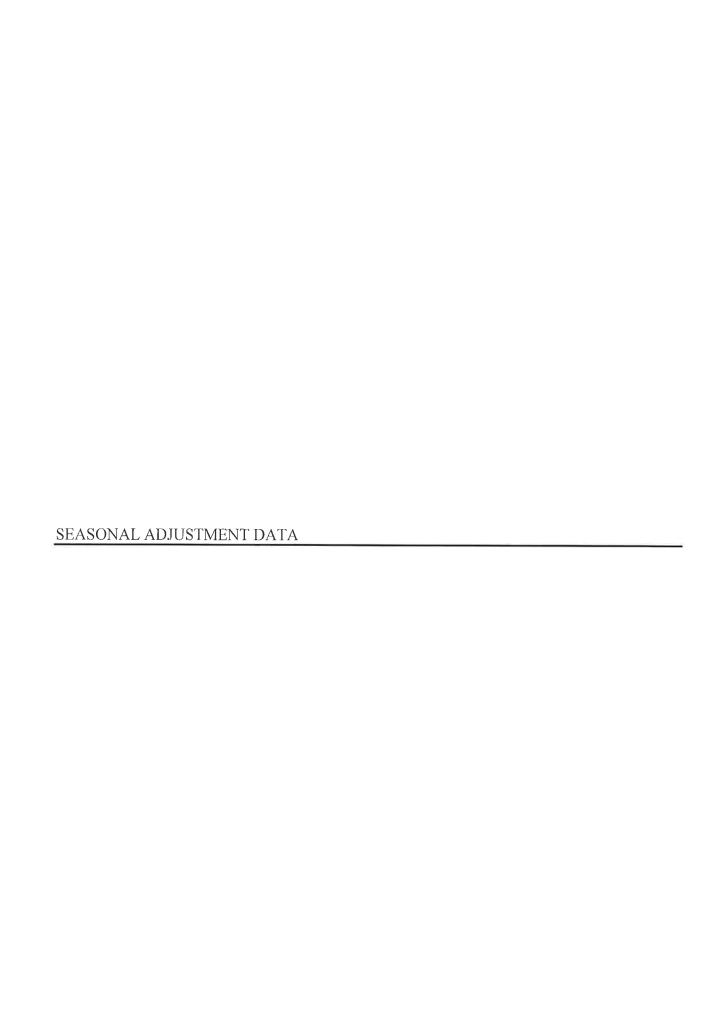


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1 Peak Hour for Each Approach Begins at:

04:00 PM +0 mins. 0 +15 mins	Σ													
+0 mins. +15 mins			Š	04:00 PM			Ö	04:00 PM			Ŏ	04:00 PM		
+15 mine	0	0	0	0	0	0	0	0	0	0	0	0	0	0
.0 11110	0 0	0	0	0	0	0	0	0	0	0	0	0	· C	0
+30 mins.	0	0	0	0	0	0	0	0	0	C	C	· C	· C) C
+45 mins.	0 0	0	0	0	0	0	0	0	0	0	0	0	o C	0 0
Total Volume	0 0	0	0	0	0	0	0	0	C	C	C	C	0 0	0 0
App. Total	0 0	0		0	0	0	ı	c	C	C)	C	00	0 0
PHF .000	000 00	000	000	000	000	000	000	000	000	000	000	000	000	000

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Massachusetts Highway Department 7318: Monthly Hourly Volume for February 2018

7 N2 Seasonal Factor Group: Axle Factor Group: Growth Factor Group: Daily Factor Group: SOUTHEAST EXPRESSWAY - RTE 3, NORTH OF TRE 228 Plymouth - Hingham, MA 2 7318 Funcation Class Location ID: Location: County:

TOTAL	92996	98398	60555	88490	97246	83866	93569	102383	85472	67633	91573	94706	94546	94954	96293	85313	64282	81566	95335	98314	94887	95299	85598	66282	92787	96240	97982
23:00		2216	2390	848	901	924	1179	1507	1597	683	1046	1002	1172	1125	1349	1240	859	753	976	1055	1093	1334	1497	649	861	1058	1133
22:00	1908	2986	2810	1309	1423	1169	1682	2160	2173	1037	1426	1736	1552	1652	1939	1561	1273	1263	1381	1714	1582	1874	2118	1078	1559	1781	1809
21:00	2433	3092	884	1895	2221	1677	2572	2414	2360	1591	2036	2278	2161	2470	2513	2336	1836	1719	2169	2398	2375	2425	2467	1479	1970	2296	2467
20:00	3190	3703	1113	2666	3059	2322	3449	3211	2956	2500	2800	3270	2918	3369	3141	2660	2412	2650	3008	3471	3305	3126	2959	2268	2895	3135	3556
19:00	4154	4088	997	3442	4052	2880	4474	4210	3528	2958	3908	4056	4057	4432	4273	3493	3119	3272	4069	4315	4196	4196	3668	2885	3766	4437	4435
18:00	5832	4629	1952	5194	5881	4367	5828	5807	4841	3896	5521	5772	5884	5780	2767	4759	4061	4310	2760	5730	5386	5336	4734	3677	5729	5756	5836
17:00	6974	5477	3941	6469	6851	5752	6269	6887	5799	4822	6828	6985	7068	6877	6249	5705	4752	5624	7013	6949	6385	6542	9299	4678	6916	7016	7141
16:00	7068	6198	4937	6522	2169	5685	6938	6992	6320	5413	6794	7207	6983	6807	7137	6339	5194	6404	2006	6669	6630	6671	6381	5363	6812	7002	7171
15:00	7073	6251	5269	6647	6923	5245	6737	6824	6425	5460	6738	7087	6780	6929	7110	6712	5437	6620	6749	6971	6147	6550	6647	5905	6762	6788	6894
14:00	6378	6339	5078	90909	6488	4874	6424	6734	6491	5798	6373	6419	9089	6581	6848	6269	5411	6451	6419	6882	6525	6580	6430	5772	6331	6688	6563
13:00	5643	6198	5154	5023	5320	4424	5585	6040	6463	0209	5213	5612	5514	5491	6237	6209	5786	6093	5945	6094	5980	6317	9999	5753	5264	5598	2690
12:00	5311	6517	5166	5047	5153	4359	5402	5835	6683	5779	4861	5125	5253	5344	5483	6726	5420	6110	5629	5713	5788	6360	9029	5749	5107	5445	5179
11:00	5141	7803	4975	4750	2002	4297	5020	5421	6320	5474	4786	4967	5069	5366	4786	6409	5165	5913	5542	5817	5665	5748	6466	5241	4858	5099	5180
10:00	5123	7081	4139	4960	4875	4646	5164	5205	5653	4626	4930	4943	5024	4997	4631	6082	4082	5320	5549	5736	5545	5145	5727	4424	5047	5075	5249
9:00	5246	6082	3260	2090	5262	4927	5081	5175	5075	3369	5012	5120	5194	4746	5252	5131	2808	4562	5426	5474	5443	5316	5022	3328	5015	5293	5321
8:00	5561	5312	2313	5547	5569	5829	5298	6543	4093	2405	5583	5741	5635	5302	5771	4176	1964	4110	5615	5734	5743	5621	4100	2362	5630	5655	5807
7:00	6012	4775	1521	5762	7158	7095	4743	7509	3006	1644	5758	5736	6140	5868	5991	2918	1315	3818	5613	5846	5738	5552	2905	1632	8009	5658	6157
9:00	2070	3420	1070	4820	6609	5828	4455	5812	2178	1190	5084	5123	5070	4841	4668	1929	915	2882	4797	4736	4729	4336	1949	1138	5245	5412	5323
2:00	4149	2072	502	3931	4713	4621	4027	4318	1228	611	4344	3874	4186	4209	3806	1128	208	1702	4045	3987	3937	3507	1104	509	4383	4298	4379
4:00	1325	949	249	1177	1583	1476	1312	1610	497	256	1440	1384	1305	1333	1233	516	293	683	1386	1376	1313	1242	446	286	1511	1418	1392
3:00	323	537	342	283	457	405	354	455	277	234	301	353	331	341	355	265	240	287	353	342	336	371	275	250	328	366	343
2:00	211	525	488	183	252	263	202	336	290	305	170	201	174	242	219	312	291	200	209	176	199	238	333	333	180	206	174
1:00	260	786	775	260	460	292	260	552	471	565	250	258	246	296	351	516	473	317	251	276	302	334	517	584	249	281	276
0:00	209	1101	1230	902	562	509	454	826	748	947	371	457	524	556	644	762	899	503	425	523	545	578	806	939	361	479	207
	1 2	m	4	2	9	7	00	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27	28

Monthly Average = 88,873
Yearly Average = 94,947

Adjustmment Factor =

1.068



Accurate Counts 978-664-2565

Start	~	16	21	26	31	36	41	46	51	56	61	99	7.1	76	
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02:00	54	69	185	230	144	32	· rc	0 0		0 0	o c	0 0		0 0	21
08:00	40	88	188	236	125	12	2	0	0 0	0 0	0 0	0 0	0 0	0 0	- 0
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10:00	33	34	169	184	113	20	-	-	0	0 0) C	0 0	0 0	0 0	ט נ
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13:00	22	40	217	249	128	44	2	0	c	· c) C) C	0 0	۸ ر
14:00	59	09	276	310	129	38	2	0	0	0	0 0	o c	0 C	0 0	~ α
15:00	96	173	355	273	9/	19	6	0	0	0) C	0 0	0 0	0 0	. 0
16:00	118	170	419	276	84	11	-	0	0	0	0 0	0 0	o	0 C	, 6
17:00	74	167	543	285	20	œ	0	0	0	0	0	0	0 0	0 0	- +
18:00	10	27	276	345	132	17	2	0	0	0	0	0	0 0	0 0	- 00
19:00	2	13	117	252	190	35	2	0	0	0	C			0 0) (C
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lotal	585	1108	3321	3844	2457	295	82	7		0	0	0	0	0	11967
Daily		15	15th Percentile	20 N	/PH										
		20	50th Percentile :	26 N	/PH										
		85	85th Percentile	32 N	32 MPH										
		95	95th Percentile ;	35 №	/IDH										
		Mean Spe	Mean Speed(Average)	26 MPH	/PH										
		Nu	Number in Pace	7 00-12	7165										
	1	Percent in Pace	Percent in Pace	59	%6.65										
			. Haw 47. 4 vr	Œ	6052										

Location: Hingham Street
Location: North of Reservoir Park Drive
City/State: Rockland, MA
SB

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15th Percentile 50th Percentile 85th Percentile 95th Percentile	Per Per Per	centile :	20 MPH 27 MPH 33 MPH 36 MPH	H H H H H										
Mean Speed(Average) 10 MPH Pace Speed Number in Pace Percent in Pace Number of Vehicles > 25 MPH Percent of Vehicles > 25 MPH	I(Ave sice S er in nt in nt in	erage): peed Pace Pace MPH	27 MPH 21-30 MPH 6994 59,4% 7563 64,2%	7 MPH 0 MPH 6994 59 4% 7563 64 2%										
1996	9	6172	7867	5152	1212	148	15	-	*-	0	0	0	0	23742
15th Percentile 550th Percentile 85th Percentile 85th Percentile 95th Percentile 95th Percentile 700 100 100 100 100 100 100 100 100 100	Perc Perc Perc	entile : entile : entile :	20 MPH 26 MPH 32 MPH 35 MPH	# # # # # # # # # # # # # # # # # # #										
Mean Speed(Average): 10 MPH Pace Speed Number in Pace Percent in Pace Number of Vehicles > 25 MPH Percent of Vehicles > 25 MPH	(Average Sperin Ferin F	age) : beed : bace : MPH :	27 MPH 21-30 MPH 14159 59.6% 14516 61,1%	7 MPH 0 MPH 14159 59.6% 14516 61.1%										

Accurate Counts 978-664-2565

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Daily	15th Percentile:	20 MPH	Ĭ										
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	85th Percentile :	33 MPH	Į.										
	Source discounter.	LIM OC	_										
Mea	Mean Speed(Average)	28 MPH	Į:										
2	Number in Pace	6858 6858	F 82										
	Percent in Pace :	57.9%	%										
Number of Ve	Number of Vehicles > 25 MPH:	807	15										

Accurate Counts 978-664-2565

Location: Hingham Street
Location: North of Reservoir Park Drive
City/State: Rockland, MA
NB

0															
Start	<u></u>	16	21	26	31	36	41	46	51	50	61	99	71	76	
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02:00	က	76	45	130	155	49	4	-	-	0	3	0	2	0	499
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		T TAIN O	Number in Pace	20-35 MPH	Ľ										
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	Perce	nt of Vehicles	> 25 MPH:	%8"69	%										
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Overall		15th	15th Percentile:	21 MF	<u> </u>										
		85th) Percentile:	34 MPH	ĘĮ										
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	Numb	Number of Vehicles > 25 MPH	> 25 MPH	16100	00										
	Perce	int of venicles	25 WIPH	68.6	8										

Accurate Counts 978-664-2565

Location: Hingham Street
Location: North of Reservoir Park Drive
City/State: Rockland, MA
SB, NB
Start
Time

ברי ה'															
Start	_	16	21	26	31	36	41	46	51	56	61	99	71	76	
Time	15	20	25	30	35	40	45	50	55	90	6.5	70	7.5	000	Total
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04:00	-	58	23	26	59	64	19	9	0	0	-	0	0	0 0	228
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08:00	66	232	460	472	264	49	15	4	2	0	2	. 0	0 0	0 C	1602
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15:00	105	224	548	589	201	69	20	က	e	n) C) C	1766
16:00	141	230	615	525	217	52	14	2	2	2	2	· ←	0 0) C	1806
17:00	96	235	788	586	178	33	11	9	2	-	-	. 0) () C	1937
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20:00	2	22	79	266	327	74	16	2	-	-	2	0	0	0	792
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22:00	-	10	19	58	145	99	14	4	0	0	0	0	0	0	317
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		50th	50th Percentile	26 MP	. I										
		85th	85th Percentile	33 MP	Ī										
		95th	95th Percentile	37 MPH	: I										
			3												
		Mean Speed(Average)	(Average)	27 MPH	Į:										
		Nimber in Pace	Number in Pace	21-30 MPH	īπ										
		Percei	Percent in Pace	57.7%	2 %										
	Num	Number of Vehicles > 25 MPH	* 25 MPH :	1498	98										
	Perc	Percent of Venicles > 25	ZS MPH	63.0	%										

Accurate Counts 978-664-2565

Location ; Hingham Street Location ; North of Reservoir Park Drive City/State: Rockland, MA SB, NB

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7	-	15	2	0	0	0	_	တေ	27	49	35	25	22	24	61	44	34	46	114	96	20	Ε'	o •	4 (0 (0	630		Numbe Percer	1416		Numbe Percen
SB, NB	Stall	Ime	02/02/20	01:00	02:00	03:00	04:00	02:00	00:00	07:00	08:00	00:60	10:00	11:00	12 PM	13:00	14:00	00:61	16:00	00:71	18:00	00:60	20:00	21:00	22:00	23:00	Total	Daily		Grand Total	Overall	



Rockland Flex Service

bat ridebat.com/schedulemaps/rockland/

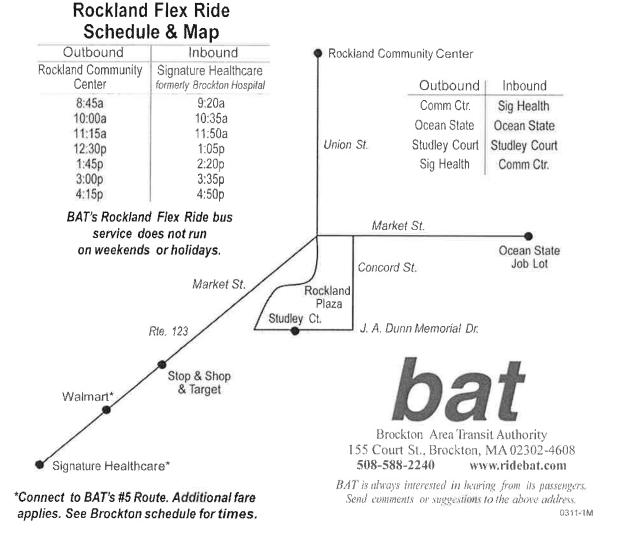


United Way of Greater Plymouth County

Flexible Route - Rockland to Brockton

Back to All Routes

Brockton Area Transit Authority is pleased to provide public transit service to Rockland. This service is offered to riders on a flexible route schedule, which features on-demand, as well as fixed-stop service. **Call 508-638-5950 to schedule your trip!**



BAT's Flex Ride service travels primarily on Union Street in Rockland, Monday through Friday, according to the schedule above. The Flex Ride bus will stop and wait only at the Rockland Community Center and Signature Healthcare (formerly Brockton Hospital). Also, three stops have been added, one at Ocean State Job Lot in Rockland and two on Quincy Avenue behind Signature Healthcare.

BAT uses its 14-passenger, lift-equipped buses for its Rockland service.

BAT is unable to provide same-day, deviated trips.

How to Ride:

• Call BAT at **508-638-5950** at least one day in advance before 4 p.m. to arrange to be picked-up and dropped-off at a particular time of day at a particular location.

- Cancellations Passengers must contact BAT in Brockton at 877-680-1287 one hour or more before the scheduled pick up time to cancel. BAT tracks Late Cancels and No-Shows and may temporarily suspend your individual on-demand service if they become excessive.
- You may also board the bus along Union Street by standing near a BAT sign, such as those posted on telephone poles, and raising your hand to flag down the bus.
- BAT's Rockland Service connects with BAT's #5 Route for an additional charge. This
 connection will take you to the BAT Intermodal Transportation Centre, From there, you may
 connect with all BAT routes and with the MBTA's Old Colony Commuter Rail Station, which is
 located directly across the street.

Cancellations, No-Shows

To provide the most efficient, cost-effective service to riders, *bat* utilizes a Cancellation, No-show Policy. For our full policy, including definitions of late trip, late cancellation, and missed trips go to 155 Court Street, Brockton, MA 02302 or visit us at www.ridebat.com.

Fares:

Adults	\$1.50 one-way
Senior Citizens/Disabled	.\$.75 one-way
Ages 5-12	\$.75 one-way
Under 5	Free

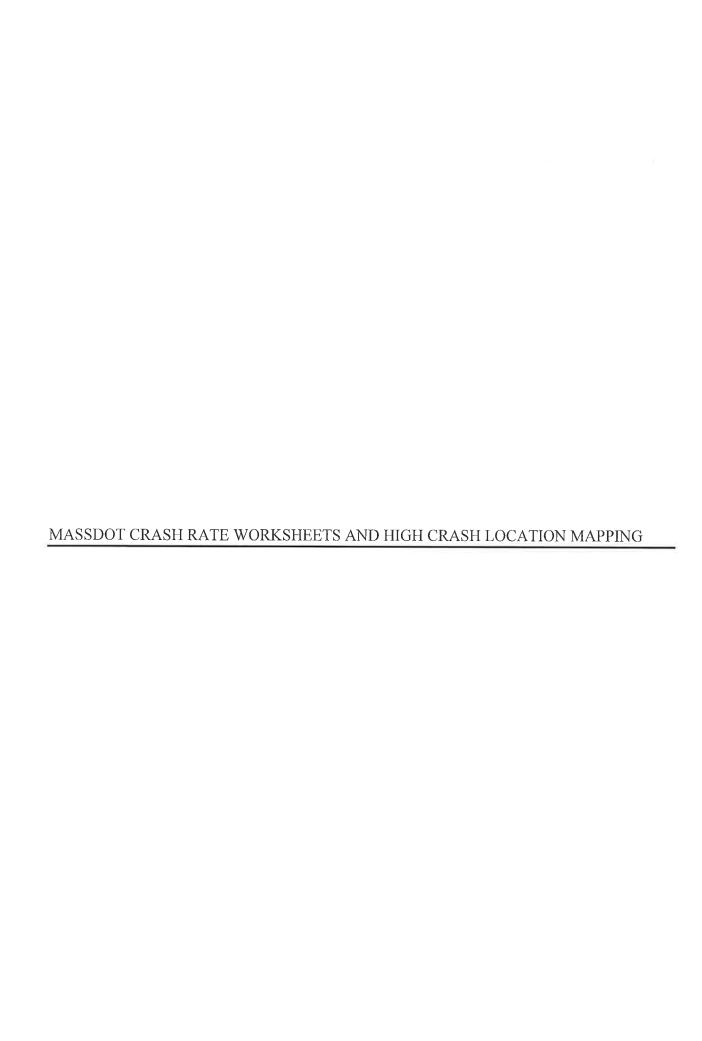
Charlie Cards: Local Charlie Card allows passengers to ride local buses at a discounted rate on a convenient Stored Value Card. For more information, visit the Charlie Card page.

BAT Riders' Club Discount Passes: Ride all day for \$3.00, all week for \$10.00 or all month for \$35. For more information, visit the Discount Passes page.

Disability Pass: Valid Medicare cards are accepted as proof of eligibility for BAT's half-fare program. For information on BAT's disability pass program, please call (508) 588-2240

For TDD: Telecommunication Device for the Deaf, please call (508) 586-0009.

Download Full Rockland Schedule





INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN :	Rockland			COUNT DA	TE::	Feb-20
DISTRICT: 5	UNSIGN	IALIZED :		SIGNA	LIZED :	х
		~ IN	TERSECTION	N DATA ~		
MAJOR STREET :	Higham Stre	et				
MINOR STREET(S):	Reservior Park Drive					
INTERSECTION DIAGRAM (Label Approaches)	North Ea	eservior Re	(Aughan)			
			PEAK HOUF	VOLUMES		Total Peak
APPROACH:	1	2	3	4	5	Hourly
DIRECTION:	EB	WB	NB	SB		Approach Volume
PEAK HOURLY VOLUMES (PM) :	768		392	1,494		2,654
"K" FACTOR;	0.090	INTERSE	SECTION ADT (V) = TOTAL DAILY APPROACH VOLUME : 29,489			29,489
TOTAL # OF CRASHES :	16	# OF YEARS :	5	CRASHES	GE#OF PERYEAR():	3.20
CRASH RATE CALCU	LATION :	0.30	RATE =	(A * 1,0	000,000) * 365)	
Comments:	ments: Below MassDOT District 5 crash rate					
Project Title & Date: Proposed Primrose Development March 2020						



INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN:	Rockland			COUNT DA	TE::	Feb-20	
DISTRICT: 5	UNSIGN	IALIZED :	Х	SIGNA	LIZED :		
~ INTERSECTION DATA ~							
MAJOR STREET:	Higham Stre	et					
MINOR STREET(S)	Comfort Inn Driveway						
INTERSECTION DIAGRAM (Label Approaches)	North Comfort Inn Make the second of the						
APPROACH:	1	PEAK HOUR VOLUMES 1 2 3 4 5 Total Peak					
DIRECTION:	EB	WB	NB	SB	3	Hourly Approach Volume	
PEAK HOURLY VOLUMES (PM) :	3		965	1,501		2,469	
"K" FACTOR:	0.090	INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME: 27,433				27,433	
TOTAL # OF CRASHES :	8	# OF YEARS :	5	CRASHES	GE # OF PER YEAR ():	1.60	
CRASH RATE CALCU	LATION :	0.16	RATE =	(A * 1,0	000,000)		
Comments Below MassDOT District 5 crash rate							
Project Title & Date: Proposed Primrose Development March 2020							

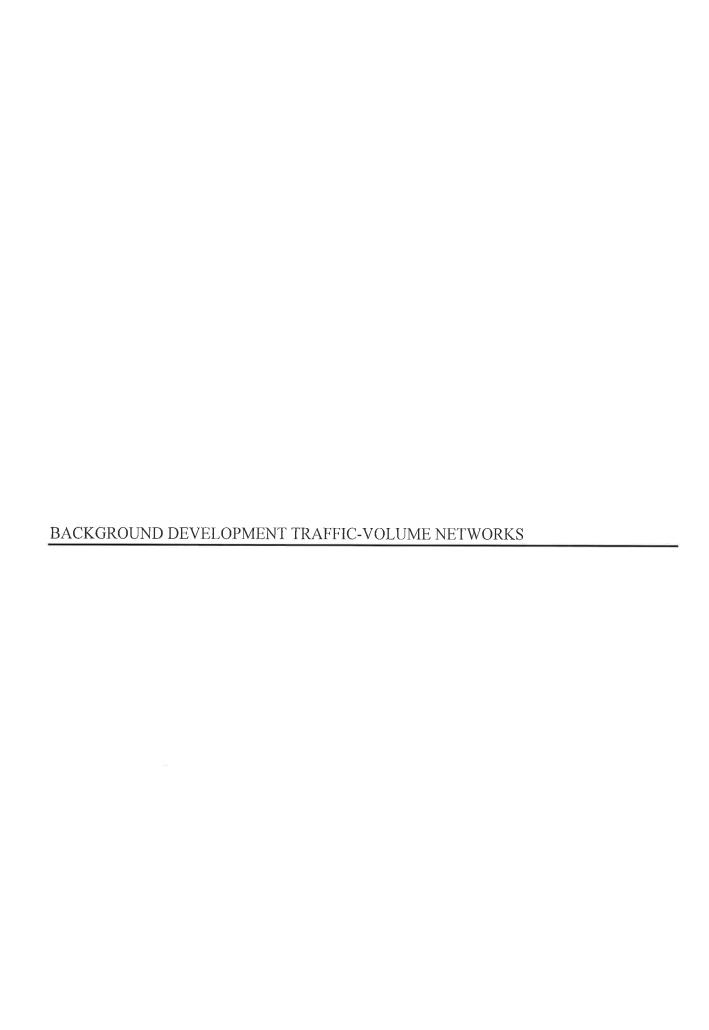


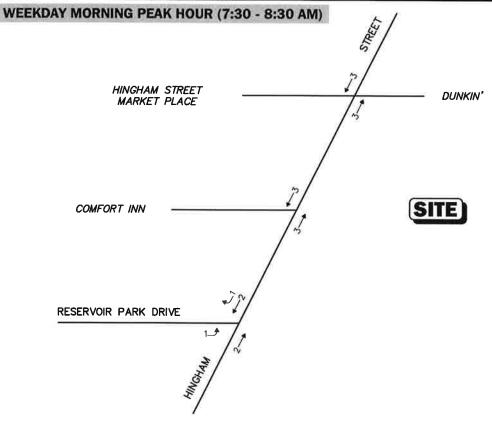
INTERSECTION CRASH RATE WORKSHEET

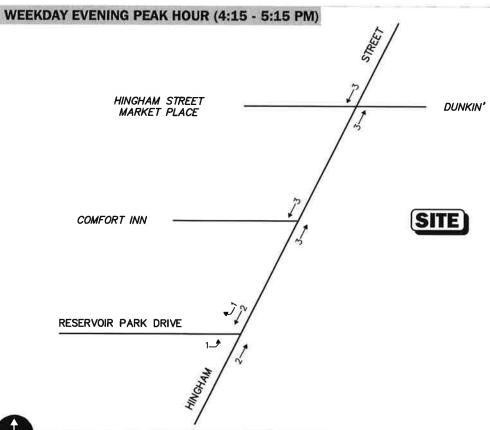
CITY/TOWN:	Rockland			COUNT DA	TE:	Feb-20
DISTRICT: 5	UNSIGN	IALIZED :	Х	SIGNA	ALIZED :	
		~ IN	TERSECTION	N DATA ~		
MAJOR STREET :	Higham Stre	et				
MINOR STREET(S)	Dunkin' Donuts/Hingham Street Market Place Driveways					
INTERSECTION DIAGRAM (Label Approaches)	North Hingken street Josephan Dunkin' Place Donnts					
	PEAK HOUR VOLUMES					
APPROACH:	1	2	3	4	5	Total Peak Hourly
DIRECTION:	EB	WB	NB	SB		Approach Volume
PEAK HOURLY VOLUMES (PM) :	75	54	962	1,447		2,538
"K" FACTOR:	0.090	0.090 INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME : 28,200				28,200
TOTAL # OF CRASHES :	7	# OF YEARS	5	CRASHES	GE # OF PER YEAR ():	1.40
CRASH RATE CALCU	CRASH RATE CALCULATION: 0.14 RATE = (A * 1,000,000) (V * 365)					
Comments :	Below MassE	OOT District 5	crash rate			
Project Title & Date:	Proposed Pri	mrose Develo	pment Marc	h 2020		

Top 200 Intersection Cluster 2014-2016

RISERVOW PARK DA

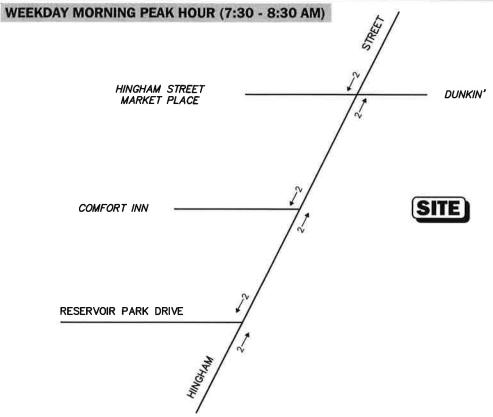


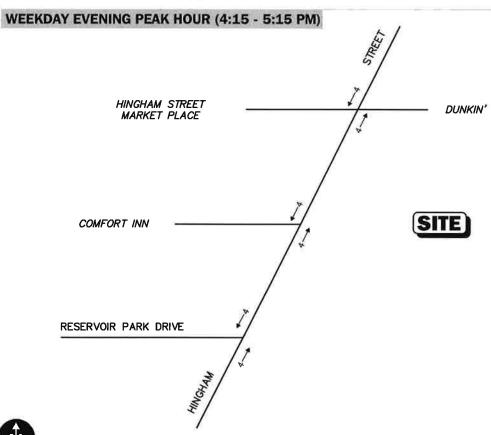






Wendy's Restaurant Peak Hour Traffic Volumes

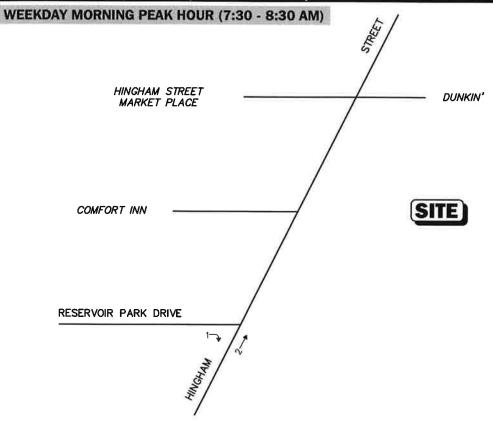


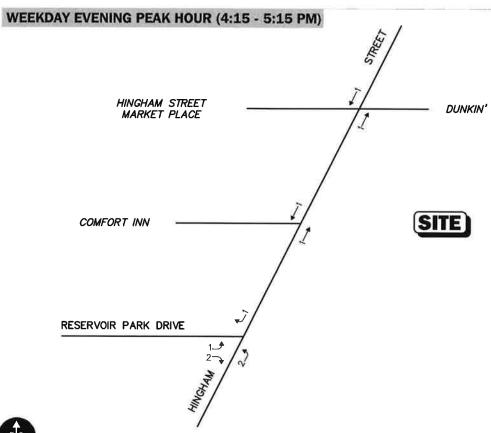




21 Commerce Road Marijuana Facility Peak Hour Traffic Volumes

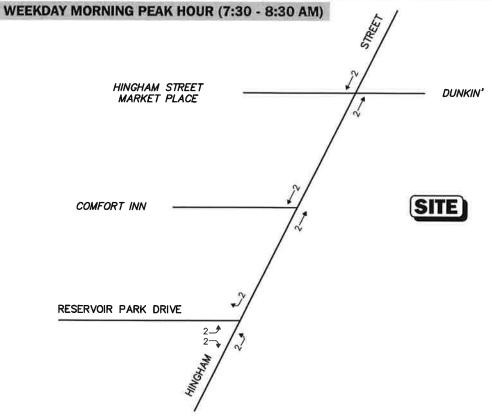
Not To Scale

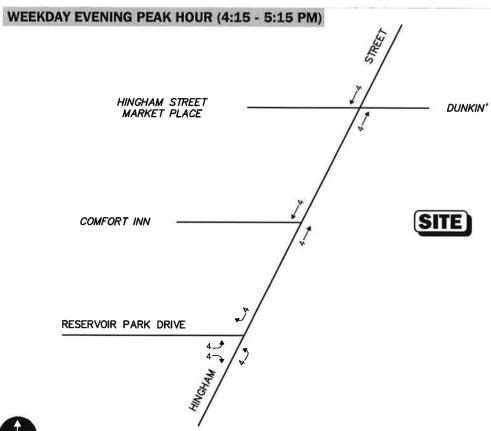






256 Weymouth Street Marijuana Facility Peak Hour Traffic Volumes

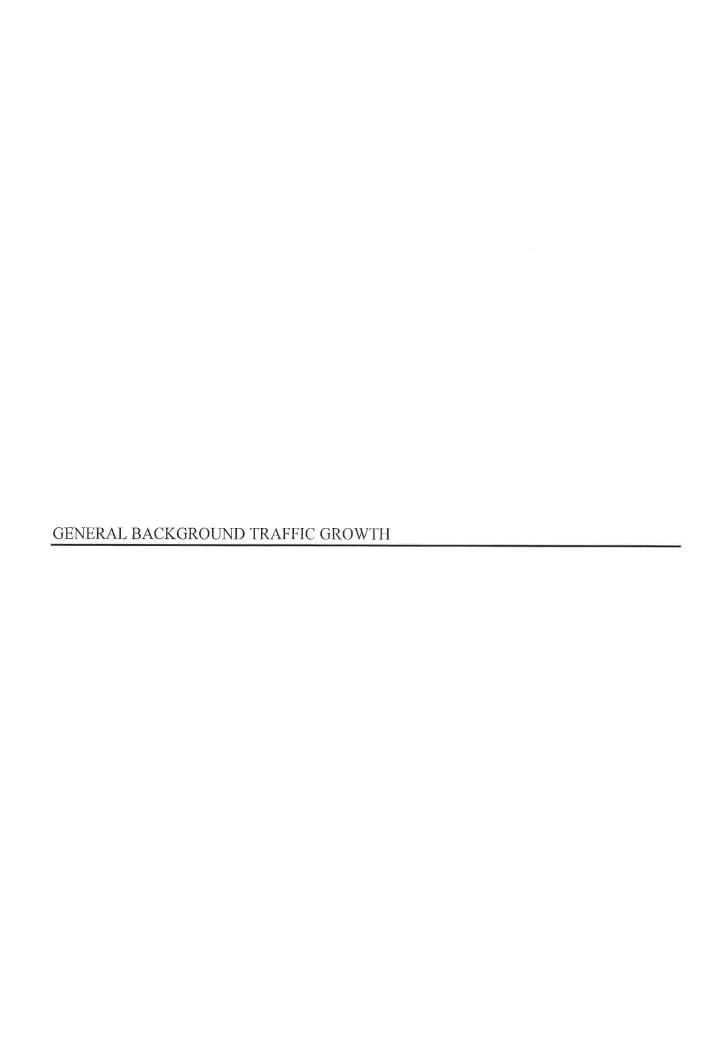






53 Airport Park Drive Marijuana Facility Peak Hour Traffic Volumes

Not To Scale



Proposed Primrose School Rockland, MA

General Background Traffic Growth

8 Hingham Route 3 North of Rte 228 92,983 89,680 90,993 90,738 92,478 96,218 94,644 96,013 9	STA. CITY/TOWN	ROUTE/STREET	LOCATION	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	Average Annual Growth Rate
	7318 Hingham	Route 3	North of Rte 228	92,983	89.680	90,993	90 738	92.478	96 218	94 644	96.013	DZ 0 74	03 015	70US U
									0170	1.0.1	20.00	1717	17,010	0.000



Day Care Center (565)

Vehicle Trip Ends vs: Employees

On a: Weekday

Setting/Location: General Urban/Suburban

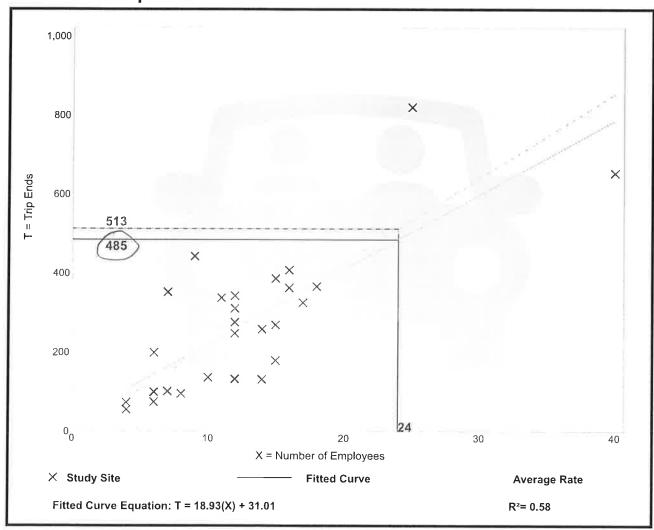
Number of Studies: 28 Avg. Num. of Employees: 13

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
21.38	9.43 - 50.43	9.24

Data Plot and Equation



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Day Care Center (565)

Vehicle Trip Ends vs: **Employees**

> On a: Weekday,

> > Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location:

General Urban/Suburban

Number of Studies:

79

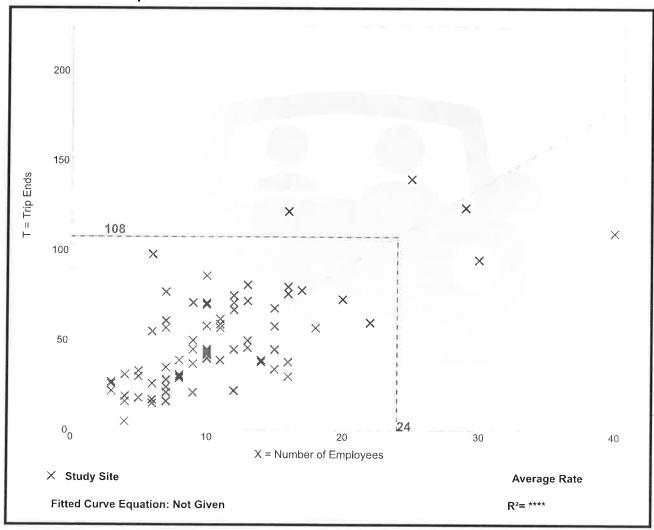
Avg. Num. of Employees:

Directional Distribution: 53% entering, 47% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
4.49	1.25 - 16.33	2.04

Data Plot and Equation



Day Care Center

(565)

Vehicle Trip Ends vs: Employees

On a: Weekday,

Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 79

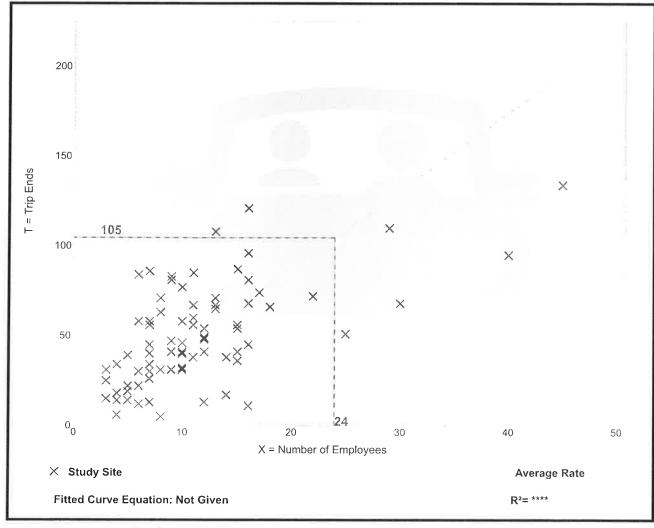
Avg. Num. of Employees: 12

Directional Distribution: 47% entering, 53% exiting

Vehicle Trip Generation per Employee

Average Rate	Range of Rates	Standard Deviation
4.36	0.63 - 14.00	2.32

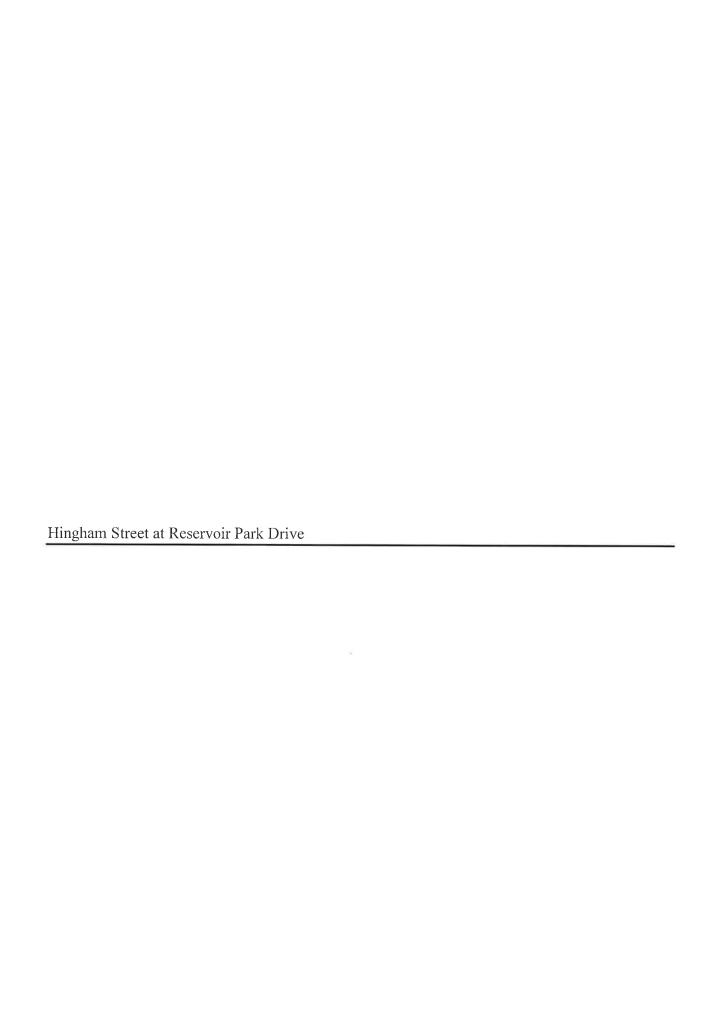
Data Plot and Equation



Trip Gen Manual, 10th Ed + Supplement • Institute of Transportation Engineers

CAPACITY ANALYSIS WORKSHEETS

Hingham Street at Reservoir Park Drive Hingham Street at the Comfort Inn Driveway and the Project Site Driveway Hingham Street at the Dunkin'/Hingham Street Market Place Driveways



2020 Existing WKdy AM 1: Reservoir Park Drive & Hingham Street

	٦	*	4	†		1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	†	†	7
Traffic Volume (vph)	619	24	152	657	274	798
Future Volume (vph)	619	24	152	657	274	798
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	1900	1900	1900	1900	1900
		260	100	12	12	
Storage Length (ft)	0					375
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Right Turn on Red	- 22	Yes				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	725			456	263	
Travel Time (s)	16.5			10.4	6.0	
Peak Hour Factor	0.89	0.89	0.80	0.80	0.95	0.95
Heavy Vehicles (%)	1%	0%	0%	1%	7%	1%
Shared Lane Traffic (%)	17570	0.5000	3011	ుకిందినే	1 110	. , ,
Lane Group Flow (vph)	696	27	190	821	288	840
The state of the s						
Turn Type	Prot	Prot	pm+pt	NA	NA	pm+ov
Protected Phases	4	4	5	2	6	4
Permitted Phases	20.40		2		277	6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	8.0	21.0	21.0	21.0
Total Split (s)	45.0	45.0	13.0	55.0	42.0	45.0
Total Split (%)	45.0%	45.0%	13.0%	55.0%	42.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	None	None	None
v/c Ratio	0.94	0.04	0.43	0.90	0.47	0.60
Control Delay	49.5	6.9	17.0	36.5	26.4	3.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	49.5	6.9	17.0	36.5	26.4	3.2
Queue Length 50th (ft)	49.5	0.9	64	435	134	
						42
Queue Length 95th (ft)	#663	16	92	498	207	73
Internal Link Dist (ft)	645			376	183	
Turn Bay Length (ft)		260	100			375
Base Capacity (vph)	756	675	449	1024	720	1400
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	0.92	0.04	0.42	0.80	0.40	0.60
	0.02	0.07	0.72	0.00	0.40	0.00
Intersection Summary				1, 14, 16		100
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 94.	1					
otacioa Oyolo Estigiti. 34.	-т					

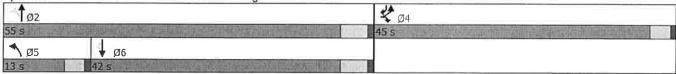
Proposed Primrose School VAI

Natural Cycle: 70

Control Type: Actuated-Uncoordinated

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

Queue shown is maximum after two cycles.



	Þ	•	1	1	↓	1		
Movement	EBL	EBR	NBL	NBT	SBT	SBR		of The Si
Lane Configurations	ሻ	7	*5	1	1	۲		
Traffic Volume (vph)	619	24	152	657	274	798		
Future Volume (vph)	619	24	152	657	274	798		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900		
Lane Width	11	10	11	12	12	12		
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00		
Frt	1.00	0.85	1.00	1.00	1.00	0.85		
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00		
Satd. Flow (prot)	1728	1507	1745	1881	1776	1599		
FIt Permitted	0.95	1.00	0.39	1.00	1.00	1.00		
Satd. Flow (perm)	1728	1507	724	1881	1776	1599		
Peak-hour factor, PHF	0.89	0.89	0.80	0.80	0.95	0.95		
Adj. Flow (vph)	696	27	190	821	288	840		
RTOR Reduction (vph)	0	15	0	0	0	100		
Lane Group Flow (vph)	696	12	190	821	288	740		
Heavy Vehicles (%)	1%	0%	0%	1%	7%	1%		
Turn Type	Prot	Prot	pm+pt	NA	NA	pm+ov		
Protected Phases	4	4	5	2	6	4		
Permitted Phases			2			6		
Actuated Green, G (s)	40.5	40.5	44.8	44.8	32.0	72.5		
Effective Green, g (s)	40.5	40.5	44.8	45.8	33.0	72.5		
Actuated g/C Ratio	0.43	0.43	0.48	0.49	0.35	0.77		
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	4.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		
Lane Grp Cap (vph)	742	647	439	913	621	1229		
//s Ratio Prot	c0.40	0.01	0.04	c0.44	0.16	0.26		
//s Ratio Perm			0.17			0.20		
//c Ratio	0.94	0.02	0.43	0.90	0.46	0.60		
Jniform Delay, d1	25.7	15.5	15.5	22.1	23.8	4.7		
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00		
ncremental Delay, d2	19.3	0.0	0.7	11.6	0.6	0.8		
Delay (s)	45.0	15.5	16.1	33.7	24.3	5.5		
evel of Service	D	В	В	C	C	A		
Approach Delay (s)	43.9		_	30.4	10.3			
Approach LOS	D			С	В			
ntersection Summary								MANAGE
ICM 2000 Control Delay			25.9	Н	CM 2000	Level of Service	ce C	
ICM 2000 Volume to Capa	city ratio		0.96					
Actuated Cycle Length (s)			94.3	Su	m of los	t time (s)	12.0	
ntersection Capacity Utiliza	tion		75.5%			of Service	D	
Analysis Period (min)			15					
Critical Lane Group								

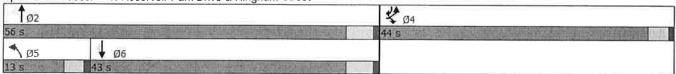
2020 Existing WKdy PM 1: Reservoir Park Drive & Hingham Street

	٦	•	4	†	↓	1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	*	7"	ሻ	1	†	7
Traffic Volume (vph)	631	137	58	334	745	749
Future Volume (vph)	631	137	58	334	745	749
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	12	12
Storage Length (ft)	0	260	100			375
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Right Turn on Red	20	Yes	20			Yes
Link Speed (mph)	30	100		30	30	103
Link Distance (ft)	725			456	263	
Travel Time (s)	16.5			10.4	6.0	
Peak Hour Factor	0.83	0.02	0.70			0.00
		0.83	0.78	0.78	0.93	0.93
Heavy Vehicles (%)	1%	0%	0%	0%	0%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	760	165	74	428	801	805
Turn Type	Prot	Prot	pm+pt	NA	NA	pm+ov
Protected Phases	4	4	5	2	6	4
Permitted Phases			2			6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	8.0	21.0	21.0	21.0
Total Split (s)	44.0	44.0	13.0	56.0	43.0	44.0
Total Split (%)	44.0%	44.0%	13.0%	56.0%	43.0%	44.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag	7.0	4.0	Lead	4.0		4.0
Lead-Lag Optimize?					Lag	
	Mana	Mana	Yes	Manage	Yes	
Recall Mode	None	None	None	None	None	None
v/c Ratio	1.03	0.23	0.34	0.45	1.05	0.55
Control Delay	71.6	5.1	16.5	17.0	76.2	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	71.6	5.1	16.5	17.0	76.2	2.2
Queue Length 50th (ft)	~536	6	23	161	~573	25
Queue Length 95th (ft)	#667	37	39	194	#802	47
Internal Link Dist (ft)	645			376	183	
Turn Bay Length (ft)		260	100			375
Base Capacity (vph)	738	732	233	1020	765	1456
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	1.03	0.23	0.32	0.42	1.05	0.55
Intersection Summary	U-7/50 E	- 8 2		- 1		
Area Type:	Other					
	Other					
Cycle Length: 100						
Actuated Cycle Length: 97.	<u>1</u>					

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

- 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.



	١	*	4	1	1	~	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	ሻ	7	ሻ	↑	1	*	
Traffic Volume (vph)	631	137	58	334	745	749	
Future Volume (vph)	631	137	58	334	745	749	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width	12	11	11	12	12	12	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	0.85	
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	
Satd. Flow (prot)	1787	1561	1745	1900	1900	1599	
FIt Permitted	0.95	1.00	0.10	1.00	1.00	1.00	
Satd. Flow (perm)	1787	1561	175	1900	1900	1599	
Peak-hour factor, PHF	0.83	0.83	0.78	0.78	0.93	0.93	
Adj. Flow (vph)	760	165	74	428	801	805	
RTOR Reduction (vph)	0	88	0	0	0	107	
Lane Group Flow (vph)	760	77	74	428	801	698	
Heavy Vehicles (%)	1%	0%	0%	0%	0%	1%	
Turn Type	Prot	Prot	pm+pt	NA	NA	pm+ov	
Protected Phases	4	4	5	2	6	4	
Permitted Phases			2		0	6	
Actuated Green, G (s)	40.1	40.1	48.8	48.8	38.1	78.2	
Effective Green, g (s)	40.1	40.1	48.8	49.8	39.1	78.2	
Actuated g/C Ratio	0.41	0.41	0.50	0.51	0.40	0.80	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	731	639	194	966	758	1277	
v/s Ratio Prot	c0.43	0.05	0.03	c0.23	c0.42	0.22	
v/s Ratio Perm	00.40	0.00	0.03	60.25	00.42	0.22	
v/c Ratio	1.04	0.12	0.10	0.44	1.06	0.55	
Uniform Delay, d1	28.9	17.9	20.6	15.3	29.4	3.5	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	44.0	0.1	1.3	0.3	48.7	0.5	
Delay (s)	72.9	18.0	21.8	15.6	78.1	4.0	
Level of Service	72.5 E	В	21.0 C	В	70.1 E	4.0 A	
Approach Delay (s)	63.1	D	O	16.5	41.0		
Approach LOS	E			В	71.0 D		
Intersection Summary			148			100	
HCM 2000 Control Delay			43.7	Н	CM 2000	Level of Serv	rvice D
HCM 2000 Volume to Capa	city ratio		1.01		2000		_
Actuated Cycle Length (s)	-,		97.9	Sı	ım of los	t time (s)	12.0
Intersection Capacity Utiliza	ation		87.5%			of Service	E
Analysis Period (min)			15	.0			
c Critical Lane Group							

	٠	•	4	†	ļ	1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	j#	ሻ	A	↑	7
Traffic Volume (vph)	661	29	167	702	295	855
Future Volume (vph)	661	29	167	702	295	855
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	11	12	12	12
Storage Length (ft)	0	260	100	12	12	375
- • • • •						
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Right Turn on Red	00	Yes				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	725			456	263	
Travel Time (s)	16.5			10.4	6.0	
Peak Hour Factor	0.89	0.89	0.80	0.80	0.95	0.95
Heavy Vehicles (%)	1%	0%	0%	1%	7%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	743	33	209	878	311	900
Turn Type	Prot	Prot	pm+pt	NA	NA	pm+ov
Protected Phases	4	4	5	2	6	4
Permitted Phases	551		2	-	9	6
Detector Phase	4	4	5	2	6	4
Switch Phase	7	7.	U	4	U	7
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
7. 7.	21.0	21.0	8.0			
Minimum Split (s)				21.0	21.0	21.0
Total Split (s)	45.0	45.0	13.0	55.0	42.0	45.0
Total Split (%)	45.0%	45.0%	13.0%	55.0%	42.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	None	None	None
v/c Ratio	1.02	0.05	0.47	0.94	0.48	0.65
Control Delay	70.3	7.0	17.7	41.6	26.6	4.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	70.3	7.0	17.7	41.6	26.6	4.0
Queue Length 50th (ft)	~519	1.0	71	492	147	4.0 59
Queue Length 95th (ft)	#729	19	101			
		19	101	557	226	114
Internal Link Dist (ft)	645	000	400	376	183	075
Turn Bay Length (ft)	705	260	100	004	000	375
Base Capacity (vph)	725	650	445	981	690	1389
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	1.02	0.05	0.47	0.90	0.45	0.65
ntersection Summary				30	With the	
Area Type:	Other					
Cuala Langilla, 400						
Cycle Length: 100						

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

- 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.

102		₹ Ø4
55 s	数据·性》是《图·克斯·斯·斯·斯·斯·斯·斯·斯·斯·斯·斯·斯·斯·斯·斯·斯·斯·斯·斯	45 s
↑ Ø5	Ø6	
13 s	42 s	

	•	-	4	†	↓	4	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	۲	۳	ሻ	↑	1	7	
Traffic Volume (vph)	661	29	167	702	295	855	
Future Volume (vph)	661	29	167	702	295	855	
ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width	11	10	11	12	12	12	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	0.85	
FIt Protected	0.95	1.00	0.95	1.00	1.00	1.00	
Satd. Flow (prot)	1728	1507	1745	1881	1776	1599	
FIt Permitted	0.95	1.00	0.38	1.00	1.00	1.00	
Satd. Flow (perm)	1728	1507	700	1881	1776	1599	
Peak-hour factor, PHF	0.89	0.89	0.80	0.80	0.95	0.95	
Adj. Flow (vph)	743	33	209	878	311	900	
RTOR Reduction (vph)	0	18	0	0	0	86	
Lane Group Flow (vph)	743	15	209	878	311	814	
Heavy Vehicles (%)	1%	0%	0%	1%	7%	1%	
Turn Type	Prot	Prot	pm+pt	NA	NA	pm+ov	
Protected Phases	4	4	5	2	6	4	
Permitted Phases			2	_	Ŭ	6	
Actuated Green, G (s)	41.1	41.1	47.8	47.8	34.9	76.0	
Effective Green, g (s)	41.1	41.1	47.8	48.8	35.9	76.0	
Actuated g/C Ratio	0.42	0.42	0.49	0.50	0.37	0.78	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	
/ehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
ane Grp Cap (vph)	725	632	436	937	651	1241	
/s Ratio Prot	c0.43	0.01	0.04	c0.47	0.18	0.28	
/s Ratio Perm	00.40	0.01	0.19	00.47	0.10	0.23	
/c Ratio	1.02	0.02	0.48	0.94	0.48	0.66	
Iniform Delay, d1	28.4	16.6	15.6	23.1	23.8	5.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	
ncremental Delay, d2	39.9	0.0	0.8	16.2	0.6	1.3	
Pelay (s)	68.3	16.7	16.5	39.3	24.4	6.3	
evel of Service	E	В	В	59.5 D	24.4 C		
approach Delay (s)	66.1	D	Ь	34.9	10.9	А	
Approach LOS	E			C C	В		
ntersection Summary			by profit		3. 60		
ICM 2000 Control Delay			33.3	HO	CM 2000	Level of Serv	vice C
ICM 2000 Volume to Capacity	ratio		1.02				
ctuated Cycle Length (s)			97.9	Su	m of los	t time (s)	12.0
ntersection Capacity Utilization	n		80.2%			of Service	D
nalysis Period (min)			15	. •			-

2027 No-Build WKdy PM 1: Reservoir Park Drive & Hingham Street

	<i>></i>	*	1	1	↓	1
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	1	↑	74
Traffic Volume (vph)	680	153	68	363	797	805
Future Volume (vph)	680	153	68	363	797	805
Ideal Flow (vphpi)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	11	11	12	12	12
Storage Length (ft)	0	260	100	12	12	
						375
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			
Right Turn on Red		Yes				Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	725			456	263	
Travel Time (s)	16.5			10.4	6.0	
Peak Hour Factor	0.83	0.83	0.78	0.78	0.93	0.93
Heavy Vehicles (%)	1%	0%	0%	0%	0%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	819	184	87	465	857	866
Turn Type	Prot	Prot	pm+pt	NA	NA	pm+ov
Protected Phases	4	4		2	6	
Permitted Phases	4	4	5	2	Ö	4
	0.40	241	2			6
Detector Phase	4	4	5	2	6	4
Switch Phase	ONE	74.55	W 45	(2.000	(Local-	
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	8.0	21.0	21.0	21.0
Total Split (s)	44.0	44.0	13.0	56.0	43.0	44.0
Total Split (%)	44.0%	44.0%	13.0%	56.0%	43.0%	44.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	-1.0	0.0
	4.0	4.0	4.0			
Total Lost Time (s)	4.0	4.0		4.0	4.0	4.0
Lead/Lag			Lead		Lag	
_ead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	None	None	None
ı/c Ratio	1.11	0.25	0.40	0.48	1.12	0.60
Control Delay	97.8	5.9	17.7	17.7	101.2	2.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.8	5.9	17.7	17.7	101.2	2.9
Queue Length 50th (ft)	~616	12	27	180	~649	41
Queue Length 95th (ft)	#743	44	44	214	#881	70
		44	44			70
nternal Link Dist (ft)	645	000	400	376	183	075
Furn Bay Length (ft)		260	100	40:-		375
Base Capacity (vph)	737	734	233	1019	764	1446
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	1.11	0.25	0.37	0.46	1,12	0.60
ntersection Summary					V VIII	
Area Type:	Other					
Cycle Length: 100	O LITO					
Actuated Cycle Length: 97.						

Proposed Primrose School VAI

Natural Cycle: 130

Control Type: Actuated-Uncoordinated

- 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.

↑ø2	and the same and t	₹ ø4					
56 s		44 s					
↑ Ø5	↓ Ø6						
13 s	43 s						

2027 No-Build WKdy PM 1: Reservoir Park Drive & Hingham Street

	1	*	1	†	Į.	1	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	ሻ	*	ሻ	1	1	74	
Traffic Volume (vph)	680	153	68	363	797	805	
Future Volume (vph)	680	153	68	363	797	805	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width	12	11	11	12	12	12	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	0.85	
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	
Satd. Flow (prot)	1787	1561	1745	1900	1900	1599	
Flt Permitted	0.95	1.00	0.10	1.00	1.00	1.00	
Satd. Flow (perm)	1787	1561	175	1900	1900	1599	
Peak-hour factor, PHF	0.83	0.83	0.78	0.78	0,93	0.93	
Adj. Flow (vph)	819	184	87	465	857	866	
RTOR Reduction (vph)	0	91	0	0	0	95	
Lane Group Flow (vph)	819	93	87	465	857	771	
Heavy Vehicles (%)	1%	0%	0%	0%	0%	1%	
Turn Type	Prot	Prot	pm+pt	NA	NA	pm+ov	
Protected Phases	4	4	5	2	6	4	
Permitted Phases	7.	- 7.	2		U	6	
Actuated Green, G (s)	40.1	40.1	48.9	48.9	38.1	78.2	
Effective Green, g (s)	40.1	40.1	48.9	49.9	39.1	78.2	
Actuated g/C Ratio	0.41	0.41	0.50	0.51	0.40	0.80	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
	731	638	196	967			
Lane Grp Cap (vph) v/s Ratio Prot					758	1275	
v/s Ratio Perm	c0.46	0.06	0.03	c0.24	c0.45	0.25	
v/c Ratio	1.10	0.15	0.19	0.40	4.40	0.24	
	1.12	0.15	0.44	0.48	1.13	0.61	
Uniform Delay, d1	28.9	18.2	20.7	15.6	29.4	3.9	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	71.5	0.1	1.6	0.4	74.9	0.8	
Delay (s)	100.5	18.3	22.3	16.0	104.4	4.7	
Level of Service	F	В	C	B	540	Α	
Approach Delay (s) Approach LOS	85.4 F			17.0 B	54.3 D		
Intersection Summary	Resid					7 = 1 (1) (1) (1) (1) (1)	
HCM 2000 Control Delay			57.5	Н	CM 2000	Level of Serv	ice E
HCM 2000 Volume to Capaci	tv ratio		1.08		_,000		
Actuated Cycle Length (s)	., 10.10		98.0	Si	ım of los	t time (s)	12.0
ntersection Capacity Utilization	93.4%			of Service	F		
Analysis Period (min)	15	10	O LEVE	OI OGIVICE	1		
Critical Lane Group		10					

	J.	*	4	†	↓	4
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	ሻ	7	ሻ	1	↑	7
Traffic Volume (vph)	678	29	167	719	310	870
Future Volume (vph)	678	29	167	719	310	870
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	11	10	11	12	12	12
Storage Length (ft)	0	260	100	12	12	375
Storage Lanes	1	1	1			1
Taper Length (ft)	25		25			1
	20	V	20			V
Right Turn on Red	20	Yes		20	20	Yes
Link Speed (mph)	30			30	30	
Link Distance (ft)	725			456	263	
Travel Time (s)	16.5			10.4	6.0	
Peak Hour Factor	0.89	0.89	0.80	0.80	0.95	0.95
Heavy Vehicles (%)	1%	0%	0%	1%	7%	1%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	762	33	209	899	326	916
Turn Type	Prot	Prot	pm+pt	NA	NA	pm+ov
Protected Phases	4	4	5	2	6	4
Permitted Phases			2			6
Detector Phase	4	4	5	2	6	4
Switch Phase						
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	21.0	21.0	8.0	21.0	21.0	21.0
Total Split (s)	45.0	45.0	13.0	55.0	42.0	45.0
Total Split (%)	45.0%	45.0%	13.0%	55.0%	42.0%	45.0%
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	3.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	-1.0	-1.0	0.0
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0
Lead/Lag			Lead		Lag	
Lead-Lag Optimize?			Yes		Yes	
Recall Mode	None	None	None	None	None	None
v/c Ratio	1.06	0.05	0.48	0.95	0.50	0.66
Control Delay	80.1	7.3	17.9	44.4	26.9	4.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	80.1	7.3	17.9	44.4	26.9	4.2
Queue Length 50th (ft)	~544	1	71	515	155	63
Queue Length 95th (ft)	#755	19	101	581	237	126
Internal Link Dist (ft)	645	13	101	376	183	120
Turn Bay Length (ft)	040	260	100	3/0	103	275
, , ,	700	260	100	075	COF	375
Base Capacity (vph)	720	645	436	975	685	1388
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	1.06	0.05	0.48	0.92	0.48	0.66
Intersection Summary	0"	- 48	180	1871.0"	7 17	
Area Type:	Other					
Cycle Length: 100						
Actuated Cycle Length: 9	8.5					

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

- 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.

1ø2		\$ 04					
55 s	THE RESERVE TO THE RESERVE TO SERVE TO SERVE THE SPECIAL PROPERTY.	45 s	15/01/01				
↑ ø5	↓ ø6						
3 s	42 s						

2027 Build WKdy AM 1: Reservoir Park Drive & Hingham Street

	4	†	ļ	4			
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	ሻ	7"	ሻ	†	↑	7	
Traffic Volume (vph)	678	29	167	719	310	870	
Future Volume (vph)	678	29	167	719	310	870	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width	11	10	11	12	12	12	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	0.85	
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	
Satd. Flow (prot)	1728	1507	1745	1881	1776	1599	
Flt Permitted	0.95	1.00	0.37	1.00	1.00	1.00	
Satd. Flow (perm)	1728	1507	676	1881	1776	1599	
Peak-hour factor, PHF	0.89	0.89	0.80	0.80	0.95	0.95	
Adj. Flow (vph)	762	33	209	899	326	916	
RTOR Reduction (vph)	0	18	0	0	0	83	
Lane Group Flow (vph)	762	16	209	899	326	833	
Heavy Vehicles (%)	1%	0%	0%	1%	7%	1%	
Turn Type	Prot	Prot	pm+pt	NA	NA	pm+ov	
Protected Phases	4	4	5	2	6	4	
Permitted Phases		780	2	2	O	6	
Actuated Green, G (s)	41.0	41.0	48.4	48.4	35.5	76.5	
Effective Green, g (s)	41.0	41.0	48.4	49.4	36.5	76.5	
Actuated g/C Ratio	0.42	0.42	0.49	0.50	0.37	0.78	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	4.0 3.0	
Lane Grp Cap (vph)	720	627	429	944	658	1243	
v/s Ratio Prot	c0.44	0.01	0.04	c0.48	0.18	0.28	
v/s Ratio Perm	4.00	0.00	0.20	0.05	0.50	0.24	
v/c Ratio	1.06	0.02	0.49	0.95	0.50	0.67	
Uniform Delay, d1	28.7	16.9	15.6	23.4	23.9	5.1	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	50.0	0.0	0.9	18.7	0.6	1.4	
Delay (s)	78.7	16.9	16.5	42.1	24.4	6.5	
Level of Service	E 70.0	В	В	D	С	Α	
Approach Delay (s)	76.2			37.3	11.2		
Approach LOS	E			D	В		
Intersection Summary		NOW.		HE .	10.78		
HCM 2000 Control Delay			36.8	HO	CM 2000	Level of Servi	ice D
HCM 2000 Volume to Capacity ratio 1.0							
Actuated Cycle Length (s)			98.4	Su	ım of los	t time (s)	12.0
Intersection Capacity Utiliza	ntion		82.1%	IC	U Level	of Service	E
Analysis Period (min)			15				
c Critical Lane Group							

2027 Build WKdy PM 1: Reservoir Park Drive & Hingham Street

	<i>•</i>	*	1	1	↓	4	
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	7	74	ħ	^	†	۲	
Traffic Volume (vph)	694	153	68	378	814	822	
Future Volume (vph)	694	153	68	378	814	822	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	12	11	11	12	12	12	
Storage Length (ft)	0	260	100			375	
Storage Lanes	1	1	1			1	
Taper Length (ft)	25		25				
Right Turn on Red		Yes				Yes	
Link Speed (mph)	30	100		30	30	100	
Link Distance (ft)	725			456	263		
Travel Time (s)	16.5			10.4	6.0		
Peak Hour Factor	0.83	0.83	0.78	0.78	0.93	0.93	
	1%	0.03	0.78	0.78	0.93		
Heavy Vehicles (%)	1 70	076	0%	0%	0%	1%	
Shared Lane Traffic (%)	000	404	0.7	405	075	004	
Lane Group Flow (vph)	836	184	87	485	875	884	
Turn Type	Prot	Prot	pm+pt	NA	NA	pm+ov	
Protected Phases	4	4	5	2	6	4	
Permitted Phases			2			6	
Detector Phase	4	4	5	2	6	4	
Switch Phase							
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Minimum Split (s)	21.0	21.0	8.0	21.0	21.0	21.0	
Total Split (s)	44.0	44.0	13.0	56.0	43.0	44.0	
Total Split (%)	44.0%	44.0%	13.0%	56.0%	43.0%	44.0%	
Yellow Time (s)	3.0	3.0	3.0	4.0	4.0	3.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	
ost Time Adjust (s)	0.0	0.0	0.0	-1.0	-1.0	0.0	
Total Lost Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
_ead/Lag			Lead		Lag		
_ead-Lag Optimize?			Yes		Yes		
Recall Mode	None	None	None	None	None	None	
/c Ratio	1.13	0.25	0.40	0.51	1.15	0.61	
Control Delay	106.3	6.1	17.7	18.0	110.0	3.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	
Total Delay	106.3	6.1	17.7	18.0	110.0	3.1	
Queue Length 50th (ft)	~638	13	27	190	~673	43	
Queue Length 95th (ft)	#764	46	44	225		43 78	
		40	44		#907	10	
nternal Link Dist (ft)	645	000	400	376	183	075	
Turn Bay Length (ft)	707	260	100	1010	704	375	
Base Capacity (vph)	737	733	233	1019	764	1446	
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	1,13	0.25	0.37	0.48	1.15	0.61	
ntersection Summary	8	цп			1.00	1 × 2 ×	nes de la
	Other						
Cycle Length: 100 Actuated Cycle Length: 97.2)						

Proposed Primrose School VAI

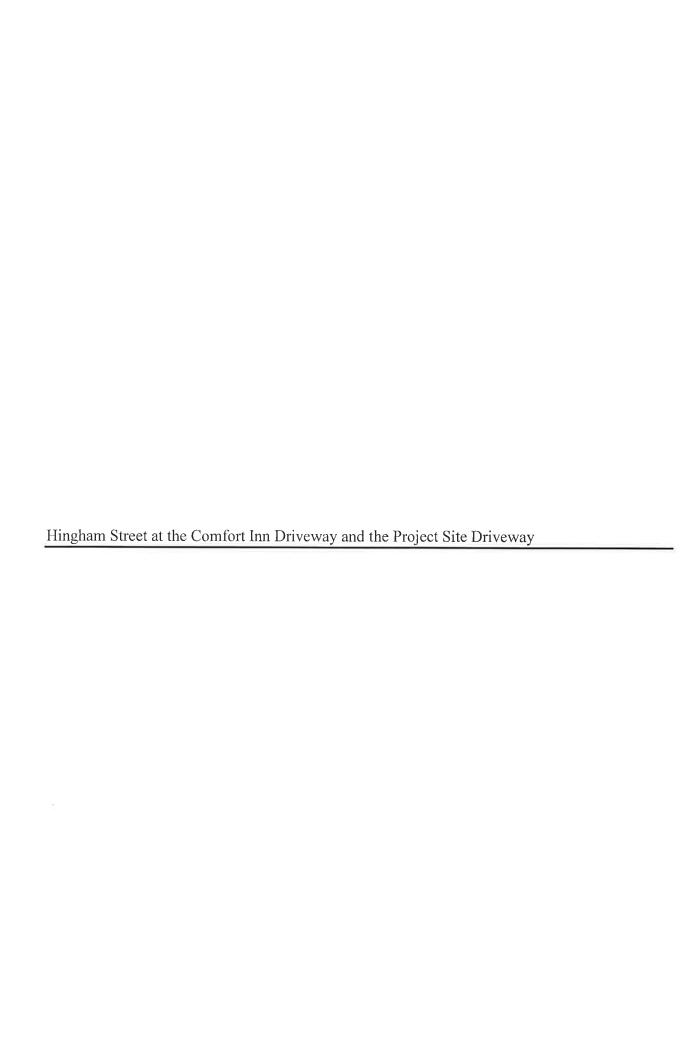
Natural Cycle: 130

Control Type: Actuated-Uncoordinated

- 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.

↑ø2		₹ Ø4
56 s	KAN HISPANIA AND AND AND AND AND AND AND AND AND AN	44 \$ 12 10 10 10 10 10 10 10 10 10 10 10 10 10
↑ Ø5	↓ Ø6	
13 s	43 s	

	۶	*	4	†	↓	1	
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	ሻ	7	ř	↑	†	ř	
Traffic Volume (vph)	694	153	68	378	814	822	
Future Volume (vph)	694	153	68	378	814	822	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width	12	11	11	12	12	12	
Total Lost time (s)	4.0	4.0	4.0	4.0	4.0	4.0	
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Frt	1.00	0.85	1.00	1.00	1.00	0.85	
Flt Protected	0.95	1.00	0.95	1.00	1.00	1.00	
Satd. Flow (prot)	1787	1561	1745	1900	1900	1599	
Flt Permitted	0.95	1.00	0.10	1.00	1.00	1.00	
Satd. Flow (perm)	1787	1561	175	1900	1900	1599	
Peak-hour factor, PHF	0.83	0.83	0.78	0.78	0.93	0.93	
Adj. Flow (vph)	836	184	87	485	875	884	
RTOR Reduction (vph)	0	89	0	0	0	95	
Lane Group Flow (vph)	836	95	87	485	875	789	
Heavy Vehicles (%)	1%	0%	0%	0%	0%	1%	
Turn Type	Prot	Prot	pm+pt	NA	NA	pm+ov	
Protected Phases	4	4	5	2	6	4	
Permitted Phases			2			6	
Actuated Green, G (s)	40.1	40.1	48.9	48.9	38.1	78.2	
Effective Green, g (s)	40.1	40.1	48.9	49.9	39.1	78.2	
Actuated g/C Ratio	0.41	0.41	0.50	0.51	0.40	0.80	
Clearance Time (s)	4.0	4.0	4.0	5.0	5.0	4.0	
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	
Lane Grp Cap (vph)	731	638	196	967	758	1275	
v/s Ratio Prot	c0.47	0.06	0.03	c0.26	c0.46	0.25	
v/s Ratio Perm			0.19			0.24	
v/c Ratio	1.14	0.15	0.44	0.50	1.15	0.62	
Uniform Delay, d1	28.9	18.2	20.7	15.9	29.4	4.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	
Incremental Delay, d2	80.4	0.1	1.6	0.4	84.1	0.9	
Delay (s)	109.3	18.3	22.3	16.3	113.6	4.9	
Level of Service	F	В	С	В	F	Α	
Approach Delay (s)	92.9			17.2	58.9		
Approach LOS	F			В	Е		
Intersection Summary				OFF THE		A PRINCE	
HCM 2000 Control Delay			62.2	Н	CM 2000	Level of Ser	rvice E
HCM 2000 Volume to Capacity ratio 1.11							
Actuated Cycle Length (s) 98.0			St	um of los	t time (s)	12.0	
ntersection Capacity Utilizatio	n		95.1%			of Service	F
Analysis Period (min)			15				
Critical Lane Group							



2020 Existing WKdy AM 2: Hingham Street & Comfort Inn Drive

	٦	-	4	†	ļ	4	
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	sta			स	↑ 1>		
Traffic Volume (vph)	7	11	3	1273	1061	5	
Future Volume (vph)	7	11	3	1273	1061	5	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	16	12	12	15	12	12	
Link Speed (mph)	30			30	30		
Link Distance (ft)	241			263	230		
Travel Time (s)	5.5			6.0	5.2		
Peak Hour Factor	0.88	0.88	0.90	0.90	0.85	0.85	
Heavy Vehicles (%)	0%	0%	0%	3%	5%	0%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	21	0	0	1417	1254	0	
Sign Control	Stop			Free	Free		
Intersection Summary	(3) (5) (1)	METHODAY					
Area Type:	Other						
Control Torres Harrison I'm	14						

Control Type: Unsignalized

		31 374			W Cook	Sea Transmitter and March Person And
0.9						
EBL	EBR	NBL	NBT	SBT	SBR	
A			सी	↑ }		
7	. 11	3	1273	1061	5	
7	11	3	1273	1061	5	
0	0	0	0	0	0	
Stop	Stop	Free	Free	Free	Free	
	None		None		None	
0	: e:	(#.	-) +)	(*)	
,# 0	: •:		0	0	-	
0	-	120	0	0	-	
88	88	90	90	85	85	
0	0	0	3	5	0	
8	13	3	1414	1248	6	
Minor2				Major2		
2671	627	1254	0		0	
1251	(*)		1.0	-	*	
1420		~	**	-	2	
6.6	6.9	4.1	-	==	2	
5.8	-		·		*	
5.4			- 3	7		
3.5	3.3	2.2	2		-	
22	431	562	-			
237				-	*	
225	1 2	^ -	14	2	-	
			2	2	-	
21	431	562		- 2	- 3	
21	8	-	9	3		
231	3					
225	=	iπ	র	æ	±.	
			1.30			
		0		0		
i sali	NBL	NBT	EBLn1	SBT	SBR	
	562	-		-		
		-				
	В	Α	F	-	-	
	EBL 77 7 7 0 Stop 0 88 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0 8 0	FBL EBR 7 11 7 11 0 0 Stop Stop - None 0 - 88 88 0 0 - 88 88 0 0 8 13 Minor2 1 2671 627 1251 - 1420 - 6.6 6.9 5.8 - 5.4 - 3.5 3.3 22 431 237 - 225 - 21 431 21 - 231 - 225 - EB 119.9 F NBL 562 0.006 11.4	FBL EBR NBL 7 11 3 7 11 3 0 0 0 0 Stop Stop Free - None - 0 88 88 90 0 0 88 88 90 0 0 0 8 13 3 Minor2 Major1 2671 627 1254 1251 1420 6.6 6.9 4.1 5.8 5.4 3.5 3.3 2.2 22 431 562 237 225 21 431 562 237 225 EB NB 119.9 0 F	## A 1273 7 11 3 1273 7 11 3 1273 0 0 0 0 0 Stop Stop Free Free - None 0 0 0 0 88 88 90 90 0 0 0 3 8 13 3 1414 ### Minor2 Major1 2671 627 1254 0 1251 1420 6.6 6.9 4.1 - 5.8 5.4 3.5 3.3 2.2 - 22 431 562 - 237 225 21 431 562 - 237 225 EB NB 119.9 0 F	EBL EBR NBL NBT SBT 7 11 3 1273 1061 7 11 3 1273 1061 0 0 0 0 0 0 0 0 0 0 Stop Free Free Free Free - None - 0 0 0 0 - - 0 0 0 - - 0 0 88 88 90 90 85 0 0 3 5 8 13 3 1414 1248 Minor2 Major1 Major2 2671 627 1254 0 - 1251 - - - - 1420 - - - - 5.4 - - - - 237 - -	EBL EBR NBL NBT SBT SBR 7 11 3 1273 1061 5 7 11 3 1273 1061 5 0 0 0 0 0 0 0 0 0 0 0 0 Stop Stop Free Free Free Free - None - None - None - None 0 - - 0 0 - None 0 - - 0 0 - None - None 0 - - 0 0 - None - None - None - None - None 0 - - 0 0 - None - None<

2: Hingham Street & Comfort Inn Drive

	٠	7	4	†	↓	4	
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	A			4	† \$		
Traffic Volume (vph)	0	3	3	962	1491	10	
Future Volume (vph)	0	3	3	962	1491	10	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	16	12	12	15	12	12	
Link Speed (mph)	30			30	30		
Link Distance (ft)	241			263	230		
Travel Time (s)	5.5			6.0	5.2		
Peak Hour Factor	0.88	0.88	0.86	0.86	0.88	0.88	
Heavy Vehicles (%)	0%	0%	0%	3%	1%	0%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	3	0	0	1122	1705	0	
Sign Control	Stop			Free	Free		
Intersection Summary	STEEL F	Toke 1		A GILL			

Area Type:

Other

Control Type: Unsignalized

Intersection		ST. ST.	A Sala				
Int Delay, s/veh	0						
Movement	EBL		NBL	NBT	SBT	SBR	
Lane Configurations	Y			4	↑ ↑		
Traffic Vol, veh/h	0	3	3	962	1491	10	
Future Vol, veh/h	0	3	3	962	1491	10	
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	-	(*)	380	-		
Veh in Median Storage	,# 0	-	-	0	0		
Grade, %	0		-	0	0	2	
Peak Hour Factor	88	88	86	86	88	88	
Heavy Vehicles, %	0		0	3	1	0	
Mvmt Flow	0	3	3	1119	1694	11	
Major/Minor I	Minor2		Major1	1	Major2	150 B	
Conflicting Flow All	2825	853	1705	0		0	
Stage 1	1700	-				-	
Stage 2	1125	-	3	14	*	里	
Critical Hdwy	6.6	6.9	4.1	~	÷	-	
Critical Hdwy Stg 1	5.8	-	3	2	3		
Critical Hdwy Stg 2	5.4	-		-	-		
Follow-up Hdwy	3.5	3.3	2.2			-	
Pot Cap-1 Maneuver	17	307	378	*			
Stage 1	136	-		*	*	-	
Stage 2	313	-	-	2	-		
Platoon blocked, %				×	20	\$	
Mov Cap-1 Maneuver	17	307	378	2	- 2	2	
Mov Cap-2 Maneuver	17	-		*	-		
Stage 1	133	-				75	
Stage 2	313	-	5	*:	5.90	0 =	
Approach	EB	ENTA.	NB		SB	-1153	A STANDARD BANKS AND STANDARD WAS WELL AND STANDARD
HCM Control Delay, s	16.9		0		0		
HCM LOS	С						
Minor Lane/Major Mvm	ť	NBL	NBT E	BLn1	SBT	SBR	SEATER OF THE RESIDENCE OF THE SEATER OF THE
Capacity (veh/h)		378	-	307			
HCM Lane V/C Ratio		0.009	_	0.011	-		
HCM Control Delay (s)		14.6	0	16.9			
HCM Lane LOS		В	A	C			
HCM 95th %tile Q(veh)		0	-	0		-	
		v		•			

	•	*	4	†	ļ	1	
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	TAX THE THAT WE ARE STROME, THE PER
Lane Configurations	A			4	† \$		
Traffic Volume (vph)	7	11	3	1360	1139	5	
Future Volume (vph)	7	11	3	1360	1139	5	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	16	12	12	15	12	12	
Link Speed (mph)	30			30	30		
Link Distance (ft)	241			263	230		
Travel Time (s)	5.5			6.0	5.2		
Peak Hour Factor	0.88	0.88	0.90	0.90	0.85	0.85	
Heavy Vehicles (%)	0%	0%	0%	3%	5%	0%	
Shared Lane Traffic (%)						75. C F.	
Lane Group Flow (vph)	21	0	0	1514	1346	0	
Sign Control	Stop			Free	Free		

Area Type: Other Control Type: Unsignalized

Intersection Summary

2027 No-Build WKdy AM 2: Hingham Street & Comfort Inn Drive

Intersection	0115	er let					
Int Delay, s/veh	1.4						
Movement	EBL		NBL	NBT	SBT	SBR	
Lane Configurations	N.			सी	1		
Traffic Vol, veh/h	7	11	3	1360	1139	5	
Future Vol, veh/h	7	11	3	1360	1139	5	
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	e,# 0	-	-	0	0	-	
Grade, %	0	12/	-	0	0	-	
Peak Hour Factor	88	88	90	90	85	85	
Heavy Vehicles, %	0	0	0	3	5	0	
Mvmt Flow	8	13	3	1511	1340	6	
10.5 - 60.0							
	Minor2		Major1		Major2	150, 25	
Conflicting Flow All	2860	673	1346	0	¥	0	
Stage 1	1343	-	-			*	
Stage 2	1517	2	4	4		2	
Critical Hdwy	6.6	6.9	4.1			•	
Critical Hdwy Stg 1	5.8	9	8	3		-	
Critical Hdwy Stg 2	5.4					*	
Follow-up Hdwy	3.5	3.3	2.2	:-	*		
Pot Cap-1 Maneuver	16	402	518			*	
Stage 1	212	-	-	-	÷		
Stage 2	202	-	•	-	-	20	
Platoon blocked, %				-	3	-	
Mov Cap-1 Maneuver	15	402	518		*		
Mov Cap-2 Maneuver	15	-	₹	-	5		
Stage 1	204	-	5		*	150	
Stage 2	202	-	*	*	*	(*)	
According			NID		0.0		
Approach	EB	0	NB		SB	N'I	
HCM Control Delay, s			0		0		
HCM LOS	F						
Minor Lane/Major Mvm	nt	NBL	NRT	EBLn1	SBT	SBR	
Capacity (veh/h)		518	11011	36	001	ODIT	
HCM Lane V/C Ratio		0.006	-	0.568	150	1.7	
HCM Control Delay (s)		12		194.9	35		
HCM Lane LOS		B	A	194.9 F	051	A.E.)	
HCM 95th %tile Q(veh)		0	А	2	100	363	
TOW SOME WINE CALABIT	1	U	_	2))	

2027 No-Build WKdy PM 2: Hingham Street & Comfort Inn Drive

	٠	•	4	†	. ↓	1	
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	A			4	1		
Traffic Volume (vph)	0	3	3	1040	1599	10	
Future Volume (vph)	0	3	3	1040	1599	10	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	
Lane Width (ft)	16	12	12	15	12	12	
Link Speed (mph)	30			30	30		
Link Distance (ft)	241			263	230		
Travel Time (s)	5.5			6.0	5.2		
Peak Hour Factor	0.88	0.88	0.86	0.86	0.88	0.88	
Heavy Vehicles (%)	0%	0%	0%	3%	1%	0%	
Shared Lane Traffic (%)							
Lane Group Flow (vph)	3	0	0	1212	1828	0	
Sign Control	Stop			Free	Free		
Intersection Summary	100000	MARS		THE SAME		ST THE	
Area Type:	Other						

Control Type: Unsignalized

Intersection	The l	416	-6.5			1	
Int Delay, s/veh	0						
Movement	EBL	EBR	NBL	NBT	SBT	SBR	
Lane Configurations	*/A			4	1	9	
Traffic Vol, veh/h	0	3	3	1040	1599	10	
Future Vol, veh/h	0	3	3	1040	1599	10	
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	88	88	86	86	88	88	
Heavy Vehicles, %	0	0	0	3	1	0	
Mvmt Flow	0	3	3	1209	1817	11	
Major/Minor N	/linor2	J* 876	Major1	N	//ajor2		
Conflicting Flow All	3038	914	1828	0	-	0	
Stage 1	1823			11 -			
Stage 2	1215	-	*	-	2		
Critical Hdwy	6.6	6.9	4.1		1 2		
Critical Hdwy Stg 1	5.8	-	-	2	-	=	
Critical Hdwy Stg 2	5.4			•			
Follow-up Hdwy	3.5	3.3	2.2	5	73		
Pot Cap-1 Maneuver	12	279	339				
Stage 1	116			-	-	-	
Stage 2	283		-			1 =	
Platoon blocked, %				=	2	25	
Mov Cap-1 Maneuver	12	279	339	=	14	-	
Mov Cap-2 Maneuver	12	8		-		÷	
Stage 1	113	•		- 2			
Stage 2	283	5		1.81	-		
Approach	EB	1 (23)	NB	WINE T	SB		Price Manager and the property of the price of the property of the price of the pri
HCM Control Delay, s	18.1		0		0		
HCM LOS	С						
Minor Lane/Major Mvmt		NBL	NBT E	BLn1	SBT	SBR	
Capacity (veh/h)		339	-	279			
HCM Lane V/C Ratio		0.01	_	0.012		-	
HCM Control Delay (s)		15.7	0	18.1			
HCM Lane LOS		С	Ā	С			
		-		_			

	1	→	*	•	←	•	4	†	-	>	ļ	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4			4			474	
Traffic Volume (vph)	7	0	11	30	0	21	3	1360	34	23	1139	5
Future Volume (vph)	7	0	11	30	0	21	3	1360	34	23	1139	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	12	12	12	15	12	12	12	12
Link Speed (mph)		30			30			30		N=1	30	
Link Distance (ft)		241			137			263			230	
Travel Time (s)		5.5			3.1			6.0			5.2	
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.90	0.90	0.90	0.85	0.85	0.85
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	3%	2%	2%	5%	0%
Shared Lane Traffic (%)							,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					0.70
Lane Group Flow (vph)	0	21	0	0	56	0	0	1552	0	0	1373	0
Sign Control		Stop			Stop			Free			Free	Ü
Intersection Summary				1 950			N. Bank	100157		285 AVID	111111111111111111111111111111111111111	O Pol

Other

Area Type: Control Type: Unsignalized

Intersection	11.96							الرنجع	E Sal	JP10 .S.		Quini.			
Int Delay, s/veh	19.5														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	i pari		
Lane Configurations		4			4			4			414				
Traffic Vol, veh/h	7	0	11	30	0	21	3	1360	34	23	1139	5			
Future Vol, veh/h	7	0	11	30	0	21	3	1360	34	23	1139	5			
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0			
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free			
RT Channelized	-		None	· -		None			None	-		None			
Storage Length	1-		(4)	: 3 4 0	-		32	2	2	=	12	(%)			
Veh in Median Storage	.# -	0	-	-	0	- 1	-	0	ृ		0	1/2			
Grade, %		0	2	_	0			0	2		0				
Peak Hour Factor	88	88	88	92	92	92	90	90	90	85	85	85			
Heavy Vehicles, %	0	2	0	2	2	2	0	3	2	2	5	0			
Mvmt Flow	8	0	13	33	0	23	3	1511	38	27	1340	6			
	Minor2			Minor1			Major1	1		Major2	ALL THE		THE PARTY	4 (CS. 5.4)	
Conflicting Flow All	2945	2952	673	2260	2936	1530	1346	0	0	1549	0	0			
Stage 1	1397	1397	-	1536	1536	×	-	-	2	1 4	*				
Stage 2	1548	1555	-	724	1400		2	Ē	-			•			
Critical Hdwy	7.3	6.53	6.9	7.33	6.53	6.23	4.1	•	•	4.13		-			
Critical Hdwy Stg 1	6.5	5.53	7	6.13	5.53			57	•	4.5.					
Critical Hdwy Stg 2	6.1	5.53		6.53	5.53					1.50					
Follow-up Hdwy	3.5	4.019	3.3	3.519	4.019	3.319	2.2	*	•	2.219	:•0	>€			
Pot Cap-1 Maneuver	8	14	402	~ 25	15	143	518	-		426					
Stage 1	151	207	2	145	177	-	-	-2		3=5	•	196			
Stage 2	144	173	2	384	206					12	120	120			
Platoon blocked, %								÷	•		•	•			
Mov Cap-1 Maneuver	~ 5	10	402	~ 19	11	143	518	- 5	-	426		-7			
Mov Cap-2 Maneuver	~ 5	10	-	~ 19	11	-		•	25	3.5	7.0	5 5 8			
Stage 1	145	155	-	139	169	-		*	10		•	:#2			
Stage 2	116	166	-	278	154	-			() = (940			
Vaccanati	FD			VAID			ND	DO NO		00			x = 0 = 50		
Approach HCM Control Delay, s\$	872.2	1000	•	WB 684.8			NB 0			1.9	(0.74V=1)		(STATE OF		
HCM LOS	F		Ψ	F			0			1.0					
Minor Lane/Major Mvmt	t	NBL	NBT	NBR E	EBLn1V	VBLn1	SBL	SBT	SBR			WING:			
Capacity (veh/h)		518		-	13	30	426								
ICM Lane V/C Ratio		0.006	_	_		1.848		æ							
ICM Control Delay (s)		12	0		872.2\$		14	1.7							
ICM Lane LOS		В	A	Ψ -	F	F	В	A							
ICM 95th %tile Q(veh)		0	-	-	3.3	6.4	0.2	250							
lotes															
: Volume exceeds cap	acity	\$: De	lav exc	eeds 30)0s -	+: Com	outation	Not De	fined	*· All i	maior v	olume ir	platoon		

	۶	\rightarrow	-	•	←	*	4	†	1	-	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			44			4			414	
Traffic Volume (vph)	0	0	3	34	0	22	3	1040	29	20	1599	10
Future Volume (vph)	0	0	3	34	0	22	3	1040	29	20	1599	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	16	16	12	12	12	12	12	15	12	12	12	12
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		241			161			263			230	
Travel Time (s)		5.5			3.7			6.0			5.2	
Peak Hour Factor	0.88	0.88	0.88	0.92	0.92	0.92	0.86	0.86	0.86	0.88	0.88	0.88
Heavy Vehicles (%)	0%	2%	0%	2%	2%	2%	0%	3%	2%	2%	1%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	3	0	0	61	0	0	1246	0	0	1851	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary	1,577	Translation (Contraction)	2 77 557			RUS	W. WILLY		y in Section		"Lime	

Area Type:

Other

Intersection			of Garage												THE REAL PROPERTY.
nt Delay, s/veh	8.4														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			18758.
ane Configurations	1.1-12.11	4			4			4	1,720,3		414				
Traffic Vol, veh/h	0	0	3	34	0	22	3	1040	29	20	1599	10			
Future Vol, veh/h	0	0	3	34	0	22	3	1040	29	20	1599	10			
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0			
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free			
RT Channelized		-	None			None	-		None		26	None			
Storage Length									-		-	3.00			
/eh in Median Storage	.# -	0			0			0			0	-			
Grade, %	_	0		- 4	0	9		0		-	0				
Peak Hour Factor	88	88	88	92	92	92	86	86	86	88	88	88			
Heavy Vehicles, %	0	2	0	2	2	2	0	3	2	2	1	0			
Mvmt Flow	0	0	3	37	0	24	3	1209	34	23	1817	11			
		-													
Major/Minor 1	Minor2	Till		Minor1			Major1		ingrun I	Major2		NS =33		it veid	535.81
Conflicting Flow All	3113	3118	914	2187	3106	1226	1828	0	0	1243	0	0			
Stage 1	1869	1869		1232	1232		-		-						
Stage 2	1244	1249	*	955	1874				(4)	1780	198	190			
Critical Hdwy	7.3	6.53	6.9	7.33	6.53	6.23	4.1	12		4.13	7.0	(2)			
Critical Hdwy Stg 1	6.5	5.53		6.13	5.53			-	923	1,1,0		023			
Critical Hdwy Stg 2	6.1	5.53		6.53	5.53					-		-			
follow-up Hdwy	3.5	4.019	3.3	3.519	4.019	3.319	2.2		1000	2.219					
Pot Cap-1 Maneuver	6	11	279	~ 29	11	217	339			558		740			
Stage 1	76	121	-	216	248	-	-	/=:		-					
Stage 2	215	244		278	120				1	-	-	4			
Platoon blocked, %				2,0	120			(4)	243		-	-			
Mov Cap-1 Maneuver	5	11	279	~ 28	11	217	339	- 00		558					
Nov Cap-2 Maneuver	5	11		~ 28	11	71.14	-	-		000	929	141			
Stage 1	74	121	-	210	241						-				
Stage 2	186	237		275	120		-			-	190	-			
olago 2	100	201		200	120										
pproach	EB	41 5		WB		134,57	NB		Ve I	SB		On Age		34.00	DUTSHIE
ICM Control Delay, s	18.1		\$	431.4			0			0.1				10	
1CM LOS	С		•	F						0.1					
linor Lane/Major Mvm		NBL	NBT	NBR	EBLn1V	VBLn1	SBL	SBT	SBR	13.					3240
apacity (veh/h)		339		-	279	43	558	20	20						
CM Lane V/C Ratio		0.01	•	-	0.012	1.416	0.041	_							
CM Control Delay (s)		15.7	0	-		431.4	11.7	0	-						
ICM Lane LOS		С	Α	-	С	F	В	Α	:=0						
ICM 95th %tile Q(veh)		0	(-)	-	0	6	0.1	-	-						
otes															
: Volume exceeds cap	- 1	f. D-	lau ava	eeds 30	200	L: Com	outation	Not Do	food	*· A II •	noioru	olume in	- ploto or		



	*	→	*	•	←	*	4	†	-	-	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		43-			4	7		43-			4	
Traffic Volume (vph)	1	1	16	62	2	116	12	1126	142	63	988	0
Future Volume (vph)	-1	1	16	62	2	116	12	1126	142	63	988	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	15	15	12	13	12	12	16	12
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		128			143			230			379	
Travel Time (s)		2.9			3.3			5.2			8.6	
Peak Hour Factor	0.71	0.71	0.71	0.83	0.87	0.83	0.90	0.90	0.90	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	2%	0%	0%	5%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	77	140	0	1422	0	- 0	1266	0
Sign Control		Stop			Stop			Free		- 60	Free	
Intersection Summary	729		ni vrite:			(Now	(F)(a)		[時表]):	138117	With the last	643-34

Other

Area Type: Control Type: Unsignalized

Intersection								iezu- ^{te}	117000	a seri		-40.51	Son shire	UP SHOW
Int Delay, s/veh	151.9													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR		
Lane Configurations		4			4	7		4			44			
Traffic Vol, veh/h	1	1	16	62	2	116	12	1126	142	63	988	0		
Future Vol, veh/h	1	1	16	62	2	116	12	1126	142	63	988	0		
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0		
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free		
RT Channelized		-	None	-		None		-	None	-	-	None		
Storage Length	8-	-	(in)	140	-	0	-	-	-	:	-	2		
Veh in Median Storage	e,# -	0	-		0	2	- 1	0			0			
Grade, %	72	0	- 2	_	0	- 4	-	0			0			
Peak Hour Factor	71	71	71	83	87	83	90	90	90	83	83	83		
Heavy Vehicles, %	0	0	0	2	0	0	0	2	0	0	5	0		
Mvmt Flow	-1	1	23	75	2	140	13	1251	158	76	1190	0		
	Minor2	0777		Minor1	0000		Major1	2074/15		Major2	SENT	ell public	The second	
Conflicting Flow All	2769	2777	1190	2710	2698	1330	1190	0	0	1409	0	0		
Stage 1	1342	1342	-	1356	1356	2				•		•		
Stage 2	1427	1435	-	1354	1342	-	2 4	-	2			•		
Critical Hdwy	7.1	6.5	6.2	7.12	6.5	6.2	4.1		•	4.1				
Critical Hdwy Stg 1	6.1	5.5	*	6.12	5.5					=	*	1.00		
Critical Hdwy Stg 2	6.1	5.5	32	6.12	5.5						•			
ollow-up Hdwy	3.5	4	3.3	3.518	4	3.3	2.2	-	*	2.2	•	:(*:		
ot Cap-1 Maneuver	13	19	231	~ 14	22	191	594			490				
Stage 1	190	223	320	184	219	-	14	*	=	2	2	-		
Stage 2	169	201		185	223		-	-	-			-		
Platoon blocked, %											•			
Nov Cap-1 Maneuver	2	9	231	~ 7	11	191	594	-		490		1/71		
Nov Cap-2 Maneuver	2	9	-	~ 7	11	-		-	5	5	16	(i.e.)		
Stage 1	169	121	-	164	195	-						100		
Stage 2	40	179	-	89	121	-			*	*	::•:	: * €		
pproach	EB			WB	200		NB			SB	300 8	75.00		n. nelreg
ICM Control Delay, s\$			\$ 2	2003.9			0.1			0.8				
ICM LOS	F		,	F						010				
Minor Lane/Major Mym	ıt	NBL	NBT	NBR F	Bl n1V	VBLn1V	VBI n2	SBL	SBT	SBR				
Capacity (veh/h)	2	594	-		26	7	191	490						-1/2
CM Lane V/C Ratio		0.022	=	_	0.975	11	0.732		- 5	-				
CM Control Delay (s)		11.2	0		384.\$4.5		62.7	13.7	0					
CM Lane LOS		11.2 B	A	-φ	504.# C	521.4 F	62.7 F	13.7 B	A	124				
CM 95th %tile Q(veh))	0.1	_	_	3	11.3	4.7	0.5	-	-				
otes														
: Volume exceeds cap	a a a i tru	¢. Do	lau ava	eeds 30	100	L: Com	outotion	Not De	- Grand	*. All .		olume in	-lete on	

	۶	→	•	•	←	•	•	†	1	>	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		43-			सी	7		4			4	
Traffic Volume (vph)	15	2	58	20	2	32	17	916	29	22	1423	2
Future Volume (vph)	15	2	58	20	2	32	17	916	29	22	1423	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	15	15	12	13	12	12	16	12
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		128			143			230			379	
Travel Time (s)		2.9			3.3			5.2			8.6	
Peak Hour Factor	0.65	0.65	0.65	0.75	0.75	0.75	0.89	0.89	0.89	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	115	0	0	30	43	0	1081	0	0	1590	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary		100		160	1/4 7		No.	J. 3845				10

Area Type:

Other

Intersection		NEW TO		W. 7. B	974 19	100			W		950		Maria Par		
Int Delay, s/veh	132.5														
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	u yake		
Lane Configurations		4			स	*		4			4				
Traffic Vol, veh/h	15	2	58	20	2	32	17	916	29	22	1423	2			
Future Vol., veh/h	15		58	20	2	32	17	916	29	22	1423	2			
Conflicting Peds, #/hr	0		0	0	0	0	0	0	0	0	0	0			
Sign Control	Stop		Stop	Stop	Stop	Stop		Free	Free	Free	Free	Free			
RT Channelized		_	None			None		-	None			None			
Storage Length		-			-	0	(6.			:=:	34	10000			
Veh in Median Storage	e.# -	0			0			0	- 12		0	120			
Grade, %	-,	0		2	0		12	0	-		0	-			
Peak Hour Factor	65	65	65	75	75	75	89	89	89	91	91	91			
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0			
Mvmt Flow	23	3	89	27	3	43	19	1029	33	24	1564	2			
	Minor2	學是		Minor1			Major1			Major2		Man 3	SB.	e de la	The sale
Conflicting Flow All	2720	2713	1565	2743	2698	1046	1566	0	0	1062	0	0			
Stage 1	1613	1613		1084	1084		i e		-			-			
Stage 2	1107	1100	*	1659	1614	: ¥:	:=:			£47	-20	₹V			
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	•		4.1	9				
Critical Hdwy Stg 1	6.1	5.5	- 8	6.1	5.5	•			1		· 20	15.7			
Critical Hdwy Stg 2	6.1	5.5		6.1	5.5						- 5				
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2	550	:=::	2.2					
Pot Cap-1 Maneuver	~ 14	21	139	~ 13	22	280	427		-	664	*				
Stage 1	132	165	:(€:	265	296			:=:	(=)	*	-	-			
Stage 2	257	290		125	164		-	10-3	140	-	112				
Platoon blocked, %								:40	-		14	3			
Mov Cap-1 Maneuver	~ 7	14	139	~ 3	14	280	427	•	-	664	-	- 5			
Mov Cap-2 Maneuver	~ 7	14	-	~ 3	14	35	-		120	-		in the			
Stage 1	118	119	_	236	264			= .*:							
Stage 2	192	258	-	31	118		(⊕).	:=::	-		*	-			
Approach	EB	10/1/	0.000	WB			NB		Y S	SB		State of	EY9A		s Jeff
HCM Control Delay, s \$ HCM LOS	1691 F		\$	2542 F			0.2			0.2					
HOW LOS	Г			Г											
Minor Lane/Major Mvm	t	NBL	NBT	NBR F	BLn1V	VBLn1V	VBLn2	SBL	SBT	SBR	View/A		=1915-1		
Capacity (veh/h)		427			28	3	280	664	A 10 10 11						
HCM Lane V/C Ratio		0.045	-	_			0.152		-						
HCM Control Delay (s)		13.8	0		1691		20.2	10.6	0						
CM Lane LOS		В	A	- 4	F	F	20.2 C	В	A						
HCM 95th %tile Q(veh)		0.1	-	-	14	5.3	0.5	0.1	-						
Votes						1.9.15			-5.2			- 31			
: Volume exceeds cap				eeds 30		r: Com				110			platoon		

2027 No-Build WKdy AM 3: Hingham Street & Dunkin' Donuts Drive

<i>≯</i> → → ←	*	4	†	1	-	↓	1
e Group EBL EBT EBR WBL WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
e Configurations	7"		4			4	
fic Volume (vph) 1 1 16 62 2	116	12	1213	142	63	1066	0
re Volume (vph) 1 1 16 62 2	116	12	1213	142	63	1066	0
I Flow (vphpl) 1900 1900 1900 1900 1900	1900	1900	1900	1900	1900	1900	1900
e Width (ft) 12 16 12 15	15	12	13	12	12	16	12
Speed (mph) 30 30			30			30	
Distance (ft) 128 143			230			379	
vel Time (s) 2.9 3.3			5.2			8.6	
k Hour Factor 0.71 0.71 0.71 0.83 0.87	0.83	0.90	0.90	0.90	0.83	0.83	0.83
vy Vehicles (%) 0% 0% 0% 2% 0%	0%	0%	2%	0%	0%	5%	0%
red Lane Traffic (%)							
e Group Flow (vph) 0 25 0 0 77	140	0	1519	0	0	1360	0
Control Stop Stop			Free			Free	
rection Summary	SHE SH		Free	(V) - 2 (Te	Nev I is		Free

Area Type:

Other

Intersection		538	2 ×	-1151				S 10.8		A Ri			
Int Delay, s/veh	336.6												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			र्स	7"		4			4		
Traffic Vol, veh/h	1	1	16	62	2	116	12	1213	142	63	1066	0	
Future Vol, veh/h	1	1	16	62	2	116	12	1213	142	63	1066	0	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-		None	-	-	None		-	None		_	None	
Storage Length	323	-	2	==	-	0	2	2	II PANGOSOSONII	1001	12	12.0	
Veh in Median Storage	.# -	0	- 2		0	- 2		0		-	0		
Grade, %	-	0	-	_	0			0		-	0	-	
Peak Hour Factor	71	71	71	83	87	83	90	90	90	83	83	83	
Heavy Vehicles, %	0	0	0	2	0	0	0	2	0	0	5	0	
Mvmt Flow	1	1	23	75	2	140	13	1348	158	76	1284	0	
	Minor2	921 P.		Minor1	DE VIE		Major1			Major2		NAME OF	
Conflicting Flow All	2960	2968	1284	2901	2889	1427	1284	0	0	1506	0	0	
Stage 1	1436	1436		1453	1453		•	-	12		-	-	
Stage 2	1524	1532		1448	1436			-			•	*	
Critical Hdwy	7.1	6.5	6.2	7.12	6.5	6.2	4.1	N N*		4.1		-51	
Critical Hdwy Stg 1	6.1	5.5		6.12	5.5	5.	5.	•		6.5	£70	383	
Critical Hdwy Stg 2	6.1	5.5		6.12	5.5	*	-:		(*)			- ec	
Follow-up Hdwy	3.5	4	3.3	3.518	4	3.3	2.2	-	() ()	2.2	3#3	•	
Pot Cap-1 Maneuver	9	15	203	~ 10	16	167	547	- 1-	-	450	-	- 2	
Stage 1	167	201	-	162	197	-	-	122	-		2	-	
Stage 2	149	180		163	201	- 9		•			•		
Platoon blocked, %									27.4		\ \ \sqrt{\sq}}\ext{\sqrt{\sq}}\sqrt{\sq}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}	7	
Mov Cap-1 Maneuver	0	5	203	~ 3	5	167	547	250		450	*		
Mov Cap-2 Maneuver	0	5	-	~ 3	5	3.	0 8 2			385	90	-	
Stage 1	140	82	-	136	165	190				-	(+)	:+	
Stage 2	20	151	-	~ 58	82	280	1040	1000	()	(*)	540	¥	
Approach	EB	-3307		WB			NB		7 E E S	SB	e) .		
HCM Control Delay, s			\$ 4	1829.5			0.1			0.8			
HCM LOS	F		Ψ	F			0.1			0.0			
Minor Lane/Major Mvm	t .	NBL	NBT	NED	EBLn1V	VRI n1V	VRI n2	SBL	SBT	SBR			
Capacity (veh/h)		547		HOIN	61	3	167	450	001	ODIN			
HCM Lane V/C Ratio		0.024	•	-	0.4162		0.837	0.169		:20			
		11.7	_	-					0	:•);			
HCM Control Delay (s)			0	-	100\$813		87.1	14.6	0				
HCM Lane LOS		B 0.1	А	-	F 16	F 11.7	F = 7	В	Α	(a):			
HCM 95th %tile Q(veh)		0.1	-		1.6	11.7	5.7	0.6	•	-			
Votes	4					, CK			441, 254			100	The same of the
-: Volume exceeds cap	acity	\$: De	lay exc	eeds 30	00s -	F: Com	outation	Not De	efined	*: All ı	najor v	olume ir	n platoon

	*	-	*	•	—	*	4	†	1	>	Ţ	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			4	7"		44			4	
Traffic Volume (vph)	15	2	58	20	2	32	17	994	29	22	1531	2
Future Volume (vph)	15	2	58	20	2	32	17	994	29	22	1531	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	15	15	12	13	12	12	16	12
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		128			143			230			379	
Travel Time (s)		2.9			3.3			5.2			8.6	
Peak Hour Factor	0.65	0.65	0.65	0.75	0.75	0.75	0.89	0.89	0.89	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)									50.5	10000	- ACT,	:705
Lane Group Flow (vph)	0	115	0	0	30	43	0	1169	0	0	1708	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary			In Street	THE LIFE	45.447	5.31.3	12 45		. News		64508	Day 18 4

Other

Area Type: Control Type: Unsignalized

Intersection	41672			E 34			5 aL						
Int Delay, s/veh	416.6												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4			4	7		43			44		
Traffic Vol, veh/h	15	2	58	20	2	32	17	994	29	22	1531	2	
Future Vol, veh/h	15	2	58	20	2	32	17	994	29	22	1531	2	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	-	-	None		-	None	. 100	-	None	
Storage Length		120	4	121	-	0		2	110110	19	2	-	
Veh in Median Storage	# -	0		-	0	_		0	_		0		
Grade, %	., "	0		-	0			0	_		0		
Peak Hour Factor	65	65	65	75	75	75	89	89	89	91	91	91	
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0	
Mymt Flow	23	3	89	27	3	43	19	1117	33	24	1682	2	
MALLIC FIOW	23	3	09	21	3	43	19	1117	33	24	1002	2	
Major/Minor	Minor2	STUS	AMB A	Minor1	4000	1115.025	Major1	5786	59.81	Major2	SUPPLE	16.113	
Conflicting Flow All	2926	2919	1683	2949	2904	1134	1684	0	0	1150	0	0	
Stage 1	1731	1731	-	1172	1172	1100	_	-	-	2	-	-	
Stage 2	1195	1188	<u> </u>	1777	1732		- 2	2		-		-	
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1		-	4.1		0.00	
Critical Hdwy Stg 1	6.1	5.5	0,2	6.1	5.5	0.2	7.1		-	-			
Critical Hdwy Stg 2	6.1	5.5		6.1	5.5			7-1	-		975		
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2			2.2			
ot Cap-1 Maneuver	~ 10	16	118	~ 9	16	249	385		-	615			
Stage 1	113	144	110	237	269	240	303	-	-	013	Total .	1000	
Stage 2	230	264		106	144		-	- 20		V =0	2000	1040	
	230	204	•	100	144			- 5	- 1				
Platoon blocked, %	0	-	440	- 4	-	040	205	•		045	15%	-7.	
Mov Cap-1 Maneuver	~ 2	5	118	~ 1	5	249	385	•		615	3.00	_ 3	
Mov Cap-2 Maneuver	~ 2	5	5	~ 1	5	•	•	•		G€2	(*)		
Stage 1	97	56	*	204	232	*	-	-	(60	-	(100)		
Stage 2	162	228	-	~ 10	56				100	96	53 4 3	1961	
pproach	EB	8159/F1	-X721	WB	0.70		NB			SB	owne.	TOW ASSI	MUNICAL ELECTION
ICM Control Delay, \$			\$ 7	904.5			0.2			0.2			
ICM LOS	F		Ψ	F			0.2			0.2			
r		NIS.	NIPT	NES		(D)	NDI C	051	00=	000			
linor Lane/Major Mvm	l	NBL	NBT	NRK F	EBLn1V			SBL	SBT	SBR			
Capacity (veh/h)		385		-	9	1	249	615	300	351			
ICM Lane V/C Ratio		0.05			2.821			0.039	-	:#5			
ICM Control Delay (s)		14.8	0	\$ 6	61276519	369.4	22.4	11.1	0				
ICM Lane LOS		В	Α	-	F	F	С	В	Α	0			
ICM 95th %tile Q(veh)		0.2	120	-	16	5.5	0.6	0.1	-	7,5			
lotes	<u> </u>	1,5	51.2	Land	ARC .	1.18	Bull.						
-: Volume exceeds cap	acity	\$: De	lay exc	eeds 30)0s -	r: Com	putation	Not De	efined	*: All	major v	olume ir	n platoon

	*	-	•	•	•	*	4	†	*	-	↓	1
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		43+			4	7		4			4	
Traffic Volume (vph)	1	_ 1	16	62	2	116	12	1234	142	63	1089	0
Future Volume (vph)	1	1	16	62	2	116	12	1234	142	63	1089	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	15	15	12	13	12	12	16	12
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		128			143			230			379	
Travel Time (s)		2.9			3.3			5.2			8.6	
Peak Hour Factor	0.71	0.71	0.71	0.83	0.87	0.83	0.90	0.90	0.90	0.83	0.83	0.83
Heavy Vehicles (%)	0%	0%	0%	2%	0%	0%	0%	2%	0%	0%	5%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	25	0	0	77	140	0	1542	0	0	1388	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary	Sat Jovew o	7°5 (6)	ne Willia	4610	SERVI		144	81 ay 24	7 4 58	302 Jan V	XIII	length)

Other

Area Type: Control Type: Unsignalized

2027 Build WKdy AM 3: Hingham Street & Dunkin' Donuts Drive

Intersection	L LUIO ET	1000				to the last	Ite o		(Binovilla	ann so		WI COLOR		W. 10 TE	- I - I (0)
Int Delay, s/veh	331.8					201111111111111111111111111111111111111			in a						
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR			A 201
Lane Configurations		4		.,	सी	77		4	,,,,,,		44	0011			
Traffic Vol, veh/h	1	1	16	62	2	116	12	1234	142	63	1089	0			
Future Vol, veh/h	1	1	16	62	2	116	12	1234	142	63	1089	Ő			
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0			
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free			
RT Channelized	Сюр	Otop	None	Otop	Otop	None	1100	1100	None	1100	1100	None			
Storage Length		_	140110			0			TVOICE		_	IVOITE			
Veh in Median Storage	# -	0			0			0	2	72	0	700			
Grade, %	, m _	0	-		0			0			0				
Peak Hour Factor	71	71	71	83	87	83	90	90	90	83	83	83			
Heavy Vehicles, %	0	0	0	2	0	0	0	2	0	0	5	0			
Mymt Flow	1	1	23	75	2	140	13	1371	158	76	1312	0			
MAILICETOW	'		23	10	2	140	13	13/1	100	10	1312	U			
Major/Minor	Minor2		1_200	Minor1			Major1	\$3.500 B	1	Major2					
Conflicting Flow All	3011	3019	1312	2952	2940	1450	1312	0	0	1529	0	0			
Stage 1	1464	1464	-	1476	1476	-			745	/-		720			
Stage 2	1547	1555	- 2	1476	1464	-				-					
Critical Hdwy	7.1	6.5	6.2	7.12	6.5	6.2	4.1	-		4.1		197			
Critical Hdwy Stg 1	6.1	5.5		6.12	5.5	-	-			5.00		(*)			
Critical Hdwy Stg 2	6.1	5.5		6.12	5.5							-			
Follow-up Hdwy	3.5	4	3.3	3.518	4	3.3	2.2		000	2.2	361	540			
Pot Cap-1 Maneuver	8	13	196	~ 9	15	162	534		140	441		-			
Stage 1	161	195		157	192	W.77.E.	2		::		140	140			
Stage 2	145	176	<u> </u>	157	195	-	2		12	-	120	- 27			
Platoon blocked, %	110	110		107	100										
Mov Cap-1 Maneuver	0	4	196	~ 3	4	162	534		0.5%	441					
Mov Cap-2 Maneuver	0	4	-	~ 3	4	102	004		1.57	Sec. 1	150				
Stage 1	132	71		128	157	-	-	070	07.		:70				
Stage 2	16	144	0	~ 50	71			0)±:	546		(4)	-			
Approach	EB		United States	WB	Tay Th	i Bus	NB		1. // "	SB		25-19	100	الطرتي	J.
HCM Control Delay, s HCM LOS	131.5 F		\$ 4	1834.1 F			0.1			0.8					
Minor Lane/Major Mvm	t	NBL	NBT	NBR I	EBLn1V	VBLn1V	VBLn2	SBL	SBT	SBR				, Sire	15,6
Capacity (veh/h)		534	•:		51	3	162	441							
CM Lane V/C Ratio		0.025	_	_	0.4972			0.172		900					
HCM Control Delay (s)		11.9	0	_	131\$513		94.2	14.9	0	-20					
ICM Lane LOS		В	A		F	F	54.Z	B	A	320					
1CM 95th %tile Q(veh)		0.1	-	-	1.9	11.7	6	0.6	-	-					
lotes								700						ST S L	

	*	→	-	*	←	*	4	†	-	-	↓	4
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		4			र्स	75		4			44	
Traffic Volume (vph)	15	2	58	20	2	32	17	1016	29	22	1551	2
Future Volume (vph)	15	2	58	20	2	32	17	1016	29	22	1551	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	16	12	12	15	15	12	13	12	12	16	12
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		128			143			230			379	
Travel Time (s)		2.9			3.3			5.2			8.6	
Peak Hour Factor	0.65	0.65	0.65	0.75	0.75	0.75	0.89	0.89	0.89	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	115	0	0	30	43	0	1194	0	0	1730	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary			37	0.5		V nam		fing to				10.25

intersection outlinary

Area Type:

Other

2027 Build WKdy PM 3: Hingham Street & Dunkin' Donuts Drive

Intersection				10- "		How Co		ISIGI					
Int Delay, s/veh	421.6												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		4	10-100-1400		4	7"		4		TO THE REAL PROPERTY.	4		
Traffic Vol, veh/h	15	2	58	20	2	32	17	1016	29	22	1551	2	
Future Vol, veh/h	15	2	58	20	2	32	17	1016	29	22	1551	2	
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0	
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	
RT Channelized	-	-	None	100		None	-	-	None	-	-	None	
Storage Length	026	120	- 2	723	120	0	2	2		2	2	- 2	
Veh in Median Storage	e.# -	0			0	-	3	0		-	0		
Grade, %	_	0		4.	0	-		0	-	-	0		
Peak Hour Factor	65	65	65	75	75	75	89	89	89	91	91	91	
Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	0	0	
Mvmt Flow	23	3	89	27	3	43	19	1142	33	24	1704	2	
Major/Minor	Minor2	9,817		Minor1	(10 s)	1	//ajor1	Sec. 1913.9	W Bal	Major2	100	2011	
Conflicting Flow All	2973	2966	1705	2996	2951	1159	1706	0	0	1175	0	0	
Stage 1	1753	1753		1197	1197		9						
Stage 2	1220	1213	,÷o	1799	1754	=	-		5	5		0.54	
Critical Hdwy	7.1	6.5	6.2	7.1	6.5	6.2	4.1	-		4.1		0.50	
Critical Hdwy Stg 1	6.1	5.5	90	6.1	5.5	26	*			-		12 0 5	
Critical Hdwy Stg 2	6.1	5.5	(*)	6.1	5.5					-		740	
Follow-up Hdwy	3.5	4	3.3	3.5	4	3.3	2.2			2.2	220	848	
Pot Cap-1 Maneuver	~ 9	15	114	~ 9	15	241	378		-	602	- 2	= 029	
Stage 1	110	140	327	229	261	2	2	- 2	×	è	14	-	
Stage 2	222	257	-	103	140				-	-			
Platoon blocked, %								70			ne:	(#)	
Mov Cap-1 Maneuver	~ 1	~ 3	114		- 3	241	378			602	652	(*)	
Mov Cap-2 Maneuver	~ 1	~ 3			3	-	*	+			300	::::::	
Stage 1	94	32	-	196	223		- 2	*	-	546	(8)	563	
Stage 2	154	219	*	~ 5	32	-	-	2	25	14	:20	223	
Approach	EB	3, 31, 3	1	WB	000		NB		Y TOTAL	SB			الإد
HCM Control Delay\$ d	_						0.2			0.2			
HCM LOS	F			77									
Minor Lane/Major Mvm	ıt	NBL	NBT	NBR F	BLn1V	VBLn1W	BLn2	SBL	SBT	SBR			
Capacity (veh/h)		378		- Constitute	5	CONTRACTOR OF THE PARTY OF THE	241	602		-			
HCM Lane V/C Ratio		0.051	2	_0	3.077	2	0.177	0.04	(37)	621			
CM Control Delay (s)		15	0		362.5	-	23.1	11.2	0	023			
ICM Control Delay (s)		C	A	911	502.5 F	29	23.1 C	11.Z B	A	12:			
ICM Lane LOS ICM 95th %tile Q(veh)		0.2	-		16.4	-	0.6	0.1	- A	-			
		V.2			MAINCH		0.0	0.1					
lotes													