

EXHIBIT 1



TRANSPORTATION IMPACT ASSESSMENT

DEVELOPMENT ALTERNATIVES FOR
SUDBURY STATION COMPREHENSIVE PERMIT (40B) PROJECT
SUDBURY, MASSACHUSETTS

Prepared for the
Town of Sudbury

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Abbreviations and Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ATR	Automatic traffic recorder
D	Control Delay
EB	Eastbound
NB	Northbound
SB	Southbound
WB	Westbound
HCM	Highway Capacity Manual, Published by the National Academies, Transportation Research Board
ISD	Intersection sight distance
ITE	Institute of Transportation Engineers
L	Left (lane)
R	Right (lane)
T	Through (lane)
T/R	Through/right (lane)
LOS	Level-of-service
PHF	Peak hour factor
SSD	Stopping sight distance
TMC	Turning movement count
TRB	Transportation Research Board
TSA	Transportation study area
TWSC	Two-way stop-controlled intersection
v/c	Volume to capacity ratio



1. EXECUTIVE SUMMARY

The Sudbury Station Comprehensive Permit 40B Project (“Proposed Project”) is a residential rental project submitted to the Sudbury Zoning Board of Appeals by Sudbury Station, LLC (“Applicant”). Professional Services Corporation, PC (PSC) was engaged by the Town of Sudbury to prepare this Transportation Impact Assessment (TIA) addressing the impacts of two alternatives, the 30-Unit Approved Townhouse Project Alternative (“Approved Townhouse Project”) and the 250-unit Submitted Project Alternative (“Submitted Project”).

The “Approved Townhouse Project” is a 30 unit rental project approved by the Sudbury Zoning Board of Appeals that is served by a single two-lane, two-way primary access drive that intersects with Hudson Road east of Peakham Road.

The “Submitted Project” is a 250 unit rental project that includes 36 townhouses and 214 units in mid-rise buildings that is served by two entrances, one on Hudson Road and one connecting to Concord Road using a newly constructed Peter’s Way.

The traffic impacts of the Sudbury Station Comprehensive Permit (40B) were previously evaluated in the “Traffic Impact and Access Study, The Village at Sudbury Station 40B Development, Hudson Road, Sudbury, Massachusetts, Prepared for Sudbury Station, LLC, December 2015” prepared by MDM Transportation Consultants, Inc. (“Submitted TIAS”). This TIA differs significantly from the “Submitted TIAS” because it uses updated traffic data, technical references, capacity analysis methodology, and trip generation data.

The Transportation Study Area (TSA) for this TIA includes the signalized Hudson Road/Concord Road/Old Sudbury Road Intersection, the unsignalized Peckham Road/Hudson Road Intersection, the unsignalized Concord Road/Candy Hill Road Intersection and the two proposed unsignalized intersections serving as project entrances.

New automatic traffic recorder (ATR) counts and manual turning movement counts at the TSA intersections were obtained on Thursday, May 24, 2018 and represent midweek conditions.

The “Approved Townhouse Project” will generate 280 vehicle trips (140 entering, 140 exiting) per 24 hours with 24 vehicle trips (6 entering, 18 exiting) in the weekday AM peak hour and 28 trips (18 entering, 10 exiting) in the weekday PM peak hour. The “Submitted Project” will generate 1492 vehicle trips (715 entering, 714 exiting) per 24 hours with 92 vehicle trips (23 entering, 69 exiting) in the weekday AM peak hour and 28 trips (18 entering, 10 exiting) in the weekday PM peak hour. In comparison to the “Approved Townhouse Project”, the “Submitted Project” will generate 511% of the trips generated by the “Approved Townhouse Project” per day, 383% in the weekday AM peak hour and 418% in the weekday PM peak hour.



The Concord Road/Candy Hill Road Intersection operates at unacceptable levels-of-service. It operates at capacity, level-of-service E (LOS E) with the 2018 Existing traffic volumes in the AM peak hour and with excessive delay (LOS F) during the PM peak hour. With the 2025 No-Build, the "Approved Townhouse Project" 2025 Build, and the "Submitted Project" 2025 Build traffic volumes, delay and volume to capacity ratios (v/c) increase from the 2018 Existing to the 2025 No-Build to the 2025 Build traffic volumes with the worst delays and v/c and being those calculated for the "Submitted Project" 2025 Build traffic volumes.

The Peckham Road/Hudson Road Intersection operates with very poor levels-of-service and extreme delays and extreme queues on Peakham Road northbound. Delay and volume to capacity ratios (v/c) increase from the 2018 Existing to the 2025 No-Build to the 2025 Build traffic volumes with the worst delays and v/c ratios and being those calculated for the "Submitted Project" 2025 Build traffic volumes.

The Concord Road/Candy Hill Road Intersection operates at LOS C based on the eastbound Candy Hill Road approach with both the AM and PM 2018 Existing traffic volumes. The intersection operates at LOS D with the AM and PM 2025 No-Build and the AM and PM 2025 Build traffic volumes.

The Primary Site Drive/Hudson Road Intersection operates with unacceptable delays (LOS F) with the 2025 Build traffic volumes with the highest v/c and longest delay with the "Submitted Project" 2025 Build traffic volumes.

The Peter's Way and Concord Road Intersection is only constructed with the "Submitted Project." With the 2025 Build volumes, it operates at level-of-service C with the AM peak hour traffic volumes and level-of-service B with the PM peak hour traffic volumes.

For many of the approach lanes at the intersections in the Traffic Study Area with the 2018 Existing, the 2025 No-Build, and the 2025 Build traffic volumes, the volumes exceed capacity and queue length cannot accurately be modeled using the Highway Capacity Manual methods and actual queues may be longer. This applies to 6 of the 7 approach lanes at the Hudson Road/Concord Road/Old Sudbury Road Intersection as well as to the northbound approach lane at the Peakham Road/Hudson Road Intersection. Therefore the analysis presented herein may understate actual queue lengths.

At the Hudson Road/Concord Road/Old Sudbury Road Intersection, 95th percentile PM queues (2025 No-Build/Build) exceed the available storage length of 325 ft. for the eastbound left turn lane and the 50th and 95th percentile AM and PM queues exceed the available storage length of 750 ft. for the eastbound through lane for certain peak hour volumes. When the eastbound through queues exceed 750 feet, which commonly occurs, the queues block traffic from entering the Peakham Road/Hudson Road Intersection. The 95th percentile PM queues (2025



No-Build/Build) for the westbound through/right lane commonly exceed 1,000 ft. The 50th and 95th percentile queues exceed the available storage length of 375 ft. for the northbound left turn lane for certain peak hour volumes.

For the southbound approach to the Hudson Road/Concord Road/Old Sudbury Road Intersection, queues longer than 1,350 ft. will block the proposed Peter's Way and Concord Road Intersection. For the southbound approach volume exceeds capacity for all analyzed volumes (except 2018 Existing AM 50th percentile) and queue length cannot accurately be modeled. Observation of actual southbound queues show that Peter's Way is blocked by southbound queues for the entire 2 hours between 4:00 and 6:00 PM except for 5 minutes.

At the Peakham Road/Hudson Road Intersection, the northbound approach is severely over capacity and queues are excessive. With the 2018 Existing volumes, the AM peak hour 95th percentile queues range from 985 ft. AM to 610 ft. PM. With the "Submitted Project" 2025 Build volumes, queues range from 1,340 ft. AM to 827 ft. PM

Safety concerns regarding the segment of Concord Road at the Primary Site Drive/Hudson Road Intersection and Concord Road/Candy Hill Road Intersection led the Zoning Board of Appeals to preclude use of Peter's Way as a project entrance. In fact, a vehicle crash resulting in a fatality was reported at the Concord Road/Candy Hill Road Intersection in 2016.

Maintaining a minimum safe separation distance between the centerlines of intersections is a key to satisfy operational and safety concern. Based on the 85th percentile travel speed of vehicles on Concord Road, the Peters Way and Candy Hill Road intersection should be separated by a minimum of 267 feet whereas they are separated by approximately 120 ft. Therefore drivers must simultaneously process conflicts at the Candy Hill Road intersection and the Peters Way Extension intersection. The close spacing of these intersections increases the complexity of driver decisions and compromises safety.

Vehicle queues at the Hudson Road/Concord Road/Old Sudbury Road Intersection regularly extend north on Concord Road through the Peter's Way and Candy Hill Road intersections. Queued vehicles restrict sight distance for vehicles exiting the site and for drivers looking toward these exiting vehicles from Concord Road. These sight distance limitations compromise safety and may cause vehicle crashes.

Locating a principal project entrance diagonally opposite Candy Hill Road results in trips generated by the "Submitted Project" using the Candy Hill Road, Plympton Road, and Water Row alternative route ("Alternative Route") to access points on Route 27 east of Water Row. The roads along the "Alternative Route" are low speed rural country roads unsuited to accommodate though traffic. Candy Hill Road and Plympton Road in particular have segments



where pavement widths are so narrow that it is necessary for opposing vehicles to slow, stop, and even pull off the pavement in order to pass.

The Primary Site Drive/Hudson Road Intersection is also impacted by queued vehicles that restrict sight distance and potentially increase vehicle crashes.

Cut-through traffic is a major concern. Given the delays experienced at the Hudson Road/Concord Road/Old Sudbury Road Intersection during peak traffic hours, it is quicker to cut through the site than to use Concord Road and Hudson Road for north-eastbound and south-westbound trips. The on-site drives are ill suited to accommodate through traffic and no resolution of this problem was reached during the Zoning Board of Appeals hearing process.

Eliminating the need to construct the Peter's Way and Concord Road Intersection and elimination of this intersection is in itself a key measure to minimize and mitigate traffic impacts for this alternative. The key concerns of sight distance restrictions by queued vehicles, the close spacing of the Peter's Way and Candy Hill Road Intersections, and generating traffic on Candy Hill Road, Plympton Road, and Water Row are resolved by elimination of this intersection.

In addition, the reduced trip generation with the "Approved Townhouse Project" is highly effective in minimizing and mitigating traffic impacts at all intersection locations in the Transportation Study Area.

Traffic Impact mitigation proposed by the "Applicant" for the "Submitted Project" is limited to installation of a flashing warning beacon at the Peckham Road/Hudson Road Intersection. No measures are proposed to minimize or mitigate impacts associated with use of Peter's Way and Concord Road Intersection as a major entrance. No measures are proposed to minimize or mitigate construction phase traffic impacts and no measures are offered to minimize or mitigate permanent traffic impacts by an effective Transportation Demand Management Plan.



2. INTRODUCTION

2.1. PROJECT DESCRIPTION

The Sudbury Station Comprehensive Permit 40B Project (“Proposed Project”) is a residential rental project submitted to the Sudbury Zoning Board of Appeals by Sudbury Station, LLC (“Applicant”). The “Proposed Project” is located on an approximately 13.4 acre portion of a larger tract of land, the remainder of which is restricted from development. The “Proposed Project” is located northwest of the Concord Road and Old Sudbury Road/Hudson Road Intersection to the west of the Town Cemetery in Sudbury’s Historic District. Professional Services Corporation, PC (PSC) was engaged by the Town of Sudbury to prepare this Transportation Impact Assessment (TIA) addressing the impacts of two alternatives, the 30-Unit Approved Townhouse Project Alternative (“Approved Townhouse Project”) and the 250-unit Submitted Project Alternative (“Submitted Project”).¹

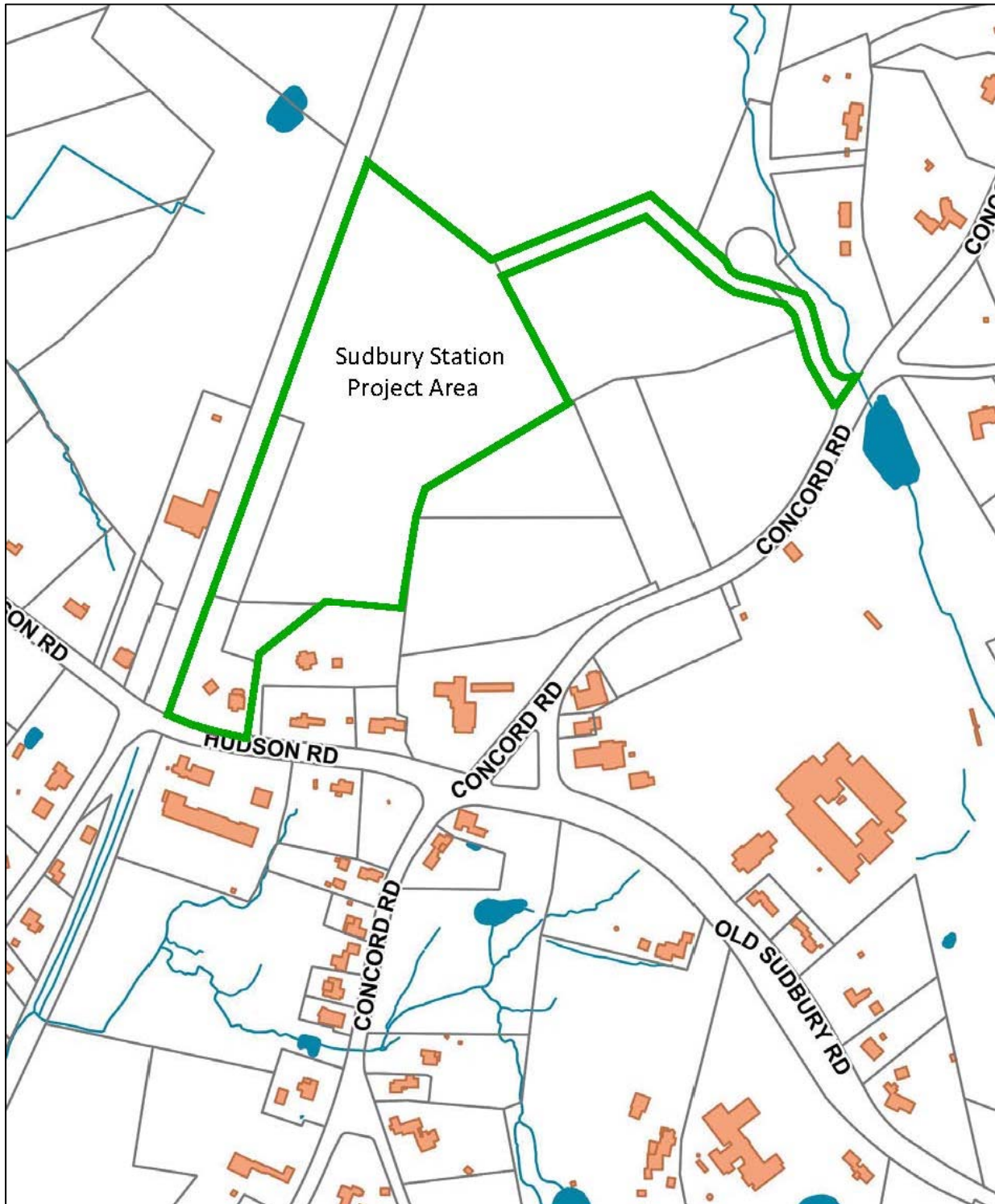
The “Approved Townhouse Project” is a 30 unit rental project approved by the Sudbury Zoning Board of Appeals by Decision dated September 20, 2016 (“Decision”). As required by the “Decision,” the development is served by a single two-lane, two-way primary access drive that intersects with Hudson Road east of Peakham Road. Each townhouse would have a garage parking space and a driveway parking space. Visitor parking would be available along the primary access drive.

The “Submitted Project” is a 250 unit rental project that includes 36 townhouses and 214 units in mid-rise buildings as well as a clubhouse for project residents. The project is served by two entrances, one on Hudson Road and one connecting to Concord Road via a newly constructed Peter’s Way.

2.2. LOCUS

As shown in Figure 2.2-1, the “Proposed Project” is located in Sudbury, Massachusetts north of Hudson Road and west of Concord Road.

¹ Site Plans dated January 25, 2016 and last revised July 14, 2016 prepared by Sullivan, Connors & Associates containing 9 sheets plus a stormwater design sheet.



Source: Sudbury, MA Maps Online

Locus: Figure 2.2-1



2.3. PRIOR TRAFFIC IMPACT AND ACCESS STUDY

The traffic impacts of the Sudbury Station Comprehensive Permit (40B) were previously evaluated in the “Traffic Impact and Access Study, The Village at Sudbury Station 40B Development, Hudson Road, Sudbury, Massachusetts, Prepared for Sudbury Station, LLC, December 2015” prepared by MDM Transportation Consultants, Inc. (“Submitted TIAS”), that was submitted to the Sudbury Zoning Board of Appeals as part of the Comprehensive Permit Application. This TIAS evaluated the 250 unit “Submitted Project” only. It did not evaluate the “Approved Townhouse Project”. This TIA evaluates the impacts of both the “Approved Townhouse Project” and the “Submitted Project”.

Approximately three and one half years have passed since the traffic counts were taken for the “Submitted TIAS” (December 2014 vs May 2018) and traffic volumes change and commonly increase over time. The “Submitted TIAS” used a 5 year planning horizon and evaluated future 2020 No-Build conditions and 2020 Build Conditions. In accordance with the MassDOT Transportation Impact Assessment (TIA) Guidelines (March 13, 2014), this TIA uses a 7 year planning horizon and evaluates future 2025 No-Build and 2025 Build conditions. The “Submitted TIAS” adjusted the counted traffic volumes to 2020 using a growth factor of 0.5% per year for 5 years. Based upon analysis of traffic volume changes at representative MassDOT permanent counting stations, this TIA uses a growth factor of 1.5% per year for 7 years.

Since the “Submitted TIAS”, reconstruction of the Hudson Road/Concord Road/Old Sudbury Road Intersection has been completed. The new traffic signal system at the Hudson Road/Concord Road/Old Sudbury Road Intersection provides an exclusive pedestrian phase. The Highway Capacity Manual (HCM) analysis in the “Submitted TIAS”, did not analyze an exclusive pedestrian phase.

Since the “Submitted TIAS”, the National Academies, Transportation Research Board (TRB) published the Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis (HCM) used in preparing this TIA. The Institute of Transportation Engineers (ITE) has published the Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, September 2017 used in preparing this TIA.

2.4. SITE PLANS

The site plan shown in Figure 2.4-1 was developed by PSC on behalf of the Town of Sudbury to depict the “Approved Townhouse Project” which complies with all the Conditions of Approval of the Zoning Board of Appeals’ “Decision” on the Comprehensive Permit.

The “Townhouse Plan” provides for 30 townhouses in buildings that comply with the height and setback requirements of the Sudbury Zoning Bylaw. In addition to the new townhouse buildings, the Gilmartin residence on Hudson Road would remain on-site.



The “Approved Townhouse Plan” is served by a single two-lane, two-way primary access drive that intersects with Hudson Road east of Peakham Road. The Primary Site Drive and Hudson Road Intersection accommodates the trips generated by the 30 townhouses with a single approach lane on the Primary Access Drive. Each townhouse is provided with a garage parking space and a driveway parking space. Visitor parking is available along the Primary Access Drive.

The “Submitted Plan” shown in Figure 2.4-2 was developed by Sullivan, Connors, and Associates on behalf of Sudbury Station, LLC and depicts the “Submitted Project.” It was submitted to the Sudbury Zoning Board of Appeals by the “Applicant” as part of the Comprehensive Permit Application.

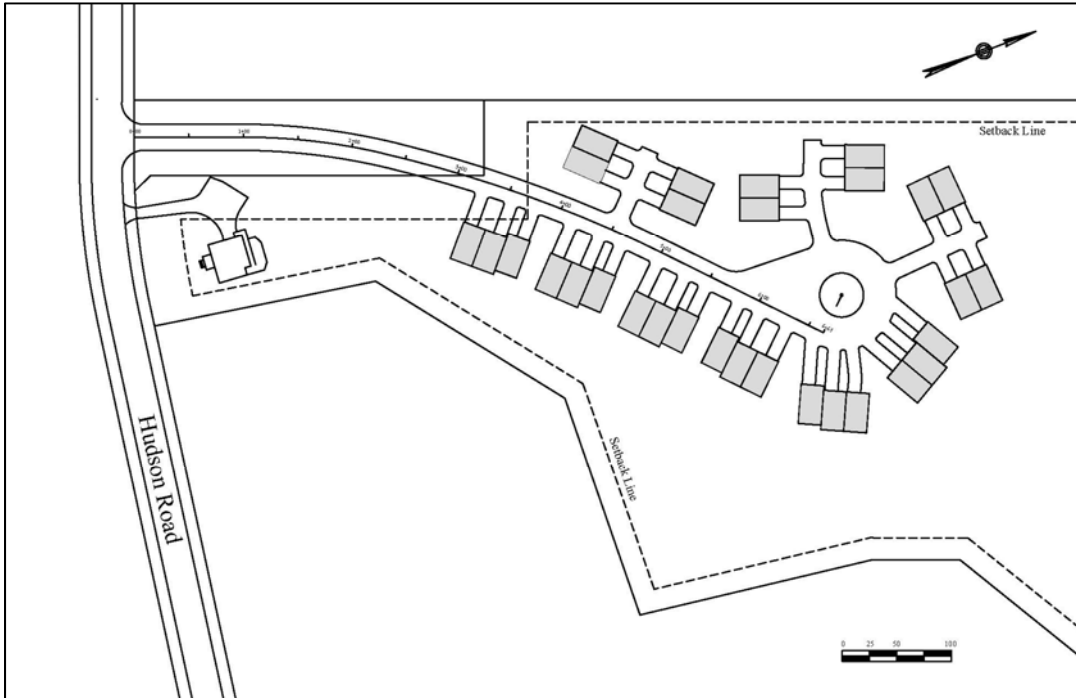
The “Submitted Project” provides five townhouse buildings, 4 buildings with 7 townhouses and 1 building with 8 townhouses. It also provides 5 mid-rise multifamily buildings, 2 buildings with 33 units, 1 building with 44 units and 2 buildings with 52 units. Additionally, the “Submitted Plan” includes a clubhouse, a wastewater treatment facility, and a maintenance building. For the “Submitted Plan”, 2 entrances are provided, 1 entrance on Hudson Road nearly opposite Peakham Road where a new driveway with two approach lanes will be constructed and 1 entrance on Concord Road nearly opposite Candy Hill Road where the currently unconstructed Peter’s Way will be fully constructed. On-site parking totaling 494 parking spaces is provided for the “Submitted Project” that includes 256 garage parking spaces (including 10 accessible parking spaces) and 238 at grade parking spaces (including 14 accessible parking spaces).

3. ANALYTICAL PROCEDURES

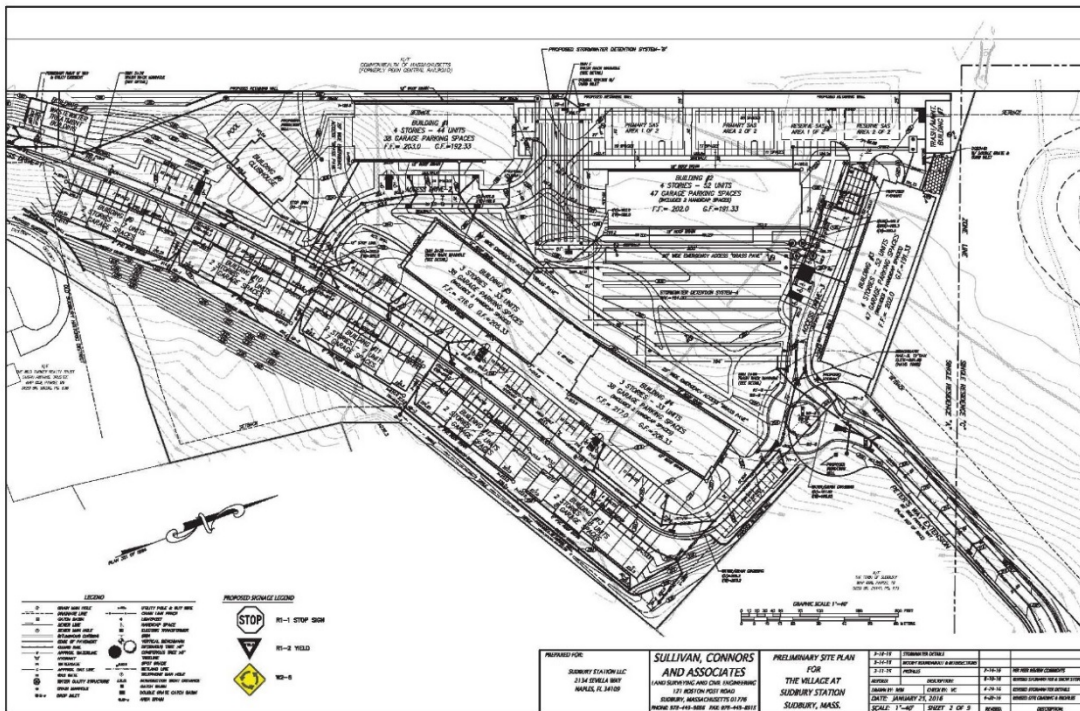
This Transportation Impact Assessment was developed in compliance with MassDOT’s Transportation Impact Assessment (TIA) Guidelines and standard engineering practice. Turning movement count data was obtained for all study intersections for the weekday morning and evening peak hours on a “typical” Thursday when school was in session. Automatic Traffic Recorder count data with vehicle classifications and speeds was obtained on the same Thursday. Signalized intersection capacity analysis and two-way stop controlled intersection capacity analyses were analyzed using Synchro plus Sim Traffic 10 (10.2.2.0.45) by Trafficware. MassDOT permanent counting station data was used to analyze seasonal adjustment requirements. Trip generation was forecast using Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, September 2017 © 2017. Origins and destination of vehicle trips is based on US Census Journey to Work data and traffic assignment is based on minimization of travel time.



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 Development Alternatives for Sudbury Station
 Comprehensive Permit (40B) Project
 Sudbury, Massachusetts



Approved Townhouse Plan: Figure 2.4-1



Submitted Plan: Figure 2.4-2



4. TRANSPORTATION STUDY AREA

The Transportation Study Area (TSA) includes intersections in proximity to the Project Site most directly impacted by trips generated by the “Proposed Project” as follows:

- Hudson Road/Concord Road/Old Sudbury Road Intersection
- Peakham Road/Hudson Road Intersection
- Concord Road/Candy Hill Road Intersection
- Hudson Road/Primary Site Drive Intersection
- Peter’s Way/Concord Road Intersection

5. EXISTING CONDITIONS ASSESSMENT

5.1. ROADWAY NETWORK

5.1.1. ROADWAY SEGMENTS

Old Sudbury Road and Hudson Road are east-west oriented segments of Route 27 and are in local jurisdiction. Route 27 is a two-way two-lane roadway. The roadway serves the Noyes School, and retail, and residential land uses.

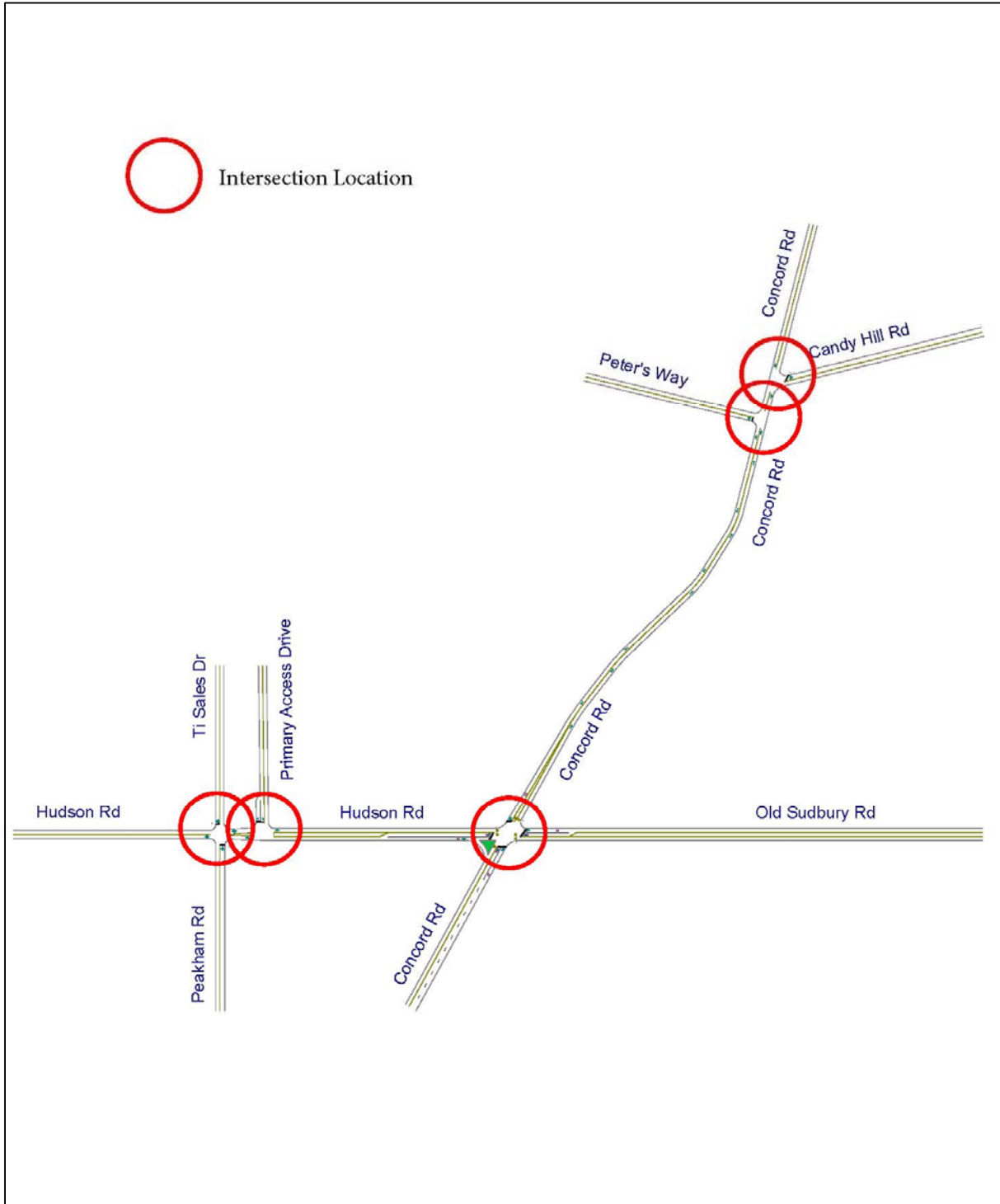
Concord Road is a north-south oriented roadway in local jurisdiction. Concord Road is a two-way two-lane roadway extending north and south of Route 27. The roadway serves an entrance to the Town Hall complex, retail, and residential land uses.

Peakham Road is a north-south oriented roadway in local jurisdiction. Peakham Road Concord Road is a two-way two-lane roadway. The roadway serves retail and residential land uses.

Candy Hill Road/Plympton Road/Water Row is a route running easterly, south westerly, and southerly connecting Concord Road with Old Sudbury Road (Route 27). These roadways are nominally two-way, two-lane roadways; however, segments of Candy Hill Road and Plympton Road are narrow and passenger vehicles must slow, stop, or pull off the pavement in order to pass. These restrictions would be even more severe for trucks.

5.1.2. INTERSECTIONS

The Hudson Road/Concord Road/Old Sudbury Road Intersection is a four-way intersection operating under signal control and is under Town jurisdiction. In addition to the four intersection legs, there is a turning roadway connecting Old Sudbury Road with Concord Road north of Route 27. This two-lane, two-way turning roadway serves an entrance to the



Transportation Study Area: Figure 4-1



Town Hall complex and allows southbound left turning vehicles and westbound right turning vehicles to bypass the center of the intersection. The intersection was recently reconstructed to improve operations and safety. The eastbound Hudson Road approach has an exclusive left turn lane, a through lane and a channelized turning roadway for right turns. The westbound Old Sudbury Road approach has a left turn lane and a through/right lane although right turns are negligible due to the availability of the turning roadway. The southbound approach on Concord Road has a single lane approach. Left turns are negligible to due to the availability of the turning roadway. The northbound approach on Concord Road has a left turn lane and a through/right lane. There are crosswalks on the south side of Route 27 across Concord Street and on the east side of Concord Road across Old Sudbury Road. Signal timing was observed to operate based on recommended signal timing provided by the Town's consultant.

The Peakham Road/Hudson Road Intersection is a four way stop controlled intersection whose southbound approach is the private Ti-Sales industrial driveway. All legs have single lane approaches. The northbound approach on Peakham Road and the southbound approach on the Ti-Sales driveway operate under stop control. There is a crosswalk on the south side of Hudson Road across Peakham Road.

The Concord Road/Candy Hill Road Intersection is a two-way stop controlled intersection with single lanes on all approaches. The eastbound approach on Candy Hill Road operates under stop control. There is a crosswalk south of Candy Hill Road across Concord Road serving the walkway from the Town Hall complex.

5.2. PEDESTRIAN FACILITIES

Pedestrian facilities are limited and discontinuous within the TSA. Sidewalks along Route 27 extend approximately 600 ft. east of Concord Road on Old Sudbury Road. Between Peakham Road and Concord Road, there is an approximately 800 ft. long pedestrian path on a separate alignment south of Hudson Road. A sidewalk continues on Hudson Road west of Peakham Road.

There are short segments of sidewalk on Peakham Road and on Concord Road south of Route 27 while the remainder of these roadways do not have pedestrian facilities. On Concord Road north of Route 27, there is walkway on a separate alignment along the east side of Concord Road between the town complex and Candy Hill Road while there are no sidewalks on the remaining segments of Concord Road in the TSA. There are no sidewalks along Candy Hill Road, Plympton Road, or Water Row.



5.3. PUBLIC TRANSPORTATION

5.3.1. COMMUTER RAIL

The Town of Sudbury is served by the MBTA Fitchburg commuter rail line. The nearest commuter rail station is Lincoln which is 5.7 miles from the project site and provides 161 parking spaces available for a daily fee. Lincoln is in fare zone 4 and is serviced by 17 inbound and 17 outbound trains per day. Future residents off the project area are expected to use Concord Road and either Route 126 or Route 117 to reach the Lincoln commuter rail station. Future project residents would not be expected to use the Worcester-Framingham commuter rail line as the nearest stations on the Worcester Framingham commuter rail line, Framingham, Natick, and West Natick are approximately 9 or more miles distant.

5.3.2. CONNECTIVITY

Residents primarily use private automobile or carpool modes to travel between the TSA and the MBTA commuter rail.

5.4. VEHICLE TRAFFIC VOLUMES

PSC had automatic traffic recorders placed on Hudson Road east of Peakham Road, on Old Sudbury Road east of Concord Road and on Concord Road south of Candy Hill Road on Thursday, May 24, 2018. PSC had manual turning movement counts taken at the Hudson Road/Concord Road/Old Sudbury Road intersection, at the Peakham Road/Hudson Road intersection, and at the Concord Road/Candy Hill Road intersection from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM on Thursday, May 24, 2018.

Average Daily Traffic Volumes: Table 5.4-1

Hudson Road		11,487 eastbound
	21,869	
east of Peakham Road		10,382 westbound
Old Sudbury Road		6,466 eastbound
	12,800	
east of Concord Road		6,334 westbound
Concord Road		6,049 northbound
	12,015	
south of Peter’s Way		5,966 southbound



Twenty Four Hour Traffic Volumes. On Hudson Road east of Peakham Road, the 24 hour volume was counted as 21,869 (52.5% eastbound, 47.5% westbound) of which 0.6% were busses and 4.2% were trucks (vehicles with 6 or more wheels). The bidirectional morning peak hour volume 1,362 (K=0.06) occurred for the hour beginning at 6:15 AM and the bidirectional evening peak hour volume 1,703 (K=0.08) occurred for the hour beginning at 4:00 PM. Volumes are heavier (69%) eastbound before noon and are heavier (57%) westbound after noon. The 50th percentile speed eastbound was 21 miles per hour (mph) and the 85th percentile speed was 31 mph. The 50th percentile speed westbound was 27 miles per hour (mph) and the 85th percentile speed was 32 mph.

On Old Sudbury Road east of Concord Road, the 24 hour volume was counted as 12,800 (50.5% eastbound, 49.5% westbound) of which 0.5% were busses and 4.3% were trucks (vehicles with 6 or more wheels). The bidirectional morning peak hour volume 1,088 (K=0.09) occurred for the hour beginning at 7:00 AM and the bidirectional evening peak hour volume 933 (K=0.07) occurred for the hour beginning at 4:00 PM. Volumes are heavier (68%) eastbound before noon and are heavier (65%) westbound after noon. The 50th percentile speed eastbound was 30 miles per hour (mph) and the 85th percentile speed was 35 mph. The 50th percentile speed westbound was 26 miles per hour (mph) and the 85th percentile speed was 33 mph.

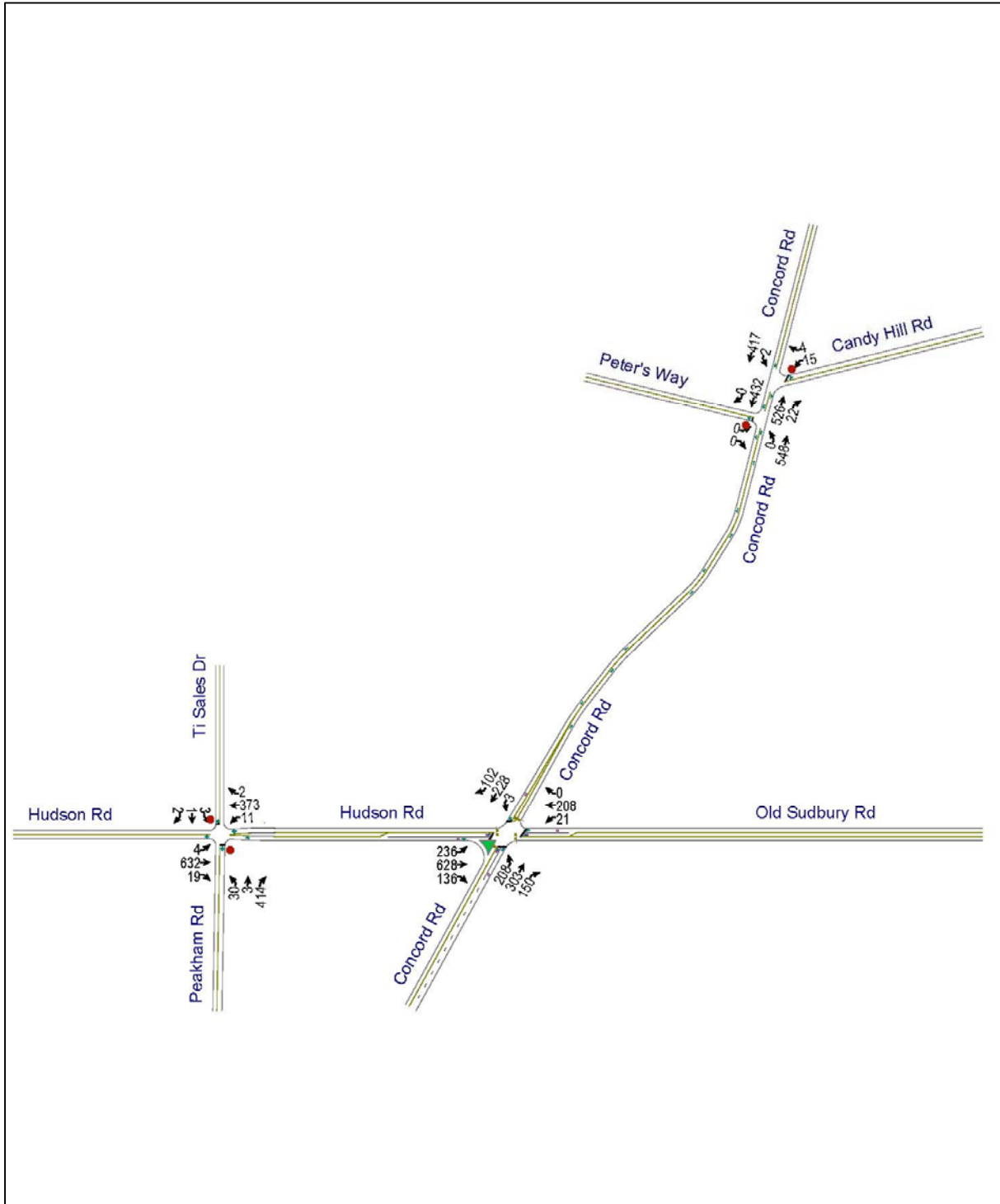
On Concord Road south of Peter's Way, the 24 hour volume was counted as 12,015 (50.3% northbound, 49.7% southbound) of which 1.2% were busses and 3.6% were trucks (vehicles with 6 or more wheels). The bidirectional morning peak hour volume 1,077 (K=0.09) occurred for the hour beginning at 9:00 AM and the bidirectional evening peak hour volume 963 (K=0.08) occurred for the hour beginning at 4:45 PM. Volumes are heavier (57%) northbound before noon and are heavier (54%) southbound after noon. The 50th percentile speed northbound was 33 miles per hour (mph) and the 85th percentile speed was 37 mph. The 50th percentile speed southbound was 29 miles per hour (mph) and the 85th percentile speed was 35 mph.

The 2018 Existing Morning Peak Hour Traffic Volumes and the Existing Evening Peak Hour Traffic Volumes based upon the May 24th manual turning movement counts are shown in Figures 5.4-1 and 2.4-2.

PSC evaluated Average Daily Traffic (ADT) data available through the MassDOT Transportation Data Management System at locations representative of traffic conditions in Sudbury. During



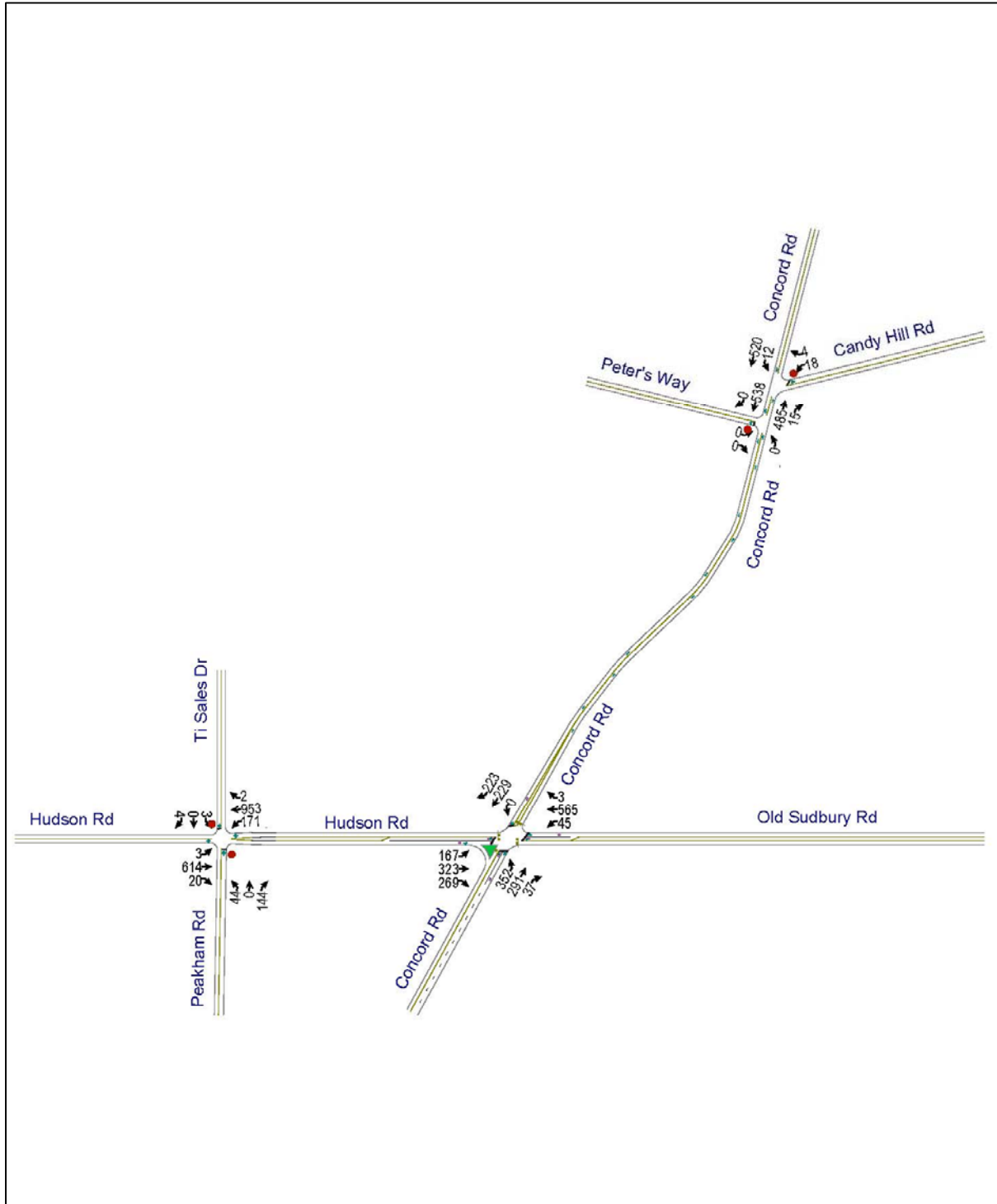
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Comprehensive Permit (40B) Project
Sudbury, Massachusetts



2018 Existing Weekday AM Peak Hour Traffic Volumes: Figure 5.4-1



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2018 Existing Weekday PM Peak Hour Traffic Volumes: Figure 5.4-2



2017, ADT volumes for the month of May were higher than the Average Annual Daily Traffic (AADT) volume at all stations. To be conservative, the counted volumes were not decreased.

5.5. SAFETY ANALYSIS

As shown in Table 5.5-1, the calculated vehicle crash rates for the most recent 5-year period available, 2012 through 2016, at the Hudson Road/Concord Road/Old Sudbury Road Intersection, Peakham Road/Hudson Road Intersection, and Concord Road/Candy Hill Road Intersection are comparable to but just below the statewide crash rates for signalized and unsignalized intersection respectively.

Vehicle Crash Data for the Years 2012 through 2016: Table 5.5-1

	Hudson Rd./ Concord Rd./ Old Sudbury Rd. Intersection	Peakham Rd./ Hudson Rd. Intersection	Concord Rd./ Candy Hill Rd. Intersection
	<u>Signalized</u>	<u>Unsignalized</u>	<u>Unsignalized</u>
Crash Rate	0.68	0.34	0.48
Statewide Average Crash Rate	0.78	0.57	0.57
District 3 Average Crash Rate	0.89	0.61	0.61
Crashes			
2012	5	4	3
2013	6	2	3
2014	7	4	2
2015	11	2	2
2016	8	3	1
Total	37	15	11
Type			
Angle	9	6	4
Rear End	16	4	5
Head On	2	2	1
Sideswipe Same Direction	3	0	–
Sideswipe Opposite	5	1	–
Single Vehicle	2	2	1
Other	–	–	–
Category			
Property Damage	33	9	9
Personal Injury	4	6	1
Fatality	0	0	1



Weather			
Dry	29	10	7
Wet	7	3	1
Snow	1	2	1
Other	–	–	2
Time of Day			
7:00 to 9:00 AM	9	5	1
4:00 to 6:00 PM	5	5	3
Balance of Day	23	5	7

5.6. OPERATIONS ANALYSIS

Intersection operations are described in terms of level-of-service which range from A to F. The level-of-service criteria for unsignalized intersections are different than those for a signalized intersection. The primary reason is that drivers expect different levels of performance at signalized and unsignalized intersections.

Level of service for signalized intersections is defined in terms of control delay for the total intersection. LOS criteria for traffic signals are stated in term of the average control delay per vehicle. Levels-of-service range from A to F and are defined to represent reasonable ranges in control delay as follows:

Level-of-service Criteria for Signalized Intersections: Table 5.6-1

Level-of-Service	Control Delay per Vehicle (sec./vehicle)
A	≤10
B	>10 to 20
C	>20 to 35
D	>35 to 55
E	>55 to 80
F	>80

Level of service (LOS) for an unsignalized two-way stop-controlled intersection (TWSC) intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS is not defined for the intersection as a whole. LOS criteria for unsignalized TWSC intersections are as follows:



Level-of-Service Criteria for Two-Way Stop Controlled Intersections: Table 5.6-2

Level-of-service	Average Control Delay (sec./vehicle)
A	≤10
B	>10 to 15
c	>15 to 25
O	>25 to 35
E	>35 to 50
F	>50

As shown in Table 6.5-1 with the 2018 Existing Traffic Volumes, the signalized Hudson Road/Concord Road/Old Sudbury Road Intersection operates at capacity for the overall intersection during the weekday AM peak hour ($v/c = 1.14$, LOS E, $D=74$ sec.).² The intersection is characterized by unacceptable delays for the overall intersection during the weekday PM peak hour ($v/c = 1.04$, LOS F, $D=96$ sec.).

As shown in Table 6.5-3 with the 2018 Existing Traffic Volumes, the unsignalized Peckham Road/Hudson Road Intersection operates with unacceptable delays based on the minor approach (Peckham Road northbound) during the weekday AM peak hour ($v/c = 3.57$, LOS F, $D=1287$ sec.). The intersection also operates with unacceptable delays based on the minor approach during the weekday PM peak hour ($v/c = 9.91$, LOS F, $D=4300$ sec.).

The unsignalized Concord Road/Candy Hill Road Intersection operates at level-of-service C based on the minor approach (Candy Hill Road eastbound) during the weekday AM peak hour ($v/c = 0.145$, LOS C, $D=22$ sec.). The intersection also operates with unacceptable delays based on the minor approach during the weekday PM peak hour ($v/c = 0.117$, LOS C, $D=18$ sec.).

5.7. QUEUE LENGTH ANALYSIS

Vehicle queues with the 2018 Existing AM and PM peak hour volumes are shown in Table 6.6-1.

With the 2018 Existing peak hour volumes, the 50th percentile AM peak hour volumes exceed capacity for the eastbound through lane and the northbound left lane and the 50th percentile PM peak hour volumes exceed capacity for the westbound through/right lane and the southbound approach and the queue is theoretically infinite. The AM 95th percentile AM peak hour volumes exceed capacity for the eastbound through lane and the northbound left turn and through/right lanes and the PM peak hour volumes exceeds capacity for the eastbound left and through lanes, the westbound through/right lane, the northbound left lane and the southbound approach and the queue may be longer than calculated. For both the 50th

² v/c is the volume to capacity ratio, LOS is the level-of-service, D is the control delay



percentile and the 95th percentile peak hour volumes, the actual queues may be longer than shown in Table 6.6-1.

The eastbound approach to the Hudson Road/Concord Road/Old Sudbury Road Intersection has a left-turn lane, 1 through lane, and a channelized free-right lane. The available storage for the through lane is limited by the separation to the Peckham Road/Hudson Road Intersection to the west. Queues longer than 750 feet will block the Peckham Road/Hudson Road Intersection.

With the 2018 Existing peak hour volumes, the 50th percentile AM peak hour queue just reaches 750 ft. The 95th percentile through lane queue is 1,293 ft. during the AM peak hour and 916 ft. during the PM peak hour which causes blockage of the Peckham Road/Hudson Road Intersection preventing vehicles from entering the intersection.

With the 2018 Existing peak hour volumes, the 375 ft. of available storage for the northbound left lane is not sufficient to accommodate the 95th percentile queues of 434 ft. with the AM peak hour peak hour volume and 607 ft. with the peak hour peak hour volume.

6. FUTURE CONDITIONS ASSESSMENT

6.1. GENERAL BACKGROUND GROWTH

Average Daily Traffic data available through the MassDOT Transportation Data Management System at locations representative of background growth in Sudbury were analyzed. During the most recent 5-year period available, 2013 to 2017, traffic volumes increased at approximately 1½% per year. Based on an annual growth rate of 1½%, between 2018 and 2025, we forecast that an 11% total increase in background growth will occur.

6.2. IN-PROCESS DEVELOPMENT

The Bruce Freeman Rail Trail (BFRT) is in development and will ultimately connect Lowell with Framingham. The BFRT will occupy the railroad right-of-way abutting the Project Site to the West. Upon completion, the BFRT will add bicycle and pedestrian trips to the Peckham Road/Hudson Road Intersection and the segment of Hudson Road where the Primary Access Drive will intersect with Hudson Street. This will further complicate a location where numerous vehicular, bicycle, and pedestrian conflicts exist in an area where numerous commercial driveways, the Primary Access Drive, and Peckham Road intersect with Hudson Road.

PSC consulted with the Sudbury Planning and Community Development Department and there are no in-process projects in addition to the BFRT which will affect traffic conditions within the Transportation Study Area.



6.3. 2025 NO-BUILD TRAFFIC VOLUMES

The 2025 No-Build Morning Peak Hour Traffic Volumes and the 2025 No-Build Evening Peak Hour Traffic Volumes are shown in Figures 6.3-1 and 6.3-2. The 2025 No-Build Traffic Volumes are based upon the May 24th manual turning movement counts and an annual growth factor of 1½%.

6.4. 2025 BUILD TRAFFIC VOLUMES

The 2025 Build Traffic Volumes are based on the 2025 No-Build Traffic Volumes and the trips generated by the “Proposed Project.” Trip Generation was forecast using the Institute of Transportation Engineers’ Trip Generation Manual (ITE Trip Generation Manual)³.

US Census of Population, Journey to Work data was used to determine the origins and destinations of peak hour trips generated by the “Proposed Project.” Traffic assignments are based on minimization of travel time using GPS software. However, when an origin or destination can be reached by alternative routes that differ in distance by less than ½ mile or in travel time by less than 1 minutes, assignments are split between the available alternative routes. Based upon this evaluation, 46% of peak hour trips have origins or destinations to the east of the Transportation Study Area. Some 16% of peak hour trips have origins or destinations to the north and 20% have origins or destination to the south of the TSA and these trips are assigned to Concord Road. Additionally, 7% of trips have origins and destinations to the southwest of the TSA and are assigned to Peckham Road and 11 % have origins or destinations to the west of the TSA and are assigned to Hudson Road. Trips generated by the “Proposed Project” are assigned to specific roadways using the percentages shown in Figure 6.4-1.

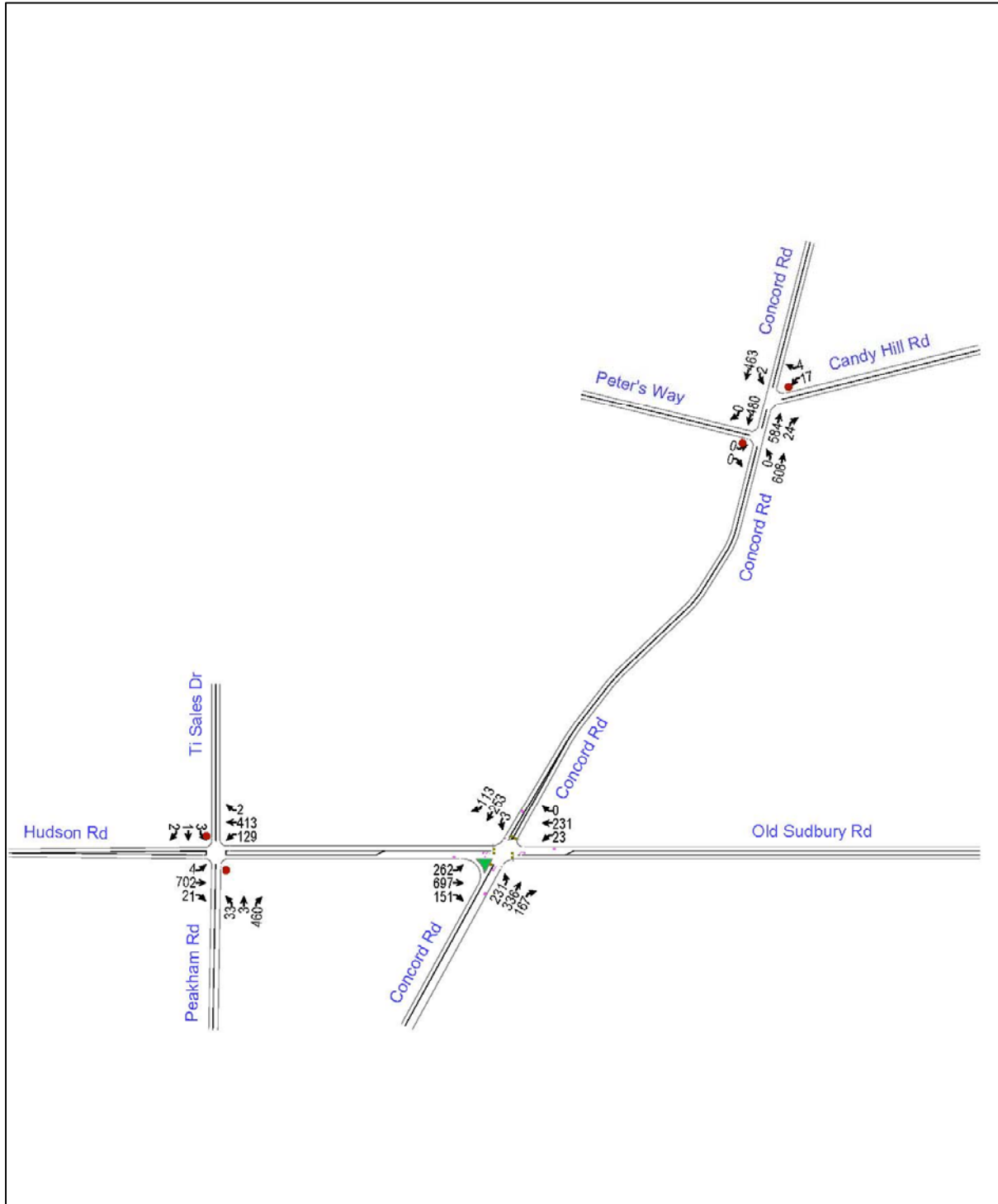
During periods of minimal traffic, trips generated by the “Proposed Project” are assigned to Hudson Road and Old Sudbury Road. During both the weekday morning peak hour and the weekday evening peak hour and extending to other non-peak times of the day, trips assigned to Route 27 experience significant delays due to delay at the Hudson Road/Concord Road/Old Sudbury Road Intersection. Maximum delays are experienced by eastbound traffic during morning peak times and by westbound drivers during evening peak times. The delay is sufficient for drivers to seek alternate routes.

The Candy Hill Road, Plympton Road, and Water Row corridor provides a viable alternate route to avoid the Hudson Road/Concord Road/Old Sudbury Road Intersection. Eastbound trips would be attracted to the Candy Hill Road, Plympton Road, and Water Row route during

³ Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, September 2017 © 2017



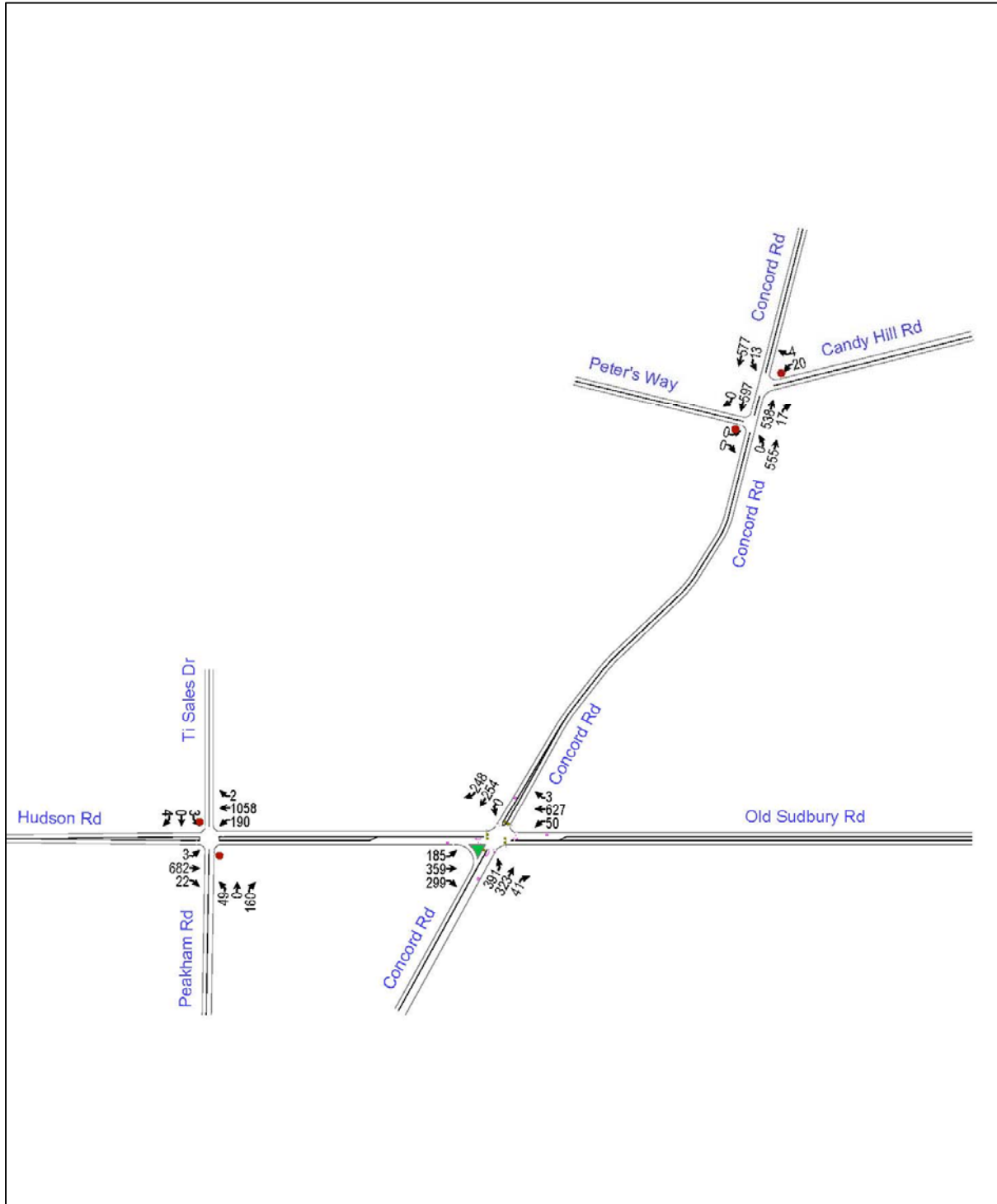
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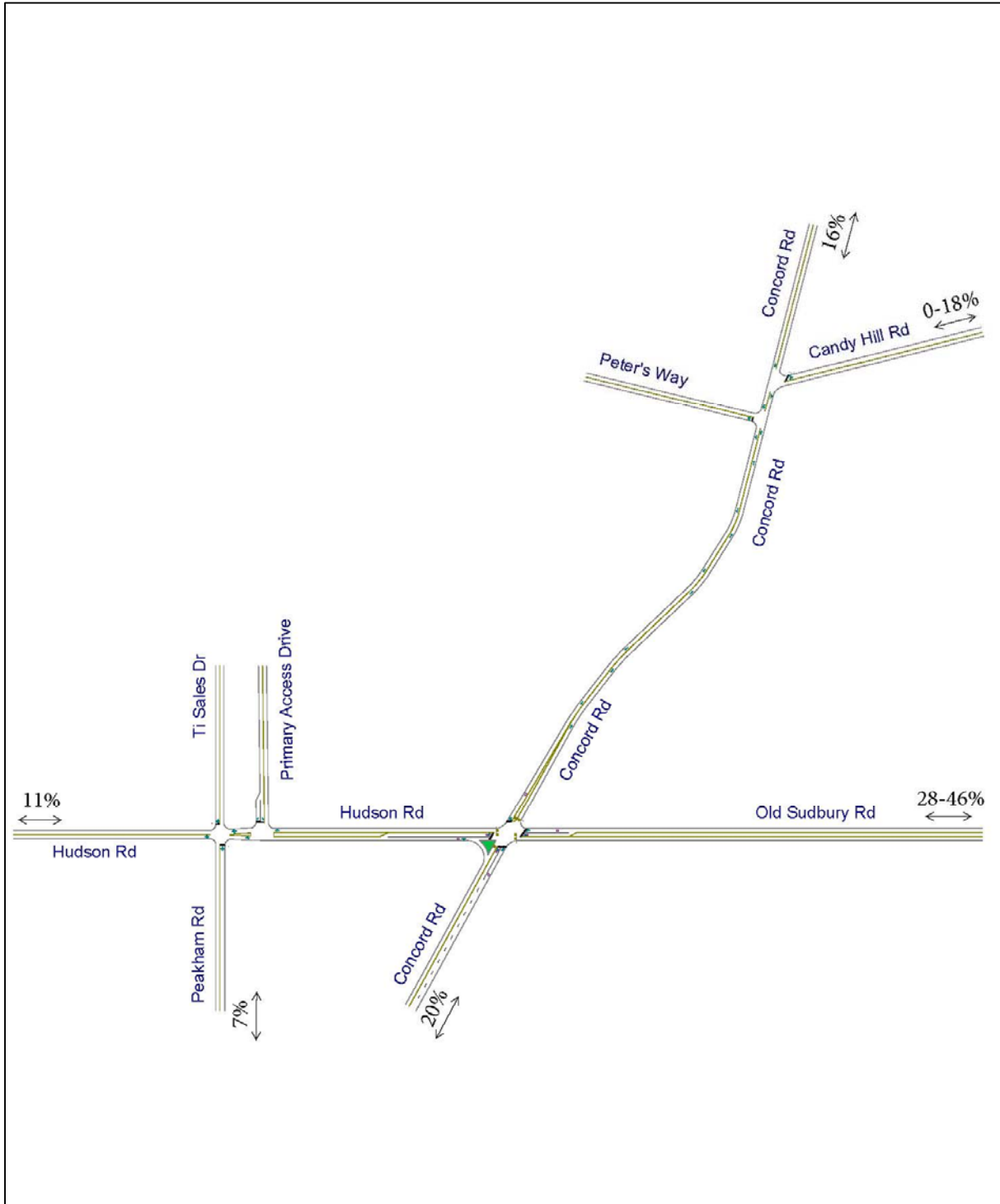
2025 No-Build Weekday AM Peak Hour Traffic Volumes: Figure 6.3-1



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2025 No-Build Weekday PM Peak Hour Traffic Volumes: Figure 6.3-2



Traffic Assignment: Figure 6.4-1



morning peak periods and westbound trips would be attracted to the Candy Hill Road, Plympton Road, and Water Row route during morning peak periods. This alternate route would involve use of the Peter's Way and Concord Road Intersection and thus would be most attractive for residents residing in the northerly portions of the Project Site. For trips using the Primary Site

Drive/Hudson Road Intersection, the Candy Hill Road, Plympton Road, and Water Row is not viable because it is still necessary to pass through the Hudson Road/Concord Road/Old Sudbury Road Intersection for both eastbound and westbound trips. Thus the traffic impacts to Candy Hill Road, Plympton Road, and Water Row would occur only with the "Submitted Project" and not with the "Approved Townhouse Project."

On June 7, 2018, PSC staff completed timed travel runs between the Sudbury Station site and the Wayland Country Club located to the east on Route 27. Travel runs using Old Sudbury Road and Hudson Road terminated at the Primary Site Drive/Hudson Road Intersection. Travel runs using Candy Hill Road, Plympton Road, and Water Row terminated at the Peter's Way and Concord Road Intersection. Both drivers used "car following" where possible or otherwise complied with posted speed and speed appropriate for road conditions. As shown in Appendix 6, travel times for eastbound (peak direction) trips in the morning peak period using the two alternative routes differed by 5 seconds, i.e. 5 minutes and 1 second vs. 5 minutes and 6 seconds. Travel times for westbound (peak direction) trips in the evening peak period using the two alternative routes differed by 10 seconds, i.e. 5 minutes and 7 seconds vs. 5 minutes and 17 seconds. With the "Submitted Project," residents in the southerly portion of the Project Site would likely use the Route 27 corridor and residents in the northerly portion of the Project Site would likely use the Candy Hill Road, Plympton Road, and Water Row corridor for trips in the peak direction of traffic flow.

To reflect this condition, during the weekday AM peak hour 18 percent of eastbound trips were assigned to the Candy Hill Road, Plympton Road, and Water Row corridor and 28% were assigned to the Route 27 corridor. All weekday AM peak hour westbound trips continued to be assigned to the Route 27 corridor. In the weekday PM peak hour 18 percent of westbound trips were assigned to the Candy Hill Road, Plympton Road, and Water Row corridor and 28% were assigned to the Route 27 corridor. All weekday PM peak hour eastbound trips continued to be assigned to the Route 27 corridor.

Adding traffic volumes from the "Proposed Project" to the Candy Hill Road, Plympton Road, and Water Row corridor gives rise to safety concerns as the pavement on these roads is so narrow that passenger vehicles must slow, stop, or pull off the pavement in order to pass. These restrictions would be even more severe for trucks. These roads can only accommodate vehicles at low speed and peak period through commuter traffic would tend to travel at higher speeds.



6.4.1. “APPROVED TOWNHOUSE PROJECT” 2025 BUILD TRAFFIC VOLUMES

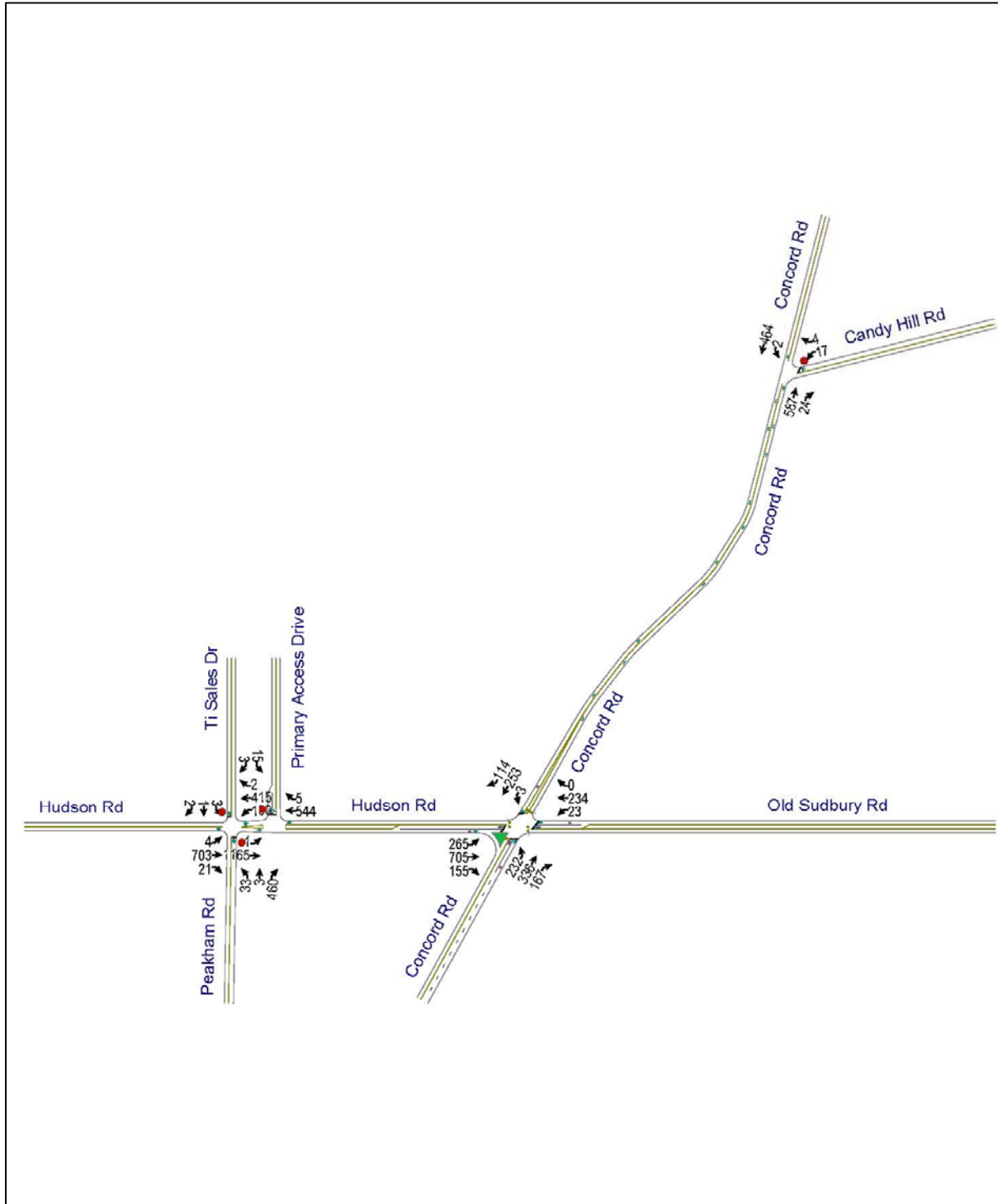
The “Approved Townhouse Project” provides 30 townhouses in 6 duplex buildings and 6 triplex buildings. As used in the current editions of the ITE Trip Generation Manual, multifamily housing includes townhouses located within the same building with at least three other dwelling units. Therefore trips generated by the units in duplex buildings are forecast using the Single-Family Detached Housing (ITE Land Use: 210) category. As used in the ITE Trip Generation Manual, low-rise multifamily housing includes townhouses located within the same building with at least three other dwelling units that have one or two levels (floors). Trips generated by the units in triplex buildings are forecast using the Multifamily Housing (Low-Rise) (ITE Land Use: 220) category.

As shown in Table 6.4-1, the “Approved Townhouse Project” is forecast to generate 280 vehicle trips per day (140 entering/140 exiting). The “Approved Townhouse Project” will generate 24 vehicle trips during the Weekday AM Peak Hour (6 entering/18 exiting) and will generate 28 vehicle trips during the Weekday PM Peak Hour (18 entering/10 exiting)

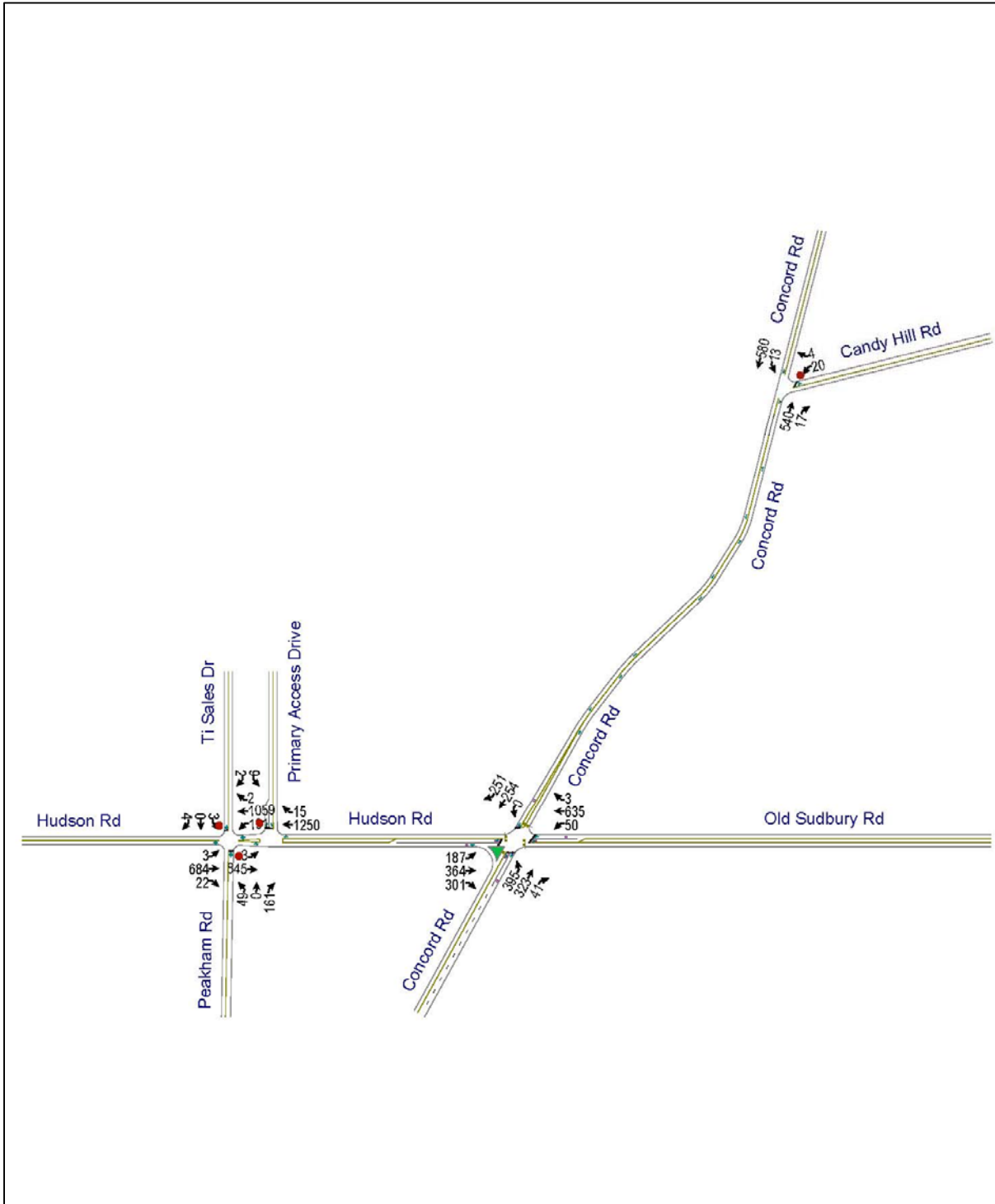
“Approved Townhouse Project” Trip Generation: Table 6.4-1

	Vehicle Trip Ends for Single-Family Detached Housing (210)	Vehicle Trip Ends for Multifamily Housing (Low-Rise) (220)	Vehicle Trip Ends for Total Project
	<u>12 Dwelling Units</u>	<u>18 Dwelling Units</u>	<u>30 Dwelling Units</u>
Weekday 24-Hour Total			
Enter	74	66	140
Exit	74	66	140
Total	148	132	280
Weekday AM Peak Hour			
Enter	4	2	6
Exit	10	8	18
Total	14	10	24
Weekday PM Peak Hour			
Enter	9	9	18
Exit	5	5	10
Total	14	14	28

Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, September 2017 © 2017



“Approved Townhouse Project” 2025 Build Weekday AM Peak Hour Traffic Volumes: Figure 6.4-2



“Approved Townhouse Project” 2025 Build Weekday PM Peak Hour Traffic Volumes: Figure 6.4-3



6.4.2. “SUBMITTED PROJECT” 2025 BUILD TRAFFIC VOLUMES

The “Submitted Project” provides 36 townhouses in 5 buildings and 214 flats in 5 mid-rise multifamily buildings. In accordance with the current edition of the ITE Trip Generation Manual, trips generated by the townhouses are forecast using the Multifamily Housing (Low-Rise) (ITE Land Use: 220) category and trips generated by the flats are forecast using the Multifamily Housing (Mid-Rise) (ITE Land Use: 221) category.

As shown in Table 6.4-2, the “Submitted Project” is forecast to generate 1429 vehicle trips per day (715 entering/714 exiting). The “Approved Townhouse Project” will generate 92 vehicle trips during the Weekday AM Peak Hour (23 entering/69 exiting) and will generate 117 vehicle trips during the Weekday PM Peak Hour (72 entering/45 exiting).

The trip generation forecast provided below is lower than the trip generation forecast provided in the “Submitted TIAS.”

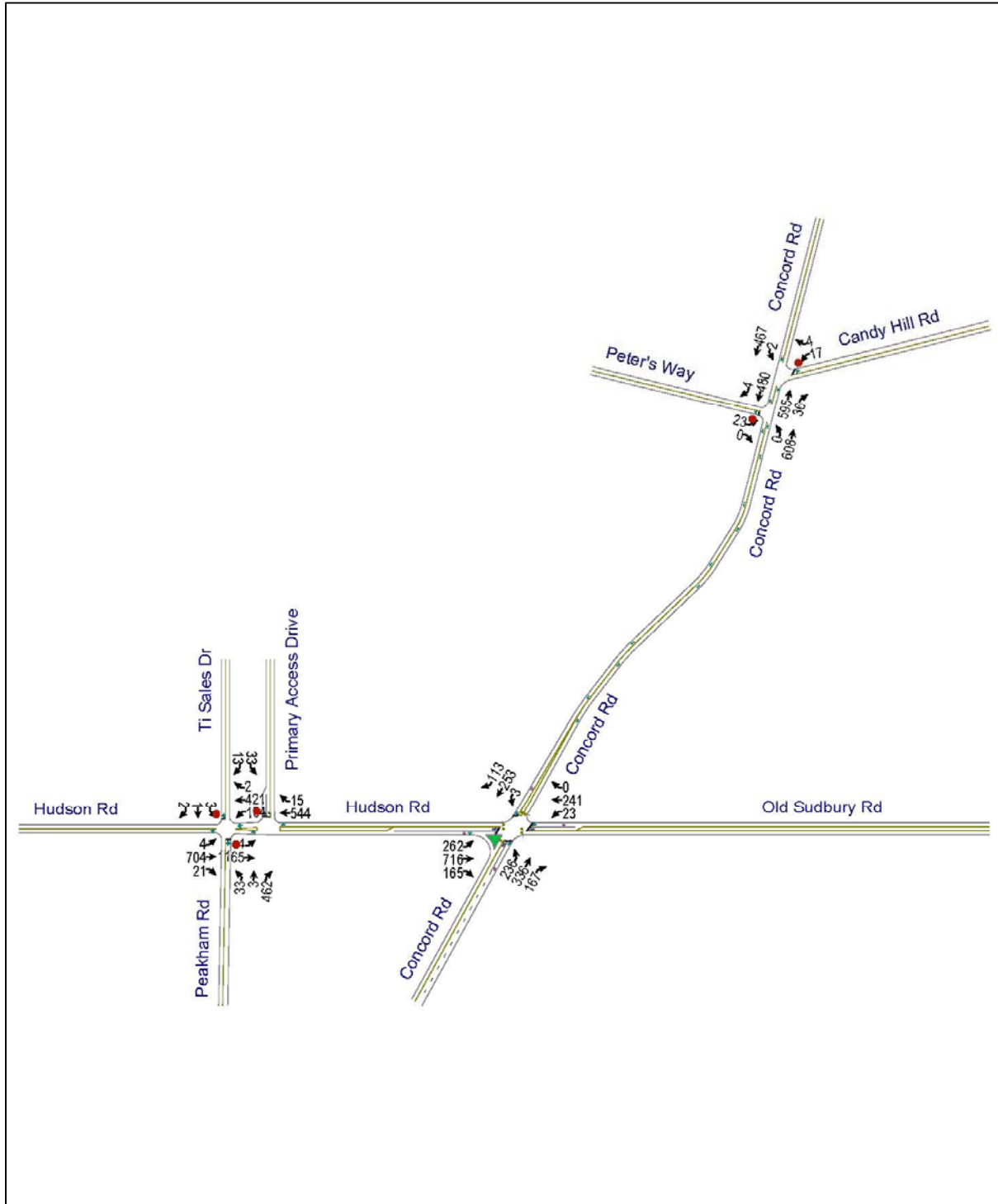
“Submitted Project” Trip Generation: Table 6.4-2

	Vehicle Trip Ends for Multifamily Housing (Low-Rise) (220) <u>36 Dwelling Units</u>	Vehicle Trip Ends for Multifamily Housing (Mid-Rise) (221) <u>214 Dwelling Units</u>	Vehicle Trip Ends for Total Project <u>250 Dwelling Units</u>
Weekday 24-Hour Total			
Enter 50%	132	583	715
Exit 50%	132	582	714
Total	264	1165	1429
Weekday AM Peak Hour			
Enter 50%	4	19	23
Exit 50%	15	54	69
Total	19	73	92
Weekday PM Peak Hour			
Enter 50%	16	56	72
Exit 50%	9	36	45
Total	25	92	117

Source: Institute of Transportation Engineers, Trip Generation Manual, 10th Edition, September 2017 © 2017



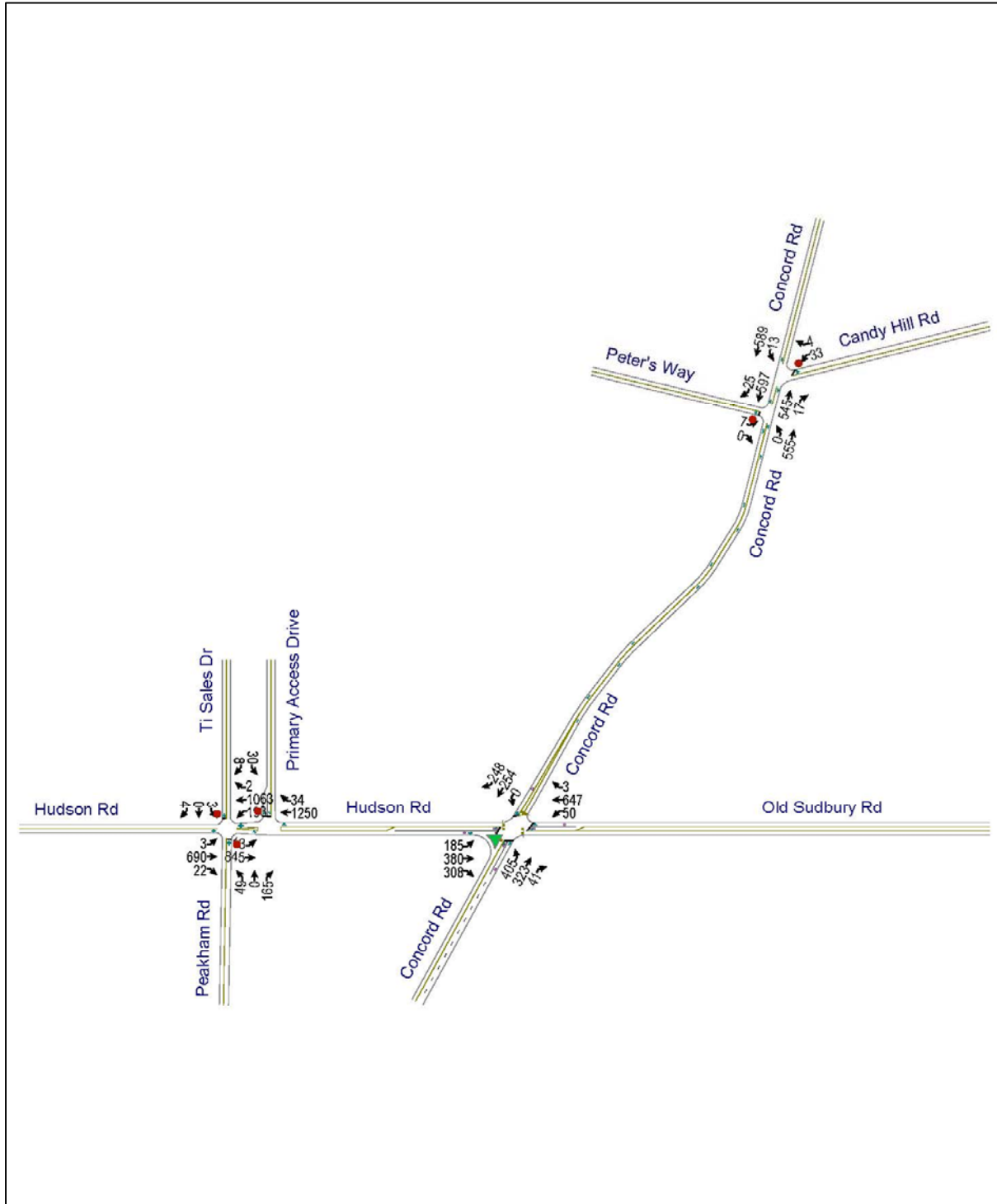
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"Submitted Project" 2025 Build Weekday AM Peak Hour Traffic Volumes: Figure 6.4-4



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“Submitted Project” 2025 Build Weekday PM Peak Hour Traffic Volumes: Figure 6.4-5



6.4.3. PLANNED AND FUNDED TRANSPORTATION IMPROVEMENTS

The Town completed reconstruction of the Hudson Road/Concord Road/Old Sudbury Road Intersection. No other transportation improvement projects are pending within the Transportation Study Area or directly affecting operations within the TSA.

6.5. 2025 OPERATIONS ANALYSIS

Intersection operations are described in terms of level-of-service which range from A to F. The level-of-service criteria for unsignalized intersections are different than those for a signalized intersection primarily because drivers expect different levels of performance at signalized and unsignalized intersections.

Level of service for signalized intersections is defined in terms of control delay for the total intersection. LOS criteria for traffic signals are stated in term of the average control delay per vehicle. Levels-of-service range from A to F and are defined to represent reasonable ranges in control delay which are shown in Table 5.6-1.

Level of service for an unsignalized two-way stop-controlled intersection is determined by the computed or measured control delay and is defined for each minor movement. LOS is not defined for the intersection as a whole. LOS criteria for unsignalized TWSC intersections are shown in Table 5.6--2.

As shown in Table 6.5-1 with the 2025 No-Build Traffic Volumes, the signalized Hudson Road/Concord Road/Old Sudbury Road Intersection operates with unacceptable delays for the overall intersection during the weekday AM peak hour ($v/c = 2.66$, LOS F, $D=791$ sec.).⁴ The intersection is also characterized by unacceptable delays for the overall intersection during the weekday PM peak hour ($v/c = 1.29$, LOS F, $D=136$ sec.).

As shown in Table 6.5-3 with the 2025 No-Build Traffic Volumes, the unsignalized Peckham Road/Hudson Road Intersection operates with unacceptable delays based on the minor approach (Peckham Road northbound) during the weekday AM peak hour ($v/c = 2.66$, LOS F, $D=791$ sec.). The intersection also operates with unacceptable delays based on the minor approach during the weekday PM peak hour ($v/c = 9.91$, LOS F, $D=4300$ sec.).

With the 2025 No-Build Traffic Volumes, the unsignalized Concord Road/Candy Hill Road Intersection operates at level-of-service D based on the minor approach (Candy Hill Road eastbound) during the weekday AM peak hour ($v/c = 0.191$, LOS D, $D=26$ sec.). The intersection also operates at level-of-service D based on the minor approach during the weekday PM peak hour ($v/c = 0.160$, LOS D, $D=23$ sec.).

⁴ v/c is the volume to capacity ratio, LOS is the level-of-service, D is the control delay



As shown in Table 6.5-1 with the “Approved Townhouse Project” 2025 Build Traffic Volumes, the signalized Hudson Road/Concord Road/Old Sudbury Road Intersection operates with unacceptable delays for the overall intersection during the weekday AM peak hour (v/c = 1.31, LOS F, D=113 sec.).⁵ The intersection is also characterized by unacceptable delays for the overall intersection during the weekday PM peak hour (v/c = 1.34, LOS F, D=151 sec.).

“Approved Townhouse Project” Signalized Intersection Operations: Table 6.5-1

	2018 Existing			2025 No-Build			2025 Build “Approved Townhouse Plan”		
Hudson Road/Concord Road/Old Sudbury Road Intersection									
Weekday AM Peak Hour									
Approach	v/c ¹	Delay ²	LOS ³	v/c	Delay	LOS	v/c	Delay	LOS
Eastbound		60.9	E		123.7	F		102.7	F
Westbound		30.6	C		37.6	D		34.3	C
Northbound		109.8	F		79.7	E		140.5	F
Southbound		70.4	E		102.4	F		143.9	F
Overall Intersection	1.14	73.7	E	1.19	98.7	F	1.31	113.4	F
Weekday PM Peak Hour									
Approach	v/c ¹	Delay ²	LOS ³	v/c	Delay	LOS	v/c	Delay	LOS
Eastbound		64.4	E		83.2	F		126.9	F
Westbound		117.6	F		139.2	F		200.7	F
Northbound		67.3	E		146.2	F		134.3	F
Southbound		158.5	F		202.3	F		135.9	F
Overall Intersection	1.07	96.4	F	1.29	136.1	F	1.34	150.6	F

1. Volume to capacity ratio.
2. Control delay in seconds.
3. Level-of-service.

⁵ v/c is the volume to capacity ratio, LOS is the level-of-service, D is the control delay



“Submitted Project” Signalized Intersection Operations: Table 6.5-2

	2018 Existing			2025 No-Build			2025 Build “Submitted Project”		
Hudson Road/Concord Road/Old Sudbury Road Intersection									
Weekday AM Peak Hour									
Approach	v/c ¹	Delay ²	LOS ³	v/c	Delay	LOS	v/c	Delay	LOS
Eastbound		60.9	E		123.7	F		113.5	F
Westbound		30.6	C		37.6	D		34.1	C
Northbound		109.8	F		79.7	E		140.5	F
Southbound		70.4	E		102.4	F		143.9	F
Overall Intersection	1.14	73.7	E	1.19	98.7	F	1.33	118.2	F
Weekday PM Peak Hour									
Approach	v/c ¹	Delay ²	LOS ³	v/c	Delay	LOS	v/c	Delay	LOS
Eastbound		64.4	E		83.2	F		136.7	F
Westbound		117.6	F		139.2	F		134.2	F
Northbound		67.3	E		146.2	F		182.6	F
Southbound		158.5	F		202.3	F		202.3	F
Overall Intersection	1.07	96.4	F	1.29	136.1	F	1.54	159.2	F

1. Volume to capacity ratio.
2. Control delay in seconds.
3. Level-of-service.

As shown in Table 6.5-3 with the “Approved Townhouse Project” 2025 Build Traffic Volumes, the unsignalized Peckham Road/Hudson Road Intersection operates with unacceptable delays based on the minor approach (Peckham Road northbound) during the weekday AM peak hour (v/c = 2.66, LOS F, D=\$791 sec.). The intersection also operates with unacceptable delays based on the minor approach during the weekday PM peak hour (v/c = 9.95, LOS F, D=4321 sec.).



“Approved Townhouse Project” Unsignalized Intersection Operations: Table 6.5-3

	2018 Existing			2025 No-Build			2025 Build 30 Unit “Approved Townhouse Project”		
	v/c ¹	Delay ²	LOS ³	v/c	Delay	LOS	v/c	Delay	LOS
Peakham Road/Hudson Road Intersection									
Weekday AM Peak Hour									
Eastbound L	0.007	8.2	A	0.007	8.3	A	0.007	8.3	A
Westbound L	0.224	10.7	B	0.269	11.6	B	0.271	11.6	B
Northbound Ln1	1.95	\$469	F	2.66	\$791	F	2.659	\$791	F
Weekday PM Peak Hour									
Eastbound L	0.013	10.8	B	0.014	11.5	B	0.014	11.5	B
Westbound L	0.197	9.9	A	0.244	10.8	B	0.246	10.8	B
Northbound Ln1	3.565	\$1287	F	9.908	\$4300	F	9.953	\$4321	F
Southbound Ln1	0.757	\$370	F	1.987	\$1349	F	2.649	\$1900	F
Concord Road/Candy Hill Road Intersection									
Weekday AM Peak Hour									
Westbound Ln1	0.145	22.1	C	0.191	26.4	D	0.192	26.6	D
Southbound L	0.009	8.9	A	0.009	9.2	A	0.009	9.2	A
Weekday PM Peak Hour									
Westbound Ln1	0.117	18.2	C	0.160	22.7	C	0.161	22.8	C
Southbound L	0.018	8.4	A	0.022	8.7	A	0.022	8.7	A
Primary Site Drive/Hudson Road Intersection									
Weekday AM Peak Hour									
Eastbound L	-	-	-	-	-	-	0.001	8.7	A
Southbound Ln1	-	-	-	-	-	-	0.210	53.7	F
Weekday PM Peak Hour									
Eastbound L	-	-	-	-	-	-	0.007	12.3	B
Southbound Ln1	-	-	-	-	-	-	0.244	100.7	F

1. Volume to capacity ratio.
2. Control delay in seconds.
3. Level-of-service.



“Submitted Project” Unsignalized Intersection Operations: Table 6.5-4

	2018 Existing			2025 No-Build			2025 Build “Submitted Project”		
	v/c ¹	Delay ²	LOS ³	v/c	Delay	LOS	v/c	Delay	LOS
Peakham Road/Hudson Road Intersection									
Weekday AM Peak Hour									
Eastbound L	0.007	8.2	A	0.007	8.3	A	0.007	8.3	A
Westbound L	0.224	10.7	B	0.269	11.6	B	0.271	11.6	B
Northbound Ln1	1.95	\$469	F	2.66	\$791	F	2.659	\$791	F
Weekday PM Peak Hour									
Eastbound L	0.013	10.8	B	0.014	11.5	B	0.014	11.5	B
Westbound L	0.197	9.9	A	0.244	10.8	B	0.250	10.9	B
Northbound Ln1	3.565	\$1287	F	9.908	\$4300	F	11.459	\$5034	F
Southbound Ln1	0.757	\$370	F	1.987	\$1349	F	2.649	\$1900	F
Concord Road/Candy Hill Road Intersection									
Weekday AM Peak Hour									
Westbound Ln1	0.145	22.1	C	0.191	26.4	D	0.192	26.6	D
Southbound L	0.009	8.9	A	0.009	9.2	A	0.009	9.2	A
Weekday PM Peak Hour									
Westbound Ln1	0.117	18.2	C	0.160	22.7	C	0.262	27.7	D
Southbound L	0.018	8.4	A	0.022	8.7	A	0.022	8.7	A
Primary Site Drive/Hudson Road Intersection									
Weekday AM Peak Hour									
Eastbound L	-	-	-	-	-	-	0.004	8.7	A
Southbound Ln1	-	-	-	-	-	-	0.490	70.3	F
Weekday PM Peak Hour									
Eastbound L	-	-	-	-	-	-	0.029	12.6	B
Southbound Ln1	-	-	-	-	-	-	0.879	230.5	F
Peter’s Way and Concord Road Intersection									
Weekday AM Peak Hour									
Eastbound Ln1	-	-	-	-	-	-	0.120	24.6	C
Weekday PM Peak Hour									
Eastbound Ln1	-	-	-	-	-	-	0.017	12.9	B

1. Volume to capacity ratio.
2. Control delay in seconds.
3. Level-of-service.



With the “Approved Townhouse Project” 2025 Build Traffic Volumes, the unsignalized Concord Road/Candy Hill Road Intersection operates at level-of-service D based on the minor approach (Candy Hill Road eastbound) during the weekday AM peak hour ($v/c = 0.192$, LOS D, $D=27$ sec.). The intersection operates at level-of-service C based on the minor approach during the weekday PM peak hour ($v/c = 0.161$, LOS C, $D=23$ sec.).

With the “Approved Townhouse Project” 2025 Build Traffic Volumes, the unsignalized Primary Site Drive/Hudson Road Intersection operates with unacceptable delays based on the minor approach (Primary Access Drive southbound) during the weekday AM peak hour ($v/c = 0.210$, LOS f, $D=54$ sec.). The intersection operates at level-of-service C based on the minor approach during the weekday PM peak hour ($v/c = 0.244$, LOS f, $D=101$ sec.).

As shown in Table 6.5-2 with the “Submitted Project” 2025 Build Traffic Volumes, the signalized Hudson Road/Concord Road/Old Sudbury Road Intersection operates with unacceptable delays for the overall intersection during the weekday AM peak hour ($v/c = 1.33$, LOS F, $D=118$ sec.).⁶ The intersection is also characterized by unacceptable delays for the overall intersection during the weekday PM peak hour ($v/c = 1.54$, LOS F, $D=159$ sec.).

As shown in Table 6.5-4 with the “Submitted Project” 2025 Build Traffic Volumes, the unsignalized Peckham Road/Hudson Road Intersection operates with unacceptable delays based on the minor approach (Peckham Road northbound) during the weekday AM peak hour ($v/c = 2.66$, LOS F, $D=5791$ sec.). The intersection also operates with unacceptable delays based on the minor approach during the weekday PM peak hour ($v/c = 11.46$, LOS F, $D=5034$ sec.).

With the “Submitted Project” 2025 Build Traffic Volumes, the unsignalized Concord Road/Candy Hill Road Intersection operates at level-of-service D based on the minor approach (Candy Hill Road eastbound) during the weekday AM peak hour ($v/c = 0.192$, LOS D, $D=27$ sec.). The intersection operates at level-of-service C based on the minor approach during the weekday PM peak hour ($v/c = 0.262$, LOS C, $D=28$ sec.).

With the “Submitted Project” 2025 Build Traffic Volumes, the unsignalized Primary Site Drive/Hudson Road Intersection operates with unacceptable delays based on the minor approach (Primary Access Drive southbound) during the weekday AM peak hour ($v/c = 0.192$, LOS F, $D=231$ sec.). The intersection operates at level-of-service C based on the minor approach during the weekday PM peak hour ($v/c = 0.879$, LOS F, $D=101$ sec.).

With the “Submitted Project” 2025 Build Traffic Volumes, the unsignalized Peter’s Way and Concord Road Intersection operates at level-of-service C based on the minor approach (Peter’s Way eastbound) during the weekday AM peak hour ($v/c = 0.120$, LOS C, $D=25$ sec.). The

⁶ v/c is the volume to capacity ratio, LOS is the level-of-service, D is the control delay



intersection operates at level-of-service B based on the minor approach during the weekday PM peak hour ($v/c = 0.017$, LOS B, $D=13$ sec.).

The “Submitted Project” as used in this TIA and the “Proposed Project” as used in the “Submitted TIAS” are the same project. However, there are significant differences in intersection operations between the “Submitted TIAS” and the above analysis. With respect to the signalized Hudson Road/Concord Road/Old Sudbury Road Intersection with the 2025 Build AM peak hour traffic volumes, intersection operations as set forth above are unacceptable ($v/c = 1.33$, LOS F, $D=118.2$ sec.) whereas the “Submitted TIAS” found that intersection operations are acceptable ($v/c = 0.93$, LOS F, $D=34$ sec.). With the 2025 Build AM peak hour traffic volumes, the intersection operations remain unacceptable as set forth above ($v/c = 1.54$, LOS F, $D=159.2$ sec.) whereas the “Submitted TIAS” found that intersection operations are acceptable ($v/c > 1$, LOS D, $D=54$ sec.). Significant differences also exist at unsignalized intersection locations as set forth below vs the analysis provided in the “Submitted TIAS”. These differences can be attributed to the updated methodology described in Section 2.3

6.6. 2025 QUEUE LENGTH ANALYSIS

6.6.1. HUDSON ROAD/CONCORD ROAD/OLD SUDBURY ROAD INTERSECTION

Queuing is analyzed with the morning and evening (AM/PM) peak hour volumes for the 2018 Existing conditions (2018 EX), the 2025 No-Build conditions (2025 No-Build), and for the 2025 “Approved Townhouse Project” and the 2025 “Submitted Project” conditions (both 2025 Build) volumes abbreviated as (AM/PM) (2018 EX/2025 No-BLD/BOTH 2025 BLD).

The eastbound approach to the Hudson Road/Concord Road/Old Sudbury Road Intersection has a left-turn lane, 1 through lane, and a channelized free-right lane. The left-turn lane has 325 ft. of available storage. The available storage for the through lane is limited by the separation to the Peckham Road/Hudson Road Intersection to the west. Queues longer than 750 feet will block the Peckham Road/Hudson Road Intersection.

The 325 ft. of available storage for the eastbound left-turn lane is not sufficient for the 95th percentile queues for the PM peak hour 2025 No-Build and both 2025 Build volumes. The eastbound left-turn volume on Hudson Road exceeds capacity during the PM peak hour for the 50th percentile volumes for both Build conditions and for the 95th percentile volumes for all analyzed PM volumes and queue length cannot accurately be modeled using the Highway Capacity Manual methods and actual queues may be longer.

The 750 ft. of available storage for the eastbound through lane is not sufficient for the 50th percentile queues for the AM peak hour 2025 No-Build and both 2025 Build volumes. Available storage is not sufficient for the 95th percentile queues for the AM and PM peak hours for all



analyzed volumes. When queues exceed 750 ft. the Peckham Road/Hudson Road Intersection is blocked.

The 130 ft. of available storage for the westbound left lane is sufficient for the 50th percentile queues and the 95th percentile queues for all analyzed traffic volumes. The 1,500+ ft. of available storage for the westbound through/right lane is sufficient for the 50th percentile queues and the 95th percentile queues for all analyzed traffic volumes. The longest queues of over 1000 feet form with the PM 2025 build volumes. The westbound through volume on Hudson Road exceeds capacity during the PM peak hour for the 50th percentile volumes and the 95th percentile volumes for the 2025 No-Build condition and for both Build conditions and queue length cannot accurately be modeled using the Highway Capacity Manual methods and actual queues may be longer.

The 375 ft. of available storage for the northbound left lane is not sufficient for the 50th percentile queues for the PM peak hour 2025 No-Build and both 2025 Build volumes. Available storage is not sufficient for the 95th percentile queues for the AM and PM peak hours for all analyzed volumes. The northbound left volume on Concord Road exceeds capacity during the AM and PM peak hours for the 50th percentile volumes and the 95th percentile volumes for all analyzed volumes and queue length cannot accurately be modeled using the Highway Capacity Manual methods and actual queues may be longer.

The 1,500+ ft. of available storage for the northbound through/right lane is sufficient for the 50th percentile queues and the 95th percentile queues for all analyzed traffic volumes. The northbound through/right volume on Concord Road exceeds capacity during the AM peak hour for the 95th percentile volumes for all analyzed conditions and queue length cannot accurately be modeled using the Highway Capacity Manual methods and actual queues may be longer.

For the southbound approach to the Hudson Road/Concord Road/Old Sudbury Road Intersection, 1350 feet of storage is available. The available storage length is determined by the queue length causing blockage of the proposed Peter's Way and Concord Road Intersection. For the southbound approach to the Hudson Road/Concord Road/Old Sudbury Road Intersection, the approach volume exceeds capacity for the 50th percentile volumes for the PM peak hour for all conditions and the AM peak hour for both Build conditions and for the 95th percentile volumes for all conditions analyzed and queue length cannot accurately be modeled using the Highway Capacity Manual methods and actual queues may be longer. Due to the limitations of the methodology, we turn to field observation to accurately quantify queue length. The calculated lengths are significantly shorter than the observed queue lengths. These longer queue lengths are consistent with the experience of Sudbury officials where the delay at the Hudson Road/Concord Road/Old Sudbury Road Intersection, regularly results in queues blocking the Peter's Way.



Hudson Road/Concord Road/Old Sudbury Road Intersection Vehicle Queues: Table 6.6-1

Lane Group	EBL	EBT	WBL	WBT/R	NBL	NBT/R	SBLTR
Available Storage Length (ft.)	325	750	130	1500	375	1500	1350
2018 Existing AM Peak Hour							
Queue Length 50th (ft.)	129	~749	11	138	~210	413	341
Queue Length 95th (ft.)	208	#1293⊗	26	255	#434⊗	#762	#641
2018 Existing PM Peak Hour							
Queue Length 50th (ft.)	93	494	33	~677	277	204	~477
Queue Length 95th (ft.)	#268	#916⊗	53	#915	#607⊗	367	#814
2025 No-Build AM Peak Hour							
Queue Length 50th (ft.)	149	~957⊗	12	162	174	480	160
Queue Length 95th (ft.)	233	#1474⊗	28	299	#328	#875	255
2025 No-Build PM Peak Hour							
Queue Length 50th (ft.)	115	566	34	~783	~428⊗	241	~571
Queue Length 95th (ft.)	#334⊗	#1037⊗	56	#1029	#768⊗	428	#928
"Approved Townhouse Project" 2025 AM Peak Hour							
Queue Length 50th (ft.)	154	~997⊗	13	167	~259	472	~455
Queue Length 95th (ft.)	239	#1518⊗	28	312	#496⊗	#862	#786
"Approved Townhouse Project" 2025 PM Peak Hour							
Queue Length 50th (ft.)	~127	~676	38	~863	~422⊗	218	~519
Queue Length 95th (ft.)	#350⊗	#1124⊗	60	#1108	#765⊗	397	#877
"Submitted Project" 2025 AM Peak Hour							
Queue Length 50th (ft.)	152	~1045⊗	13	173	~265	472	~451
Queue Length 95th (ft.)	236	#1574⊗	28	316	#506⊗	#862	#782
"Submitted Project" 2025 PM Peak Hour							
Queue Length 50th (ft.)	~228	~617	34	~802	~501⊗	241	~571
Queue Length 95th (ft.)	#367⊗	#1107⊗	56	#1048	#807⊗	428	#928

Eastbound left (EBL), eastbound through (EBT), westbound left (WBL), westbound through/right (WBT/R), northbound left (NBL), northbound through/right (NBT/R), southbound left through right (SBLTR).

⊗ Deficient storage.

~ Volume exceeds capacity, queue is theoretically infinite.

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



Our consultant, Accurate Counts, monitored vehicle queues at Peter's Way during peak hours on May 24, 2018. The southbound queues were observed to block access to Peter's Way from 4:00 PM to 4:35 PM, from 4:37 PM to 5:10 PM, and from 5:13 PM to 6:00 PM. Except for approximately 5 minutes out of the entire two-hour evening peak traffic period, the southbound queues on Concord Road blocked access to Peter's Way, Peter's Way was unblocked by only 5 minutes.

6.6.2. PECKHAM ROAD/HUDSON ROAD INTERSECTION

There is 1,500+ ft. of available storage for the northbound approach. The approach is characterized by severe delays and queues are very long. For the AM peak hour, 95th percentile queues range from 39.4 vehicles for the 2018 Existing condition to 53.6 vehicles for the "Submitted Project" 2025 Build condition. For the PM peak hour, 95th percentile queues range from 24.4 vehicles for the 2018 Existing condition to 33.1 vehicles for the "Submitted Project" 2025 Build condition.

6.6.3. OTHER INTERSECTIONS

Queues at the Concord Road/Candy Hill Road Intersection are 1 vehicle or less for all analyzed traffic volumes.

Southbound queues at the Primary Site Drive/Hudson Road Intersection are less than one vehicle with the AM and PM peak hour "Approved Townhouse Project" 2025 Build volumes. Southbound queues at the Primary Site Drive/Hudson Road Intersection are 2.2 vehicles with the AM peak hour "Submitted Project" 2025 Build volumes and 3.6 vehicles with the PM peak hour "Submitted Project" 2025 Build volumes.

Westbound queues at the Peter's Way and Concord Road Intersection are less than 0.5 vehicle with the AM and PM peak hour "Submitted Project" 2025 Build volumes.

6.7. ACCESS MANAGEMENT AND CIRCULATION ANALYSIS

6.7.1. "APPROVED TOWNHOUSE PROJECT" ACCESS AND CIRCULATION

The "Approved Townhouse Project" is served by a 665 foot long Primary Access Drive that intersects with Hudson Road between Peckham Road and the Gilmartin residence. To ensure safe and convenient access, this access drive complies with the requirements for a street as set forth in the "Planning Board Town of Sudbury, Massachusetts Rules and Regulations Governing the Subdivision of Land, 9/10/1973 last revised 6/18/2014" (Rules & Regulations). The Primary Access Drive has a 24 foot wide pavement terminating in a 100 foot diameter cul-de-sac capable of turning an AASHTO Bus 40 template that is used to model turns by fire apparatus.



The cul-de-sac also provides ample room to accommodate turns by service and delivery vehicles.

The relatively small volume of trips generated by the “Approved Townhouse Project”, allows the Primary Access Drive to have a single approach lane to Hudson Road. With a narrower break in the sidewalk, the “Approved Townhouse Project” provides better pedestrian safety in an area with numerous vehicle conflicts caused by the close spacing of the Concord Road/Candy Hill Road Intersection and the Primary Site Drive/Hudson Road Intersection as well as large commercial driveways. Vehicle, pedestrian, and bicycle conflicts will increase upon completion of the Bruce Freeman Rail Trail which crosses through the intersection.

As each townhouse unit has two dedicated parking spaces, there is no need to circulate on-site searching for an available parking space. The townhouses are all located within 500 feet of each other and there should be no need for automobile use for interactions between project residents.

Each unit is provided with two parking spaces which should typically be sufficient for residents. Occasional visitor and service parking can be accommodated along the Primary Access Drive. Parking would be limited to one side of the Primary Access Drive to ensure unimpeded emergency vehicle access and to provide room for snow storage along the edge of pavement.

6.7.2. “SUBMITTED PROJECT” ACCESS AND CIRCULATION

The “Submitted Project” has two entrances, one is located on Hudson Road, just east of the Peakham Road intersection. The other entrance is located on Concord where the existing unpaved Peters Way will be constructed and extended to serve as an entrance to the Project Site.

As a principal entrance to a significant residential project, Peter’s Way should be constructed in conformance with the requirements of the “Planning Board Town of Sudbury, Massachusetts Rules and Regulations Governing the Subdivision of Land, 9/10/1973 last revised 6/18/2014” (Rules & Regulations).

With respect to horizontal alignment, the Rules & Regulations require a minimum radius of 150 feet whereas Peters Way Extension provides a horizontal curve with a radius of approximately 70 feet. This would be a hazard for general traffic and particularly for emergency vehicles traveling at increased speed.

Safety concerns regarding this segment of Concord Road led the Zoning Board of Appeals to preclude use of Peter’s Way as a project entrance. In fact, a vehicle crash resulting in a fatality was reported at the Concord Road/Candy Hill Road Intersection in 2016.



Maintaining a minimum safe separation distance between the centerlines of vehicular facilities is a key to satisfy operational and safety concern. A basic tenet of safe roadway design is simplifying the driving function by isolating driver decisions. An intersection represents a location where multiple driver decisions are required. Accordingly a driver should completely clear an intersection before encountering another intersection requiring multiple driver decisions. This can be achieved by maintaining spacing between intersection of no less than the stopping sight distance for a particular segment of roadway based upon the greater of the posted speed or the 85th percentile speed of roadway traffic. For Concord Road at the proposed site driveway, the 85th percentile speed of roadway traffic governs.

Vehicle speed was measured by Automatic Traffic Recorder on May 24, 2018 on Concord Road. The 85th percentile speed of northbound traffic on Concord Road south of Peter's Way Extension is 37 miles per hour (mph) which is higher than the 85th percentile speed of southbound traffic (35 mph). The required stopping sight distance (SSD) for 37 miles per hour is 267 feet. Therefore the centerline of Peters Way Extension should be separated from the centerline of Candy Hill Road by a minimum of 267 feet. The centerline of Peters Way Extension is separated from the centerline of Candy Hill Road by approximately 120 ft. Therefore drivers cannot process conflicts at the Candy Hill Road intersection and conflicts at the Peters Way Extension intersection separately. The resulting complexity of driver decision making raises safety concerns.

Vehicle queues at the Hudson Road/Concord Road/Old Sudbury Road Intersection regularly extend north on Concord Road through the Peter's Way and Candy Hill Road intersections. On May 24, 2018 when updated traffic counts were taken, our consultant, Accurate Counts, monitored vehicle queues at the location of the Peter's Way and Concord Road Intersection during peak hours. During the PM Peak Hour, southbound vehicle queues blocked access to Peter's Way during the majority of the evening peak traffic period from 4:00 PM to 4:35 PM, from 4:37 PM to 5:10 PM, and from 5:13 PM to 6:00 PM. During the entire two-hour evening peak traffic period, Peter's Way was blocked by queued vehicles for all but approximately 5 minutes. Not only is access to the Project Site impaired, but northbound vehicles unable to turn left into Peter's Way will block northbound through traffic on Concord Road.

The vehicle queues that extend across the Peter's Way and Concord Road Intersection not only block access and cause delay to project generated traffic and through traffic, they also obstruct sight distance giving rise to safety concerns. In particular, vehicles exiting the site turning left have sight distance to the right restricted by the queued vehicles to the right. The extent of the sight distance restriction varies with vehicle headway, the height of eye of driver of the exiting vehicle, and the size and height of the nearest vehicles in queue. Vehicles exiting the site and turning left should have intersection sight distance (ISD) of 408 feet (Case B1 left turn from stop on minor road). With impaired sight distance, a vehicle proceeding into the northbound travel lane risks a vehicle crash.



The vehicle queues that extend across the Peter's Way and Concord Road Intersection also obstruct sight distance for northbound through traffic on Concord Road. The northbound driver's view of vehicles exiting the site and turning left will be restricted and the northbound vehicle may not be able to stop in time. The extent of the sight distance restriction varies with the separation, size, and height of the vehicles in queue nearest to the vehicle exiting from Peter's Way. Northbound through (passenger) vehicles must have stopping sight distance (SSD) of 267 feet. With impaired sight distance, the northbound may be unable to stop in time to avoid a crash.

Locating a principal project entrance diagonally opposite Candy Hill Road results in trips generated by the "Submitted Project" using the Candy Hill Road, Plympton Road, and Water Row alternative route ("Alternative Route") to access points on Route 27 east of Water Row. Trips having origins and destinations accessed by Route 27 to the east represent a significant portion of the overall trips generated by the "Submitted Project." Project generated trips would only be assigned to this "Alternative Route" with the "Submitted Project". The "Approved Townhouse Project" does not have an entrance near Candy Hill Road and the "Alternative Route" does not minimize travel time for vehicles using the Primary Site Drive/Hudson Road Intersection.

Based on timed comparative travel runs during the morning and evening peak hours, travel time is minimized by using the "Alternative Route" to access Route 27 east for eastbound vehicles leaving the "Project Site" during morning peak travel times and for westbound vehicles entering the project Site during evening peak travel times. The roads along the "Alternative Route" are low speed rural country roads unsuited to accommodate though traffic. Candy Hill Road and Plympton Road in particular have segments where pavement widths are so narrow that it is necessary for opposing vehicles to slow, stop, and even pull off the pavement in order to pass. Impacting these rural roadways with significant volumes of traffic generated by the "Proposed Project" raises measurable safety concerns.

The Primary Site Drive/Hudson Road Intersection is also not suited to serve the trips generated by a 250 unit project. The Primary Site Drive/Hudson Road Intersection is also blocked by queues from the Hudson Road/Concord Road/Old Sudbury Road Intersection. Vehicles exiting the Project Site that turn left are blocked by queued vehicles. This in turn gives rise to the same sight distance restrictions caused by queued vehicles at Peter's Way and Concord Road Intersection. Similarly an eastbound vehicle turning left onto the Primary Access Drive will be unable to complete ties turn and eastbound through traffic on Hudson Road will be blocked.

If the Peter's Way and Concord Road Intersection is eliminated and the size of the project is not reduced, 250 residential units would be located on what is the equivalent of a "dead end street" some 1,650 feet in length. The Planning Board Rules & Regulations limit the length of



Dead End Street to 1,200 ft. serving and serving as the sole means of access for a much smaller number of dwellings.

The risk of a vehicle crash at the Primary Site Drive/Hudson Road Intersection which would potentially block or limit access to the Project Site is enhanced by the complexity of vehicle, bicycle, and pedestrian movements within the intersection and the numerous points of conflict which these movements create. All movements by all modes within the intersection are measurably limited by sight distance constraints imposed by vehicles queued within the intersection. The centerline of the Site Drive and the centerline of Peakham Road are offset by approximately 120 feet creating conflicts with turning vehicles. Additional bicycle trips will be introduced in the intersection with construction of the Bruce Freeman Rail Trail. Additionally the Ti Sales industrial driveway comprising one leg of the intersection that adds additional conflicting movements that include heavy trucks.

The probability of on-site vehicle crashes and resulting potential access drive blockages is enhanced by perpendicular parking on both sides of the site access drives contributes to potential on-site vehicle crashes.. This is particularly critical for the first 700 feet of the Primary Access Drive where it constitutes the sole means of accessing Hudson Road.

6.7.3. SIGHT DISTANCE AT PROJECT ACCESS DRIVES

Required stopping sight distance and intersection sight distance are calculated using the procedures of the American Association of State Highway and Transportation Officials (AASHTO) and are calculated based upon the 85th percentile travel speed and gap determined by vehicle type. Available stopping sight distance is field measured using a 3.5 foot high height of eye and a 2.0 foot high object. The height of object models the height of a vehicle bumper. Available intersection sight distance is field measured using a 3.5 foot high height of eye and a reciprocal 3.5 foot high object.

The eastbound 85th percentile speed on Hudson Road was measured as 31 miles per hour (mph) on May 24, 2008. Required stopping sight distance is calculated to be 206 feet. Available stopping sight distance (SSD) was measured to be 575 ft. and is sufficient.

The westbound 85th percentile speed on Hudson Road was measured as 32 miles per hour (mph). Required stopping sight distance is calculated to be 216 feet. Available stopping sight distance (SSD) was measured to be 225 ft. and is marginally sufficient.

Intersection sight distance for Case B1 left turn from stop on minor road is calculated as 342 ft. Available intersection sight distance was field measured as 550 ft. and is sufficient. Intersection sight distance for Case B2 right turn from stop on minor road is calculated as 306 ft. Available intersection sight distance was field measured as 225 ft. and is deficient. Deficient intersection



sight distance will cause vehicles on the through road to stop or slow to accommodate maneuvers by minor road vehicles and thus degrade operations for through traffic.

As described in Section 6.7.2, sight distance is regularly restricted during peak traffic periods at the Peter's Way and Concord Road Intersection due to the southbound queue of vehicles extending from the Hudson Road/Concord Road/Old Sudbury Road Intersection. Outside of peak periods when queues are shorter, required sight distance is determined by the travel speed of vehicles approaching on Concord Road.

The northbound 85th percentile speed on Concord Road was measured as 37 miles per hour (mph) on May 24, 2008. Required stopping sight distance is calculated to be 267 feet. Available stopping sight distance (SSD) was measured to be 480 ft. and is sufficient.

The southbound 85th percentile speed on Concord Road was measured as 35 miles per hour (mph). Required stopping sight distance is calculated to be 246 feet. Available stopping sight distance (SSD) was measured to be 600 ft. and is sufficient.

Intersection sight distance for Case B1 left turn from stop on minor road is calculated as 408 ft. Available intersection sight distance was field measured as 420 ft. and is marginally sufficient. Intersection sight distance for Case B2 right turn from stop on minor road is calculated as 334 ft. Available intersection sight distance was field measured as 600 ft. and is sufficient.

6.7.4. CUT-THROUGH TRAFFIC

Cut-through traffic concerns were raised during the Comprehensive Permit review process by the Board's peer review consultant Vanasse and Associates and were reviewed by Town public safety officials. A gate was considered to prevent cut through traffic. Turn restrictions were also considered but we understand were not acceptable to Town public safety officials. We are unaware as to whether traffic calming measures were evaluated. In any instance, there was no resolution of this issue nor can there be a resolution absent decisions from Town public safety officials. The Zoning Board of Appeals decision to eliminate the Peter's Way and Concord Road Intersection resolves the issue for the "Approved Townhouse Project". For the "Submitted Project", the issue remains unresolved.

It is unacceptable to have cut through traffic using the private driveway system for the "Submitted Project" given its design and geometric limitations. There is a sharp horizontal curve on Peter's Way Extension that would pose a hazard to through traffic. In addition, there is no system of dedicated access drives on the "Project Site." On-site vehicle access is provided by a connected series of parking areas where the parking lot aisles serve as defacto access drives. This system is not suitable to accommodate through traffic. In particular, all parking spaces within these parking areas are perpendicular to the parking lot aisle and every vehicle backing in or out of each parking space presents a point of conflict.



The route cutting through the site would attract substantial traffic during peak periods. The distance along the on-site system of drives and linked parking lot aisles is approximately 2,630 linear feet from the Peter's Way on Concord Road to the site entrance on Hudson Road. At an average speed of 20 miles per hour exclusive of delay at the site exit, cutting through the site takes approximately 1 minute 30 seconds. In comparison the travel time between these two site entrances along Concord Road southbound and Hudson Road westbound with the "Submitted Project" 2025 Build traffic volumes is approximately 2 minutes 45 seconds in the morning peak hour and 2 minutes 40 seconds in the evening peak hour. The reverse trip from the site entrance on Hudson Road to Peter's Way on Concord road would take approximately 1 minute 30 seconds cutting through the site vs approximately 2 minutes 30 seconds in the morning peak hour and 2 minutes 55 seconds in the evening peak hour along Hudson Road eastbound and Concord Road northbound.

6.8. PARKING

6.8.1. "APPROVED TOWNHOUSE PROJECT" PARKING

Each of the 30 townhouses will have a garage parking place and a driveway parking space totaling 60 parking spaces or 2 parking places per dwelling unit. The parking supply provided complies with the 2 parking spaces per dwelling unit required by the Zoning Bylaw.⁷

For the townhouses in duplex buildings, Institute of Transportation Engineers (ITE's) Single-Family Detached Housing Land Use Category (210) applies. ITE states that the average parking supply ratio is 2.0 parking spaces per dwelling unit for suburban (within urban growth boundary) Single-Family Detached Housing (210).⁸ ITE states the observed average peak period parking demand is 1.83 parked vehicles per dwelling unit. The parking supply provided for the "Approved Townhouse Project" is sufficient to accommodate this demand.

For the townhouses in triplex buildings, Institute of Transportation Engineers (ITE's) Low/Mid-Rise Apartment Land Use Category (221) applies. ITE states that the observed average peak period parking demand is 1.23 parked vehicles per dwelling unit.⁹ The parking supply provided for the "Approved Townhouse Project" is sufficient to accommodate this demand.

In addition to the 2 parking spaces provided for each townhouse, visitor parking is available along the Primary Access Drive. To ensure emergency vehicle access and to provide room for snow storage in windrows along the edge of pavement, parking will be restricted to one side of the Primary Access Drive. With parking restricted to one side, the Primary Access Drive provides approximately 30 visitor parking spaces.

⁷ Zoning Bylaw Article IX 2003, Table of Parking Requirements, p 16.

⁸ Institute of Transportation Engineers, Parking Generation (ITE), 4th Edition, Land Use Category 210.

⁹ Institute of Transportation Engineers, Parking Generation (ITE), 4th Edition, Land Use Category 221.



6.8.2. “SUBMITTED PROJECT” PARKING

The “Submitted Project” provides 256 garage parking spaces (including 10 accessible parking spaces) and 238 surface parking spaces (including 14 accessible parking spaces) for a total of 494 parking spaces or 1.98 parking spaces per dwelling unit. The parking supply provided falls just short of the 2 parking spaces per dwelling unit required by the Zoning Bylaw.¹⁰

For the townhouses in 7 and 8 unit buildings and all other proposed dwelling units, the Institute of Transportation Engineers (ITE’s) Low/Mid-Rise Apartment Land Use Category (221) applies. ITE states that the observed average peak period parking demand is 1.23 parked vehicles per dwelling unit.¹¹ The parking supply provided for the “Approved Townhouse Project” is sufficient to accommodate this demand.

The overall parking layout gives rise to safety concerns because there is no hierarchy separating through access drives from parking bays. Although the overall access drives extend some 1,500 feet from Hudson Road to the furthest dwelling unit and conversely the drives extend some 2,300 feet from Concord Road to the furthest dwelling unit, there are perpendicular parking spaces along some 1,100 feet of these access drives. Each of the over 200 perpendicular parking spaces creates a point of conflict as vehicles back in or back out of the perpendicular parking spaces into the path of higher speed through vehicles.

No information is provided concerning a parking management plan and parking pricing. There are no provisions for bicycle parking or for charging for electric vehicles.

6.9. MITIGATING MEASURES

6.9.1. “APPROVED TOWNHOUSE PROJECT” MITIGATION

Eliminating the need to construct the Peter’s Way and Concord Road Intersection and elimination of this intersection is in itself a key measure to minimize and mitigate traffic impacts for this alternative. The key concern of sight distance deficiencies caused by queued vehicles on Concord Road with vehicles using the Peter’s Way and Concord Road Intersection is resolved. The complex driver decision process caused by close spacing of the Peter’s Way and Candy Hill Road Intersections is eliminated with elimination of this site entrance. Assigning measurable new vehicle trips to Candy Hill Road, Plympton Road, and Water Row with their substandard pavement widths will not occur with the “Approved Townhouse Project” as the “Alternative Route” is not a viable alternative for vehicle trips using the Peckham Road/Hudson Road Intersection.

¹⁰ Zoning Bylaw Article IX 2003, Table of Parking Requirements, p 16.

¹¹ Institute of Transportation Engineers, Parking Generation (ITE), 4th Edition, Land Use Category 221.



The primary reason for the Zoning Board of Appeals limiting the number of dwelling units to 30 was to limit the length of the on-site dead end access drive. However, the reduction in dwelling units for the “Approved Townhouse Project” in comparison to the “Submitted Project” is highly effective minimizing and mitigating traffic impacts at all intersection locations in the Transportation Study Area.

6.9.2. “SUBMITTED PROJECT” MITIGATION

Traffic Impact mitigation for the “Submitted Project” is limited to installation of a flashing warning beacon at the Peckham Road/Hudson Road Intersection.

No measures are proposed to avoid or minimize or to mitigate impacts caused by use of the Peter’s Way and Concord Road Intersection in terms of sight distance restrictions caused by queued traffic and the resulting safety concerns caused by sight distance restriction

No measures are proposed to avoid or minimize or to mitigate impacts caused by use of the Peter’s Way and Concord Road Intersection in terms of queued vehicles blocking northbound left turns into the site and the resulting blockage of through traffic northbound.

No measures are proposed to avoid or minimize or to mitigate impacts caused by use of the Peter’s Way and Concord Road Intersection in terms of increasing the complexity of driver decisions relating to the closely spaced intersections of Peter’s Way and Candy Hill Road approximately 120 feet apart.

No measures are proposed to avoid or minimize or to mitigate impacts caused by use of the Peter’s Way and Concord Road Intersection in terms of attracting numerous new vehicle trips to the Candy Hill Road, Plympton Road, and Water Row alternative route with its inherent pavement section deficiencies and resulting impaired vehicle operations.

No measures are proposed to avoid or minimize or to mitigate impacts caused by use of the Primary Site Drive/Hudson Road Intersection in terms of sight distance restrictions caused by queued traffic and the resulting safety concerns caused by sight distance restriction.

No measures are proposed to avoid or minimize or to mitigate impacts caused by use of the Primary Site Drive/Hudson Road Intersection in terms of queued vehicles blocking eastbound left turns into the site and the resulting blockage of through traffic eastbound.

No measures are proposed to avoid or minimize or to mitigate impacts caused by use of the Primary Site Drive/Hudson Road Intersection in terms of increasing the complexity of driver decisions relating to the closely spaced intersections of the Primary Site Drive and Peckham Road approximately 120 feet apart.



No measures are proposed to avoid or minimize or to mitigate construction phase traffic impacts by an effective Transportation Demand Management Plan to reduce short term construction trips.

No measures are proposed to avoid or minimize or to mitigate permanent traffic impacts by an effective Transportation Demand Management Plan to reduce trips by residents following completion and occupancy of the "Proposed Project."

6.10. CONCLUSION

6.10.1. CONCLUSION FOR THE "APPROVED TOWNHOUSE PROJECT"

Eliminating the Peter's Way and Concord Road Intersection is highly effective in avoiding and minimizing traffic impacts related to sight distance impairment for exiting vehicles, blocking through traffic on Concord Road at Peter's Way, requiring complex driver decisions due to close intersection spacing, and adding significant volumes of project generated trips to Candy Hill Road, Plympton Road, and Water Row.

The reduced trip generation arising from a reduction in the number of dwelling units in comparison to the number of dwelling units proposed with the "Submitted Project" is effective in minimizing traffic impacts at all intersection locations in the Transportation Study Area.

6.10.2. CONCLUSION FOR THE "SUBMITTED PROJECT"

Use of Peter's Way and Concord Road Intersection as a principal site entrance results in safety concerns as vehicles exit the site and turn left when the minimum required sight distance is compromised by queued vehicles. Queuing of vehicles is expected to persist throughout much of the evening peak hours. During the PM Peak Hour, queued southbound vehicles are expected to block northbound vehicles seeking to turn left into the Project Site, resulting in blocking of northbound traffic. The magnitude of all the above impacts is increased by the number of trips generated by 250 dwelling units.

The Peter's Way and Concord Road Intersection is located only 120± ft. from the Concord Road/Candy Hill Road Intersection which increases the complexity of driver decisions as drivers must process potential conflicts at two intersections simultaneously. The magnitude of this impact is increased by the number of trips generated by 250 dwelling units.

With a principal site entrance located diagonally opposite Candy Hill Road, measurable numbers of project generated trips with origins or destinations accessed by Route 27 to the east must be assigned to Candy Hill Road, Plympton Road, and Water Row. Due to narrow pavement and lower design speed, these roads are ill suited to accommodate an influx of new trips.



The Primary Site Drive/Hudson Road Intersection also experiences sight distance restrictions caused by queued traffic. Queued westbound vehicles will also block eastbound left turns into the Project Site and potentially will also block eastbound through traffic. The magnitude of this impact is increased by the number of trips generated by 250 dwelling units.

The Primary Site Drive/Hudson Road Intersection is located only 120± ft. from the Peckham Road/Hudson Road Intersection which increases the complexity of driver decisions as drivers must process potential conflicts at two intersections simultaneously. The magnitude of this impact is increased by the number of trips generated by 250 dwelling units.

No construction phase Transportation Demand Management Plan to reduce short term impacts has been developed. No post construction Transportation Demand Management Plan to reduce impacts of the completed project has been developed.



APPENDICES

ATR Data: Appendix 1

TMC Data: Appendix 2

Crash Data: Appendix 3

MassDOT TDMS Count Data: Appendix 4

Trip Generation: Appendix 5

Traffic Assignment: Appendix 6

Synchro Analysis: Appendix 7

Sight Distance: Appendix 8

ATR DATA: APPENDIX 1

Accurate Counts

Location : Hudson Road
 Location : East of Peakham Road
 City/State: Sudbury, MA

978-664-2565

17001VL1

Start Time	5/24/2018 Thu	EB		Hour Totals		WB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		5	165			20	135				
12:15		7	154			16	143				
12:30		3	168			15	143				
12:45		2	133	17	620	15	137	66	558	83	1178
01:00		3	130			9	158				
01:15		8	170			5	142				
01:30		0	157			2	145				
01:45		2	149	13	606	6	184	22	629	35	1235
02:00		3	151			4	177				
02:15		3	195			3	168				
02:30		5	186			4	191				
02:45		2	181	13	713	4	185	15	721	28	1434
03:00		2	185			1	201				
03:15		3	180			1	191				
03:30		8	169			2	242				
03:45		5	155	18	689	2	236	6	870	24	1559
04:00		8	176			3	236				
04:15		10	173			7	267				
04:30		20	136			4	271				
04:45		21	183	59	668	7	261	21	1035	80	1703
05:00		54	164			5	193				
05:15		83	180			19	275				
05:30		132	172			23	253				
05:45		161	176	430	692	39	203	86	924	516	1616
06:00		217	152			43	287				
06:15		286	169			54	260				
06:30		277	164			50	244				
06:45		261	171	1041	656	76	215	223	1006	1264	1662
07:00		277	131			81	236				
07:15		256	124			75	203				
07:30		205	139			114	175				
07:45		244	121	982	515	87	161	357	775	1339	1290
08:00		219	83			84	167				
08:15		236	61			89	138				
08:30		182	79			109	138				
08:45		179	67	816	290	99	125	381	568	1197	858
09:00		203	52			119	106				
09:15		220	57			108	103				
09:30		258	53			106	91				
09:45		211	53	892	215	119	93	452	393	1344	608
10:00		181	24			121	77				
10:15		197	32			75	72				
10:30		179	16			99	52				
10:45		172	37	729	109	102	55	397	256	1126	365
11:00		132	10			118	45				
11:15		175	16			127	26				
11:30		170	11			135	16				
11:45		177	13	654	50	134	20	514	107	1168	157
Total		5664	5823			2540	7842			8204	13665
Percent		49.3%	50.7%			24.5%	75.5%			37.5%	62.5%
Grand Total		5664	5823			2540	7842			8204	13665
Percent		49.3%	50.7%			24.5%	75.5%			37.5%	62.5%

ADT ADT 21,869 AADT 21,869

Accurate Counts

978-664-2565

17001VL1

Location : Hudson Road
 Location : East of Peakham Road
 City/State: Sudbury, MA

Start Time	5/24/2018 Thu	EB	WB	Total
12:00 AM		17	66	83
01:00		13	22	35
02:00		13	15	28
03:00		18	6	24
04:00		59	21	80
05:00		430	86	516
06:00		1041	223	1264
07:00		982	357	1339
08:00		816	381	1197
09:00		892	452	1344
10:00		729	397	1126
11:00		654	514	1168
12:00 PM		620	558	1178
01:00		606	629	1235
02:00		713	721	1434
03:00		689	870	1559
04:00		668	1035	1703
05:00		692	924	1616
06:00		656	1006	1662
07:00		515	775	1290
08:00		290	568	858
09:00		215	393	608
10:00		109	256	365
11:00		50	107	157
Total		11487	10382	21869
Percent		52.5%	47.5%	
AM Peak	-	06:00	11:00	-
Vol.	-	1041	514	-
PM Peak	-	14:00	16:00	-
Vol.	-	713	1035	-
Grand Total		11487	10382	21869
Percent		52.5%	47.5%	
ADT		ADT 21,869	ADT 21,869	

Accurate Counts

978-664-2565

17001CL1

Location : Hudson Road
 Location : East of Peakham Road
 City/State: Sudbury, MA

EB

Start Time	MtrCyc	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/24/18	0	15	2	0	0	0	0	0	0	0	0	0	0	17
01:00	0	10	2	0	1	0	0	0	0	0	0	0	0	13
02:00	0	11	1	0	1	0	0	0	0	0	0	0	0	13
03:00	0	12	2	0	4	0	0	0	0	0	0	0	0	18
04:00	0	44	13	0	1	0	0	0	1	0	0	0	0	59
05:00	6	296	110	0	15	2	0	1	0	0	0	0	0	430
06:00	11	696	278	3	34	7	3	5	3	1	0	0	0	1041
07:00	30	568	336	9	23	6	0	6	2	2	0	0	0	982
08:00	17	476	274	10	28	5	1	5	0	0	0	0	0	816
09:00	22	520	305	4	27	4	2	7	0	0	0	0	1	892
10:00	14	457	220	3	27	4	1	1	2	0	0	0	0	729
11:00	6	438	175	3	19	8	1	1	2	1	0	0	0	654
12 PM	6	392	188	5	18	5	2	1	3	0	0	0	0	620
13:00	8	399	163	2	21	4	5	3	1	0	0	0	0	606
14:00	16	397	267	7	19	4	0	2	1	0	0	0	0	713
15:00	11	390	256	7	17	6	1	1	0	0	0	0	0	689
16:00	16	408	221	4	10	4	1	2	2	0	0	0	0	668
17:00	13	380	276	1	13	7	0	2	0	0	0	0	0	692
18:00	15	402	218	1	6	10	0	3	1	0	0	0	0	656
19:00	6	363	131	0	12	2	0	1	0	0	0	0	0	515
20:00	2	218	57	1	8	1	0	2	1	0	0	0	0	290
21:00	1	170	41	1	2	0	0	0	0	0	0	0	0	215
22:00	0	89	19	0	1	0	0	0	0	0	0	0	0	109
23:00	0	41	8	0	1	0	0	0	0	0	0	0	0	50
Day Total	200	7192	3563	61	308	79	17	43	19	4	0	0	1	11487
Percent	1.7%	62.6%	31.0%	0.5%	2.7%	0.7%	0.1%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	06:00	07:00	08:00	06:00	11:00	06:00	09:00	06:00	07:00	0.0%	0.0%	09:00	06:00
Vol.	30	696	336	10	34	8	3	7	3	2			1	1041
PM Peak	14:00	16:00	17:00	14:00	13:00	18:00	13:00	13:00	12:00					14:00
Vol.	16	408	276	7	21	10	5	3	3					713
Grand Total	200	7192	3563	61	308	79	17	43	19	4	0	0	1	11487
Percent	1.7%	62.6%	31.0%	0.5%	2.7%	0.7%	0.1%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	

Accurate Counts

978-664-2565

Location : Hudson Road
 Location : East of Peakham Road
 City/State: Sudbury, MA

17001CL1

WB

Start Time	MtrCyc	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/24/18	0	62	4	0	0	0	0	0	0	0	0	0	0	66
01:00	0	20	2	0	0	0	0	0	0	0	0	0	0	22
02:00	0	13	0	0	2	0	0	0	0	0	0	0	0	15
03:00	0	4	1	0	1	0	0	0	0	0	0	0	0	6
04:00	0	18	2	0	1	0	0	0	0	0	0	0	0	21
05:00	0	60	22	0	3	0	0	0	1	0	0	0	0	86
06:00	8	123	75	5	7	4	0	0	1	0	0	0	0	223
07:00	11	200	116	9	11	9	0	0	1	0	0	0	0	367
08:00	10	222	123	5	10	6	1	2	1	1	0	0	0	381
09:00	10	293	118	5	19	4	0	1	2	0	0	0	0	452
10:00	2	248	111	5	17	11	0	3	0	0	0	0	0	397
11:00	7	352	116	5	17	9	2	4	1	0	1	0	0	514
12 PM	8	388	127	2	17	10	1	5	0	0	0	0	0	558
13:00	11	450	132	3	14	14	1	2	2	0	0	0	0	629
14:00	12	483	170	14	26	13	0	2	0	1	0	0	0	721
15:00	11	590	210	10	28	16	0	4	1	0	0	0	0	870
16:00	15	761	211	2	27	15	0	3	1	0	0	0	0	1035
17:00	14	697	183	2	14	11	0	3	0	0	0	0	0	924
18:00	13	777	179	3	17	12	1	2	2	0	0	0	0	1006
19:00	10	652	95	0	11	5	0	2	0	0	0	0	0	775
20:00	5	504	45	0	10	2	0	2	0	0	0	0	0	568
21:00	1	354	34	0	2	1	0	1	0	0	0	0	0	393
22:00	2	236	17	0	1	0	0	0	0	0	0	0	0	256
23:00	0	99	8	0	0	0	0	0	0	0	0	0	0	107
Day Total	150	7606	2101	70	255	142	6	36	13	2	1	0	0	10382
Percent	1.4%	73.3%	20.2%	0.7%	2.5%	1.4%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	11:00	08:00	07:00	09:00	10:00	11:00	11:00	09:00	08:00	11:00			11:00
Vol.	11	352	123	9	19	11	2	4	2	1	1			514
PM Peak	16:00	18:00	16:00	14:00	15:00	15:00	12:00	12:00	13:00	14:00				16:00
Vol.	15	777	211	14	28	16	1	5	2	1				1035
Grand Total	150	7606	2101	70	255	142	6	36	13	2	1	0	0	10382
Percent	1.4%	73.3%	20.2%	0.7%	2.5%	1.4%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	

Accurate Counts

978-664-2565

17001CL1

Location : Hudson Road
 Location : East of Peakham Road
 City/State: Sudbury, MA

EB, WB

Start Time	MtrCyc	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/24/18	0	77	6	0	0	0	0	0	0	0	0	0	0	83
01:00	0	30	4	0	1	0	0	0	0	0	0	0	0	35
02:00	0	24	1	0	3	0	0	0	0	0	0	0	0	28
03:00	0	16	3	0	5	0	0	0	0	0	0	0	0	24
04:00	0	62	15	0	2	0	0	0	1	0	0	0	0	80
05:00	6	356	132	0	18	2	0	1	1	0	0	0	0	516
06:00	19	819	353	8	41	11	3	5	4	1	0	0	0	1264
07:00	41	768	452	18	34	15	0	6	3	2	0	0	0	1339
08:00	27	698	397	15	38	11	2	7	1	1	0	0	0	1197
09:00	32	813	423	9	46	8	2	8	2	0	0	0	1	1344
10:00	16	705	331	8	44	15	1	4	2	0	0	0	0	1126
11:00	13	790	291	8	36	17	3	5	3	1	1	0	0	1168
12 PM	14	780	315	7	35	15	3	6	3	0	0	0	0	1178
13:00	19	849	295	5	35	18	6	5	3	0	0	0	0	1235
14:00	28	880	437	21	45	17	0	4	1	1	0	0	0	1434
15:00	22	980	466	17	45	22	1	5	1	0	0	0	0	1559
16:00	31	1169	432	6	37	19	1	5	3	0	0	0	0	1703
17:00	27	1077	459	3	27	18	0	5	0	0	0	0	0	1616
18:00	28	1179	397	4	23	22	1	5	3	0	0	0	0	1662
19:00	16	1015	226	0	23	7	0	3	0	0	0	0	0	1290
20:00	7	722	102	1	18	3	0	4	1	0	0	0	0	858
21:00	2	524	75	1	4	1	0	1	0	0	0	0	0	608
22:00	2	325	36	0	2	0	0	0	0	0	0	0	0	365
23:00	0	140	16	0	1	0	0	0	0	0	0	0	0	157
Day Total	350	14798	5664	131	563	221	23	79	32	6	1	0	1	21869
Percent	1.6%	67.7%	25.9%	0.6%	2.6%	1.0%	0.1%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	06:00	07:00	07:00	09:00	11:00	06:00	09:00	06:00	07:00	11:00	0.0%	09:00	09:00
Vol.	41	819	452	18	46	17	3	8	4	2	1	0.0%	1	1344
PM Peak	16:00	18:00	15:00	14:00	14:00	15:00	13:00	12:00	12:00	14:00	14:00	14:00	14:00	16:00
Vol.	31	1179	466	21	45	22	6	6	3	1	1	0.0%	1	1703
Grand Total	350	14798	5664	131	563	221	23	79	32	6	1	0	1	21869
Percent	1.6%	67.7%	25.9%	0.6%	2.6%	1.0%	0.1%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	

Accurate Counts

978-664-2565

Location : Hudson Road
 Location : East of Peakham Road
 City/State: Sudbury, MA

17001SP1

EB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	999	Total
05/24/18	0	0	0	0	0	0	0	1	1	5	4	6	0	0	0	17
01:00	0	0	0	0	0	0	1	0	1	2	4	4	1	0	0	13
02:00	0	0	0	0	0	0	0	0	1	1	4	3	3	1	1	13
03:00	0	0	0	0	1	0	0	0	0	1	3	8	2	3	18	18
04:00	0	0	0	0	0	0	0	0	4	8	9	19	12	7	59	59
05:00	11	0	0	2	7	12	5	7	20	53	123	125	57	8	430	430
06:00	109	13	52	86	100	150	92	80	92	112	90	60	4	1	1041	1041
07:00	206	28	70	97	164	177	129	81	27	3	0	0	0	0	982	982
08:00	198	31	64	124	106	116	119	44	12	2	0	0	0	0	816	816
09:00	189	14	48	87	115	124	101	75	46	41	34	15	2	1	892	892
10:00	113	5	10	23	37	59	46	59	90	118	115	47	5	2	729	729
11:00	84	1	5	12	21	21	39	59	90	139	130	44	8	1	654	654
12 PM	93	7	9	19	19	31	40	49	84	150	79	34	6	0	620	620
13:00	83	0	2	9	10	16	27	39	99	136	123	50	10	2	606	606
14:00	167	8	17	13	32	38	52	66	97	119	77	23	4	0	713	713
15:00	181	2	12	12	34	47	46	63	89	103	71	27	2	0	689	689
16:00	151	0	5	3	16	15	32	42	96	120	134	42	9	3	668	668
17:00	216	8	6	23	42	40	45	54	76	88	67	21	4	2	692	692
18:00	161	1	7	10	25	25	34	49	87	130	88	32	5	2	656	656
19:00	76	0	5	8	11	23	13	21	49	113	130	52	13	1	515	515
20:00	32	0	1	1	5	5	5	18	28	62	75	41	13	4	290	290
21:00	9	0	0	1	6	4	11	12	31	65	47	23	5	1	215	215
22:00	4	0	0	0	2	0	1	5	7	23	28	30	8	1	109	109
23:00	2	0	0	0	0	0	0	1	3	13	17	11	1	2	50	50
Total	2085	118	313	530	753	903	838	825	1130	1607	1452	717	174	42	11487	

Daily

15th Percentile : 2 MPH
 50th Percentile : 21 MPH
 85th Percentile : 31 MPH
 95th Percentile : 34 MPH

Mean Speed(Average) : 20 MPH
 10 MPH Pace Speed : 24-33 MPH
 Number in Pace : 4464
 Percent in Pace : 38.9%
 Number of Vehicles > 30 MPH : 2385
 Percent of Vehicles > 30 MPH : 20.8%

Grand Total	2085	118	313	530	753	903	838	825	1130	1607	1452	717	174	42	11487
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Overall

15th Percentile : 2 MPH
 50th Percentile : 21 MPH
 85th Percentile : 31 MPH
 95th Percentile : 34 MPH

Mean Speed(Average) : 20 MPH
 10 MPH Pace Speed : 24-33 MPH
 Number in Pace : 4464
 Percent in Pace : 38.9%
 Number of Vehicles > 30 MPH : 2385
 Percent of Vehicles > 30 MPH : 20.8%

Accurate Counts

978-664-2565

Location : Hudson Road
 Location : East of Peakham Road
 City/State: Sudbury, MA

17001SP1

WB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	999	Total
05/24/18	0	0	0	0	0	0	0	1	5	12	20	19	5	4		66
01:00	0	0	0	0	0	0	0	0	0	3	4	7	6	2		22
02:00	0	0	0	0	0	0	0	0	1	4	2	3	3	2		15
03:00	0	0	0	0	0	0	0	0	0	2	0	2	1	1		6
04:00	0	0	0	0	0	1	0	0	0	4	5	5	4	2		21
05:00	6	0	0	0	0	1	2	0	1	7	17	17	18	17		86
06:00	54	0	3	1	0	3	6	15	11	22	42	49	14	3		223
07:00	83	0	1	1	2	4	7	29	55	83	62	27	3	0		357
08:00	74	2	1	0	6	5	10	35	85	89	56	16	2	0		381
09:00	71	0	2	4	6	12	24	37	63	95	90	41	6	1		452
10:00	41	0	1	0	2	6	10	16	38	95	106	61	20	1		397
11:00	37	0	0	0	3	8	21	27	63	112	146	71	20	6		514
12 PM	55	0	1	5	8	10	18	33	72	115	140	84	15	2		558
13:00	50	0	0	2	4	8	18	49	90	158	155	72	22	1		629
14:00	88	1	3	6	15	31	36	60	84	181	132	66	16	2		721
15:00	108	2	4	16	22	38	62	54	146	206	152	48	11	1		870
16:00	99	0	4	4	13	28	56	121	199	219	197	79	15	1		1035
17:00	104	1	2	8	17	39	78	100	190	227	124	27	7	0		924
18:00	108	3	7	21	50	64	101	138	202	201	91	17	3	0		1006
19:00	37	0	0	0	11	31	31	72	135	187	177	75	17	2		775
20:00	14	0	0	1	0	5	25	35	63	160	170	74	16	5		568
21:00	2	0	0	0	0	3	3	9	41	98	159	64	14	0		393
22:00	3	0	0	0	0	2	1	5	19	57	86	63	15	5		256
23:00	1	0	0	0	0	0	0	0	3	14	43	24	17	5		107
Total	1035	9	29	69	159	299	509	836	1566	2351	2176	1011	270	63		10382

Daily

15th Percentile : 17 MPH
 50th Percentile : 27 MPH
 85th Percentile : 32 MPH
 95th Percentile : 35 MPH

Mean Speed(Average) : 26 MPH
 10 MPH Pace Speed : 25-34 MPH
 Number in Pace : 6430
 Percent in Pace : 61.9%
 Number of Vehicles > 30 MPH : 3520
 Percent of Vehicles > 30 MPH : 33.9%

Grand Total	1035	9	29	69	159	299	509	836	1566	2351	2176	1011	270	63		10382
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Overall

15th Percentile : 17 MPH
 50th Percentile : 27 MPH
 85th Percentile : 32 MPH
 95th Percentile : 35 MPH

Mean Speed(Average) : 26 MPH
 10 MPH Pace Speed : 25-34 MPH
 Number in Pace : 6430
 Percent in Pace : 61.9%
 Number of Vehicles > 30 MPH : 3520
 Percent of Vehicles > 30 MPH : 33.9%

Accurate Counts

978-664-2565

Location : Hudson Road
 Location : East of Peakham Road
 City/State: Sudbury, MA

17001SP1

EB, WB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	999	Total
05/24/18	0	0	0	0	0	0	0	2	6	17	24	25	5	4		83
01:00	0	0	0	0	0	0	1	0	1	5	8	11	7	2		35
02:00	0	0	0	0	0	0	0	0	2	5	6	6	6	3		28
03:00	0	0	0	0	1	0	0	0	0	3	3	10	3	4		24
04:00	0	0	0	0	0	1	0	0	4	12	14	24	16	9		80
05:00	17	0	0	2	7	13	7	7	21	60	140	142	75	25		516
06:00	163	13	55	87	100	153	98	95	103	134	132	109	18	4		1264
07:00	289	28	71	98	166	181	136	110	82	86	62	27	3	0		1339
08:00	272	33	65	124	112	121	129	79	97	91	56	16	2	0		1197
09:00	260	14	50	91	121	136	125	112	109	136	124	56	8	2		1344
10:00	154	5	11	23	39	65	56	75	128	213	221	108	25	3		1126
11:00	121	1	5	12	24	29	60	86	153	251	276	115	28	7		1168
12 PM	148	7	10	24	27	41	58	82	156	265	219	118	21	2		1178
13:00	133	0	2	11	14	24	45	88	189	294	278	122	32	3		1235
14:00	255	9	20	19	47	69	88	126	181	300	209	89	20	2		1434
15:00	289	4	16	28	56	85	108	117	235	309	223	75	13	1		1559
16:00	250	0	9	7	29	43	88	163	295	339	331	121	24	4		1703
17:00	320	9	8	31	59	79	123	154	266	315	191	48	11	2		1616
18:00	269	4	14	31	75	89	135	187	289	331	179	49	8	2		1662
19:00	113	0	5	8	22	54	44	93	184	300	307	127	30	3		1290
20:00	46	0	1	2	5	10	30	53	91	222	245	115	29	9		858
21:00	11	0	0	1	6	7	14	21	72	163	206	87	19	1		608
22:00	7	0	0	0	2	2	2	10	26	80	114	93	23	6		365
23:00	3	0	0	0	0	0	0	1	6	27	60	35	18	7		157
Total	3120	127	342	599	912	1202	1347	1661	2696	3958	3628	1728	444	105		21869

Daily

15th Percentile : 6 MPH
 50th Percentile : 25 MPH
 85th Percentile : 32 MPH
 95th Percentile : 34 MPH

Mean Speed(Average) : 23 MPH
 10 MPH Pace Speed : 25-34 MPH
 Number in Pace : 10858
 Percent in Pace : 49.7%
 Number of Vehicles > 30 MPH : 5905
 Percent of Vehicles > 30 MPH : 27.0%

Grand Total	3120	127	342	599	912	1202	1347	1661	2696	3958	3628	1728	444	105		21869
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Overall

15th Percentile : 6 MPH
 50th Percentile : 25 MPH
 85th Percentile : 32 MPH
 95th Percentile : 34 MPH

Mean Speed(Average) : 23 MPH
 10 MPH Pace Speed : 25-34 MPH
 Number in Pace : 10858
 Percent in Pace : 49.7%
 Number of Vehicles > 30 MPH : 5905
 Percent of Vehicles > 30 MPH : 27.0%

Accurate Counts

978-664-2565

Location : Old Sudbury Road
 Location : East of Concord Road
 City/State: Sudbury, MA

17001VL2

Start Time	5/24/2018 Thu	WB		Hour Totals		EB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		13	68			2	75				
12:15		13	72			2	103				
12:30		15	94			3	94				
12:45		8	82	49	316	0	68	7	340	56	656
01:00		5	122			3	88				
01:15		3	94			5	84				
01:30		1	117			0	97				
01:45		5	95	14	428	1	83	9	352	23	780
02:00		3	94			1	79				
02:15		1	111			0	77				
02:30		2	111			3	100				
02:45		4	128	10	444	2	74	6	330	16	774
03:00		2	134			1	65				
03:15		1	138			4	66				
03:30		1	129			4	60				
03:45		2	148	6	549	3	59	12	250	18	799
04:00		1	160			5	56				
04:15		4	184			4	82				
04:30		2	176			17	57				
04:45		7	148	14	668	13	70	39	265	53	933
05:00		3	122			39	78				
05:15		10	158			57	61				
05:30		16	156			87	54				
05:45		23	168	52	604	122	77	305	270	357	874
06:00		26	155			156	58				
06:15		35	147			193	69				
06:30		32	148			190	66				
06:45		44	151	137	601	176	63	715	256	852	857
07:00		48	125			236	56				
07:15		58	106			223	47				
07:30		68	81			202	52				
07:45		57	72	231	384	196	40	857	195	1088	579
08:00		63	89			169	38				
08:15		68	76			182	29				
08:30		55	98			143	39				
08:45		86	64	272	327	193	34	687	140	959	467
09:00		99	66			156	17				
09:15		76	62			124	29				
09:30		50	43			117	29				
09:45		47	56	272	227	101	25	498	100	770	327
10:00		74	41			90	24				
10:15		54	36			119	12				
10:30		60	30			95	6				
10:45		52	35	240	142	91	20	395	62	635	204
11:00		63	34			85	4				
11:15		66	16			95	7				
11:30		80	9			77	8				
11:45		65	14	274	73	93	7	350	26	624	99
Total		1571	4763			3880	2586			5451	7349
Percent		24.8%	75.2%			60.0%	40.0%			42.6%	57.4%
Grand Total		1571	4763			3880	2586			5451	7349
Percent		24.8%	75.2%			60.0%	40.0%			42.6%	57.4%

ADT ADT 12,800 AADT 12,800

Accurate Counts

978-664-2565

17001VL2

Location : Old Sudbury Road
 Location : East of Concord Road
 City/State: Sudbury, MA

Start Time	5/24/2018 Thu	WB	EB	Total
12:00 AM	49	7	56	
01:00	14	9	23	
02:00	10	6	16	
03:00	6	12	18	
04:00	14	39	53	
05:00	52	305	357	
06:00	137	715	852	
07:00	231	857	1088	
08:00	272	687	959	
09:00	272	498	770	
10:00	240	395	635	
11:00	274	350	624	
12:00 PM	316	340	656	
01:00	428	352	780	
02:00	444	330	774	
03:00	549	250	799	
04:00	668	265	933	
05:00	604	270	874	
06:00	601	256	857	
07:00	384	195	579	
08:00	327	140	467	
09:00	227	100	327	
10:00	142	62	204	
11:00	73	26	99	
Total	6334	6466	12800	
Percent	49.5%	50.5%		
AM Peak Vol.	-	11:00 274	-	
PM Peak Vol.	-	16:00 668	-	
Grand Total Percent	6334 49.5%	6466 50.5%	12800	

ADT 12,800

ADT 12,800

ADT 12,800

Accurate Counts

978-664-2565

17001CL2

Location : Old Sudbury Road
 Location : East of Concord Road
 City/State: Sudbury, MA

WB

Start Time	MtrCyc	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/24/18	0	47	2	0	0	0	0	0	0	0	0	0	0	49
01:00	0	12	2	0	0	0	0	0	0	0	0	0	0	14
02:00	0	9	0	0	1	0	0	0	0	0	0	0	0	10
03:00	0	5	1	0	0	0	0	0	0	0	0	0	0	6
04:00	0	12	2	0	0	0	0	0	0	0	0	0	0	14
05:00	0	32	16	1	2	0	0	0	1	0	0	0	0	52
06:00	0	95	31	0	8	3	0	0	0	0	0	0	0	137
07:00	4	142	76	2	1	5	0	0	1	0	0	0	0	231
08:00	5	149	108	3	3	1	1	1	1	0	0	0	0	272
09:00	2	189	67	1	8	2	1	0	2	0	0	0	0	272
10:00	2	111	111	1	12	3	0	0	0	0	0	0	0	240
11:00	1	125	133	1	8	5	0	0	1	0	0	0	0	274
12 PM	4	216	76	3	10	3	2	2	0	0	0	0	0	316
13:00	2	278	128	1	7	8	0	3	1	0	0	0	0	428
14:00	5	300	115	2	15	5	1	1	0	0	0	0	0	444
15:00	11	328	191	0	13	4	0	2	0	0	0	0	0	549
16:00	5	419	217	0	22	4	0	1	0	0	0	0	0	668
17:00	14	364	210	2	10	2	0	0	1	0	0	0	1	604
18:00	9	460	115	2	9	2	1	2	1	0	0	0	0	601
19:00	1	319	55	0	8	1	0	0	0	0	0	0	0	384
20:00	1	301	23	0	2	0	0	0	0	0	0	0	0	327
21:00	0	208	18	0	1	0	0	0	0	0	0	0	0	227
22:00	0	132	9	0	1	0	0	0	0	0	0	0	0	142
23:00	0	68	5	0	0	0	0	0	0	0	0	0	0	73
Day Total	66	4321	1711	19	141	48	6	12	9	0	0	0	1	6334
Percent	1.0%	68.2%	27.0%	0.3%	2.2%	0.8%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	09:00	11:00	08:00	10:00	07:00	08:00	08:00	09:00	09:00	08:00	08:00	08:00	11:00
Vol.	5	189	133	3	12	5	1	1	2	2	1	1	1	274
PM Peak	17:00	18:00	16:00	12:00	16:00	13:00	12:00	13:00	13:00	13:00	17:00	17:00	17:00	16:00
Vol.	14	460	217	3	22	8	2	3	1	1	1	1	1	668
Grand Total	66	4321	1711	19	141	48	6	12	9	0	0	0	1	6334
Percent	1.0%	68.2%	27.0%	0.3%	2.2%	0.8%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	

Accurate Counts

978-664-2565

17001CL2

Location : Old Sudbury Road
 Location : East of Concord Road
 City/State: Sudbury, MA

EB

Start Time	MtrCyc	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/24/18	0	6	0	1	0	0	0	0	0	0	0	0	0	7
01:00	0	9	0	0	0	0	0	0	0	0	0	0	0	9
02:00	0	6	0	0	0	0	0	0	0	0	0	0	0	6
03:00	0	8	2	0	2	0	0	0	0	0	0	0	0	12
04:00	1	25	11	0	2	0	0	0	0	0	0	0	0	39
05:00	3	202	81	4	11	1	0	3	0	0	0	0	0	305
06:00	12	514	150	5	21	6	0	5	2	0	0	0	0	715
07:00	21	603	177	6	40	3	3	3	1	0	0	0	0	857
08:00	55	424	171	6	17	8	0	4	1	0	1	0	0	687
09:00	9	335	118	1	26	5	2	1	1	0	0	0	0	498
10:00	2	262	105	5	15	4	0	2	0	0	0	0	0	395
11:00	3	235	92	0	13	4	1	1	1	0	0	0	0	350
12 PM	12	229	80	2	16	1	0	0	0	0	0	0	0	340
13:00	24	179	132	0	9	5	0	2	1	0	0	0	0	352
14:00	8	204	97	2	13	4	1	0	1	0	0	0	0	330
15:00	20	127	84	0	7	8	0	2	2	0	0	0	0	250
16:00	21	131	100	1	6	6	0	0	0	0	0	0	0	265
17:00	22	130	109	2	4	1	1	1	0	0	0	0	0	270
18:00	3	190	53	2	3	3	0	2	0	0	0	0	0	256
19:00	3	154	31	0	5	2	0	0	0	0	0	0	0	195
20:00	2	111	23	1	1	0	0	1	1	0	0	0	0	140
21:00	0	78	20	1	1	0	0	0	0	0	0	0	0	100
22:00	1	48	12	0	1	0	0	0	0	0	0	0	0	62
23:00	0	19	5	1	1	0	0	0	0	0	0	0	0	26
Day Total	222	4229	1653	40	214	61	8	27	11	0	1	0	0	6466
Percent	3.4%	65.4%	25.6%	0.6%	3.3%	0.9%	0.1%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	07:00	07:00	07:00	08:00	07:00	06:00	06:00	06:00	08:00	0.0%	0.0%	07:00
Vol.	55	603	177	6	40	8	3	5	2	2	1	0	0	857
PM Peak	13:00	12:00	13:00	12:00	12:00	15:00	14:00	13:00	15:00	15:00	13:00	0	0	13:00
Vol.	24	229	132	2	16	8	1	2	2	2	1	0	0	352
Grand Total	222	4229	1653	40	214	61	8	27	11	0	1	0	0	6466
Percent	3.4%	65.4%	25.6%	0.6%	3.3%	0.9%	0.1%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	

Accurate Counts

978-664-2565

17001CL2

Location : Old Sudbury Road
 Location : East of Concord Road
 City/State: Sudbury, MA

WB, EB

Start Time	MtrCyc	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/24/18	0	53	2	1	0	0	0	0	0	0	0	0	0	56
01:00	0	21	2	0	0	0	0	0	0	0	0	0	0	23
02:00	0	15	0	0	1	0	0	0	0	0	0	0	0	16
03:00	0	13	3	0	2	0	0	0	0	0	0	0	0	18
04:00	1	37	13	0	2	0	0	0	0	0	0	0	0	53
05:00	3	234	97	5	13	1	0	3	1	0	0	0	0	357
06:00	12	609	181	5	29	9	0	5	2	0	0	0	0	852
07:00	25	745	253	8	41	8	3	3	2	0	0	0	0	1088
08:00	60	573	279	9	20	9	1	5	2	0	1	0	0	959
09:00	11	524	185	2	34	7	3	1	3	0	0	0	0	770
10:00	4	373	216	6	27	7	0	2	0	0	0	0	0	635
11:00	4	360	225	1	21	9	1	1	2	0	0	0	0	624
12 PM	16	445	156	5	26	4	2	2	0	0	0	0	0	656
13:00	26	457	260	1	16	13	0	5	2	0	0	0	0	780
14:00	13	504	212	4	28	9	2	1	1	0	0	0	0	774
15:00	31	455	275	0	20	12	0	4	2	0	0	0	0	799
16:00	26	550	317	1	28	10	0	1	0	0	0	0	0	933
17:00	36	494	319	4	14	3	1	1	1	0	0	0	1	874
18:00	12	650	168	4	12	5	1	4	1	0	0	0	0	857
19:00	4	473	86	0	13	3	0	0	0	0	0	0	0	579
20:00	3	412	46	1	3	0	0	1	1	0	0	0	0	467
21:00	0	286	38	1	2	0	0	0	0	0	0	0	0	327
22:00	1	180	21	0	2	0	0	0	0	0	0	0	0	204
23:00	0	87	10	1	1	0	0	0	0	0	0	0	0	99
Day Total	288	8550	3364	59	355	109	14	39	20	0	1	0	1	12800
Percent	2.3%	66.8%	26.3%	0.5%	2.8%	0.9%	0.1%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	07:00	08:00	08:00	07:00	06:00	07:00	06:00	09:00	0.0%	08:00	0.0%	0.0%	07:00
Vol.	60	745	279	9	41	9	3	5	3		1			1088
PM Peak	17:00	18:00	17:00	12:00	14:00	13:00	12:00	13:00	13:00	17:00	17:00	17:00	17:00	16:00
Vol.	36	650	319	5	28	13	2	5	2		1			933
Grand Total	288	8550	3364	59	355	109	14	39	20	0	1	0	1	12800
Percent	2.3%	66.8%	26.3%	0.5%	2.8%	0.9%	0.1%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	

Accurate Counts

Location : Old Sudbury Road
 Location : East of Concord Road
 City/State: Sudbury, MA

17001SP2

WB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	999	Total
	3	6	9	12	15	18	21	24	27	30	33	36	39			
05/24/18	0	0	0	0	0	0	0	1	4	3	15	18	7	1		49
01:00	0	0	0	0	0	0	0	0	0	0	4	4	4	2		14
02:00	0	0	0	0	0	0	0	0	0	2	4	2	2	0		10
03:00	0	0	0	0	0	0	0	0	0	1	0	4	1	0		6
04:00	1	0	0	0	0	0	0	1	0	1	4	4	2	1		14
05:00	4	0	0	0	0	0	0	0	0	3	10	13	15	7		52
06:00	14	0	0	0	1	2	3	2	1	14	31	33	23	13		137
07:00	45	0	1	1	0	1	4	6	10	39	50	38	33	3		231
08:00	75	1	0	3	10	4	14	16	31	37	37	30	8	6		272
09:00	38	0	3	1	1	6	9	21	27	58	59	31	13	5		272
10:00	87	0	1	0	0	0	0	2	6	35	45	38	19	7		240
11:00	114	0	0	0	0	0	0	1	13	42	59	31	9	5		274
12 PM	36	0	0	0	2	5	9	12	22	62	77	70	16	5		316
13:00	77	0	1	1	0	1	1	10	41	85	116	67	21	7		428
14:00	50	0	5	3	6	9	13	21	41	84	124	67	19	2		444
15:00	120	20	18	26	36	63	93	76	51	26	15	2	2	1		549
16:00	144	10	23	28	58	57	87	72	94	60	19	13	3	0		668
17:00	165	19	24	45	64	58	81	72	58	18	0	0	0	0		604
18:00	68	6	41	32	32	72	66	63	63	71	53	27	6	1		601
19:00	26	5	3	4	1	8	13	21	29	69	114	70	16	5		384
20:00	4	0	0	0	1	0	0	5	24	81	118	75	15	4		327
21:00	4	0	0	0	0	0	0	1	30	61	76	48	7	0		227
22:00	1	0	0	0	0	0	0	0	1	34	44	50	12	0		142
23:00	0	0	0	0	0	0	0	0	4	15	22	19	11	2		73
Total	1073	61	120	144	212	286	393	403	550	901	1096	754	264	77		6334

Daily

15th Percentile : 2 MPH
 50th Percentile : 26 MPH
 85th Percentile : 33 MPH
 95th Percentile : 35 MPH

Mean Speed(Average) : 23 MPH
 10 MPH Pace Speed : 27-36 MPH
 Number in Pace : 2934
 Percent in Pace : 46.3%
 Number of Vehicles > 30 MPH : 2191
 Percent of Vehicles > 30 MPH : 34.6%

Grand Total	1073	61	120	144	212	286	393	403	550	901	1096	754	264	77		6334
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Overall

15th Percentile : 2 MPH
 50th Percentile : 26 MPH
 85th Percentile : 33 MPH
 95th Percentile : 35 MPH

Mean Speed(Average) : 23 MPH
 10 MPH Pace Speed : 27-36 MPH
 Number in Pace : 2934
 Percent in Pace : 46.3%
 Number of Vehicles > 30 MPH : 2191
 Percent of Vehicles > 30 MPH : 34.6%

Accurate Counts

Location : Old Sudbury Road
 Location : East of Concord Road
 City/State: Sudbury, MA

17001SP2

EB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	999	Total
	3	6	9	12	15	18	21	24	27	30	33	36	39			
05/24/18	0	0	0	0	0	0	0	0	0	1	0	4	2	0	0	7
01:00	0	0	0	0	0	0	0	0	2	0	2	4	1	0	0	9
02:00	0	0	0	0	0	0	0	0	0	1	0	2	2	1	0	6
03:00	0	0	0	0	0	0	0	0	0	1	0	4	5	2	0	12
04:00	2	0	0	0	0	1	1	0	1	1	4	14	9	6	0	39
05:00	5	0	0	0	0	1	1	2	1	13	56	127	74	25	0	305
06:00	17	0	0	0	0	0	0	5	27	85	190	260	106	25	0	715
07:00	46	0	0	0	1	8	9	12	57	192	283	164	63	22	0	857
08:00	98	0	3	2	12	31	58	69	120	119	96	68	10	1	0	687
09:00	32	1	0	0	0	0	8	29	56	125	138	76	28	5	0	498
10:00	23	0	0	0	0	0	1	3	27	92	111	101	31	6	0	395
11:00	25	1	0	1	0	0	1	11	34	74	101	77	20	5	0	350
12 PM	27	0	0	0	0	0	3	9	20	98	113	47	18	5	0	340
13:00	82	0	0	0	0	2	1	4	27	59	92	59	22	4	0	352
14:00	36	0	0	0	1	1	3	11	29	56	102	73	15	3	0	330
15:00	55	0	0	0	3	19	19	28	41	44	23	12	4	2	0	250
16:00	73	0	1	0	0	0	6	11	23	38	53	49	7	4	0	265
17:00	79	0	2	0	1	2	3	11	27	43	52	34	10	6	0	270
18:00	26	1	0	0	0	1	2	8	24	49	63	61	17	4	0	256
19:00	11	0	0	0	0	0	1	5	3	19	57	61	32	6	0	195
20:00	3	0	0	0	0	0	0	0	11	22	44	42	12	6	0	140
21:00	5	0	0	0	0	0	0	0	3	22	30	31	7	2	0	100
22:00	0	0	0	0	0	1	0	1	5	3	22	17	11	2	0	62
23:00	0	0	0	0	0	0	0	0	0	3	6	5	9	3	0	26
Total	645	3	6	3	18	67	117	219	538	1160	1638	1392	515	145	0	6466

Daily

15th Percentile : 22 MPH
 50th Percentile : 30 MPH
 85th Percentile : 35 MPH
 95th Percentile : 37 MPH

Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 27-36 MPH
 Number in Pace : 4369
 Percent in Pace : 67.6%
 Number of Vehicles > 30 MPH : 3690
 Percent of Vehicles > 30 MPH : 57.1%

Grand Total	645	3	6	3	18	67	117	219	538	1160	1638	1392	515	145	0	6466
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Overall

15th Percentile : 22 MPH
 50th Percentile : 30 MPH
 85th Percentile : 35 MPH
 95th Percentile : 37 MPH

Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 27-36 MPH
 Number in Pace : 4369
 Percent in Pace : 67.6%
 Number of Vehicles > 30 MPH : 3690
 Percent of Vehicles > 30 MPH : 57.1%

Accurate Counts

978-664-2565

Location : Old Sudbury Road
 Location : East of Concord Road
 City/State: Sudbury, MA

17001SP2

WB, EB

Start Time	1	4	7	10	13	16	19	22	25	28	31	34	37	40	999	Total
05/24/18	0	0	0	0	0	0	0	1	4	4	15	22	9	1	56	
01:00	0	0	0	0	0	0	0	0	2	0	6	8	5	2	23	
02:00	0	0	0	0	0	0	0	0	0	3	4	4	4	1	16	
03:00	0	0	0	0	0	0	0	0	0	2	0	8	6	2	18	
04:00	3	0	0	0	0	1	1	1	1	2	8	18	11	7	53	
05:00	9	0	0	0	0	1	1	2	1	16	66	140	89	32	357	
06:00	31	0	0	0	1	2	3	7	28	99	221	293	129	38	852	
07:00	91	0	1	1	1	9	13	18	67	231	333	202	96	25	1088	
08:00	173	1	3	5	22	35	72	85	151	156	133	98	18	7	959	
09:00	70	1	3	1	1	6	17	50	83	183	197	107	41	10	770	
10:00	110	0	1	0	0	0	1	5	33	127	156	139	50	13	635	
11:00	139	1	0	1	0	0	1	12	47	116	160	108	29	10	624	
12 PM	63	0	0	0	2	5	12	21	42	160	190	117	34	10	656	
13:00	159	0	1	1	0	3	2	14	68	144	208	126	43	11	780	
14:00	86	0	5	3	7	10	16	32	70	140	226	140	34	5	774	
15:00	175	20	18	26	39	82	112	104	92	70	38	14	6	3	799	
16:00	217	10	24	28	58	57	93	83	117	98	72	62	10	4	933	
17:00	244	19	26	45	65	60	84	83	85	61	52	34	10	6	874	
18:00	94	7	41	32	32	73	68	71	87	120	116	88	23	5	857	
19:00	37	5	3	4	1	8	14	26	32	88	171	131	48	11	579	
20:00	7	0	0	0	1	0	0	5	35	103	162	117	27	10	467	
21:00	9	0	0	0	0	0	0	1	33	83	106	79	14	2	327	
22:00	1	0	0	0	0	1	0	1	6	37	66	67	23	2	204	
23:00	0	0	0	0	0	0	0	0	4	18	28	24	20	5	99	
Total	1718	64	126	147	230	353	510	622	1088	2061	2734	2146	779	222	12800	

Daily

15th Percentile : 8 MPH
 50th Percentile : 29 MPH
 85th Percentile : 34 MPH
 95th Percentile : 36 MPH

Mean Speed(Average) : 25 MPH
 10 MPH Pace Speed : 27-36 MPH
 Number in Pace : 7304
 Percent in Pace : 57.1%
 Number of Vehicles > 30 MPH : 5881
 Percent of Vehicles > 30 MPH : 45.9%

Grand Total	1718	64	126	147	230	353	510	622	1088	2061	2734	2146	779	222	12800
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Overall

15th Percentile : 8 MPH
 50th Percentile : 29 MPH
 85th Percentile : 34 MPH
 95th Percentile : 36 MPH

Mean Speed(Average) : 25 MPH
 10 MPH Pace Speed : 27-36 MPH
 Number in Pace : 7304
 Percent in Pace : 57.1%
 Number of Vehicles > 30 MPH : 5881
 Percent of Vehicles > 30 MPH : 45.9%

Accurate Counts

Location : Concord Road
 Location : South of Peter's Way
 City/State: Sudbury, MA

978-664-2565

17001VL3

Start Time	5/24/2018 Thu	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		2	84			5	82				
12:15		3	80			3	90				
12:30		9	84			6	69				
12:45		5	84	19	332	5	94	19	335	38	667
01:00		1	86			2	84				
01:15		2	88			1	78				
01:30		0	100			0	94				
01:45		0	89	3	363	2	111	5	367	8	730
02:00		3	106			0	75				
02:15		2	95			2	112				
02:30		1	125			1	86				
02:45		1	85	7	411	1	149	4	422	11	833
03:00		1	89			0	124				
03:15		0	104			2	112				
03:30		2	130			0	99				
03:45		1	75	4	398	0	131	2	466	6	864
04:00		3	99			0	116				
04:15		3	89			0	105				
04:30		2	90			1	117				
04:45		3	104	11	382	4	131	5	469	16	851
05:00		9	107			8	139				
05:15		18	101			6	142				
05:30		21	97			8	142				
05:45		37	99	85	404	16	107	38	530	123	934
06:00		41	77			33	139				
06:15		97	51			20	106				
06:30		125	70			33	109				
06:45		123	75	386	273	53	133	139	487	525	760
07:00		140	64			56	119				
07:15		168	60			102	98				
07:30		111	68			109	92				
07:45		124	77	543	269	93	71	360	380	903	649
08:00		138	64			122	62				
08:15		137	46			84	45				
08:30		102	47			117	44				
08:45		110	38	487	195	122	27	445	178	932	373
09:00		136	45			103	22				
09:15		146	40			110	38				
09:30		199	21			104	24				
09:45		146	28	627	134	133	30	450	114	1077	248
10:00		76	22			89	22				
10:15		78	12			84	22				
10:30		83	13			66	10				
10:45		79	14	316	61	72	14	311	68	627	129
11:00		69	6			78	13				
11:15		81	9			82	10				
11:30		76	4			85	7				
11:45		86	8	312	27	91	6	336	36	648	63
Total		2800	3249			2114	3852			4914	7101
Percent		46.3%	53.7%			35.4%	64.6%			40.9%	59.1%
Grand Total		2800	3249			2114	3852			4914	7101
Percent		46.3%	53.7%			35.4%	64.6%			40.9%	59.1%

ADT

ADT 12,015

AADT 12,015

Accurate Counts

978-664-2565

17001VL3

Location : Concord Road
 Location : South of Peter's Way
 City/State: Sudbury, MA

Start Time	5/24/2018 Thu	NB	SB	Total
12:00 AM		19	19	38
01:00		3	5	8
02:00		7	4	11
03:00		4	2	6
04:00		11	5	16
05:00		85	38	123
06:00		386	139	525
07:00		543	360	903
08:00		487	445	932
09:00		627	450	1077
10:00		316	311	627
11:00		312	336	648
12:00 PM		332	335	667
01:00		363	367	730
02:00		411	422	833
03:00		398	466	864
04:00		382	469	851
05:00		404	530	934
06:00		273	487	760
07:00		269	380	649
08:00		195	178	373
09:00		134	114	248
10:00		61	68	129
11:00		27	36	63
Total		6049	5966	12015
Percent		50.3%	49.7%	
AM Peak Vol.		09:00 627	09:00 450	09:00 1077
PM Peak Vol.		14:00 411	17:00 530	17:00 934
Grand Total Percent		6049 50.3%	5966 49.7%	12015
ADT		ADT 12,015	ADT 12,015	ADT 12,015

Accurate Counts

978-664-2565

17001CL3

Location : Concord Road
 Location : South of Peter's Way
 City/State: Sudbury, MA

NB

Start Time	MtrCyc	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/24/18	0	19	0	0	0	0	0	0	0	0	0	0	0	19
01:00	0	3	0	0	0	0	0	0	0	0	0	0	0	3
02:00	0	4	1	0	1	0	0	0	1	0	0	0	0	7
03:00	0	2	0	0	2	0	0	0	0	0	0	0	0	4
04:00	0	10	1	0	0	0	0	0	0	0	0	0	0	11
05:00	1	59	22	0	2	0	0	0	1	0	0	0	0	85
06:00	1	297	60	15	4	2	3	3	1	0	0	0	0	386
07:00	3	406	97	9	14	3	3	6	1	1	0	0	0	543
08:00	0	382	76	12	11	2	0	3	1	0	0	0	0	487
09:00	2	492	99	10	12	4	3	3	2	0	0	0	0	627
10:00	1	227	69	2	13	2	1	1	0	0	0	0	0	316
11:00	1	244	51	1	12	1	1	1	0	0	0	0	0	312
12 PM	1	259	59	0	8	2	1	2	0	0	0	0	0	332
13:00	1	283	60	4	10	2	1	2	0	0	0	0	0	363
14:00	1	306	65	24	9	3	0	3	0	0	0	0	0	411
15:00	6	299	77	2	9	4	0	1	0	0	0	0	0	398
16:00	6	271	92	2	9	2	0	0	0	0	0	0	0	382
17:00	6	293	95	1	5	3	0	1	0	0	0	0	0	404
18:00	4	218	47	0	4	0	0	0	0	0	0	0	0	273
19:00	3	239	20	1	4	2	0	0	0	0	0	0	0	269
20:00	0	179	15	0	0	1	0	0	0	0	0	0	0	195
21:00	0	128	4	0	2	0	0	0	0	0	0	0	0	134
22:00	0	58	3	0	0	0	0	0	0	0	0	0	0	61
23:00	0	27	0	0	0	0	0	0	0	0	0	0	0	27
Day Total	37	4705	1013	83	131	33	13	26	7	1	0	0	0	6049
Percent	0.6%	77.8%	16.7%	1.4%	2.2%	0.5%	0.2%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	09:00	09:00	06:00	07:00	09:00	06:00	07:00	09:00	07:00	0.0%	0.0%	0.0%	09:00
Vol.	3	492	99	15	14	4	3	6	2	1				627
PM Peak	15:00	14:00	17:00	14:00	13:00	15:00	12:00	14:00						14:00
Vol.	6	306	95	24	10	4	1	3						411
Grand Total	37	4705	1013	83	131	33	13	26	7	1	0	0	0	6049
Percent	0.6%	77.8%	16.7%	1.4%	2.2%	0.5%	0.2%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	

Accurate Counts

978-664-2565

17001CL3

Location : Concord Road
 Location : South of Peter's Way
 City/State: Sudbury, MA

SB

Start Time	MtrCyc	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/24/18	0	17	1	1	0	0	0	0	0	0	0	0	0	19
01:00	0	4	0	0	0	0	0	0	1	0	0	0	0	5
02:00	0	3	0	0	1	0	0	0	0	0	0	0	0	4
03:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	3	1	0	1	0	0	0	0	0	0	0	0	5
05:00	0	33	4	1	0	0	0	0	0	0	0	0	0	38
06:00	3	112	22	0	1	0	0	1	0	0	0	0	0	139
07:00	2	251	73	16	8	5	0	3	2	0	0	0	0	360
08:00	1	303	113	6	15	4	0	2	0	1	0	0	0	445
09:00	2	284	127	15	14	6	0	2	0	0	0	0	0	450
10:00	1	236	61	0	8	2	0	2	1	0	0	0	0	311
11:00	2	237	73	0	14	7	0	3	0	0	0	0	0	336
12 PM	3	252	58	1	11	8	0	1	1	0	0	0	0	335
13:00	4	281	61	2	7	7	0	3	2	0	0	0	0	367
14:00	2	292	106	7	13	0	0	2	0	0	0	0	0	422
15:00	12	207	236	2	5	4	0	0	0	0	0	0	0	466
16:00	9	254	194	2	6	2	1	1	0	0	0	0	0	469
17:00	9	293	209	0	6	11	2	0	0	0	0	0	0	530
18:00	5	340	126	3	9	3	0	1	0	0	0	0	0	487
19:00	9	312	46	2	9	0	0	2	0	0	0	0	0	380
20:00	6	161	11	0	0	0	0	0	0	0	0	0	0	178
21:00	0	108	6	0	0	0	0	0	0	0	0	0	0	114
22:00	0	64	4	0	0	0	0	0	0	0	0	0	0	68
23:00	0	32	3	1	0	0	0	0	0	0	0	0	0	36
Day Total	70	4081	1535	59	128	59	3	23	7	1	0	0	0	5966
Percent	1.2%	68.4%	25.7%	1.0%	2.1%	1.0%	0.1%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	08:00	09:00	07:00	08:00	11:00	17:00	07:00	07:00	08:00	0.0%	0.0%	0.0%	09:00
Vol.	3	303	127	16	15	7	2	3	2	1				450
PM Peak	15:00	18:00	15:00	14:00	14:00	17:00	17:00	13:00	13:00	13:00				17:00
Vol.	12	340	236	7	13	11	2	3	2	2				530
Grand Total	70	4081	1535	59	128	59	3	23	7	1	0	0	0	5966
Percent	1.2%	68.4%	25.7%	1.0%	2.1%	1.0%	0.1%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	

Accurate Counts

978-664-2565

17001CL3

Location : Concord Road
 Location : South of Peter's Way
 City/State: Sudbury, MA

NB, SB

Start Time	MtrCyc	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Total
05/24/18	0	36	1	1	0	0	0	0	0	0	0	0	0	38
01:00	0	7	0	0	0	0	0	0	1	0	0	0	0	8
02:00	0	7	1	0	2	0	0	0	1	0	0	0	0	11
03:00	0	4	0	0	2	0	0	0	0	0	0	0	0	6
04:00	0	13	2	0	1	0	0	0	0	0	0	0	0	16
05:00	1	92	26	1	2	0	0	0	1	0	0	0	0	123
06:00	4	409	82	15	5	2	3	4	1	0	0	0	0	525
07:00	5	657	170	25	22	8	3	9	3	1	0	0	0	903
08:00	1	685	189	18	26	6	0	5	1	1	0	0	0	932
09:00	4	776	226	25	26	10	3	5	2	0	0	0	0	1077
10:00	2	463	130	2	21	4	1	3	1	0	0	0	0	627
11:00	3	481	124	1	26	8	1	4	0	0	0	0	0	648
12 PM	4	511	117	1	19	10	1	3	1	0	0	0	0	667
13:00	5	564	121	6	17	9	1	5	2	0	0	0	0	730
14:00	3	598	171	31	22	3	0	5	0	0	0	0	0	833
15:00	18	506	313	4	14	8	0	1	0	0	0	0	0	864
16:00	15	525	286	4	15	4	1	1	0	0	0	0	0	851
17:00	15	586	304	1	11	14	2	1	0	0	0	0	0	934
18:00	9	558	173	3	13	3	0	1	0	0	0	0	0	760
19:00	12	551	66	3	13	2	0	2	0	0	0	0	0	649
20:00	6	340	26	0	0	1	0	0	0	0	0	0	0	373
21:00	0	236	10	0	2	0	0	0	0	0	0	0	0	248
22:00	0	122	7	0	0	0	0	0	0	0	0	0	0	129
23:00	0	59	3	1	0	0	0	0	0	0	0	0	0	63
Day Total	107	8786	2548	142	259	92	16	49	14	2	0	0	0	12015
Percent	0.9%	73.1%	21.2%	1.2%	2.2%	0.8%	0.1%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	07:00	09:00	09:00	07:00	08:00	09:00	06:00	07:00	07:00	07:00	07:00	07:00	07:00	09:00
Vol.	5	776	226	25	26	10	3	9	3	1				1077
PM Peak	15:00	14:00	15:00	14:00	14:00	17:00	17:00	13:00	13:00	13:00				17:00
Vol.	18	598	313	31	22	14	2	5	2	2				934
Grand Total	107	8786	2548	142	259	92	16	49	14	2	0	0	0	12015
Percent	0.9%	73.1%	21.2%	1.2%	2.2%	0.8%	0.1%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	

Accurate Counts

978-664-2565

Location : Concord Road
 Location : South of Peter's Way
 City/State: Sudbury, MA

17001SP3

NB

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
05/24/18	0	0	0	0	8	9	2	0	0	0	0	0	0	0	19
01:00	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
02:00	0	0	0	0	2	4	1	0	0	0	0	0	0	0	7
03:00	0	0	0	0	2	1	1	0	0	0	0	0	0	0	4
04:00	0	0	0	1	2	6	2	0	0	0	0	0	0	0	11
05:00	0	0	0	1	20	49	15	0	0	0	0	0	0	0	85
06:00	6	0	3	12	139	188	36	2	0	0	0	0	0	0	386
07:00	25	0	3	42	299	167	6	1	0	0	0	0	0	0	543
08:00	29	0	3	73	276	98	7	1	0	0	0	0	0	0	487
09:00	32	2	10	87	361	125	10	0	0	0	0	0	0	0	627
10:00	15	0	9	26	173	83	10	0	0	0	0	0	0	0	316
11:00	14	0	6	31	162	95	4	0	0	0	0	0	0	0	312
12 PM	15	1	9	44	167	91	5	0	0	0	0	0	0	0	332
13:00	15	0	2	20	164	144	16	2	0	0	0	0	0	0	363
14:00	21	0	2	54	207	114	13	0	0	0	0	0	0	0	411
15:00	44	4	10	124	186	28	2	0	0	0	0	0	0	0	398
16:00	60	1	12	79	177	50	2	1	0	0	0	0	0	0	382
17:00	71	3	5	48	219	57	1	0	0	0	0	0	0	0	404
18:00	32	0	0	18	126	86	11	0	0	0	0	0	0	0	273
19:00	9	0	2	12	116	109	20	1	0	0	0	0	0	0	269
20:00	5	0	0	10	89	77	13	1	0	0	0	0	0	0	195
21:00	0	0	0	11	76	42	5	0	0	0	0	0	0	0	134
22:00	0	0	1	2	26	27	5	0	0	0	0	0	0	0	61
23:00	0	0	0	2	9	11	3	1	1	0	0	0	0	0	27
Total	393	11	77	697	3006	1664	190	10	1	0	0	0	0	0	6049

Daily

- 15th Percentile : 28 MPH
- 50th Percentile : 33 MPH
- 85th Percentile : 37 MPH
- 95th Percentile : 39 MPH

Mean Speed(Average) : 32 MPH

- 10 MPH Pace Speed : 31-40 MPH
- Number in Pace : 4670
- Percent in Pace : 77.2%
- Number of Vehicles > 35 MPH : 1865
- Percent of Vehicles > 35 MPH : 30.8%

Grand Total	393	11	77	697	3006	1664	190	10	1	0	0	0	0	0	6049
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Overall

- 15th Percentile : 28 MPH
- 50th Percentile : 33 MPH
- 85th Percentile : 37 MPH
- 95th Percentile : 39 MPH

Mean Speed(Average) : 32 MPH

- 10 MPH Pace Speed : 31-40 MPH
- Number in Pace : 4670
- Percent in Pace : 77.2%
- Number of Vehicles > 35 MPH : 1865
- Percent of Vehicles > 35 MPH : 30.8%

Accurate Counts

978-664-2565

Location : Concord Road
 Location : South of Peter's Way
 City/State: Sudbury, MA

17001SP3

SB

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
05/24/18	0	0	1	1	7	8	2	0	0	0	0	0	0	0	19
01:00	0	0	0	0	1	2	2	0	0	0	0	0	0	0	5
02:00	0	0	0	0	2	1	1	0	0	0	0	0	0	0	4
03:00	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2
04:00	0	0	0	0	1	2	1	1	0	0	0	0	0	0	5
05:00	0	0	0	2	14	19	3	0	0	0	0	0	0	0	38
06:00	5	0	0	4	46	73	11	0	0	0	0	0	0	0	139
07:00	50	4	29	88	130	56	3	0	0	0	0	0	0	0	360
08:00	106	20	27	79	172	40	1	0	0	0	0	0	0	0	445
09:00	131	16	18	76	164	43	2	0	0	0	0	0	0	0	450
10:00	11	0	1	53	169	76	1	0	0	0	0	0	0	0	311
11:00	16	2	12	70	188	47	1	0	0	0	0	0	0	0	336
12 PM	6	1	3	75	198	50	2	0	0	0	0	0	0	0	335
13:00	14	7	6	39	171	122	8	0	0	0	0	0	0	0	367
14:00	104	23	12	27	143	103	9	1	0	0	0	0	0	0	422
15:00	424	31	9	2	0	0	0	0	0	0	0	0	0	0	466
16:00	383	70	12	3	1	0	0	0	0	0	0	0	0	0	469
17:00	435	79	11	5	0	0	0	0	0	0	0	0	0	0	530
18:00	243	16	4	20	129	72	3	0	0	0	0	0	0	0	487
19:00	47	20	15	36	153	105	4	0	0	0	0	0	0	0	380
20:00	3	0	0	11	83	68	11	2	0	0	0	0	0	0	178
21:00	1	0	0	9	47	44	12	1	0	0	0	0	0	0	114
22:00	0	0	0	4	21	38	4	1	0	0	0	0	0	0	68
23:00	0	0	0	0	7	25	4	0	0	0	0	0	0	0	36
Total	1979	289	160	604	1847	996	85	6	0	0	0	0	0	0	5966

Daily

15th Percentile : 6 MPH
 50th Percentile : 29 MPH
 85th Percentile : 35 MPH
 95th Percentile : 38 MPH

Mean Speed(Average) : 24 MPH
 10 MPH Pace Speed : 31-40 MPH
 Number in Pace : 2843
 Percent in Pace : 47.7%
 Number of Vehicles > 35 MPH : 1087
 Percent of Vehicles > 35 MPH : 18.2%

Grand Total	1979	289	160	604	1847	996	85	6	0	0	0	0	0	0	5966
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Overall

15th Percentile : 6 MPH
 50th Percentile : 29 MPH
 85th Percentile : 35 MPH
 95th Percentile : 38 MPH

Mean Speed(Average) : 24 MPH
 10 MPH Pace Speed : 31-40 MPH
 Number in Pace : 2843
 Percent in Pace : 47.7%
 Number of Vehicles > 35 MPH : 1087
 Percent of Vehicles > 35 MPH : 18.2%

Accurate Counts

978-664-2565

Location : Concord Road
 Location : South of Peter's Way
 City/State: Sudbury, MA

17001SP3

NB, SB

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total
05/24/18	0	0	1	1	15	17	4	0	0	0	0	0	0	0	38
01:00	0	0	0	0	1	5	2	0	0	0	0	0	0	0	8
02:00	0	0	0	0	4	5	2	0	0	0	0	0	0	0	11
03:00	0	0	0	0	2	3	1	0	0	0	0	0	0	0	6
04:00	0	0	0	1	3	8	3	1	0	0	0	0	0	0	16
05:00	0	0	0	3	34	68	18	0	0	0	0	0	0	0	123
06:00	11	0	3	16	185	261	47	2	0	0	0	0	0	0	525
07:00	75	4	32	130	429	223	9	1	0	0	0	0	0	0	903
08:00	135	20	30	152	448	138	8	1	0	0	0	0	0	0	932
09:00	163	18	28	163	525	168	12	0	0	0	0	0	0	0	1077
10:00	26	0	10	79	342	159	11	0	0	0	0	0	0	0	627
11:00	30	2	18	101	350	142	5	0	0	0	0	0	0	0	648
12 PM	21	2	12	119	365	141	7	0	0	0	0	0	0	0	667
13:00	29	7	8	59	335	266	24	2	0	0	0	0	0	0	730
14:00	125	23	14	81	350	217	22	1	0	0	0	0	0	0	833
15:00	468	35	19	126	186	28	2	0	0	0	0	0	0	0	864
16:00	443	71	24	82	178	50	2	1	0	0	0	0	0	0	851
17:00	506	82	16	53	219	57	1	0	0	0	0	0	0	0	934
18:00	275	16	4	38	255	158	14	0	0	0	0	0	0	0	760
19:00	56	20	17	48	269	214	24	1	0	0	0	0	0	0	649
20:00	8	0	0	21	172	145	24	3	0	0	0	0	0	0	373
21:00	1	0	0	20	123	86	17	1	0	0	0	0	0	0	248
22:00	0	0	1	6	47	65	9	1	0	0	0	0	0	0	129
23:00	0	0	0	2	16	36	7	1	1	0	0	0	0	0	63
Total	2372	300	237	1301	4853	2660	275	16	1	0	0	0	0	0	12015

Daily
 15th Percentile : 11 MPH
 50th Percentile : 31 MPH
 85th Percentile : 37 MPH
 95th Percentile : 39 MPH

Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 31-40 MPH
 Number in Pace : 7513
 Percent in Pace : 62.5%
 Number of Vehicles > 35 MPH : 2952
 Percent of Vehicles > 35 MPH : 24.6%

Grand Total	2372	300	237	1301	4853	2660	275	16	1	0	0	0	0	0	12015
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Overall
 15th Percentile : 11 MPH
 50th Percentile : 31 MPH
 85th Percentile : 37 MPH
 95th Percentile : 39 MPH

Mean Speed(Average) : 28 MPH
 10 MPH Pace Speed : 31-40 MPH
 Number in Pace : 7513
 Percent in Pace : 62.5%
 Number of Vehicles > 35 MPH : 2952
 Percent of Vehicles > 35 MPH : 24.6%

TMC DATA: APPENDIX 2

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 1

Start Time	Groups Printed- Cars - Trucks											
	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
07:00 AM	0	26	31	3	42	0	40	59	81	168	31	536
07:15 AM	1	42	25	3	46	0	45	85	78	177	26	562
07:30 AM	1	56	44	2	55	0	49	68	44	155	29	544
07:45 AM	1	65	19	8	46	0	51	70	57	145	51	566
Total	3	189	119	16	189	0	185	282	260	645	137	2208
08:00 AM	0	65	14	8	61	0	63	80	57	151	30	551
08:15 AM	1	58	21	9	56	1	42	89	53	144	46	550
08:30 AM	1	58	29	12	52	0	56	63	44	143	21	507
08:45 AM	2	49	29	22	86	0	67	78	49	117	39	587
Total	4	230	93	51	255	1	228	310	203	555	136	2195
Grand Total	7	419	212	67	444	1	413	592	463	1200	273	4403
Approch %	1.1	65.7	33.2	13.1	86.7	0.2	31.4	45	23.9	62	14.1	
Total %	0.2	9.5	4.8	1.5	10.1	0	9.4	13.4	10.5	27.3	6.2	
Cars	6	407	183	65	438	1	407	574	438	1189	263	4280
% Cars	85.7	97.1	86.3	97	98.6	100	98.5	97	94.6	99.1	96.3	97.2
Trucks	1	12	29	2	6	0	6	18	25	11	10	123
% Trucks	14.3	2.9	13.7	3	1.4	0	1.5	3	5.4	0.9	3.7	2.8

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 2

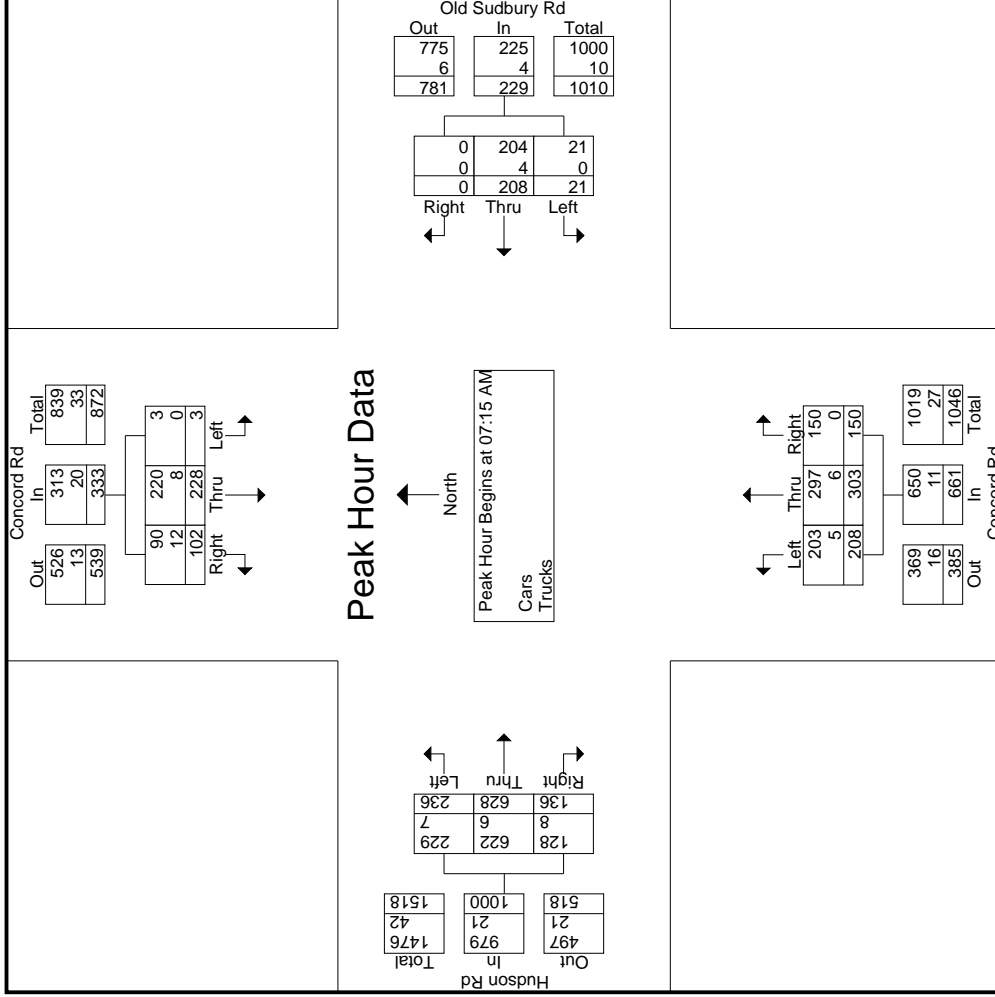
Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West					
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	App. Total	Int. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1															
Peak Hour for Entire Intersection Begins at 07:15 AM															
07:15 AM	1	42	25	3	46	0	49	45	85	34	164	78	177	26	562
07:30 AM	1	56	44	2	55	0	57	49	68	41	158	44	155	29	544
07:45 AM	1	65	19	8	46	0	54	51	70	53	174	57	145	51	566
08:00 AM	0	65	14	8	61	0	69	63	80	22	165	57	151	30	551
Total Volume	3	228	102	21	208	0	229	208	303	150	661	236	628	136	2223
% App. Total	0.9	68.5	30.6	9.2	90.8	0		31.5	45.8	22.7		23.6	62.8	13.6	
PHF	.750	.877	.580	.656	.852	.000	.830	.825	.891	.708	.950	.756	.887	.667	.982
Cars	3	220	90	21	204	0	225	203	297	150	650	229	622	128	2167
% Cars	100	96.5	88.2	100	98.1	0	98.3	97.6	98.0	100	98.3	97.0	99.0	94.1	97.5
Trucks	0	8	12	0	4	0	4	5	6	0	11	7	6	8	56
% Trucks	0	3.5	11.8	0	1.9	0	1.7	2.4	2.0	0	1.7	3.0	1.0	5.9	2.5

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 3



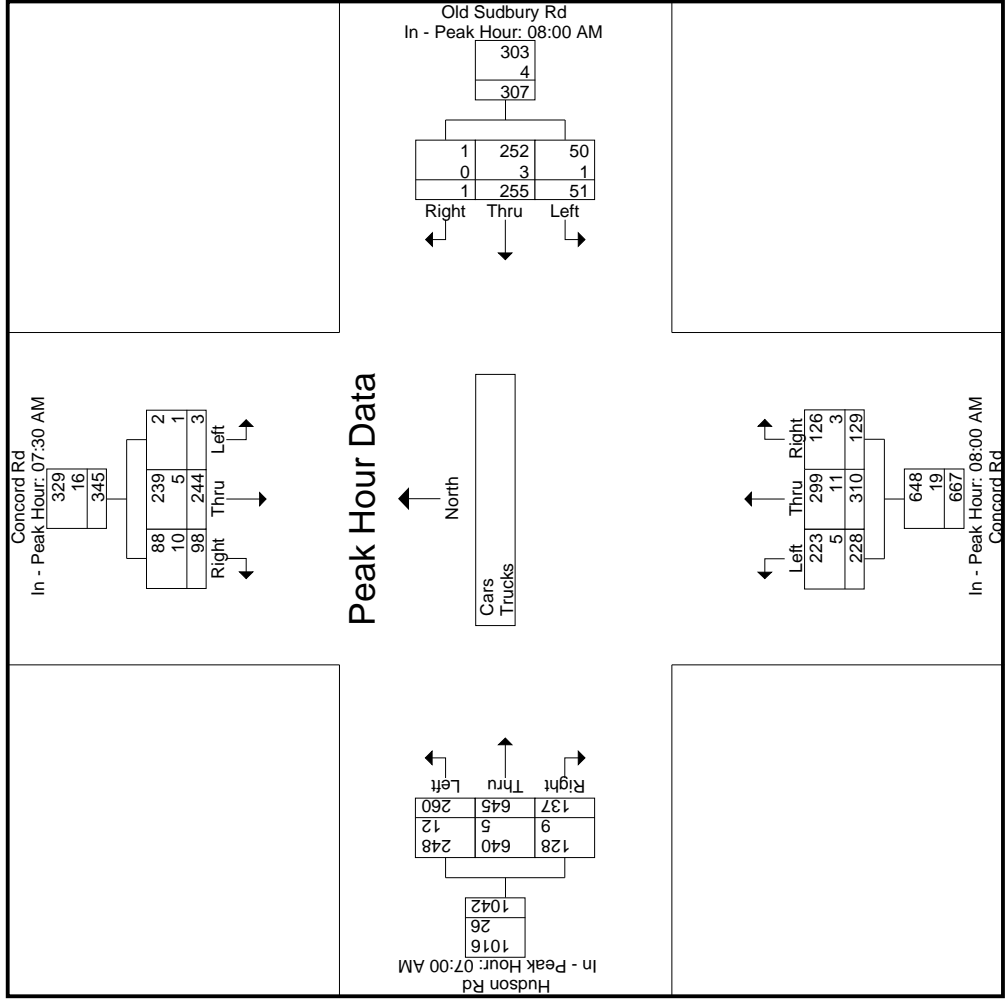
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM			08:00 AM			08:00 AM			08:00 AM			07:00 AM		
+0 mins.	1	56	44	101	8	61	0	69	63	80	22	165	81	31	280
+15 mins.	1	65	19	85	9	56	1	66	42	89	30	161	78	26	281
+30 mins.	0	65	14	79	12	52	0	64	56	63	28	147	44	29	228
+45 mins.	1	58	21	80	22	86	0	108	67	78	49	194	57	51	253
Total Volume	3	244	98	345	51	255	1	307	228	310	129	667	260	137	1042
% App. Total	0.9	70.7	28.4		16.6	83.1	0.3		34.2	46.5	19.3		25	61.9	13.1

Accurate Counts

978-664-2565

PHF	.750	.938	.557	.854	.580	.741	.250	.711	.851	.871	.658	.860	.802	.911	.672	.927
Cars	2	239	88	329	50	252	1	303	223	299	126	648	248	640	128	1016
% Cars	66.7	98	89.8	95.4	98	98.8	100	98.7	97.8	96.5	97.7	97.2	95.4	99.2	93.4	97.5
Trucks	1	5	10	16	1	3	0	4	5	11	3	19	12	5	9	26
% Trucks	33.3	2	10.2	4.6	2	1.2	0	1.3	2.2	3.5	2.3	2.8	4.6	0.8	6.6	2.5



Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 5

Groups Printed- Cars

Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	25	27	2	42	0	40	58	75	166	30	520	
07:15 AM	1	38	18	3	45	0	45	81	76	176	24	541	
07:30 AM	1	55	41	2	53	0	48	66	44	154	27	532	
07:45 AM	1	63	19	8	46	0	51	70	53	144	47	555	
Total	3	181	105	15	186	0	184	275	248	640	128	2148	
08:00 AM	0	64	12	8	60	0	59	80	56	148	30	539	
08:15 AM	0	57	16	8	55	1	42	85	49	143	46	529	
08:30 AM	1	58	28	12	52	0	56	61	40	143	21	500	
08:45 AM	2	47	22	22	85	0	66	73	45	115	38	564	
Total	3	226	78	50	252	1	223	299	190	549	135	2132	
Grand Total	6	407	183	65	438	1	407	574	438	1189	263	4280	
Apprch %	1	68.3	30.7	12.9	86.9	0.2	31.6	44.5	23.2	62.9	13.9		
Total %	0.1	9.5	4.3	1.5	10.2	0	9.5	13.4	10.2	27.8	6.1		

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 6

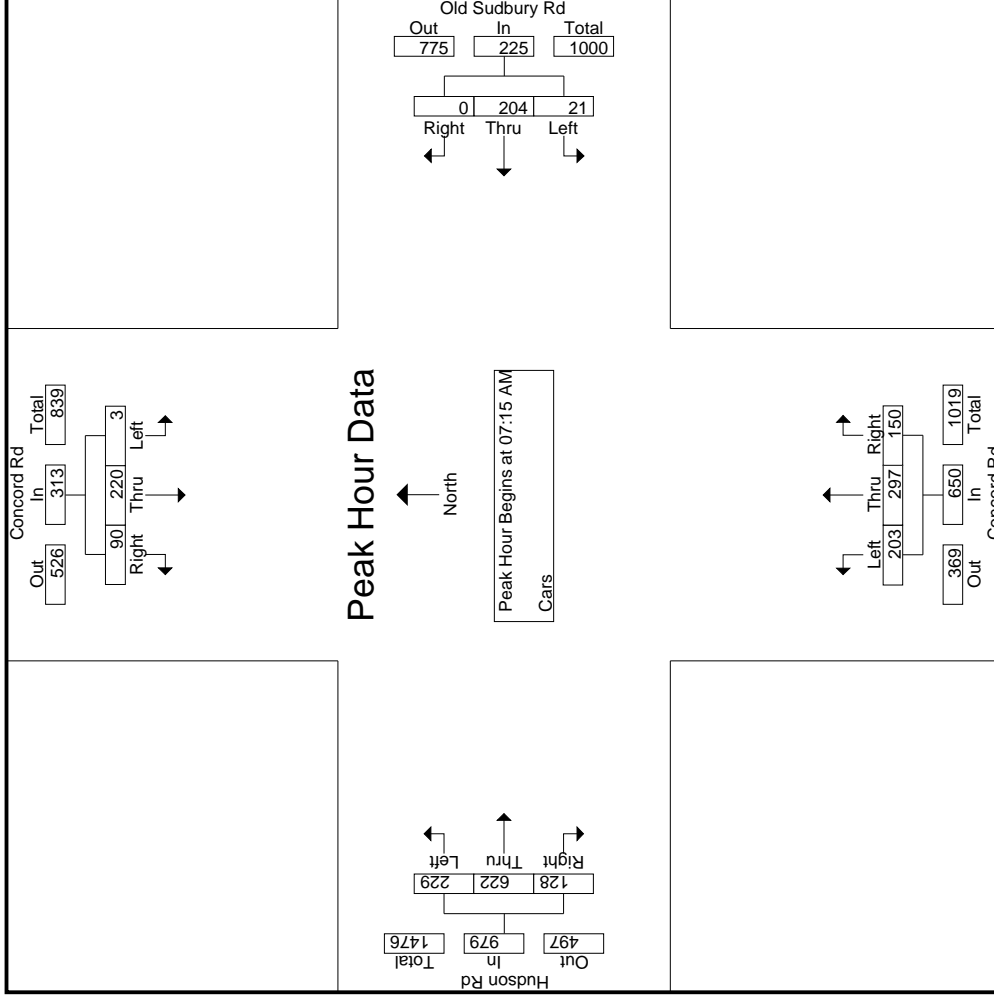
Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West			Int. Total			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total		
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																
Peak Hour for Entire Intersection Begins at 07:15 AM																
07:15 AM	1	38	18	3	45	0	48	45	81	34	160	76	176	24	276	541
07:30 AM	1	55	41	2	53	0	55	48	66	41	155	44	154	27	225	532
07:45 AM	1	63	19	8	46	0	54	51	70	53	174	53	144	47	244	555
08:00 AM	0	64	12	8	60	0	68	59	80	22	161	56	148	30	234	539
Total Volume	3	220	90	21	204	0	225	203	297	150	650	229	622	128	979	2167
% App. Total	1	70.3	28.8	9.3	90.7	0	31.2	31.2	45.7	23.1	23.1	23.4	63.5	13.1	88.7	97.6
PHF	.750	.859	.549	.656	.850	.000	.827	.860	.917	.708	.934	.753	.884	.681	.887	.976

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 7

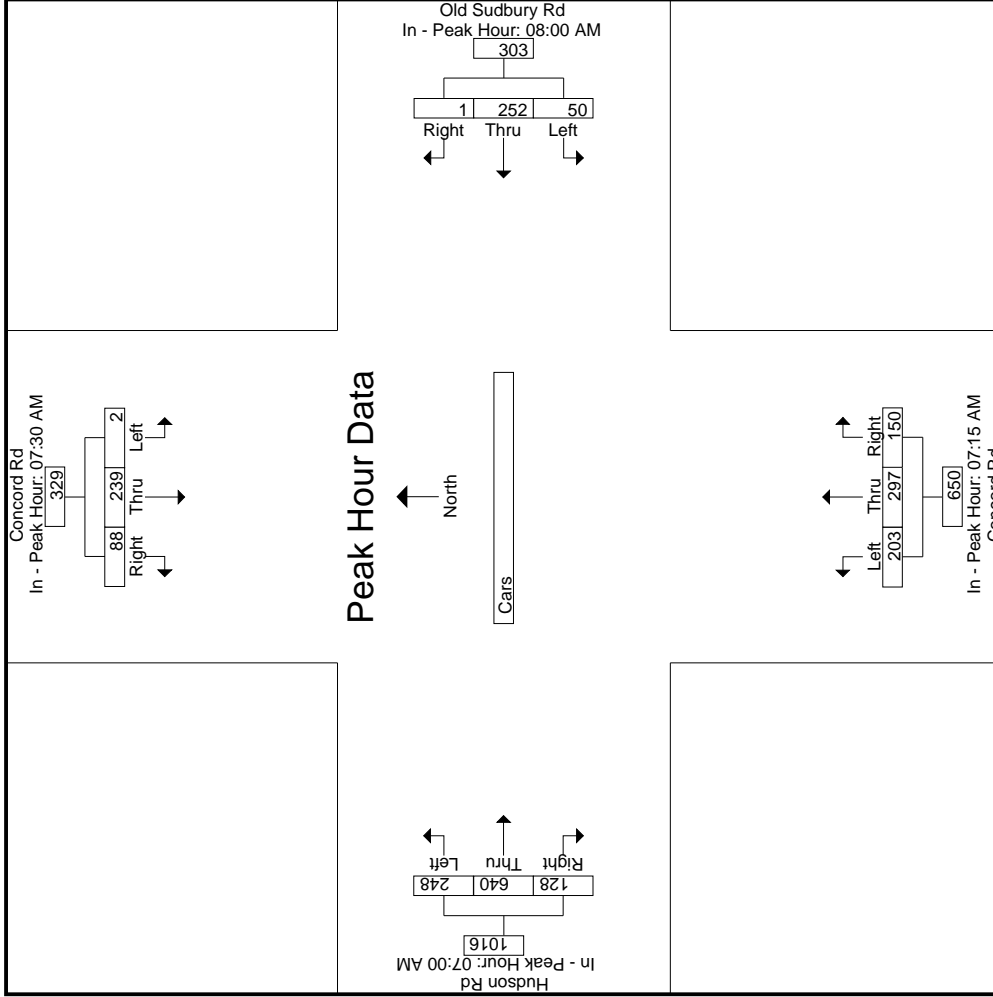


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:30 AM			08:00 AM			07:15 AM			07:00 AM		
+0 mins.	1	55	41	8	60	0	68	45	75	166	30	271
+15 mins.	1	63	19	8	55	1	64	48	76	176	24	276
+30 mins.	0	64	12	12	52	0	64	51	44	154	27	225
+45 mins.	0	57	16	22	85	0	107	59	53	144	47	244
Total Volume	2	239	88	50	252	1	303	203	248	640	128	1016
% App. Total	0.6	72.6	26.7	16.5	83.2	0.3	45.7	31.2	24.4	63	12.6	

Accurate Counts
978-664-2565

PHF | .500 | .934 | .537 | .848 | .568 | .741 | .250 | .708 | .860 | .917 | .708 | .934 | .816 | .909 | .681 | .920



Accurate Counts
978-664-2565

N/S Street : Concord Road
E/W Street : Old Sudbury Rd / Concord Rd
City/State : Sudbury, MA
Weather : Clear

File Name : 17001001
Site Code : 17001001
Start Date : 5/24/2018
Page No : 9

Groups Printed- Trucks

Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	1	4	1	0	0	0	1	0	0	2	1	16
07:15 AM	0	4	7	0	1	0	0	4	0	0	1	2	21
07:30 AM	0	1	3	0	2	0	1	2	0	0	1	2	12
07:45 AM	0	2	0	0	0	0	0	0	0	0	1	4	11
Total	0	8	14	1	3	0	1	7	0	0	5	9	60
08:00 AM	0	1	2	0	1	0	4	0	0	0	3	0	12
08:15 AM	1	1	5	1	1	0	0	4	3	0	1	0	21
08:30 AM	0	0	1	0	0	0	0	2	0	0	0	0	7
08:45 AM	0	2	7	0	1	0	1	5	0	0	2	1	23
Total	1	4	15	1	3	0	5	11	3	0	6	1	63
Grand Total	1	12	29	2	6	0	6	18	3	0	11	10	123
Apprch %	2.4	28.6	69	25	75	0	22.2	66.7	11.1	0	54.3	21.7	
Total %	0.8	9.8	23.6	1.6	4.9	0	4.9	14.6	2.4	0	8.9	8.1	

Accurate Counts
978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 10

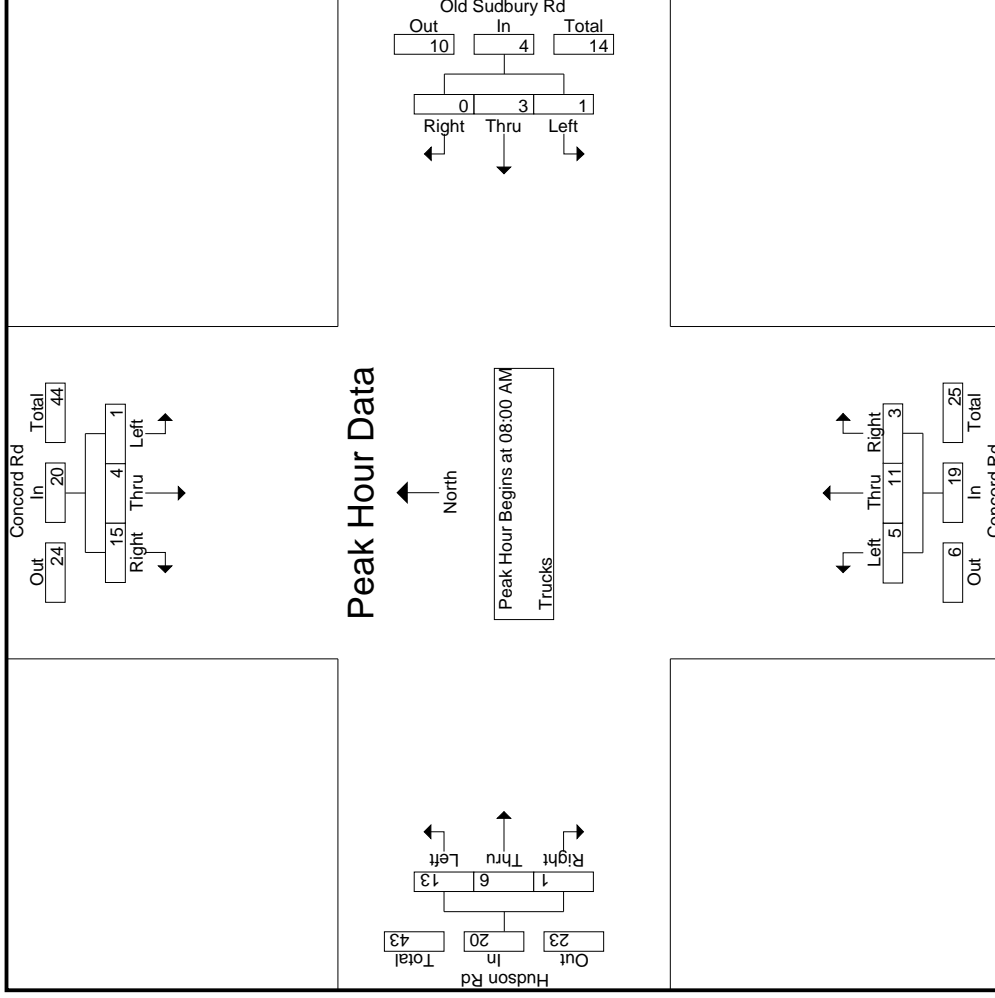
Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West			Int. Total					
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total				
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																		
Peak Hour for Entire Intersection Begins at 08:00 AM																		
08:00 AM	0	1	2	0	1	0	1	0	0	4	0	0	4	1	3	0	4	12
08:15 AM	1	1	5	1	1	0	2	0	4	0	3	4	7	4	1	0	5	21
08:30 AM	0	0	1	0	0	0	0	0	2	0	0	4	2	4	0	0	4	7
08:45 AM	0	2	7	0	1	0	1	0	5	0	0	4	6	4	2	1	7	23
Total Volume	1	4	15	1	3	0	4	0	11	3	19	13	19	13	6	1	20	63
% App. Total	.250	.500	.536	.250	.750	.000	.500	.000	26.3	15.8	.679	65	.679	.813	.500	.250	.714	.685
PHF	.250	.500	.536	.250	.750	.000	.500	.000	.313	.250	.679	.813	.679	.813	.500	.250	.714	.685

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 11

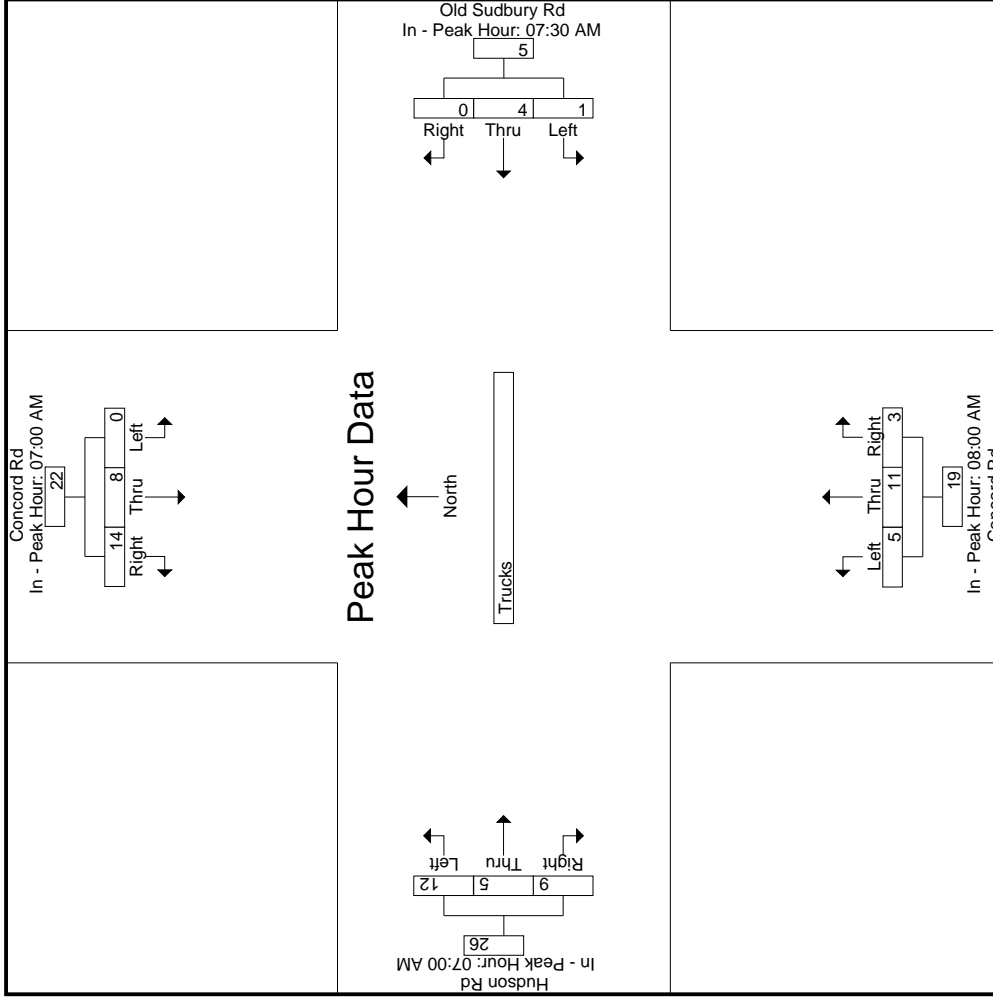


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			07:30 AM			08:00 AM			08:00 AM			07:00 AM		
+0 mins.	0	1	4	0	0	2	0	0	4	0	0	0	0	0	4
+15 mins.	0	4	7	0	0	0	0	0	0	4	0	3	2	1	2
+30 mins.	0	1	3	0	0	1	0	0	0	0	0	0	0	1	2
+45 mins.	0	2	0	1	1	1	0	0	2	1	1	5	4	1	4
Total Volume	0	8	14	1	4	5	0	0	19	5	11	15.8	12	5	34.6
% App. Total	0	36.4	63.6	20	80	0	26.3	57.9	46.2	26.3	57.9	15.8	46.2	19.2	34.6

Accurate Counts
978-664-2565

PHF | .000 | .500 | .500 | .500 | .250 | .500 | .000 | .625 | .313 | .250 | .679 | .500 | .625 | .563 | .722



Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 13

Groups Printed- Bikes- Peds

Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West			Exclu. Total	Inclu. Total	Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right				
07:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
07:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	1	1	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	2	0	0	0	0	1	0	1	0	1	3	4
08:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	2	2	4
08:15 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	3
08:30 AM	0	0	0	0	0	0	0	0	0	3	1	2	3	3	3	6
08:45 AM	0	0	0	0	0	0	0	0	0	0	1	4	0	0	5	5
Total	0	2	0	0	0	0	0	3	0	3	2	6	5	13	18	18
Grand Total	0	2	0	0	2	0	0	3	0	4	2	7	6	16	22	22
Approch %	0	100	0	0	100	0	0	100	0	22.2	22.2	77.8	0	0	0	0
Total %	0	12.5	0	0	12.5	0	0	18.8	0	12.5	12.5	43.8	27.3	72.7	72.7	72.7

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

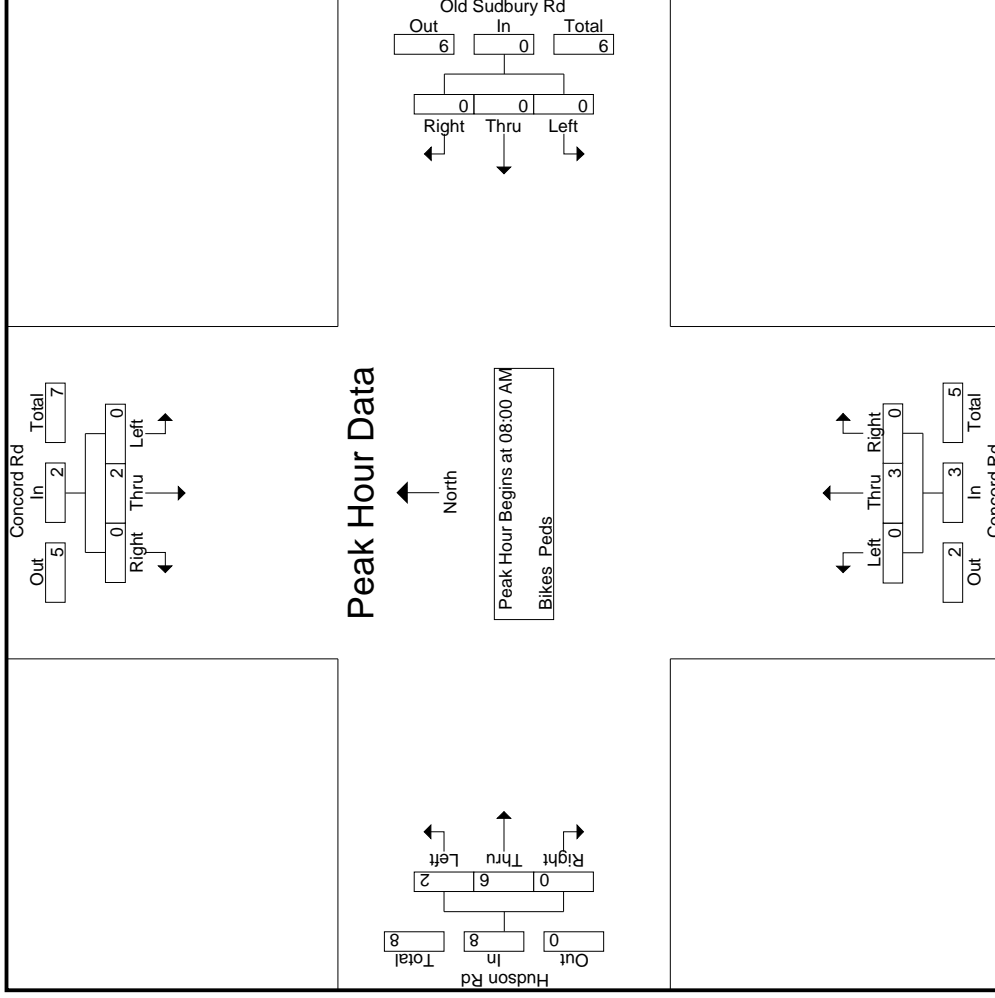
File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 14

Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 08:00 AM														
08:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	2
08:15 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	3
08:30 AM	0	0	0	0	0	0	0	0	0	1	2	0	3	3
08:45 AM	0	0	0	0	0	0	0	0	0	1	4	0	5	5
Total Volume	0	2	0	0	0	0	0	3	0	2	6	0	8	13
% App. Total	0	100	0	0	0	0	0	100	0	25	75	0	0	
PHF	.000	.250	.000	.000	.000	.000	.000	.250	.000	.500	.375	.000	.400	.650

Accurate Counts
978-664-2565

N/S Street : Concord Road
E/W Street : Old Sudbury Rd / Concord Rd
City/State : Sudbury, MA
Weather : Clear

File Name : 17001001
Site Code : 17001001
Start Date : 5/24/2018
Page No : 15

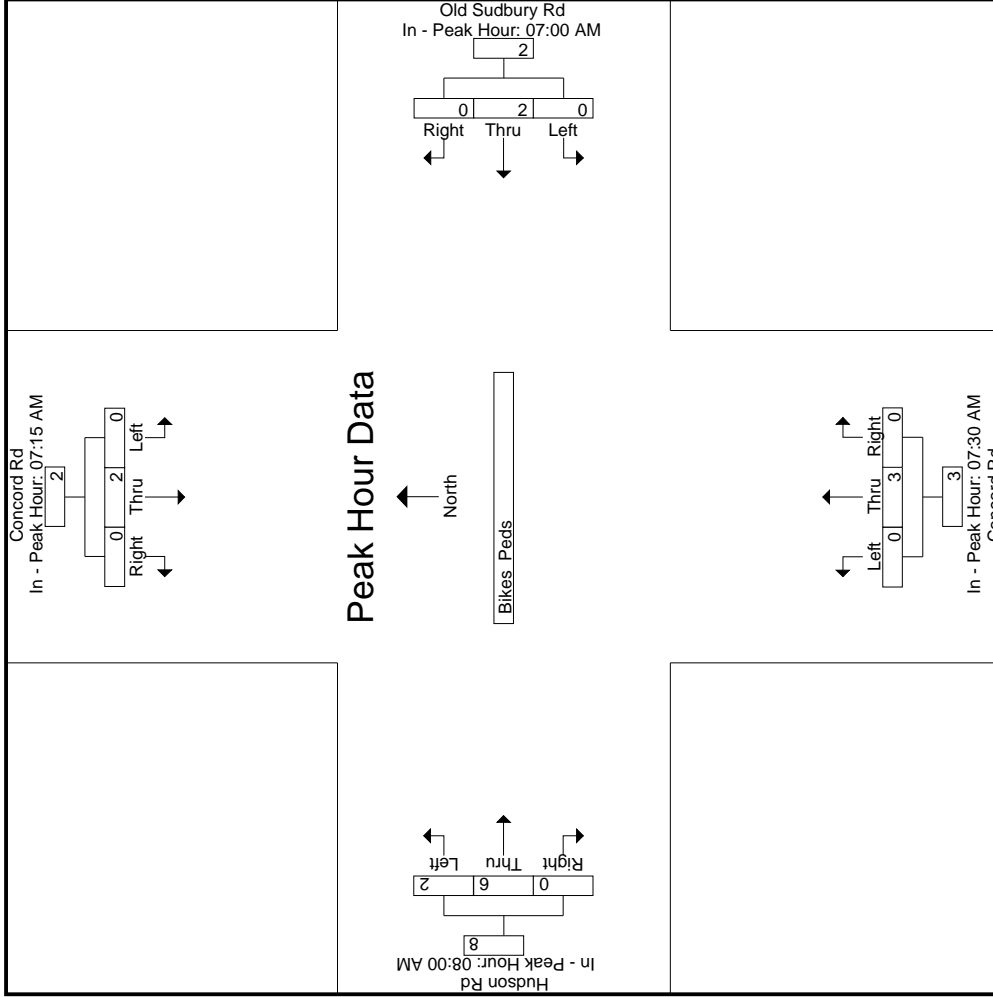


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:15 AM			07:00 AM			07:30 AM			08:00 AM		
+0 mins.	0	0	0	0	0	0	0	0	1	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	1	0	0	0
+30 mins.	0	0	0	0	0	0	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	2	0	2	0	0	0	0	2	0	3	3
% App. Total	0	100	0	100	0	0	0	100	0	0	25	75

Accurate Counts
978-664-2565

PHF | .000 | .250 | .500 | .750 | 1.000 | 1.250 | 1.500 | 1.750 | 2.000 | 2.250 | 2.500 | 2.750 | 3.000 | 3.250 | 3.500 | 3.750 | 4.000



Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 1

Groups Printed- Cars - Trucks

Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	0	59	33	12	162	0	74	63	5	47	80	63	598
04:15 PM	0	62	37	11	173	0	91	62	5	29	85	63	618
04:30 PM	1	57	51	7	143	1	69	58	3	34	60	53	537
04:45 PM	0	58	55	8	121	0	91	72	4	40	60	72	581
Total	1	236	176	38	599	1	325	255	17	150	285	251	2334
05:00 PM	0	54	58	8	103	1	91	80	13	35	81	58	582
05:15 PM	0	51	55	5	179	0	93	72	9	44	88	65	661
05:30 PM	0	59	63	14	143	1	71	66	5	44	70	76	612
05:45 PM	0	65	47	18	140	1	97	73	10	44	84	70	649
Total	0	229	223	45	565	3	352	291	37	167	323	269	2504
Grand Total	1	465	399	83	1164	4	677	546	54	317	608	520	4838
Approch %	0.1	53.8	46.1	6.6	93	0.3	53	42.8	4.2	21.9	42.1	36	
Total %	0	9.6	8.2	1.7	24.1	0.1	14	11.3	1.1	6.6	12.6	10.7	
Cars	1	458	398	82	1154	4	668	539	54	310	602	512	4782
% Cars	100	98.5	99.7	98.8	99.1	100	98.7	98.7	100	97.8	99	98.5	98.8
Trucks	0	7	1	1	10	0	9	7	0	7	6	8	56
% Trucks	0	1.5	0.3	1.2	0.9	0	1.3	1.3	0	2.2	1	1.5	1.2

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 2

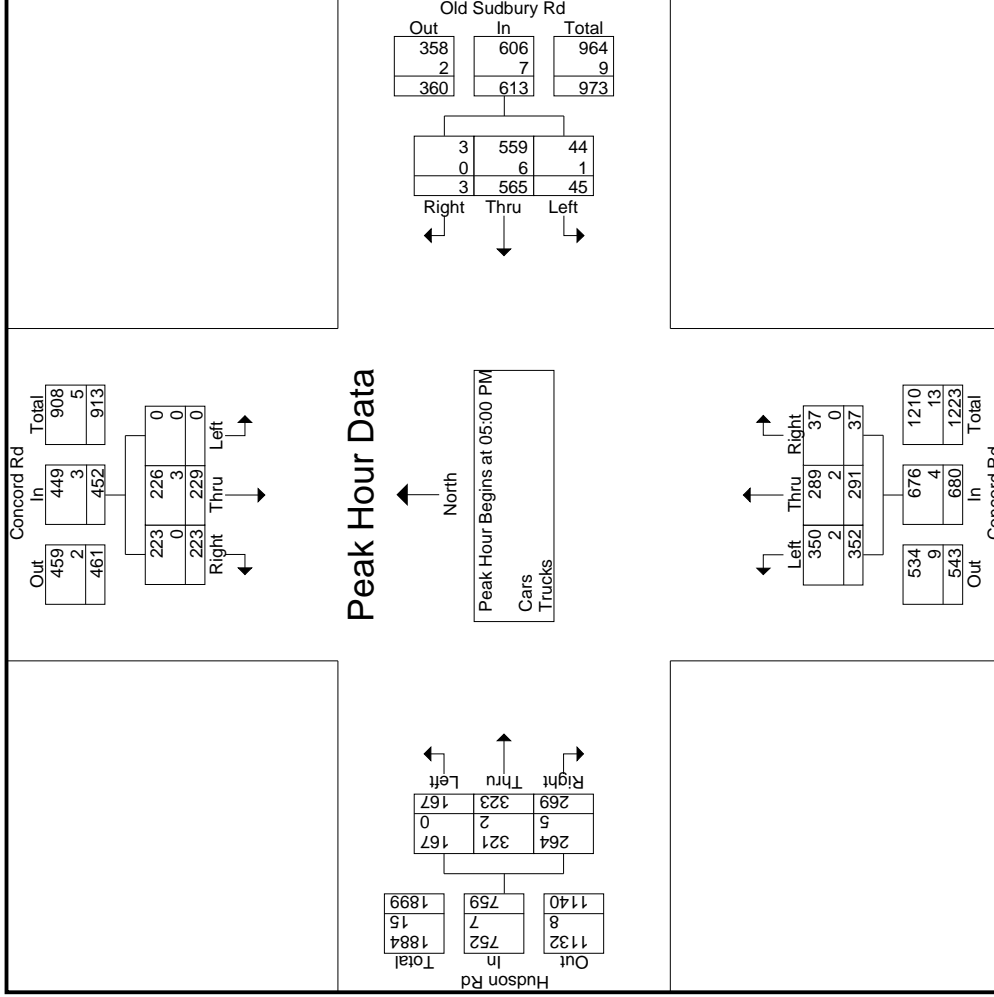
Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West							
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right					
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	0	54	58	112	8	103	1	112	91	80	13	184	35	81	58	174	582
05:15 PM	0	51	55	106	5	179	0	184	93	72	9	174	44	88	65	197	661
05:30 PM	0	59	63	122	14	143	1	158	71	66	5	142	44	70	76	190	612
05:45 PM	0	65	47	112	18	140	1	159	97	73	10	180	44	84	70	198	649
Total Volume	0	229	223	452	45	565	3	613	352	291	37	680	167	323	269	759	2504
% App. Total	0	50.7	49.3		7.3	92.2	0.5		51.8	42.8	5.4		22	42.6	35.4		
PHF	.000	.881	.885	.926	.625	.789	.750	.833	.907	.909	.712	.924	.949	.918	.885	.958	.947
Cars	0	226	223	449	44	559	3	606	350	289	37	676	167	321	264	752	2483
% Cars	0	98.7	100	99.3	97.8	98.9	100	98.9	99.4	99.3	100	99.4	100	99.4	98.1	99.1	99.2
Trucks	0	3	0	3	1	6	0	7	2	2	0	4	0	2	5	7	21
% Trucks	0	1.3	0	0.7	2.2	1.1	0	1.1	0.6	0.7	0	0.6	0	0.6	1.9	0.9	0.8

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 3



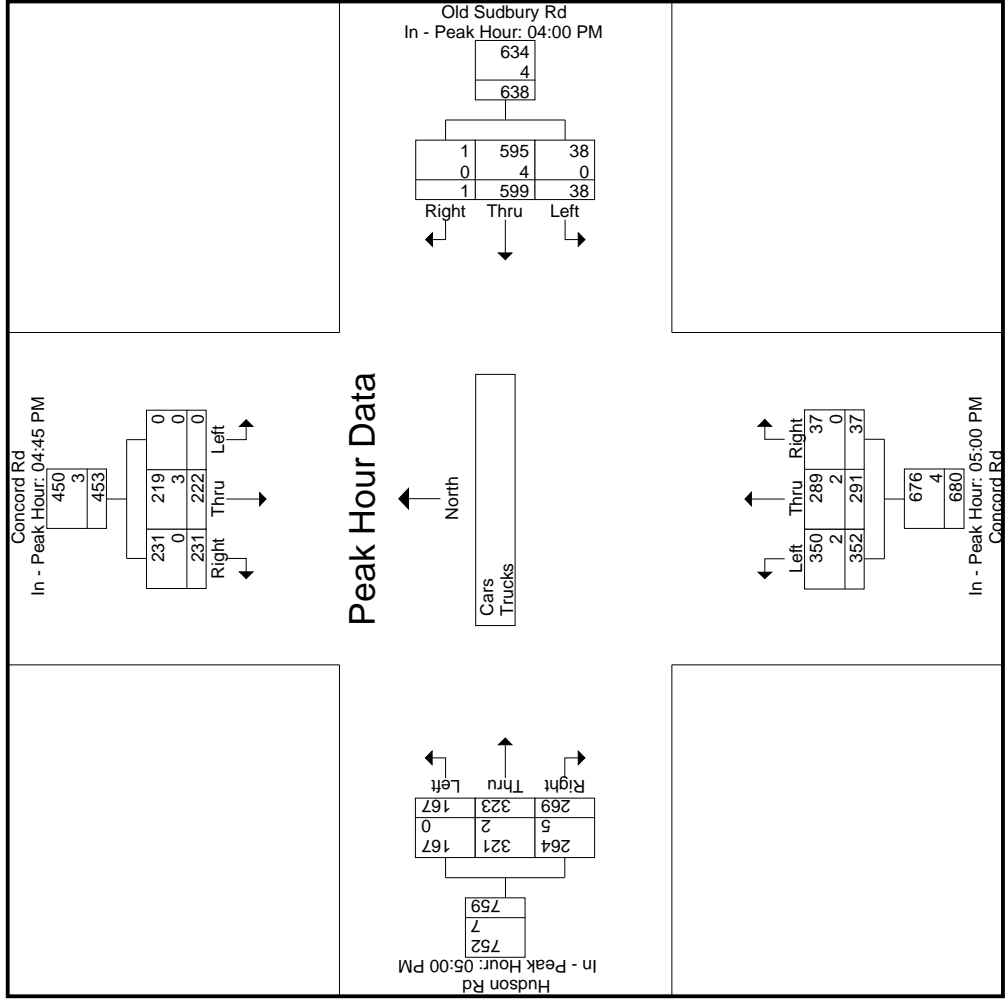
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM			04:00 PM			05:00 PM			05:00 PM						
+0 mins.	0	58	55	113	12	162	0	174	91	80	13	184	35	81	58	174
+15 mins.	0	54	58	112	11	173	0	184	93	72	9	174	44	88	65	197
+30 mins.	0	51	55	106	7	143	1	151	71	66	5	142	44	70	76	190
+45 mins.	0	59	63	122	8	121	0	129	97	73	10	180	44	84	70	198
Total Volume	0	222	231	453	38	599	1	638	352	291	37	680	167	323	269	759
% App. Total	0	49	51	51	6	93.9	0.2	51.8	42.8	5.4	42.6	35.4	22	42.6	35.4	42.6

Accurate Counts

978-664-2565

PHF	.000	.941	.917	.928	.792	.866	.250	.867	.907	.909	.712	.924	.949	.918	.885	.958
Cars	0	219	231	450	38	595	1	634	350	289	37	676	167	321	264	752
% Cars	0	98.6	100	99.3	100	99.3	100	99.4	99.4	99.3	100	99.4	100	99.4	98.1	99.1
Trucks	0	3	0	3	0	4	0	4	2	2	0	4	0	2	5	7
% Trucks	0	1.4	0	0.7	0	0.7	0	0.6	0.6	0.7	0	0.6	0	0.6	1.9	0.9



Peak Hour Data

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 5

Groups Printed- Cars

Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	0	58	33	12	161	0	73	59	5	40	78	61	580
04:15 PM	0	61	36	11	172	0	88	62	5	29	84	62	610
04:30 PM	1	57	51	7	142	1	66	57	3	34	59	53	531
04:45 PM	0	56	55	8	120	0	91	72	4	40	60	72	578
Total	1	232	175	38	595	1	318	250	17	143	281	248	2299
05:00 PM	0	54	58	8	100	1	90	80	13	35	80	57	576
05:15 PM	0	50	55	5	177	0	92	71	9	44	88	63	654
05:30 PM	0	59	63	13	142	1	71	65	5	44	70	74	607
05:45 PM	0	63	47	18	140	1	97	73	10	44	83	70	646
Total	0	226	223	44	559	3	350	289	37	167	321	264	2483
Grand Total	1	458	398	82	1154	4	668	539	54	310	602	512	4782
Apprch %	0.1	53.4	46.4	6.6	93.1	0.3	53	42.7	4.3	21.8	42.3	36	
Total %	0	9.6	8.3	1.7	24.1	0.1	14	11.3	1.1	6.5	12.6	10.7	

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

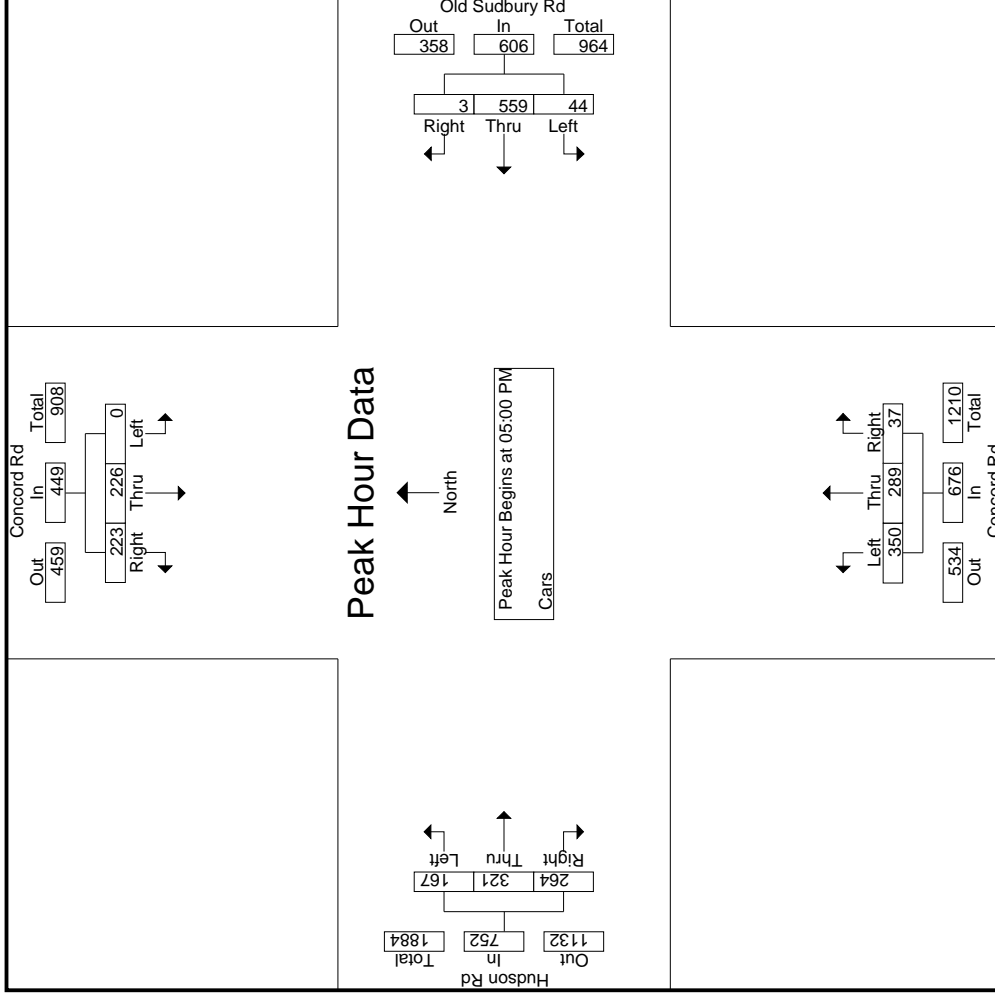
File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 6

Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total
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	0	54	58	8	100	1	90	80	13	35	80	57	172	576
05:15 PM	0	50	55	5	177	0	92	71	9	44	88	63	195	654
05:30 PM	0	59	63	13	142	1	71	65	5	44	70	74	188	607
05:45 PM	0	63	47	18	140	1	97	73	10	44	83	70	197	646
Total Volume	0	226	223	44	559	3	350	289	37	167	321	264	752	2483
% App. Total	0	50.3	49.7	7.3	92.2	0.5	51.8	42.8	5.5	22.2	42.7	35.1		
PHF	.000	.897	.885	.611	.790	.750	.902	.903	.712	.949	.912	.892	.954	.949

Accurate Counts
978-664-2565

N/S Street : Concord Road
E/W Street : Old Sudbury Rd / Concord Rd
City/State : Sudbury, MA
Weather : Clear

File Name : 17001001
Site Code : 17001001
Start Date : 5/24/2018
Page No : 7

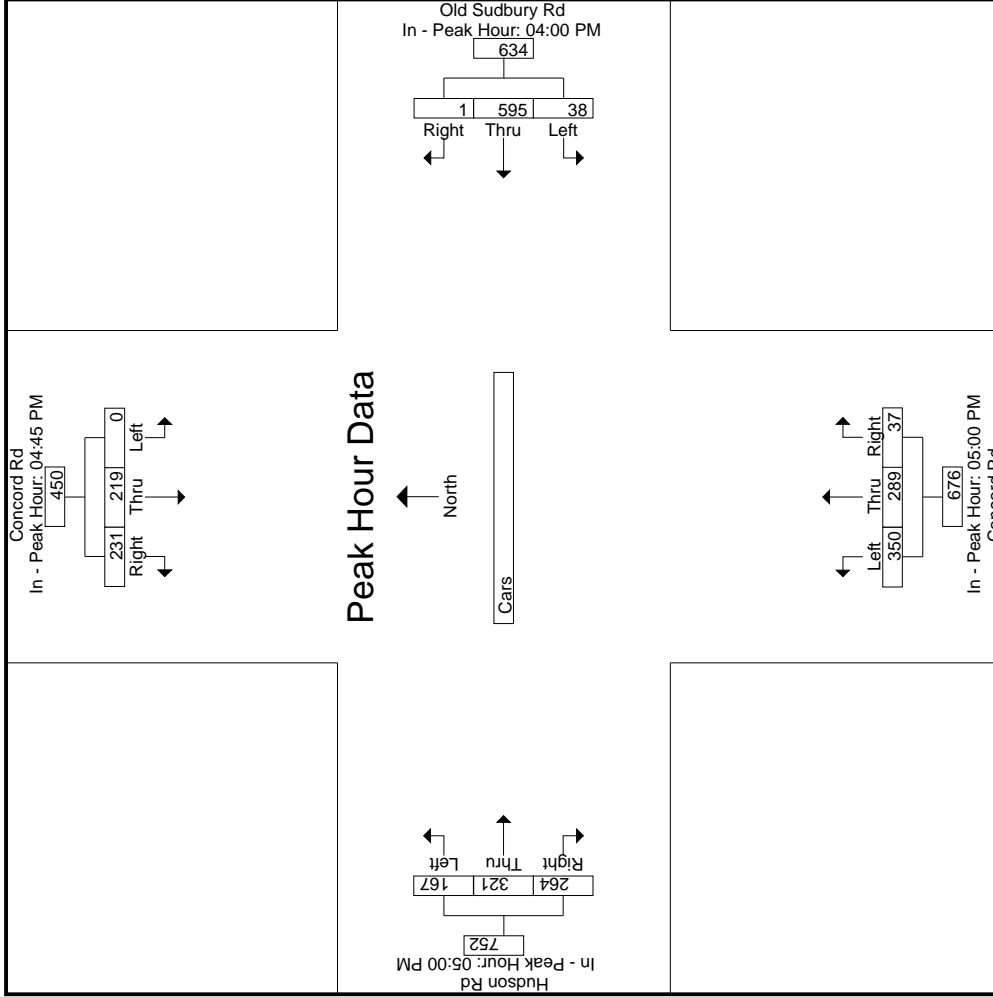


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM			04:00 PM			05:00 PM			05:00 PM				
+0 mins.	0	56	55	111	161	0	173	90	80	13	183	35	57	172
+15 mins.	0	54	58	112	172	0	183	92	71	9	172	44	63	195
+30 mins.	0	50	55	105	142	1	150	71	65	5	141	44	70	188
+45 mins.	0	59	63	122	120	0	128	97	73	10	180	44	83	197
Total Volume	0	219	231	450	595	1	634	350	289	37	676	167	321	752
% App. Total	0	48.7	51.3	6	93.8	0.2	51.8	42.8	42.8	5.5	22.2	42.7	35.1	

Accurate Counts
978-664-2565

PHF | .000 | .928 | .917 | .922 | .792 | .865 | .250 | .866 | .902 | .903 | .712 | .923 | .949 | .912 | .892 | .954



Accurate Counts
978-664-2565

N/S Street : Concord Road
E/W Street : Old Sudbury Rd / Concord Rd
City/State : Sudbury, MA
Weather : Clear

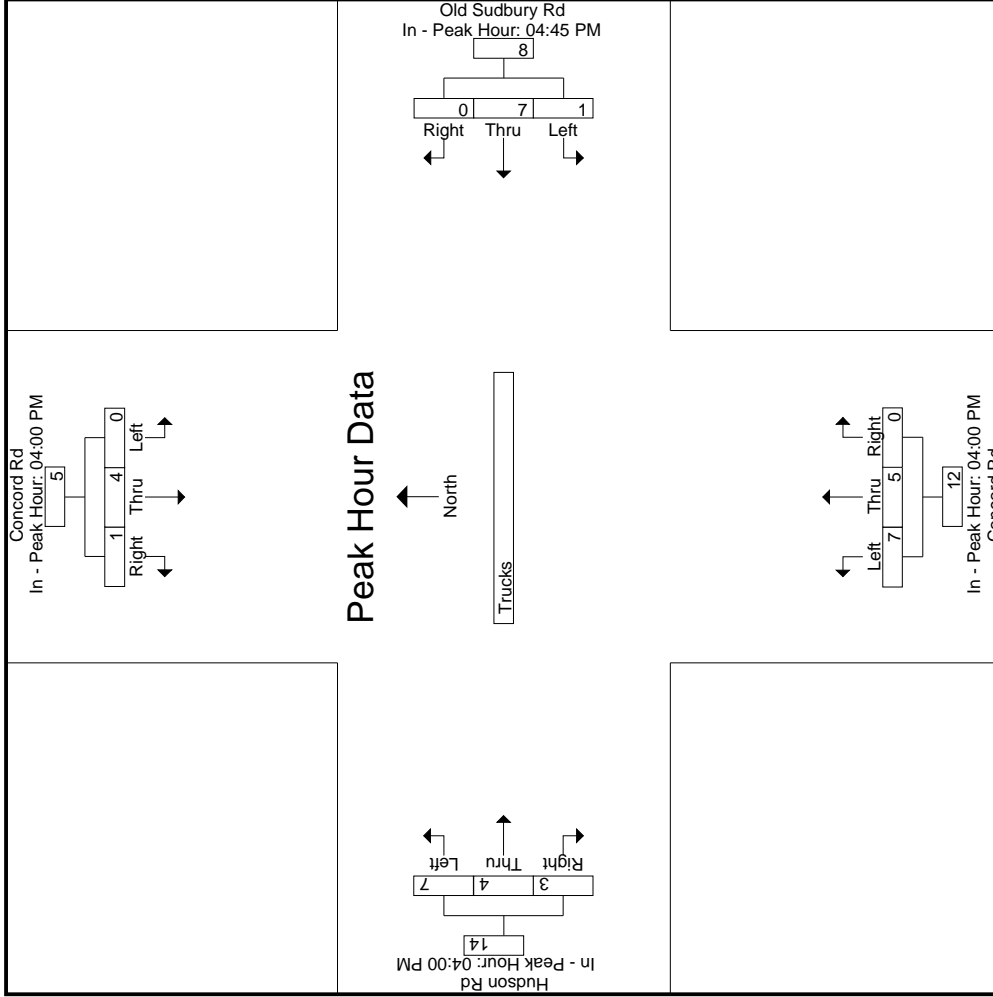
File Name : 17001001
Site Code : 17001001
Start Date : 5/24/2018
Page No : 9

Groups Printed- Trucks

Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	0	1	0	0	1	0	1	4	0	7	2	2	18
04:15 PM	0	1	1	0	1	0	3	0	0	0	1	1	8
04:30 PM	0	0	0	0	1	0	3	1	0	0	1	0	6
04:45 PM	0	2	0	0	1	0	0	0	0	0	0	0	3
Total	0	4	1	0	4	0	7	5	0	7	4	3	35
05:00 PM	0	0	0	0	3	0	1	0	0	0	1	1	6
05:15 PM	0	1	0	0	2	0	1	1	0	0	0	2	7
05:30 PM	0	0	0	1	1	0	0	1	0	0	0	2	5
05:45 PM	0	2	0	0	0	0	0	0	0	0	1	0	3
Total	0	3	0	1	6	0	2	2	0	0	2	5	21
Grand Total	0	7	1	1	10	0	9	7	0	7	6	8	56
Apprch %	0	87.5	12.5	9.1	90.9	0	56.2	43.8	0	33.3	28.6	38.1	
Total %	0	12.5	1.8	1.8	17.9	0	16.1	12.5	0	12.5	10.7	14.3	

Accurate Counts
978-664-2565

PHF | .000 | .500 | .250 | .625 | .250 | .583 | .000 | .667 | .583 | .313 | .000 | .600 | .250 | .500 | .375 | .318



Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 13

Groups Printed- Bikes- Peds

Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West			Exclu. Total	Inclu. Total	Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right				
04:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	2
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	3
Total	0	0	0	0	0	0	0	0	0	0	4	0	1	4	1	5
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
Grand Total	0	0	0	0	0	0	0	0	0	0	5	0	1	5	1	6
Approch %	0	0	0	0	0	0	0	0	0	0	0	0	100	0	0	0
Total %	0	0	0	0	0	0	0	0	0	0	0	0	100	83.3	16.7	0

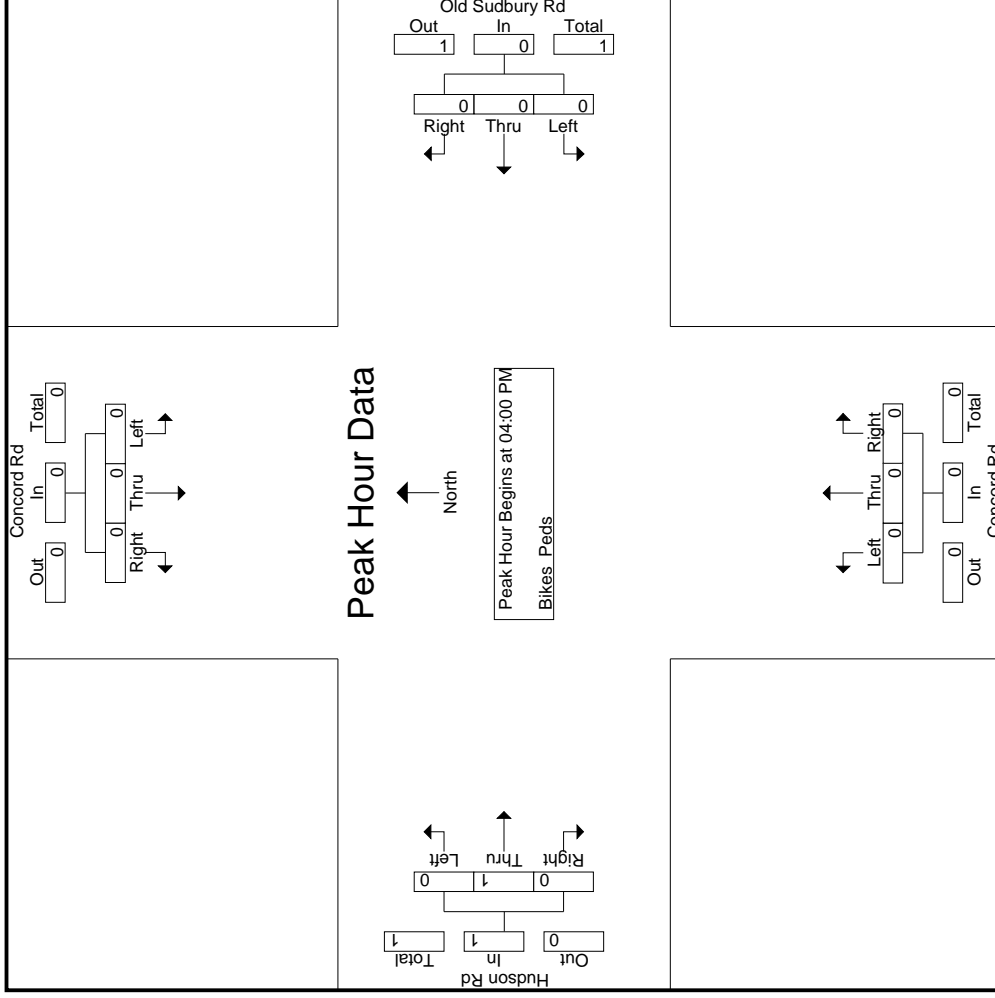
Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Old Sudbury Rd / Concord Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001001
 Site Code : 17001001
 Start Date : 5/24/2018
 Page No : 14

Start Time	Concord Rd From North			Old Sudbury Rd From East			Concord Rd From South			Hudson Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 04:00 PM													
04:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	1	0	1
% App. Total	0	0	0	0	0	0	0	0	0	0	100	0	0
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250



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			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	0	0	1
+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	1
% App. Total	0	0	0	0	0	0	0	0	100

Accurate Counts

978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 1

Start Time	Groups Printed- Cars - Trucks											
	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
07:00 AM	2	1	0	30	80	2	9	0	98	0	188	5
07:15 AM	0	0	0	24	90	0	5	0	128	2	161	4
07:30 AM	1	0	1	45	104	0	9	0	91	0	127	4
07:45 AM	0	0	1	17	99	0	7	3	97	2	156	6
Total	3	1	2	116	373	2	30	3	414	4	632	19
08:00 AM	0	0	0	13	109	1	4	1	91	0	135	4
08:15 AM	0	0	0	15	96	0	6	0	78	0	170	2
08:30 AM	0	0	1	16	120	0	6	1	73	0	114	2
08:45 AM	0	1	1	28	128	1	10	0	87	1	122	2
Total	0	1	2	72	453	2	26	2	329	1	541	10
Grand Total	3	2	4	188	826	4	56	5	743	5	1173	29
Approch %	33.3	22.2	44.4	18.5	81.1	0.4	7	0.6	92.4	0.4	97.2	2.4
Total %	0.1	0.1	0.1	6.2	27.2	0.1	1.8	0.2	24.5	0.2	38.6	1
Cars	3	2	4	170	800	4	55	5	727	5	1141	28
% Cars	100	100	100	90.4	96.9	100	98.2	100	97.8	100	97.3	96.6
Trucks	0	0	0	18	26	0	1	0	16	0	32	1
% Trucks	0	0	0	9.6	3.1	0	1.8	0	2.2	0	2.7	3.4
Total	3	2	4	188	826	4	56	5	743	5	1173	29
Approch %	33.3	22.2	44.4	18.5	81.1	0.4	7	0.6	92.4	0.4	97.2	2.4
Total %	0.1	0.1	0.1	6.2	27.2	0.1	1.8	0.2	24.5	0.2	38.6	1
Cars	3	2	4	170	800	4	55	5	727	5	1141	28
% Cars	100	100	100	90.4	96.9	100	98.2	100	97.8	100	97.3	96.6
Trucks	0	0	0	18	26	0	1	0	16	0	32	1
% Trucks	0	0	0	9.6	3.1	0	1.8	0	2.2	0	2.7	3.4

Int. Total
 415
 414
 382
 388
 1599
 358
 367
 333
 381
 1439
 3038
 2944
 96.9
 94
 3.1

Accurate Counts

978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 2

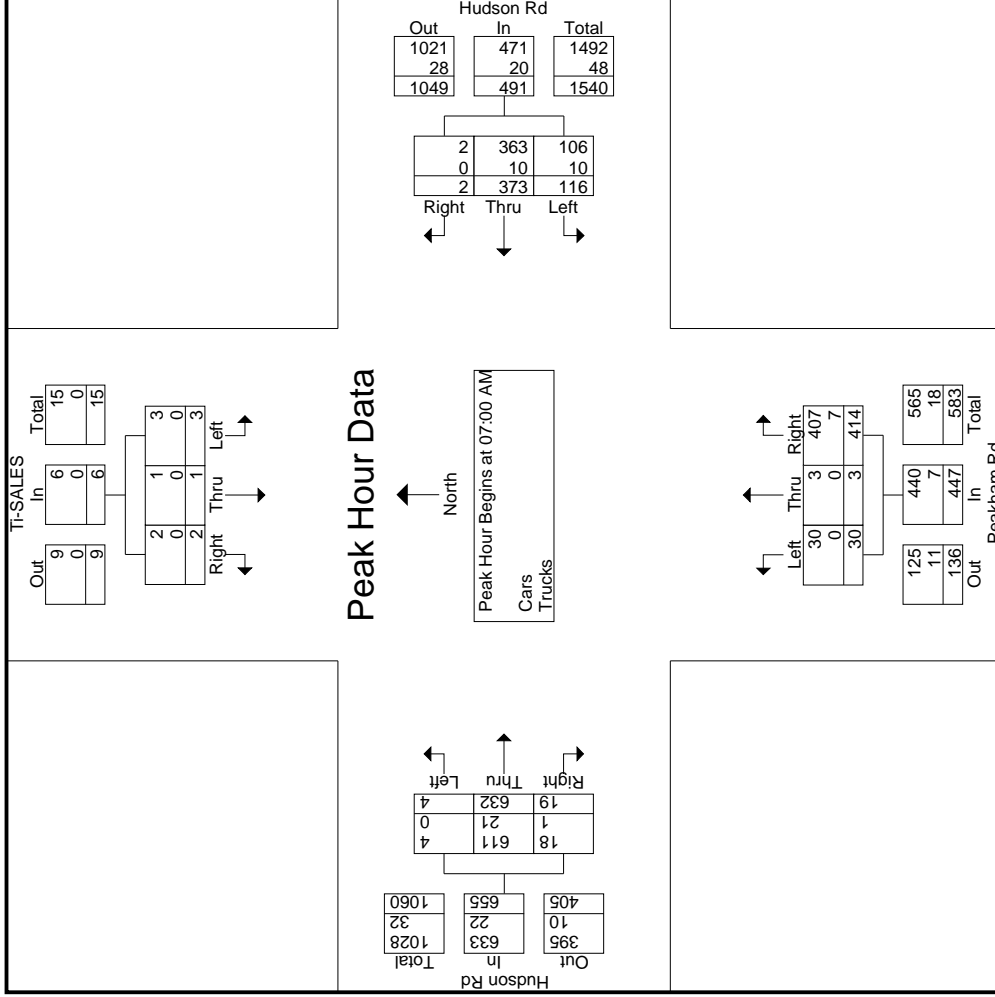
Start Time	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:00 AM														
07:00 AM	2	1	0	30	80	2	9	0	98	0	188	5	107	415
07:15 AM	0	0	0	24	90	0	5	0	128	2	161	4	133	414
07:30 AM	1	0	1	45	104	0	9	0	91	0	127	4	100	382
07:45 AM	0	0	1	17	99	0	7	3	97	2	156	6	107	388
Total Volume	3	1	2	116	373	2	30	3	414	4	632	19	447	1599
% App. Total	50	16.7	33.3	23.6	76	0.4	6.7	0.7	92.6	0.6	96.5	2.9		
PHF	.375	.250	.500	.644	.897	.250	.833	.250	.809	.500	.840	.792	.840	.963
Cars	3	1	2	106	363	2	30	3	407	4	611	18	440	1550
% Cars	100	100	100	91.4	97.3	100	100	100	98.3	100	96.7	94.7	98.4	96.9
Trucks	0	0	0	10	10	0	0	0	7	0	21	1	7	49
% Trucks	0	0	0	8.6	2.7	0	0	0	1.7	0	3.3	5.3	1.6	3.1

Accurate Counts

978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 3



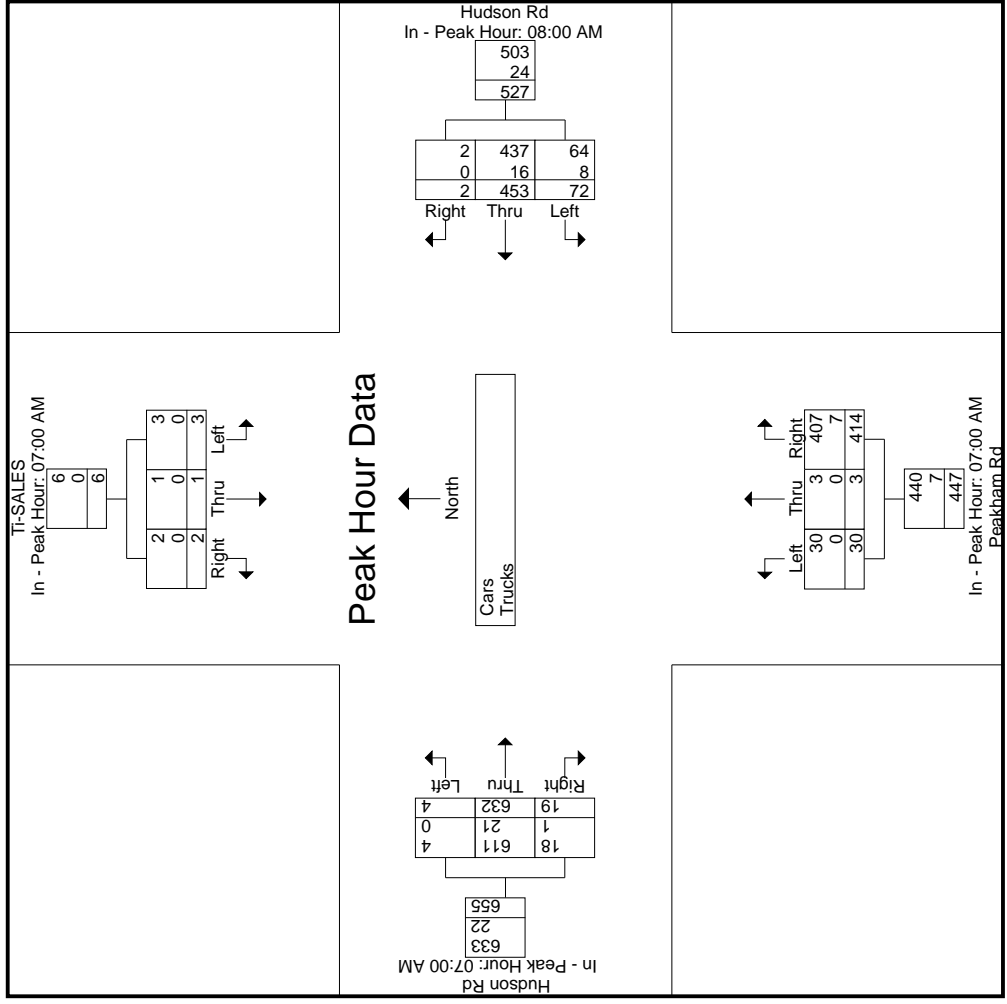
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			08:00 AM			07:00 AM			07:00 AM			
+0 mins.	2	1	0	13	109	1	123	9	98	0	188	5	193
+15 mins.	0	0	0	15	96	0	111	5	0	0	161	4	167
+30 mins.	1	0	1	16	120	0	136	9	0	0	127	4	131
+45 mins.	0	0	1	28	128	1	157	7	3	2	156	6	164
Total Volume	3	1	2	72	453	2	527	30	3	414	632	19	655
% App. Total	50	16.7	33.3	13.7	86	0.4	6.7	0.7	92.6	0.6	96.5	2.9	

Accurate Counts

978-664-2565

PHF	.375	.250	.500	.500	.643	.885	.500	.839	.833	.250	.809	.840	.840	.500	.840	.792	.848
Cars	3	1	2	6	64	437	2	503	30	3	407	440	440	4	611	18	633
% Cars	100	100	100	100	88.9	96.5	100	95.4	100	100	98.3	98.4	98.4	100	96.7	94.7	96.6
Trucks	0	0	0	0	8	16	0	24	0	0	7	7	7	0	21	1	22
% Trucks	0	0	0	0	11.1	3.5	0	4.6	0	0	1.7	1.6	1.6	0	3.3	5.3	3.4



Accurate Counts
978-664-2565

N/S Street : Peakham Rd / Driveway
E/W Street : Hudson Road
City/State : Sudbury, MA
Weather : Clear

File Name : 17001002
Site Code : 17001002
Start Date : 5/24/2018
Page No : 5

Groups Printed- Cars

Start Time	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	2	1	0	29	76	2	9	0	95	0	182	5	401
07:15 AM	0	0	0	19	87	0	5	0	125	2	157	4	399
07:30 AM	1	0	1	41	101	0	9	0	91	0	123	4	371
07:45 AM	0	0	1	17	99	0	7	3	96	2	149	5	379
Total	3	1	2	106	363	2	30	3	407	4	611	18	1550
08:00 AM	0	0	0	12	105	1	4	1	89	0	133	4	349
08:15 AM	0	0	0	13	90	0	5	0	75	0	169	2	354
08:30 AM	0	0	1	16	118	0	6	1	70	0	112	2	326
08:45 AM	0	1	1	23	124	1	10	0	86	1	116	2	365
Total	0	1	2	64	437	2	25	2	320	1	530	10	1394
Grand Total	3	2	4	170	800	4	55	5	727	5	1141	28	2944
Approch %	33.3	22.2	44.4	17.5	82.1	0.4	7	0.6	92.4	0.4	97.2	2.4	
Total %	0.1	0.1	0.1	5.8	27.2	0.1	1.9	0.2	24.7	0.2	38.8	1	

Accurate Counts

978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 6

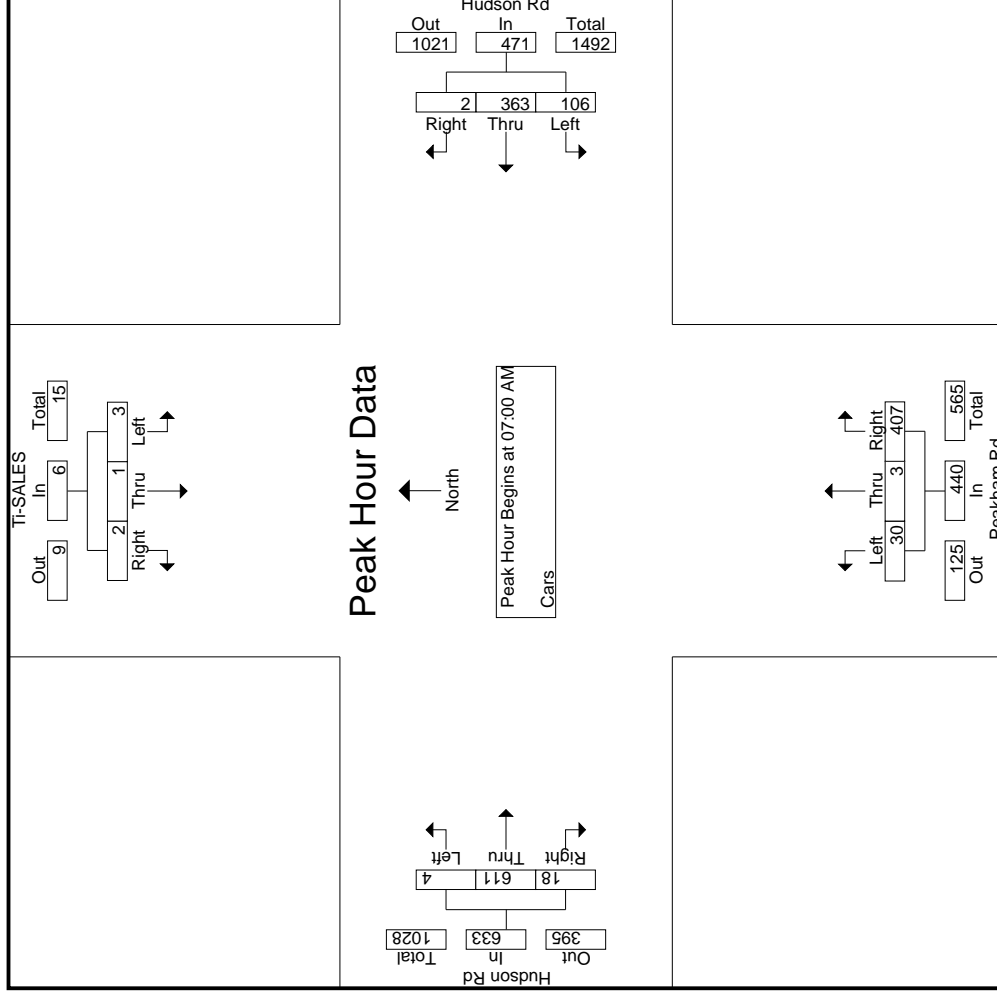
Start Time	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:00 AM													
07:00 AM	2	1	0	29	76	2	107	0	95	0	182	5	401
07:15 AM	0	0	0	19	87	0	106	5	125	2	157	4	399
07:30 AM	1	0	1	41	101	0	142	9	91	0	123	4	371
07:45 AM	0	0	1	17	99	0	116	7	96	2	149	5	379
Total Volume	3	1	2	106	363	2	471	30	407	4	611	18	1550
% App. Total	50	16.7	33.3	22.5	77.1	0.4		6.8	92.5	0.6	96.5	2.8	
PHF	.375	.250	.500	.646	.899	.250	.829	.833	.814	.500	.839	.900	.846

Accurate Counts

978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Rd
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 7

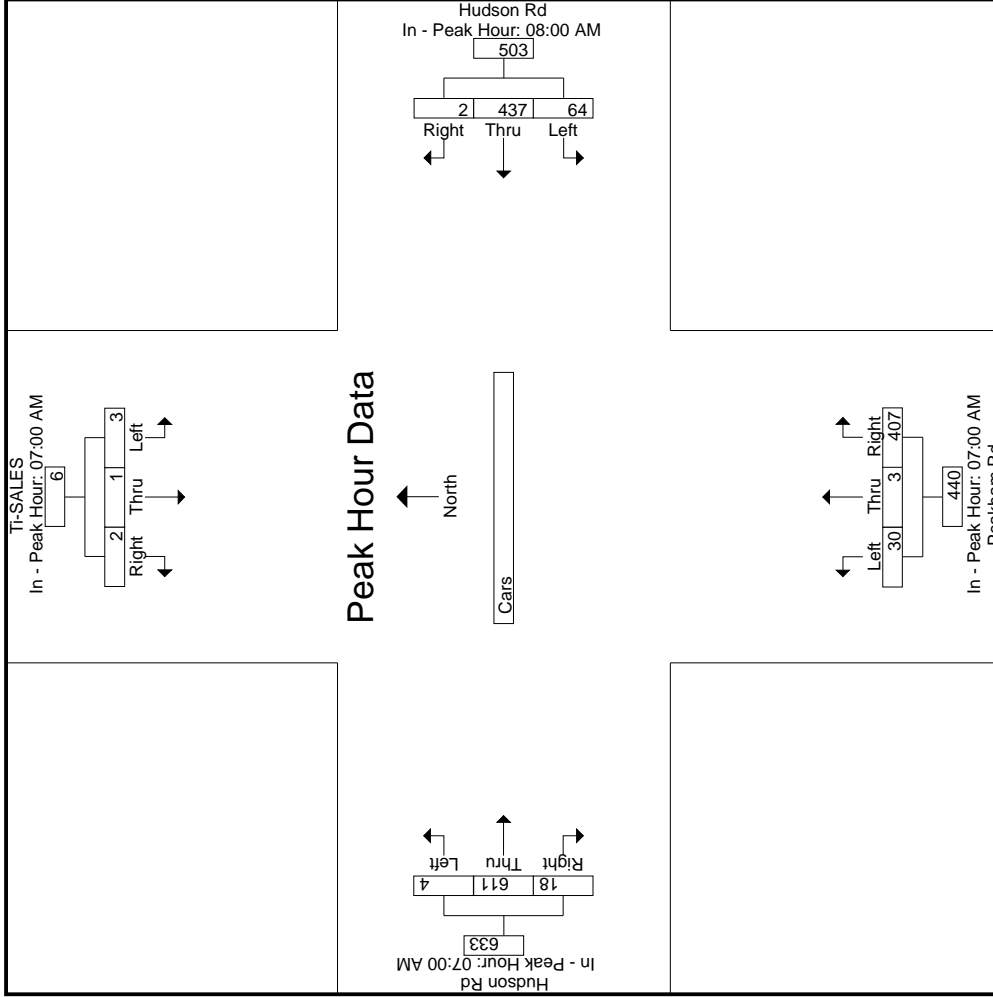


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:00 AM			08:00 AM			07:00 AM			07:00 AM					
+0 mins.	2	1	0	12	105	1	118	9	0	95	104	0	182	5	187
+15 mins.	0	0	0	13	90	0	103	5	0	0	130	2	157	4	163
+30 mins.	1	0	1	16	118	0	134	9	0	0	100	0	123	4	127
+45 mins.	0	0	1	23	124	1	148	7	3	96	106	2	149	5	156
Total Volume	3	1	2	64	437	2	503	30	3	407	440	4	611	18	633
% App. Total	50	16.7	33.3	12.7	86.9	0.4	6.8	0.7	92.5	0.6	96.5	2.8			

Accurate Counts
978-664-2565

PHF | .375 | .250 | .500 | .696 | .881 | .500 | .850 | .833 | .250 | .814 | .846 | .500 | .839 | .900 | .846



Accurate Counts
978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 9

Groups Printed- Trucks

Start Time	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	0	0	1	4	0	0	0	0	0	6	0	14
07:15 AM	0	0	0	5	3	0	0	0	3	0	4	0	15
07:30 AM	0	0	0	4	3	0	0	0	0	0	4	0	11
07:45 AM	0	0	0	0	0	0	0	0	1	0	7	1	9
Total	0	0	0	10	10	0	0	0	7	0	21	1	49
08:00 AM	0	0	0	1	4	0	0	0	2	0	2	0	9
08:15 AM	0	0	0	2	6	0	1	0	3	0	1	0	13
08:30 AM	0	0	0	0	2	0	0	0	3	0	2	0	7
08:45 AM	0	0	0	5	4	0	0	0	1	0	6	0	16
Total	0	0	0	8	16	0	1	0	9	0	11	0	45
Grand Total	0	0	0	18	26	0	1	0	16	0	32	1	94
Apprch %	0	0	0	40.9	59.1	0	5.9	0	94.1	0	97	3	
Total %	0	0	0	19.1	27.7	0	1.1	0	17	0	34	1.1	

Accurate Counts

978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

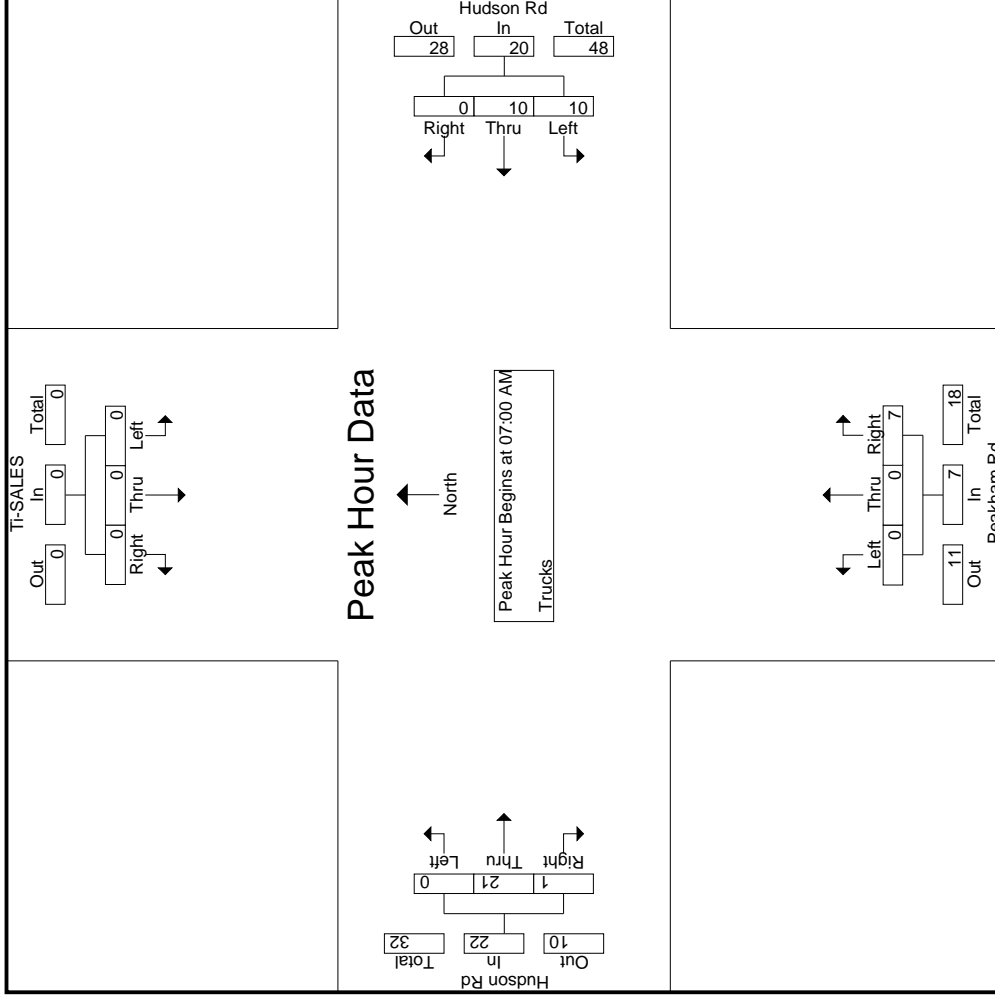
File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 10

Start Time	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:00 AM														
07:00 AM	0	0	0	1	4	0	5	0	0	0	0	0	6	14
07:15 AM	0	0	0	5	3	0	8	0	0	3	0	4	0	15
07:30 AM	0	0	0	4	3	0	7	0	0	0	0	4	0	11
07:45 AM	0	0	0	0	0	0	0	0	0	1	0	7	1	9
Total Volume	0	0	0	10	10	0	20	0	0	7	0	21	1	49
% App. Total	0	0	0	50	50	0	100	0	0	100	0	95.5	4.5	
PHF	.000	.000	.000	.500	.625	.000	.625	.000	.000	.583	.000	.750	.250	.817

Accurate Counts
978-664-2565

N/S Street : Peakham Rd / Driveway
E/W Street : Hudson Road
City/State : Sudbury, MA
Weather : Clear

File Name : 17001002
Site Code : 17001002
Start Date : 5/24/2018
Page No : 11

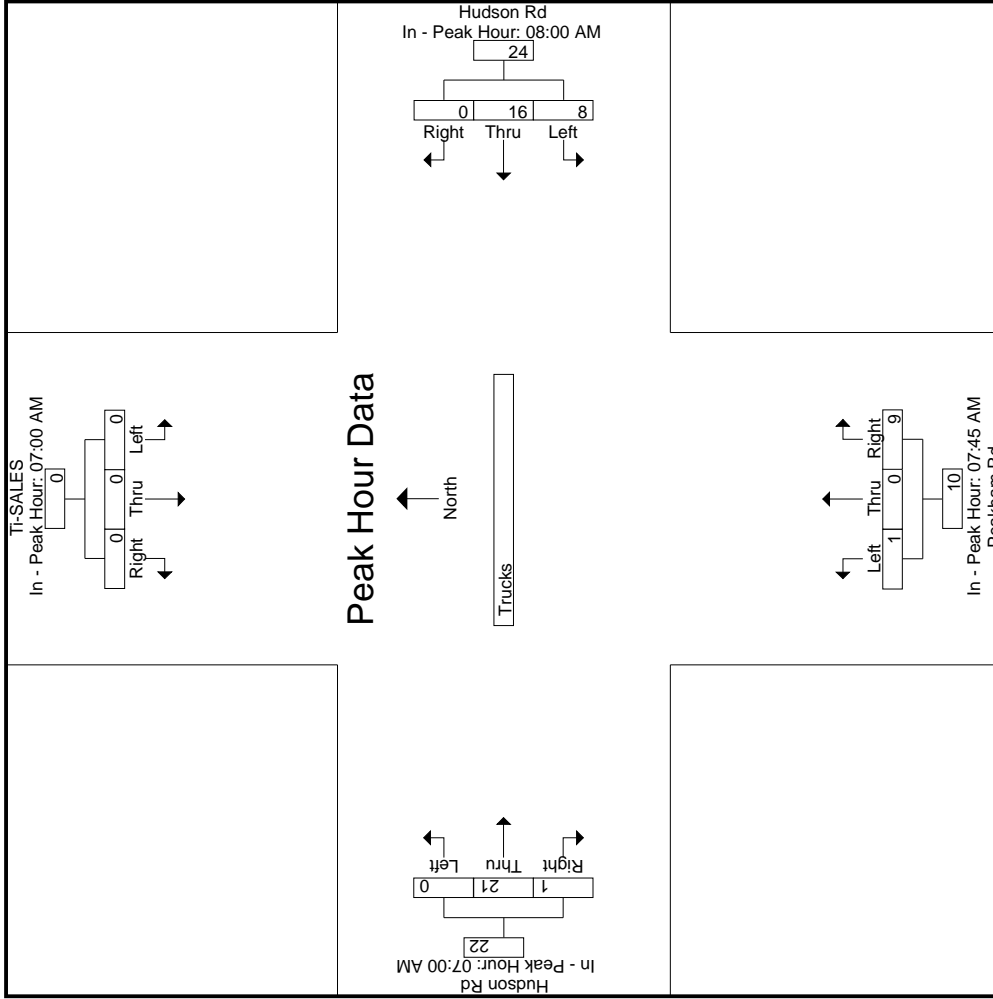


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	07:00 AM			07:45 AM			08:00 AM			07:00 AM			
+0 mins.	0	0	0	4	0	5	1	0	0	1	0	0	6
+15 mins.	0	0	0	6	0	8	2	0	0	2	0	0	4
+30 mins.	0	0	0	2	0	2	0	0	0	3	0	0	4
+45 mins.	0	0	0	4	0	9	5	0	0	3	0	0	8
Total Volume	0	0	0	16	0	24	8	0	0	10	0	0	22
% App. Total	0	0	0	33.3	0	66.7	33.3	0	0	90	0	0	4.5

Accurate Counts
978-664-2565

PHF | .000 | .000 | .000 | .000 | .000 | .000 | .667 | .400 | .667 | .000 | .667 | .000 | .250 | .625 | .750 | .000 | .750 | .250 | .625 | .000 | .750 | .250 | .688



Accurate Counts

978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 13

Groups Printed- Bikes- Peds

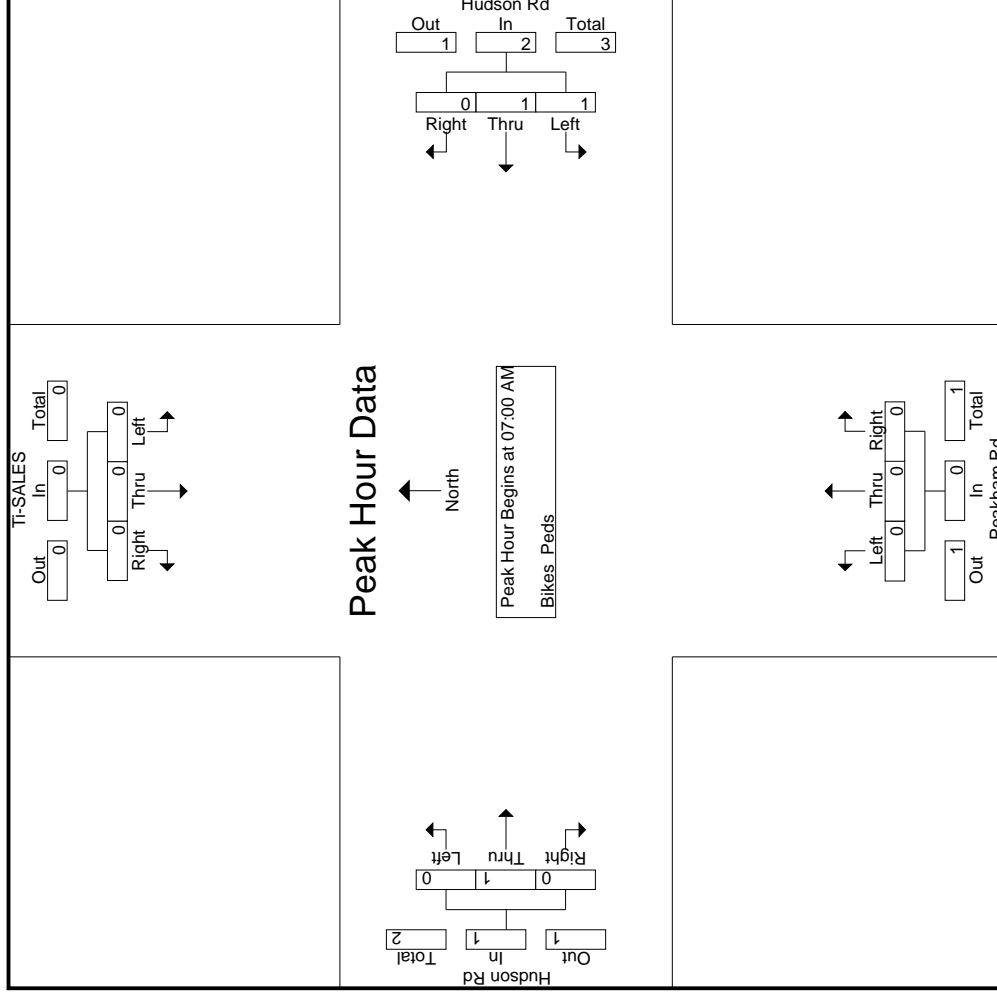
Start Time	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			Exclu. Total	Inclu. Total	Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right				Peds
07:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1
07:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	1	1	0	0	0	0	0	1	0	1	3	4	
08:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1
08:30 AM	0	0	0	0	0	0	0	1	2	0	0	0	0	2	1	3
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2
Total	0	0	0	0	0	0	1	4	0	0	2	0	4	3	7	
Grand Total	0	0	0	1	1	0	1	5	0	0	3	0	5	6	11	
Apprch %	0	0	0	50	50	0	100	0	0	100	0	0	0	0	0	0
Total %	0	0	0	16.7	16.7	0	16.7	0	0	50	0	0	45.5	54.5	0	0

Accurate Counts
978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 14

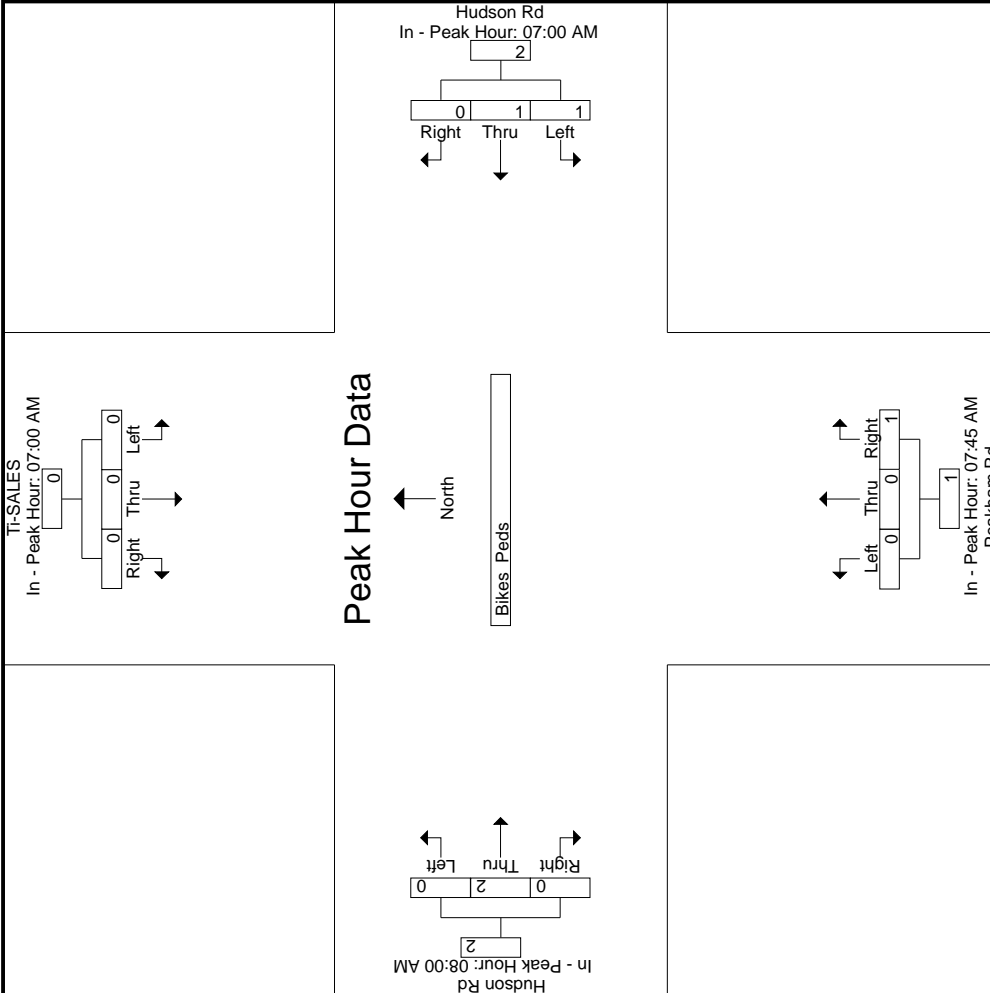
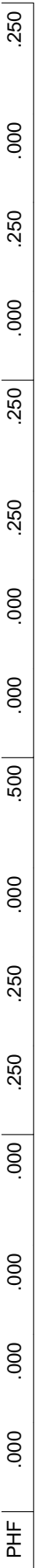
Start Time	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 07:00 AM														
07:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	0	1
07:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	1	1	0	0	0	0	0	1	0	1	3
% App. Total	0	0	0	50	50	0	0	0	0	0	100	0	0	3
PHF	.000	.000	.000	.250	.250	.000	.000	.500	.000	.000	.250	.000	.250	.750



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

	07:00 AM			07:45 AM			08:00 AM		
+0 mins.	0	0	0	1	0	0	0	0	0
+15 mins.	0	0	0	0	1	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	2
Total Volume	0	0	0	1	0	2	0	0	1
% App. Total	0	0	0	50	0	100	0	0	100

Accurate Counts
978-664-2565



Accurate Counts

978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 1

Start Time	Groups Printed- Cars - Trucks												Int. Total
	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	0	0	2	36	224	1	10	0	46	0	140	7	466
04:15 PM	0	0	0	48	234	1	4	0	33	0	145	9	474
04:30 PM	0	0	0	50	236	0	21	0	28	0	116	6	457
04:45 PM	1	0	0	32	242	1	7	0	39	0	152	5	479
Total	1	0	2	166	936	3	42	0	146	0	553	27	1876
05:00 PM	0	0	2	44	208	0	15	0	31	0	143	5	448
05:15 PM	2	0	0	45	281	1	11	0	43	1	149	1	534
05:30 PM	1	0	0	42	229	1	13	0	29	2	163	9	489
05:45 PM	0	0	2	40	235	0	5	0	41	0	159	5	487
Total	3	0	4	171	953	2	44	0	144	3	614	20	1958
Grand Total	4	0	6	337	1889	5	86	0	290	3	1167	47	3834
Apprch %	40	0	60	15.1	84.7	0.2	22.9	0	77.1	0.2	95.9	3.9	
Total %	0.1	0	0.2	8.8	49.3	0.1	2.2	0	7.6	0.1	30.4	1.2	
Cars	4	0	6	336	1871	5	84	0	287	3	1155	46	3797
% Cars	100	0	100	99.7	99	100	97.7	0	99	100	99	97.9	99
Trucks	0	0	0	1	18	0	2	0	3	0	12	1	37
% Trucks	0	0	0	0.3	1	0	2.3	0	1	0	1	2.1	1

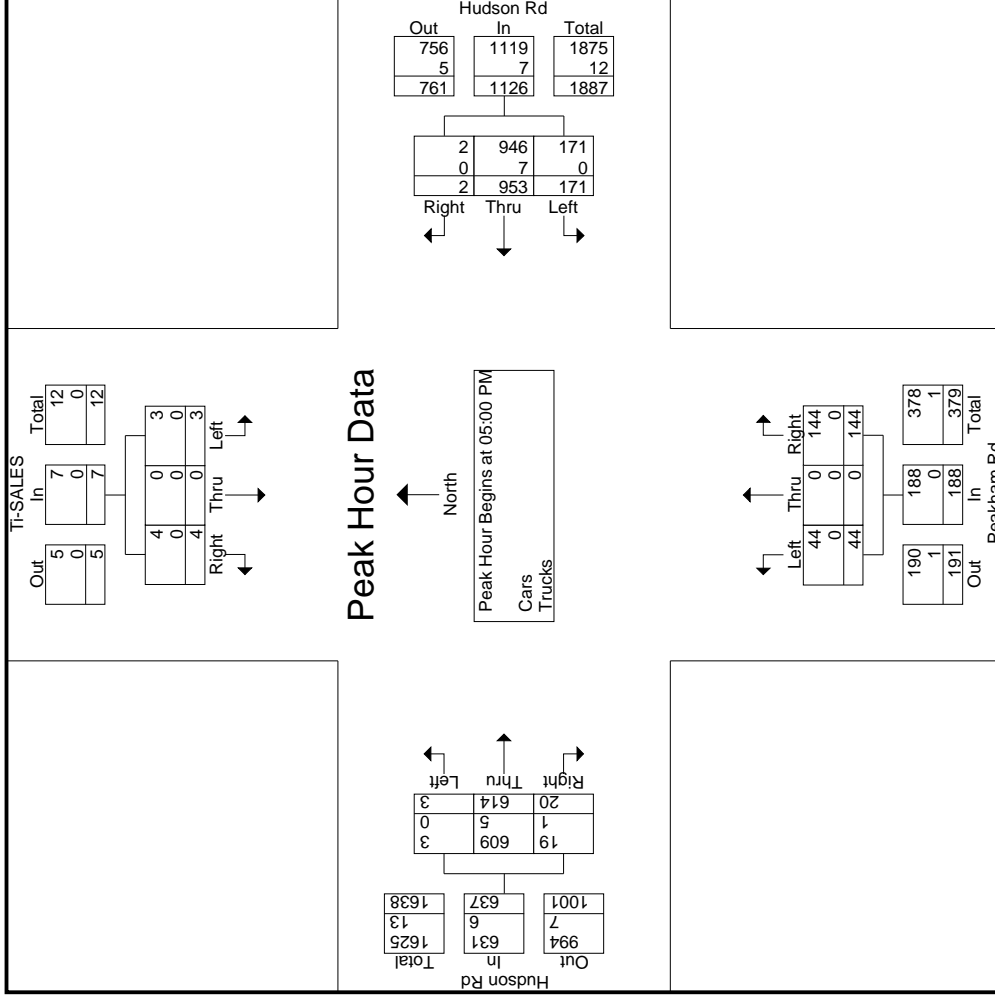
Accurate Counts

978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 2

Start Time	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			Int. Total			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total		
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	0	0	2	44	208	0	252	15	0	31	46	0	143	5	148	448
05:15 PM	2	0	0	45	281	1	327	11	0	43	54	1	149	1	151	534
05:30 PM	1	0	0	42	229	1	272	13	0	29	42	2	163	9	174	489
05:45 PM	0	0	2	40	235	0	275	5	0	41	46	0	159	5	164	487
Total Volume	3	0	4	171	953	2	1126	44	0	144	188	3	614	20	637	1958
% App. Total	42.9	0	57.1	15.2	84.6	0.2		23.4	0	76.6		0.5	96.4	3.1		
PHF	.375	.000	.500	.950	.848	.500	.861	.733	.000	.837	.870	.375	.942	.556	.915	.917
Cars	3	0	4	171	946	2	1119	44	0	144	188	3	609	19	631	1945
% Cars	100	0	100	100	99.3	100	99.4	100	0	100	100	100	99.2	95.0	99.1	99.3
Trucks	0	0	0	0	7	0	7	0	0	0	0	0	5	1	6	13
% Trucks	0	0	0	0	0.7	0	0.6	0	0	0	0	0	0.8	5.0	0.9	0.7



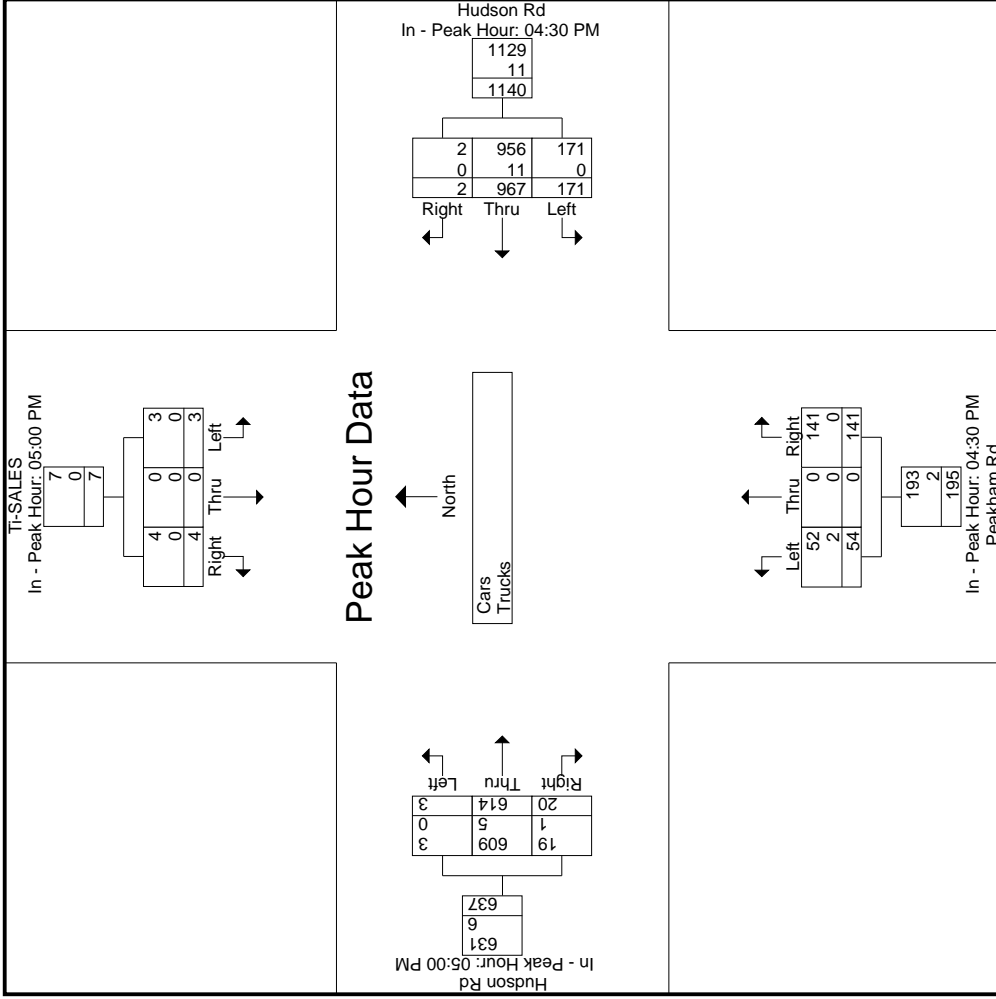
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM			04:30 PM			04:30 PM			04:30 PM			05:00 PM			
+0 mins.	0	0	2	2	236	0	286	0	21	0	28	49	0	143	5	148
+15 mins.	2	0	2	32	242	1	275	7	7	0	39	46	1	149	1	151
+30 mins.	1	0	1	44	208	0	252	15	15	0	31	46	2	163	9	174
+45 mins.	0	0	2	45	281	1	327	11	11	0	43	54	0	159	5	164
Total Volume	3	0	4	7	967	2	1140	54	54	0	141	195	3	614	20	637
% App. Total	42.9	0	57.1	15	84.8	0.2	27.7	0	72.3	0	0.5	96.4	3.1	96.4	3.1	96.4

Accurate Counts

978-664-2565

PHF	.375	.000	.500	.875	.855	.860	.500	.872	.643	.000	.820	.903	.375	.942	.556	.915
Cars	3	0	4	7	171	956	2	1129	52	0	141	193	3	609	19	631
% Cars	100	0	100	100	100	98.9	100	99	96.3	0	100	99	100	99.2	95	99.1
Trucks	0	0	0	0	0	11	0	11	2	0	0	2	0	5	1	6
% Trucks	0	0	0	0	0	1.1	0	1	3.7	0	0	1	0	0.8	5	0.9



Accurate Counts

978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 5

Groups Printed- Cars

Start Time	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	0	0	2	36	222	1	10	0	43	0	137	7	458
04:15 PM	0	0	0	47	230	1	4	0	33	0	143	9	467
04:30 PM	0	0	0	50	232	0	20	0	28	0	115	6	451
04:45 PM	1	0	0	32	241	1	6	0	39	0	151	5	476
Total	1	0	2	165	925	3	40	0	143	0	546	27	1852
05:00 PM	0	0	2	44	205	0	15	0	31	0	141	5	443
05:15 PM	2	0	0	45	278	1	11	0	43	1	148	1	530
05:30 PM	1	0	0	42	228	1	13	0	29	2	162	9	487
05:45 PM	0	0	2	40	235	0	5	0	41	0	158	4	485
Total	3	0	4	171	946	2	44	0	144	3	609	19	1945
Grand Total	4	0	6	336	1871	5	84	0	287	3	1155	46	3797
Apprch %	40	0	60	15.2	84.6	0.2	22.6	0	77.4	0.2	95.9	3.8	
Total %	0.1	0	0.2	8.8	49.3	0.1	2.2	0	7.6	0.1	30.4	1.2	

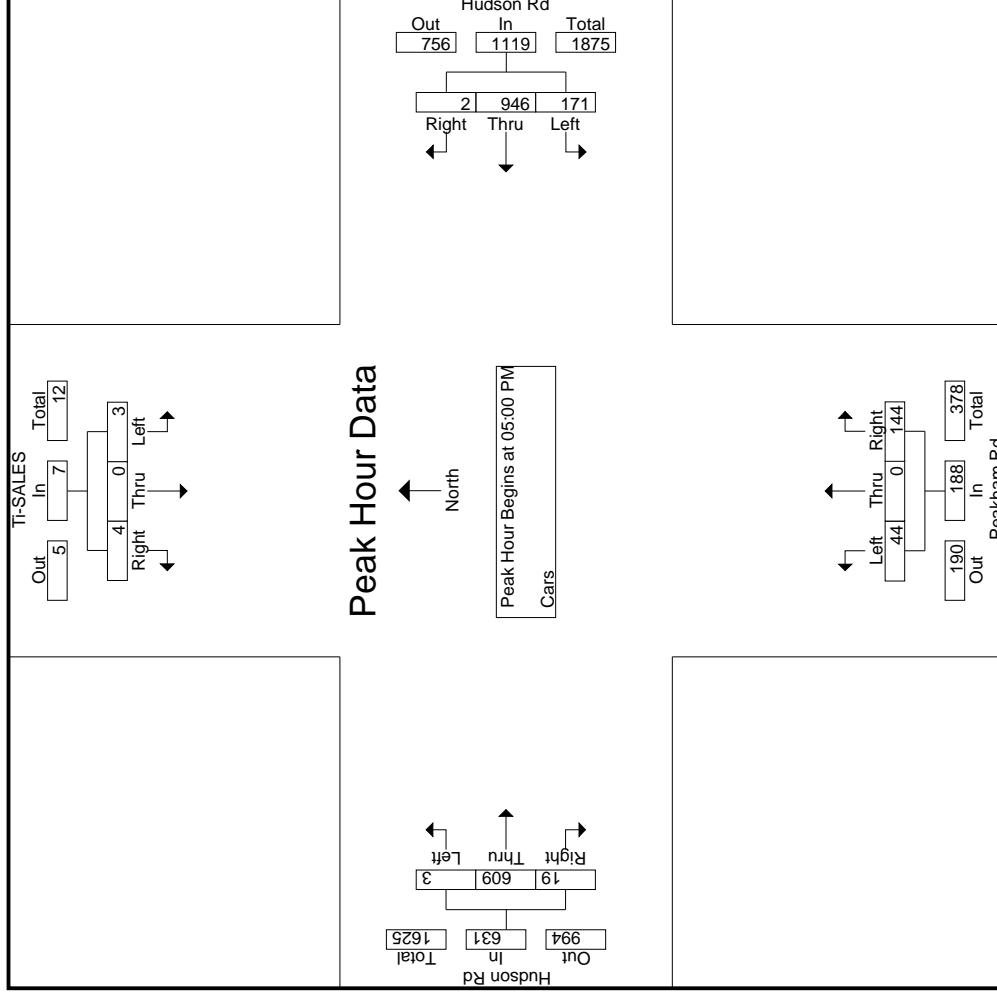
Accurate Counts

978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 6

Start Time	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			Int. Total			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total		
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	0	0	2	44	205	0	249	15	0	31	46	0	141	5	146	443
05:15 PM	2	0	0	45	278	1	324	11	0	43	54	1	148	1	150	530
05:30 PM	1	0	0	42	228	1	271	13	0	29	42	2	162	9	173	487
05:45 PM	0	0	2	40	235	0	275	5	0	41	46	0	158	4	162	485
Total Volume	3	0	4	171	946	2	1119	44	0	144	188	3	609	19	631	1945
% App. Total	42.9	0	57.1	15.3	84.5	0.2		23.4	0	76.6		0.5	96.5	3		
PHF	.375	.000	.500	.950	.851	.500	.863	.733	.000	.837	.870	.375	.940	.528	.912	.917

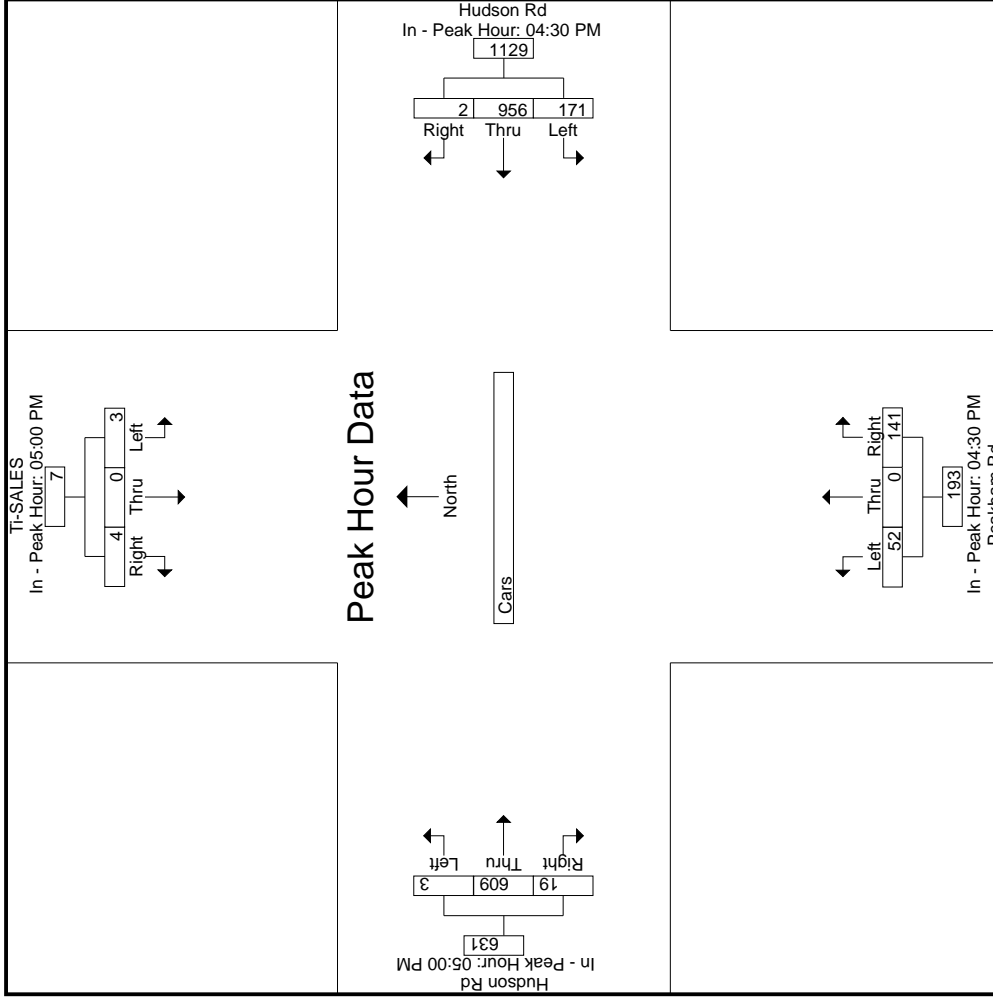


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	05:00 PM			04:30 PM			04:30 PM			04:30 PM			05:00 PM				
+0 mins.	0	0	2	2	50	232	0	282	0	282	0	28	48	0	141	5	146
+15 mins.	2	0	0	2	32	241	1	274	1	274	6	0	45	1	148	1	150
+30 mins.	1	0	0	1	44	205	0	249	0	249	15	0	46	2	162	9	173
+45 mins.	0	0	2	2	45	278	1	324	1	324	11	0	54	0	158	4	162
Total Volume	3	0	4	7	171	956	2	1129	2	1129	52	0	193	3	609	19	631
% App. Total	42.9	0	57.1		15.1	84.7	0.2		0.2		26.9	0	73.1	0.5	96.5	3	

Accurate Counts
978-664-2565

PHF | .375 | .000 | .500 | .875 | .855 | .860 | .500 | .871 | .650 | .000 | .820 | .894 | .375 | .940 | .528 | .912



Accurate Counts

978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 9

Groups Printed- Trucks

Start Time	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	0	0	0	0	2	0	0	0	0	0	3	0	8
04:15 PM	0	0	0	1	4	0	0	0	0	0	2	0	7
04:30 PM	0	0	0	0	4	0	0	1	0	0	1	0	6
04:45 PM	0	0	0	0	1	0	0	1	0	0	1	0	3
Total	0	0	0	1	11	0	0	2	0	0	7	0	24
05:00 PM	0	0	0	0	3	0	0	0	0	0	2	0	5
05:15 PM	0	0	0	0	3	0	0	0	0	0	1	0	4
05:30 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	1	1	2
Total	0	0	0	0	7	0	0	0	0	0	5	1	13
Grand Total	0	0	0	1	18	0	0	2	0	0	12	1	37
Apprch %	0	0	0	5.3	94.7	0	0	40	0	0	92.3	7.7	
Total %	0	0	0	2.7	48.6	0	0	5.4	0	0	32.4	2.7	

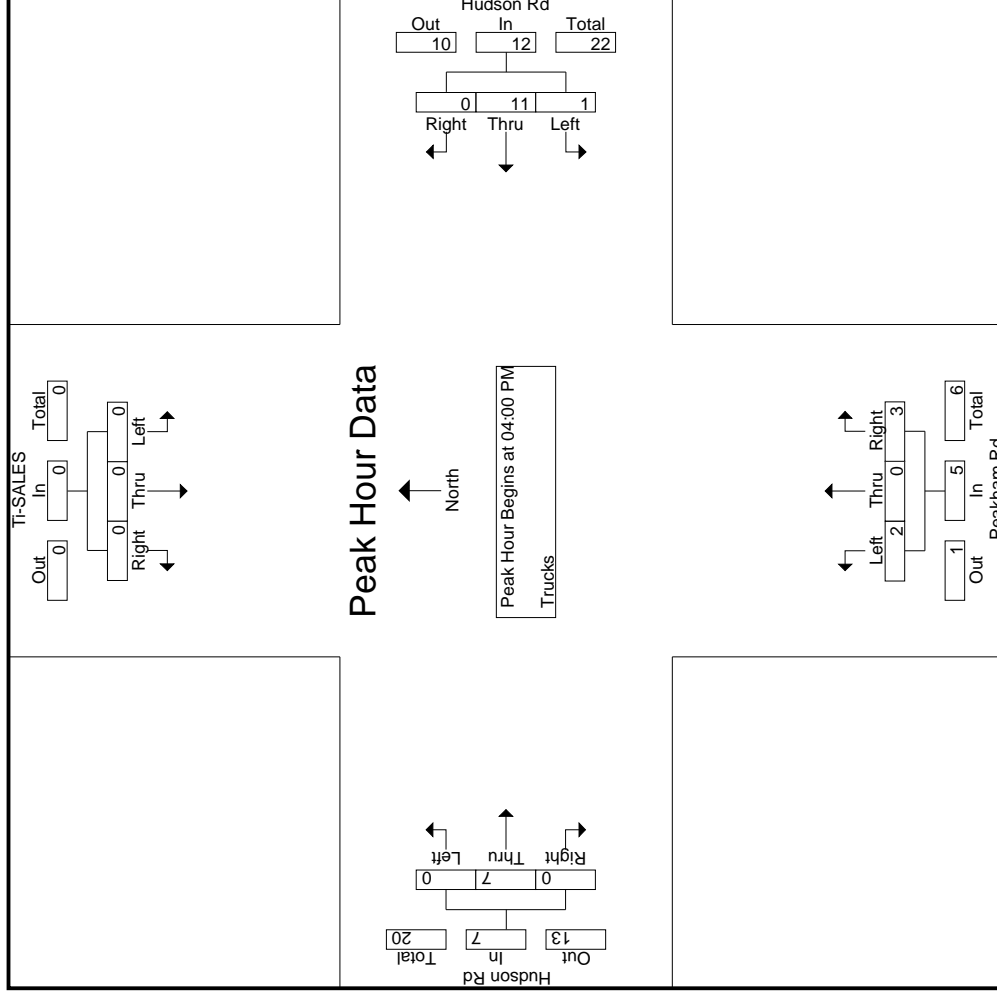
Accurate Counts

978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 10

Start Time	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			Int. Total							
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total						
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																				
Peak Hour for Entire Intersection Begins at 04:00 PM																				
04:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	3	0	3	0	0	0	3	8
04:15 PM	0	0	0	1	4	0	0	0	0	0	0	0	0	0	2	0	0	0	2	7
04:30 PM	0	0	0	0	4	0	0	0	4	1	0	0	1	0	1	0	0	0	1	6
04:45 PM	0	0	0	0	1	0	0	0	1	1	0	0	1	0	1	0	0	0	1	3
Total Volume	0	0	0	1	11	0	0	12	2	0	3	5	0	7	0	0	0	7	24	
% App. Total	0	0	0	8.3	91.7	0	0	40	40	0	60	0	100	0	0	0	0	0	75	
PHF	.000	.000	.000	.250	.688	.000	.600	.500	.500	.000	.250	.417	.000	.583	.000	.583	.000	.583	.750	

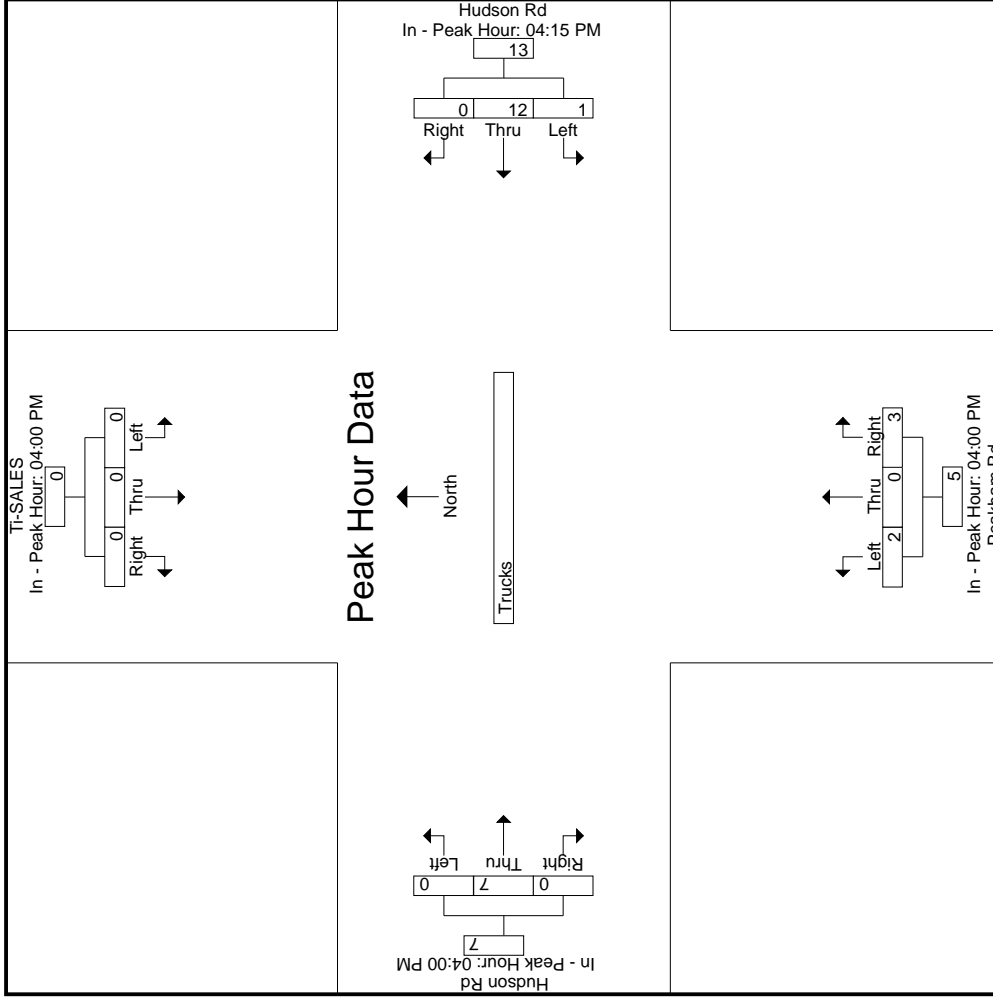


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:15 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	1	4	0	5	0	0	3	3
+15 mins.	0	0	0	0	0	4	0	4	0	0	0	2
+30 mins.	0	0	0	0	0	1	0	1	0	0	0	1
+45 mins.	0	0	0	0	0	3	0	3	0	0	0	1
Total Volume	0	0	0	1	12	0	13	2	0	5	7	0
% App. Total	0	0	0	7.7	92.3	0	60	40	0	100	0	0

Accurate Counts
978-664-2565

PHF | .000 | .000 | .000 | .000 | .000 | .250 | .750 | .000 | .000 | .000 | .650 | .500 | .000 | .250 | .417 | .583 | .000 | .583



Accurate Counts

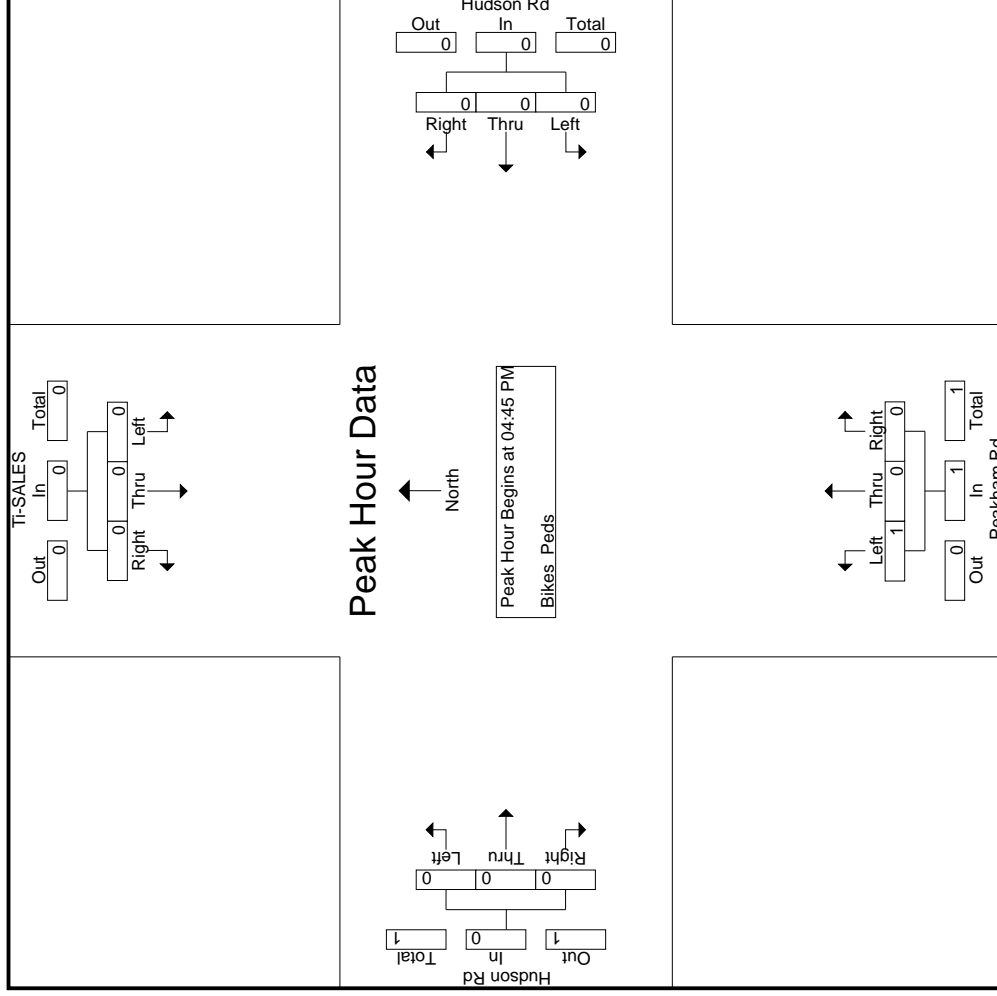
978-664-2565

N/S Street : Peakham Rd / Driveway
 E/W Street : Hudson Road
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001002
 Site Code : 17001002
 Start Date : 5/24/2018
 Page No : 13

Groups Printed- Bikes- Peds

Start Time	Ti-SALES From North			Hudson Rd From East			Peakham Rd From South			Hudson Rd From West			Exclu. Total	Inclu. Total	Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right				
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	6
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	9	1	10
Apprch %	0	0	0	0	0	0	0	0	0	0	0	0	0	90	10	
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	90	10	

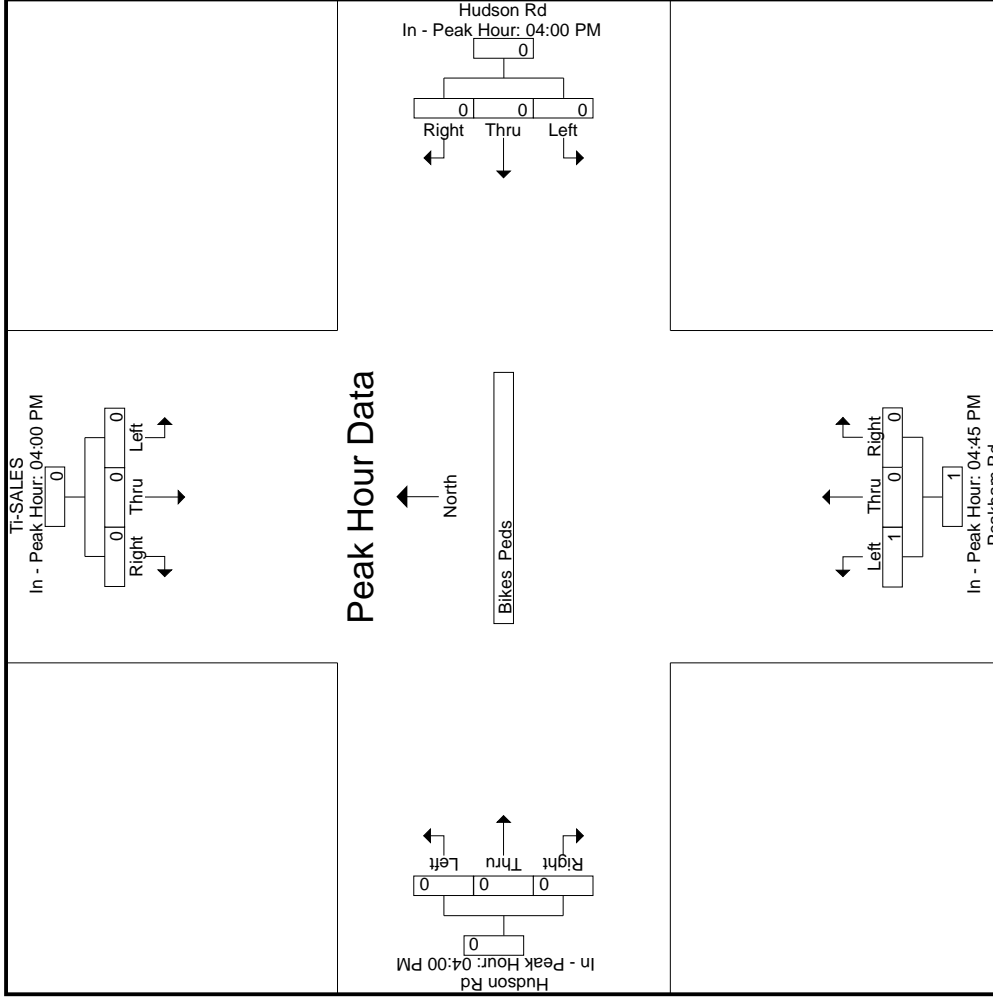


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM	04:00 PM	04:45 PM	04:00 PM
+0 mins.	0	0	0	0
+15 mins.	0	0	0	0
+30 mins.	0	0	0	0
+45 mins.	0	0	0	0
Total Volume	0	0	0	0
% App. Total	0	0	100	0

Accurate Counts
978-664-2565

PHF | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000



Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 1

Start Time	Groups Printed- Cars - Trucks												
	Concord Rd From North			Candy Hill Rd From East			Concord Rd From South			Peter's Wy From West			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
07:00 AM	0	56	0	2	0	1	0	136	0	0	0	0	198
07:15 AM	0	109	0	4	0	2	0	163	0	0	0	0	284
07:30 AM	0	102	0	3	0	1	0	111	0	0	0	0	222
07:45 AM	2	88	0	1	0	1	0	116	0	0	0	0	215
Total	2	355	0	10	0	5	0	526	0	0	0	0	919
08:00 AM	0	118	0	7	0	0	0	136	0	0	0	0	265
08:15 AM	0	85	0	2	0	0	0	128	0	0	0	0	217
08:30 AM	0	111	0	0	0	0	0	114	0	0	0	0	225
08:45 AM	2	118	0	1	0	2	0	117	0	0	0	0	241
Total	2	432	0	10	0	2	0	495	0	0	0	0	948
Grand Total	4	787	0	20	0	7	0	1021	0	0	0	0	1867
Approch %	0.5	99.5	0	74.1	0	25.9	0	97.3	0	0	0	0	96.4
Total %	0.2	42.2	0	1.1	0	0.4	0	54.7	0	0	0	0	67
Cars	4	751	0	20	0	7	0	990	0	0	0	0	1800
% Cars	100	95.4	0	100	0	100	0	97	0	0	0	0	96.4
Trucks	0	36	0	0	0	0	0	31	0	0	0	0	67
% Trucks	0	4.6	0	0	0	0	0	3	0	0	0	0	3.6

Accurate Counts

978-664-2565

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 2

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

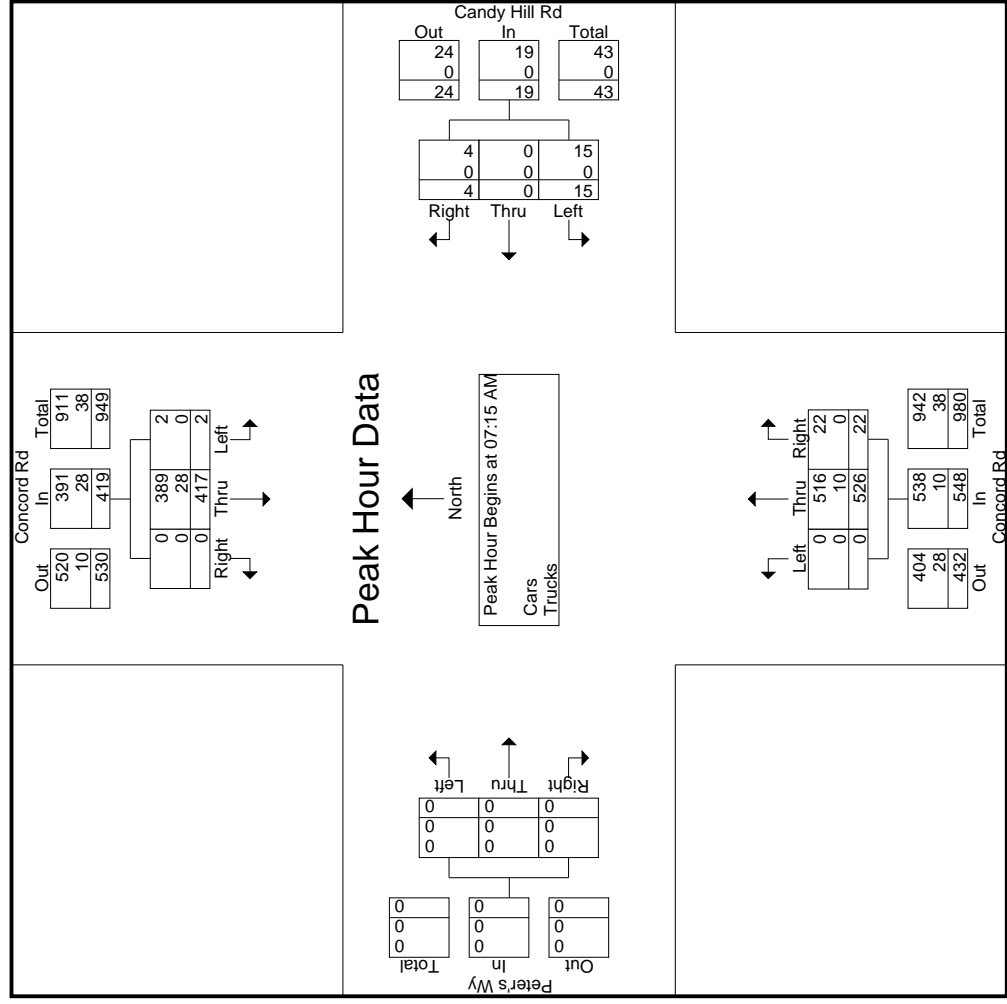
Start Time	Concord Rd From North			Candy Hill Rd From East			Concord Rd From South			Peter's Wy From West												
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right										
		App. Total			App. Total			App. Total			App. Total		App. Total									
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 07:15 AM																						
07:15 AM	0	109	0	109	0	109	4	0	2	6	0	0	0	0	0	0	0	0	0	0	0	284
07:30 AM	0	102	0	102	0	102	3	0	1	4	0	0	111	5	116	0	0	0	0	0	0	222
07:45 AM	2	88	0	90	1	90	1	0	1	2	0	0	116	7	123	0	0	0	0	0	0	215
08:00 AM	0	118	0	118	7	118	7	0	0	7	0	0	136	4	140	0	0	0	0	0	0	265
Total Volume	2	417	0	419	15	419	78.9	0	21.1	19	0	0	526	22	548	0	0	0	0	0	0	986
% App. Total	0.5	99.5	0										96	4		0	0	0	0	0	0	
PHF	.250	.883	.000	.888	.536	.679	.500	.000	.500	.679	.000	.807	.786	.811	.868	.000	.000	.000	.000	.000	.000	.868
Cars	2	389	0	391	15	391		0	4	19	0	0	516	22	538	0	0	0	0	0	0	948
% Cars	100	93.3	0	93.3	100	100		0	100	100	0	0	98.1	100	98.2	0	0	0	0	0	0	96.1
Trucks	0	28	0	28	0	28	0	0	0	0	0	0	10	0	10	0	0	0	0	0	0	38
% Trucks	0	6.7	0	6.7	0	6.7	0	0	0	0	0	0	1.9	0	1.8	0	0	0	0	0	0	3.9

Accurate Counts

978-664-2565

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 3

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

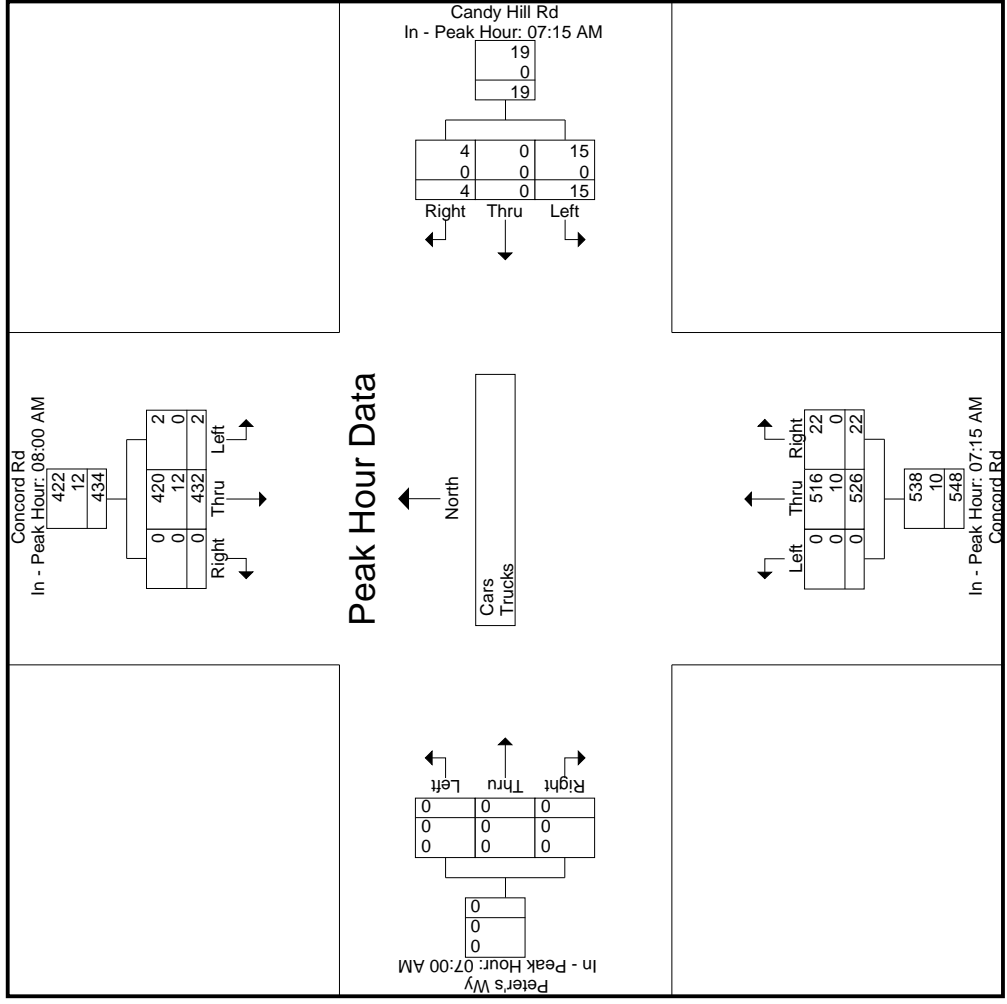


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	08:00 AM		07:15 AM		07:15 AM		07:00 AM					
+0 mins.	0	118	0	118	4	0	6	163	0	0	0	0
+15 mins.	0	85	0	85	3	0	4	111	0	0	0	0
+30 mins.	0	111	0	111	1	0	2	116	0	0	0	0
+45 mins.	2	118	0	120	7	0	7	136	4	140	0	0
Total Volume	2	432	0	434	15	0	4	526	22	548	0	0
% App. Total	0.5	99.5	0	78.9	0	0	21.1	96	4	0	0	0

Accurate Counts
978-664-2565

PHF	.250	.915	.000	.904	.536	.000	.500	.679	.000	.807	.786	.811	.000	.000	.000	.000
Cars	2	420	0	422	15	0	4	19	0	516	22	538	0	0	0	0
% Cars	100	97.2	0	97.2	100	0	100	100	0	98.1	100	98.2	0	0	0	0
Trucks	0	12	0	12	0	0	0	0	0	10	0	10	0	0	0	0
% Trucks	0	2.8	0	2.8	0	0	0	0	0	1.9	0	1.8	0	0	0	0



Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 5

Groups Printed- Cars

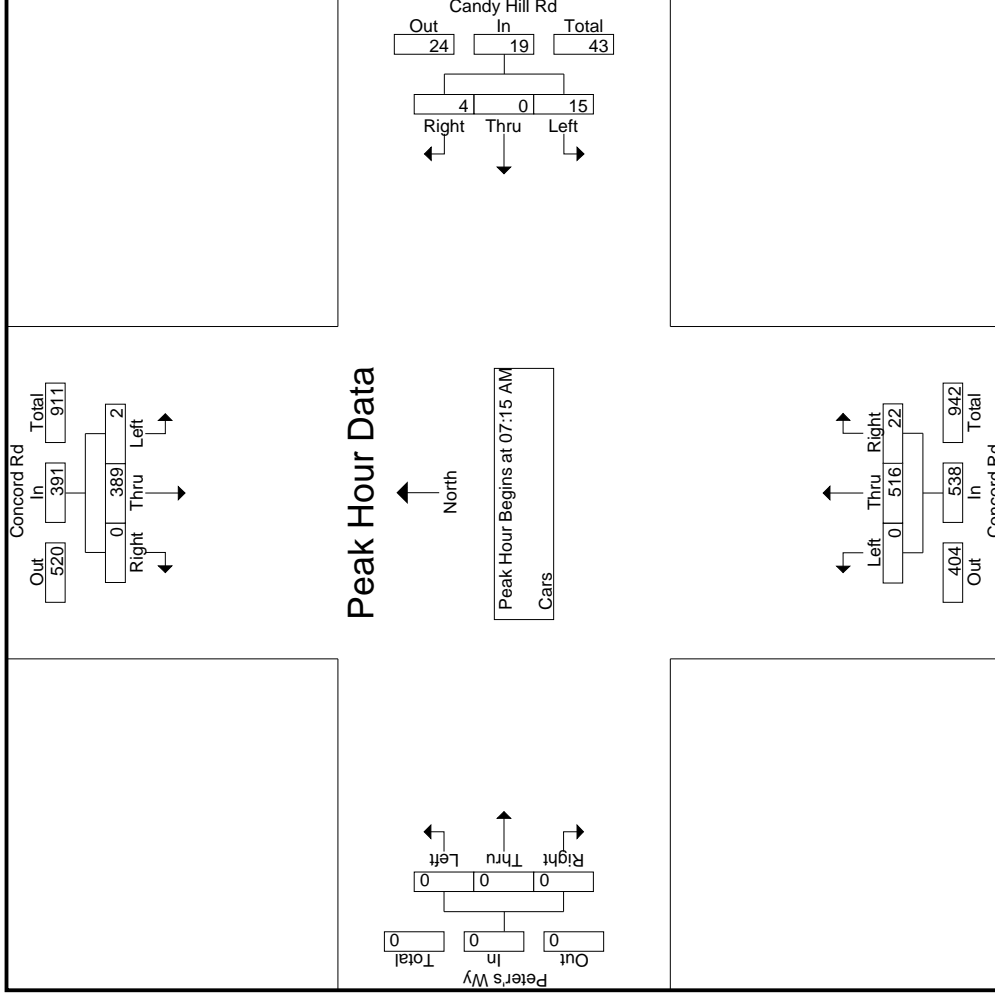
Start Time	Concord Rd From North			Candy Hill Rd From East			Concord Rd From South			Peter's Wy From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	56	0	2	0	1	0	128	3	0	0	0	190
07:15 AM	0	91	0	4	0	2	0	156	6	0	0	0	259
07:30 AM	0	97	0	3	0	1	0	110	5	0	0	0	216
07:45 AM	2	87	0	1	0	1	0	115	7	0	0	0	213
Total	2	331	0	10	0	5	0	509	21	0	0	0	878
08:00 AM	0	114	0	7	0	0	0	135	4	0	0	0	260
08:15 AM	0	83	0	2	0	0	0	120	2	0	0	0	207
08:30 AM	0	110	0	0	0	0	0	110	0	0	0	0	220
08:45 AM	2	113	0	1	0	2	0	116	1	0	0	0	235
Total	2	420	0	10	0	2	0	481	7	0	0	0	922
Grand Total	4	751	0	20	0	7	0	990	28	0	0	0	1800
Apprch %	0.5	99.5	0	74.1	0	25.9	0	97.2	2.8	0	0	0	
Total %	0.2	41.7	0	1.1	0	0.4	0	55	1.6	0	0	0	

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 7

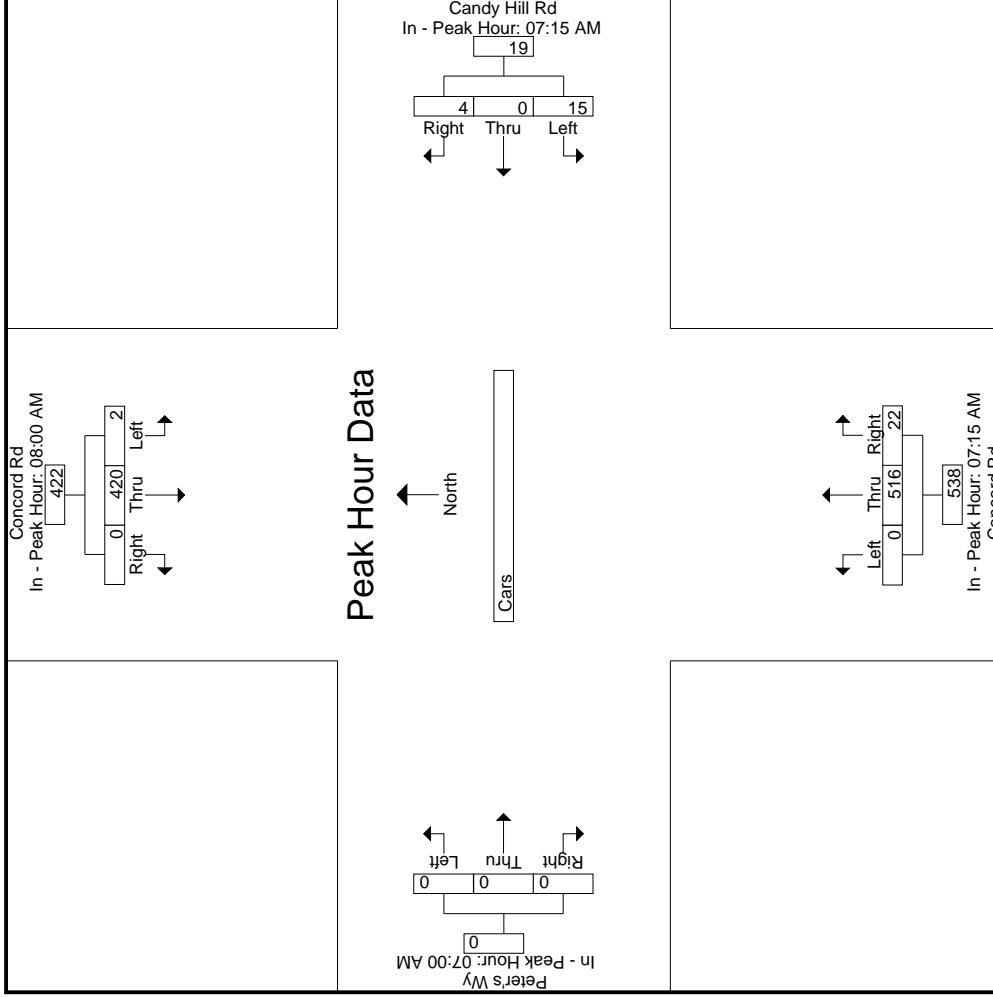


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	08:00 AM			07:15 AM			07:15 AM			07:00 AM				
+0 mins.	0	114	0	114	4	0	0	6	0	156	6	0	0	0
+15 mins.	0	83	0	83	3	0	1	4	0	110	5	0	0	0
+30 mins.	0	110	0	110	1	0	1	2	0	115	7	0	0	0
+45 mins.	2	113	0	115	7	0	0	7	0	135	4	0	0	0
Total Volume	2	420	0	422	15	0	4	19	0	516	22	0	0	0
% App. Total	0.5	99.5	0		78.9	0	21.1		0	95.9	4.1	0	0	0

Accurate Counts
978-664-2565

PHF | .250 | .921 | .000 | .917 | .536 | .000 | .500 | .679 | .000 | .827 | .786 | .830 | .000 | .000 | .000



Accurate Counts
978-664-2565

N/S Street : Concord Road
E/W Street : Candy Hill Rd / Peter's Way
City/State : Sudbury, MA
Weather : Clear

File Name : 17001003
Site Code : 17001003
Start Date : 5/24/2018
Page No : 9

Groups Printed- Trucks

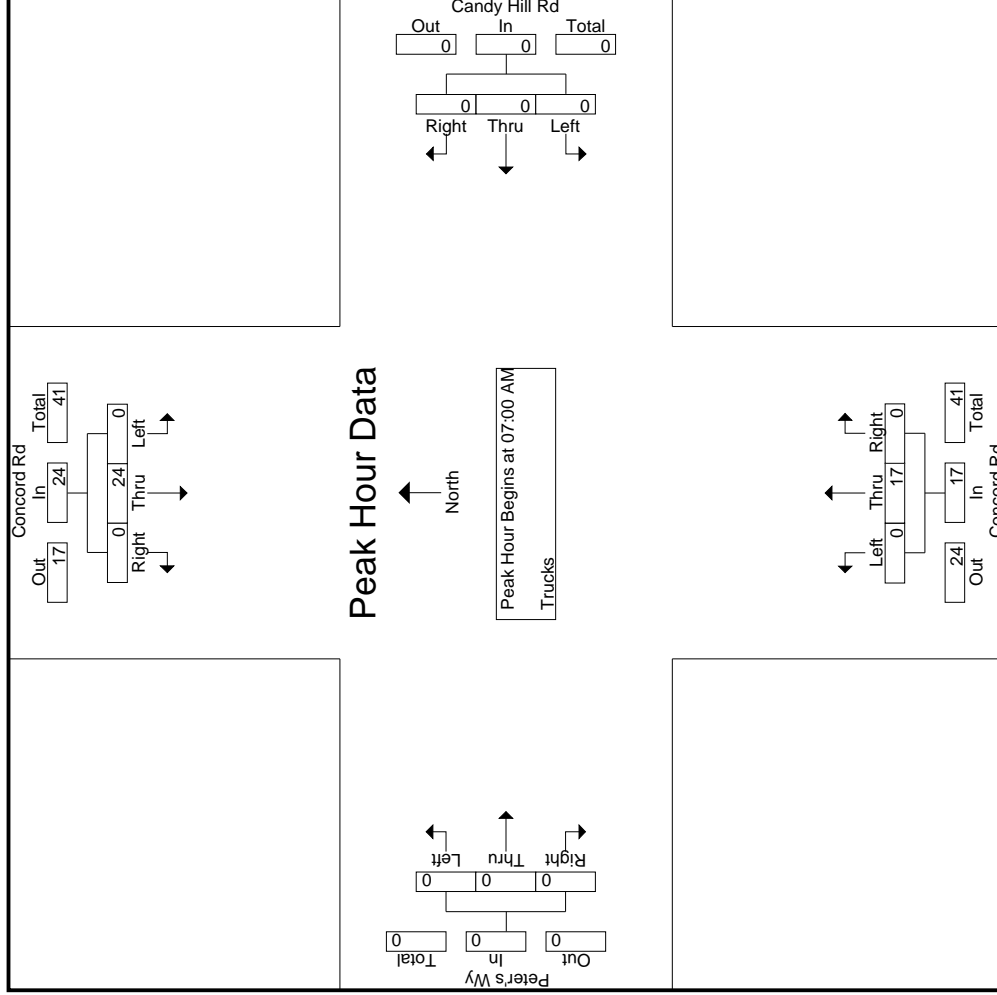
Start Time	Concord Rd From North			Candy Hill Rd From East			Concord Rd From South			Peter's Wy From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
07:00 AM	0	0	0	0	0	0	0	8	0	0	0	0	8
07:15 AM	0	18	0	0	0	0	0	7	0	0	0	0	25
07:30 AM	0	5	0	0	0	0	0	1	0	0	0	0	6
07:45 AM	0	1	0	0	0	0	0	1	0	0	0	0	2
Total	0	24	0	0	0	0	0	17	0	0	0	0	41
08:00 AM	0	4	0	0	0	0	0	1	0	0	0	0	5
08:15 AM	0	2	0	0	0	0	0	8	0	0	0	0	10
08:30 AM	0	1	0	0	0	0	0	4	0	0	0	0	5
08:45 AM	0	5	0	0	0	0	0	1	0	0	0	0	6
Total	0	12	0	0	0	0	0	14	0	0	0	0	26
Grand Total	0	36	0	0	0	0	0	31	0	0	0	0	67
Approch %	0	100	0	0	0	0	0	100	0	0	0	0	
Total %	0	53.7	0	0	0	0	0	46.3	0	0	0	0	

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 11

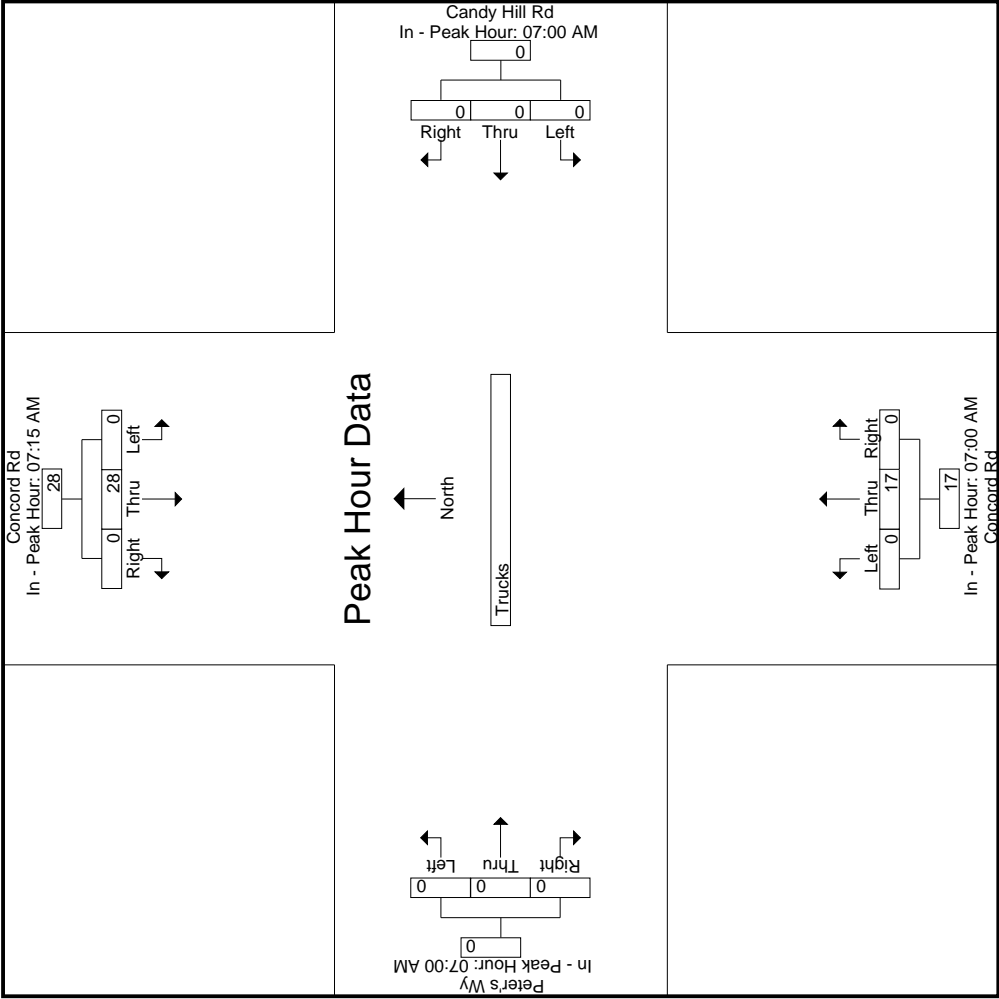


Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	07:15 AM			07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	18	0	0	0	0	0	0	0	0	8	0
+15 mins.	0	5	0	0	0	0	0	0	0	0	7	0
+30 mins.	0	1	0	0	0	0	0	0	0	0	1	0
+45 mins.	0	4	0	0	0	0	0	0	0	0	1	0
Total Volume	0	28	0	0	0	0	0	0	0	0	17	0
% App. Total	0	100	0	0	0	0	0	0	0	0	100	0

Accurate Counts
978-664-2565

PHF | .000 | .389 | .000 | .389 | .000 | .000 | .000 | .000 | .000 | .000 | .531 | .000 | .531 | .000 | .000 | .000 | .000



Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 13

Groups Printed- Bikes- Peds

Start Time	Concord Rd From North			Candy Hill Rd From East			Concord Rd From South			Peter's Wy From West			Exclu. Total	Inclu. Total	Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right			
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
08:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	2	3	5
08:15 AM	0	0	0	0	0	0	3	0	2	0	0	0	2	3	5
08:30 AM	0	0	0	0	0	0	1	0	5	0	0	0	5	1	6
08:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1
Total	0	3	0	0	0	0	4	1	9	0	0	0	9	8	17
Grand Total	0	3	0	0	0	0	4	1	10	0	0	0	10	8	18
Apprch %	0	100	0	0	0	0	80	20		0	0	0			
Total %	0	37.5	0	0	0	0	50	12.5		0	0	0	55.6	44.4	

Accurate Counts

978-664-2565

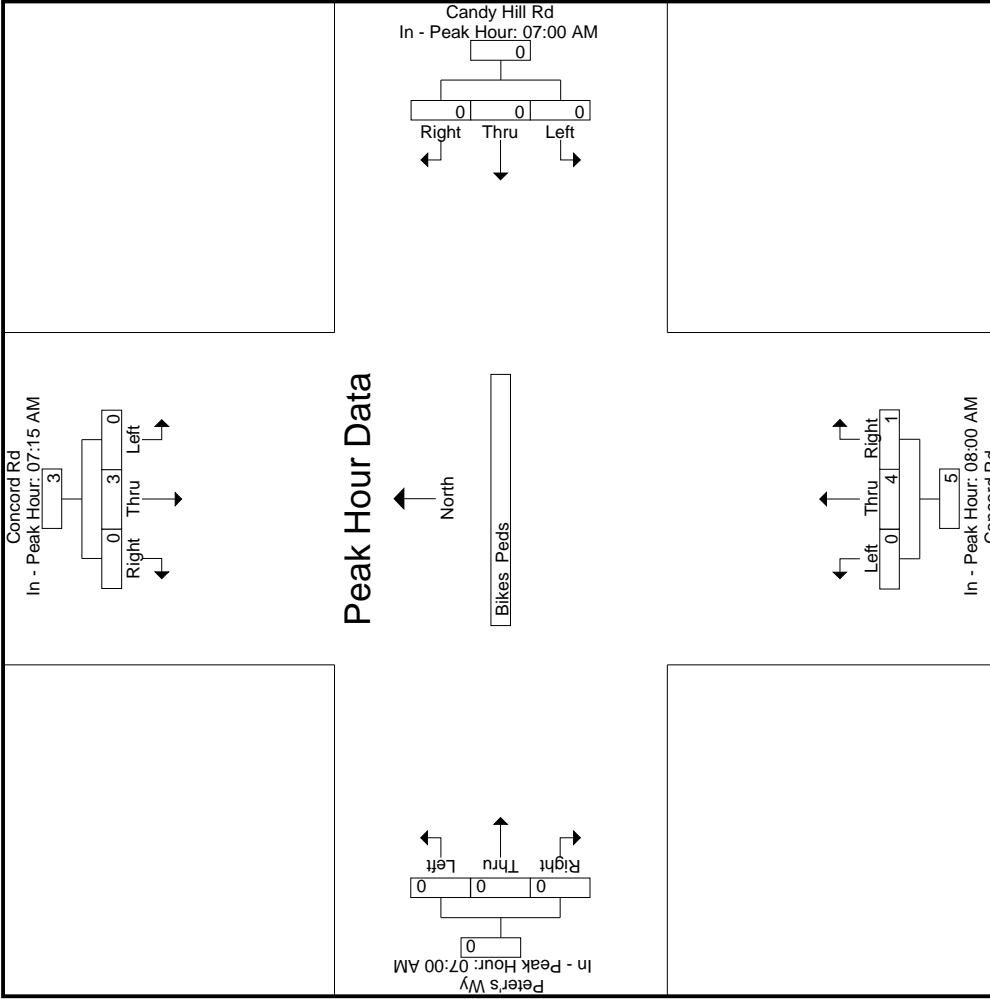
N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 14

Start Time	Concord Rd From North			Candy Hill Rd From East			Concord Rd From South			Peter's Wy From West			Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1														
Peak Hour for Entire Intersection Begins at 08:00 AM														
08:00 AM	0	3	0	0	0	0	0	0	0	0	0	0	0	3
08:15 AM	0	0	0	0	0	0	0	3	0	0	0	0	0	3
08:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	1
08:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	1
Total Volume	0	3	0	0	0	0	0	4	1	5	0	0	0	8
% App. Total	0	100	0	0	0	0	0	80	20	0	0	0	0	0
PHF	.000	.250	.000	.250	.000	.000	.000	.333	.250	.417	.000	.000	.000	.667

Accurate Counts
978-664-2565

PHF | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .417 | .250 | .333 | .000 | .000 | .000 | .000



Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 1

Start Time	Groups Printed- Cars - Trucks												
	Concord Rd From North			Candy Hill Rd From East			Concord Rd From South			Peter's Wy From West			
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Int. Total
04:00 PM	3	105	0	4	0	1	0	120	0	0	0	0	235
04:15 PM	2	98	0	0	0	1	0	99	0	0	0	0	203
04:30 PM	1	104	0	2	0	1	0	101	0	0	0	0	210
04:45 PM	3	132	0	3	0	0	0	109	0	0	0	0	252
Total	9	439	0	9	0	3	0	429	0	0	0	0	900
05:00 PM	3	116	0	6	0	1	1	115	0	0	0	0	247
05:15 PM	1	129	0	6	0	3	0	116	0	0	0	0	258
05:30 PM	5	123	0	3	0	0	0	118	0	0	0	0	251
05:45 PM	1	108	0	7	0	3	0	108	0	0	0	0	232
Total	10	476	0	22	0	7	1	457	0	0	0	0	988
Grand Total	19	915	0	31	0	10	1	886	0	0	0	0	1888
Approch %	2	98	0	75.6	0	24.4	0.1	97	0	0	0	0	
Total %	1	48.5	0	1.6	0	0.5	0.1	46.9	0	0	0	0	
Cars	19	898	0	31	0	10	1	878	0	0	0	0	1862
% Cars	100	98.1	0	100	0	100	100	99.1	0	0	0	0	98.6
Trucks	0	17	0	0	0	0	0	8	0	0	0	0	26
% Trucks	0	1.9	0	0	0	0	0	0.9	0	0	0	0	1.4

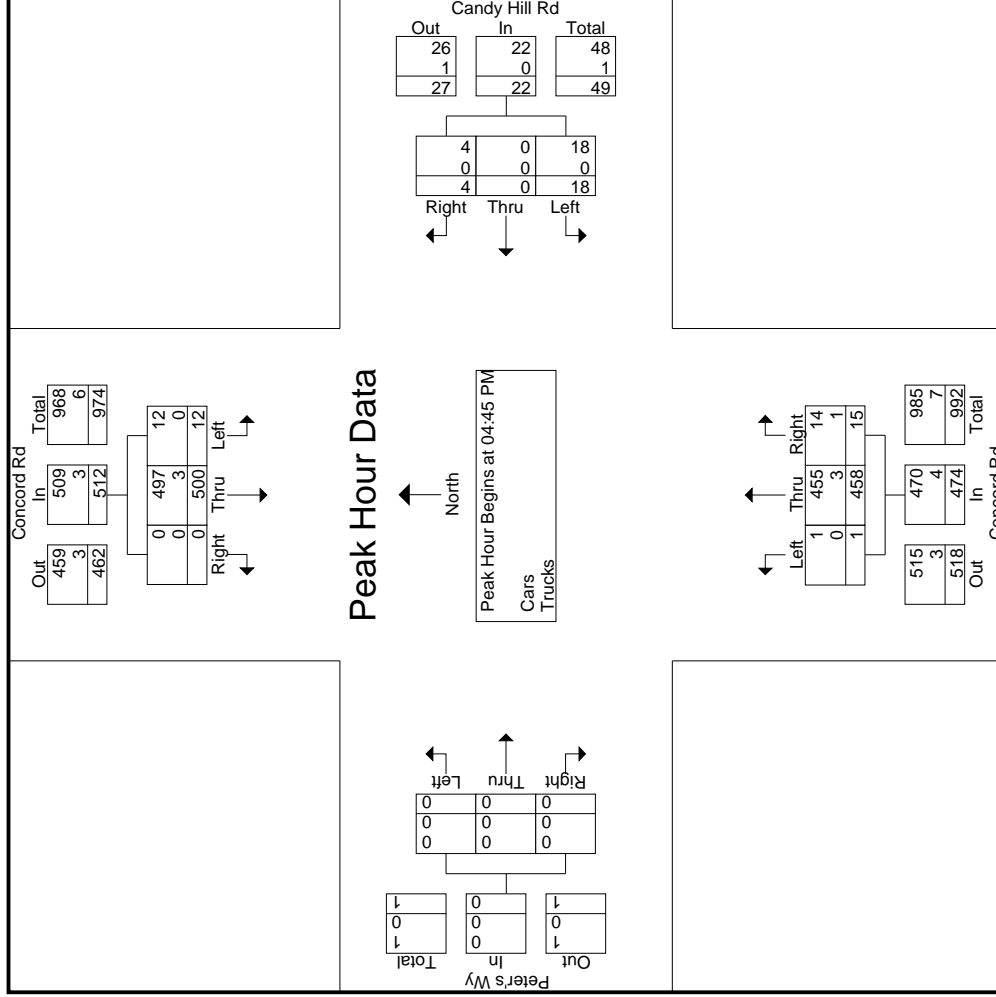
Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 2

Start Time	Concord Rd From North			Candy Hill Rd From East			Concord Rd From South			Peter's Wy From West			Int. Total				
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total			
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	3	132	0	135	3	0	0	3	0	109	5	114	0	0	0	0	252
05:00 PM	3	116	0	119	6	0	1	7	1	115	5	121	0	0	0	0	247
05:15 PM	1	129	0	130	6	0	3	9	0	116	3	119	0	0	0	0	258
05:30 PM	5	123	0	128	3	0	0	3	0	118	2	120	0	0	0	0	251
Total Volume	12	500	0	512	18	0	4	22	1	458	15	474	0	0	0	0	1008
% App. Total	2.3	97.7	0		81.8	0	18.2		0.2	96.6	3.2		0	0	0	0	
PHF	.600	.947	.000	.948	.750	.000	.333	.611	.250	.970	.750	.979	.000	.000	.000	.000	.977
Cars	12	497	0	509	18	0	4	22	1	455	14	470	0	0	0	0	1001
% Cars	100	99.4	0	99.4	100	0	100	100	100	99.3	93.3	99.2	0	0	0	0	99.3
Trucks	0	3	0	3	0	0	0	0	0	3	1	4	0	0	0	0	7
% Trucks	0	0.6	0	0.6	0	0	0	0	0	0.7	6.7	0.8	0	0	0	0	0.7



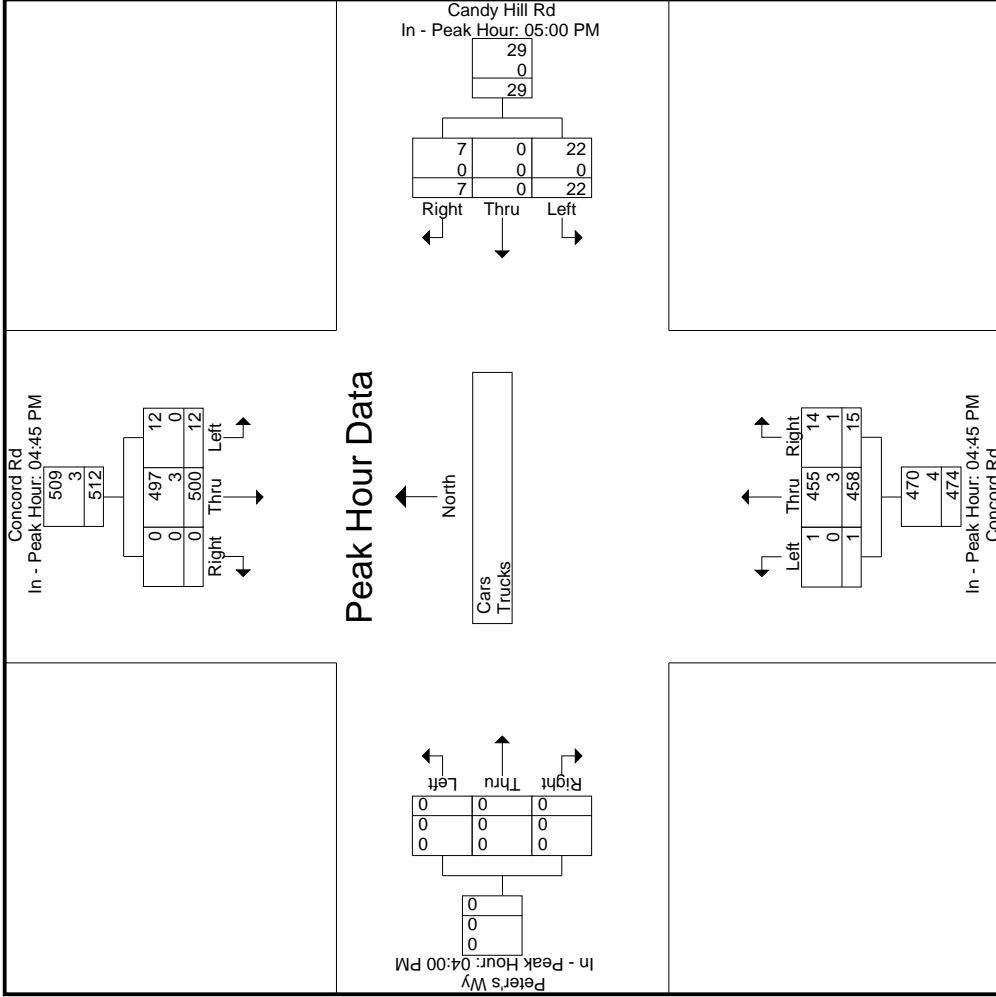
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:45 PM		05:00 PM		04:45 PM		04:00 PM								
+0 mins.	3	132	0	135	6	0	1	7	0	109	5	114	0	0	0
+15 mins.	3	116	0	119	6	0	3	9	1	115	5	121	0	0	0
+30 mins.	1	129	0	130	3	0	0	3	0	116	3	119	0	0	0
+45 mins.	5	123	0	128	7	0	3	10	0	118	2	120	0	0	0
Total Volume	12	500	0	512	22	0	7	29	1	458	15	474	0	0	0
% App. Total	2.3	97.7	0		75.9	0	24.1		0.2	96.6	3.2		0	0	0

Accurate Counts

978-664-2565

PHF	.600	.947	.000	.948	.786	.000	.583	.725	.250	.970	.750	.979	.000	.000	.000	.000
Cars	12	497	0	509	22	0	7	29	1	455	14	470	0	0	0	0
% Cars	100	99.4	0	99.4	100	0	100	100	100	99.3	93.3	99.2	0	0	0	0
Trucks	0	3	0	3	0	0	0	0	0	3	1	4	0	0	0	0
% Trucks	0	0.6	0	0.6	0	0	0	0	0	0.7	6.7	0.8	0	0	0	0



Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 5

Groups Printed- Cars

Start Time	Concord Rd From North			Candy Hill Rd From East			Concord Rd From South			Peter's Wy From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	3	98	0	4	0	1	0	118	2	0	0	0	226
04:15 PM	2	95	0	0	0	1	0	99	3	0	0	0	200
04:30 PM	1	102	0	2	0	1	0	98	1	0	0	0	205
04:45 PM	3	132	0	3	0	0	0	109	5	0	0	0	252
Total	9	427	0	9	0	3	0	424	11	0	0	0	883
05:00 PM	3	114	0	6	0	1	1	115	4	0	0	0	244
05:15 PM	1	129	0	6	0	3	0	114	3	0	0	0	256
05:30 PM	5	122	0	3	0	0	0	117	2	0	0	0	249
05:45 PM	1	106	0	7	0	3	0	108	5	0	0	0	230
Total	10	471	0	22	0	7	1	454	14	0	0	0	979
Grand Total	19	898	0	31	0	10	1	878	25	0	0	0	1862
Apprch %	2.1	97.9	0	75.6	0	24.4	0.1	97.1	2.8	0	0	0	
Total %	1	48.2	0	1.7	0	0.5	0.1	47.2	1.3	0	0	0	

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 6

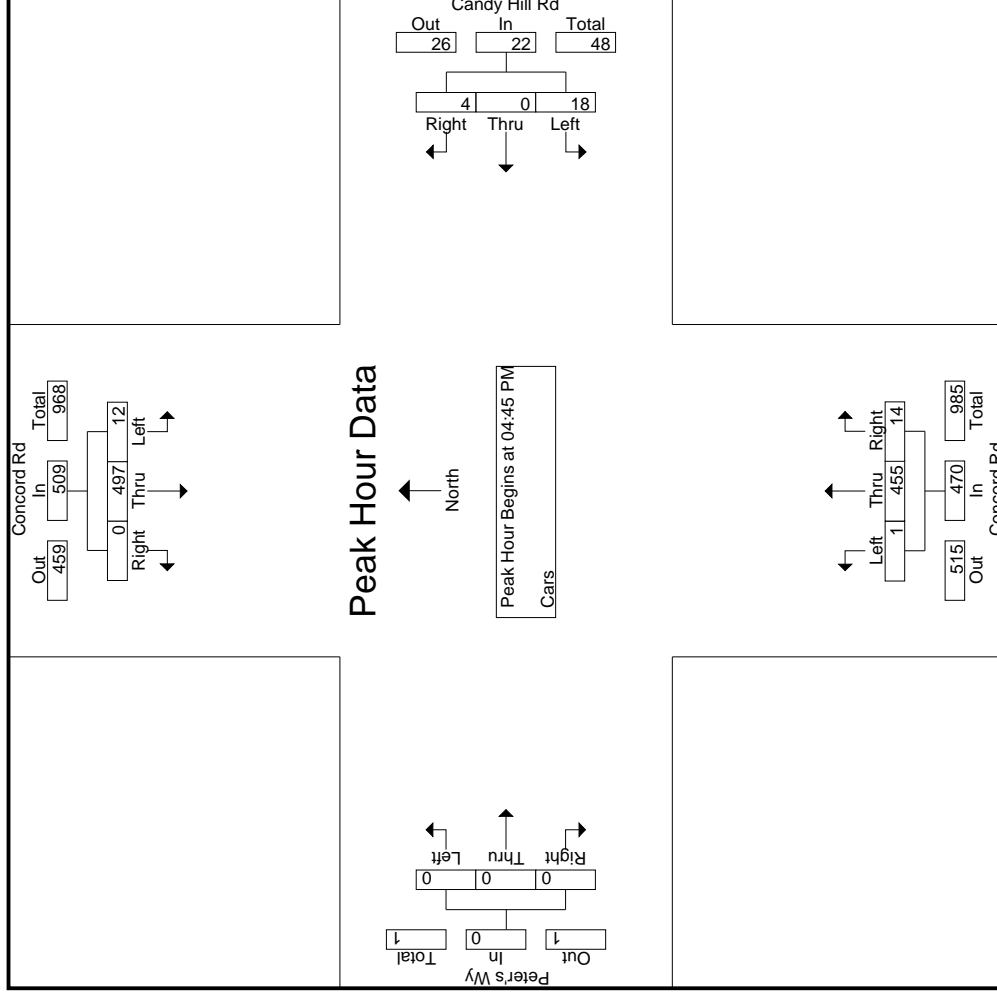
Start Time	Concord Rd From North			Candy Hill Rd From East			Concord Rd From South			Peter's Wy From West			Int. Total				
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total			
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
04:45 PM	3	132	0	135	3	0	0	3	0	109	5	114	0	0	0	0	252
05:00 PM	3	114	0	117	6	0	1	7	1	115	4	120	0	0	0	0	244
05:15 PM	1	129	0	130	6	0	3	9	0	114	3	117	0	0	0	0	256
05:30 PM	5	122	0	127	3	0	0	3	0	117	2	119	0	0	0	0	249
Total Volume	12	497	0	509	18	0	4	22	1	455	14	470	0	0	0	0	1001
% App. Total	2.4	97.6	0		81.8	0	18.2		0.2	96.8	3		0	0	0	0	
PHF	.600	.941	.000	.943	.750	.000	.333	.611	.250	.972	.700	.979	.000	.000	.000	.000	.978

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 7

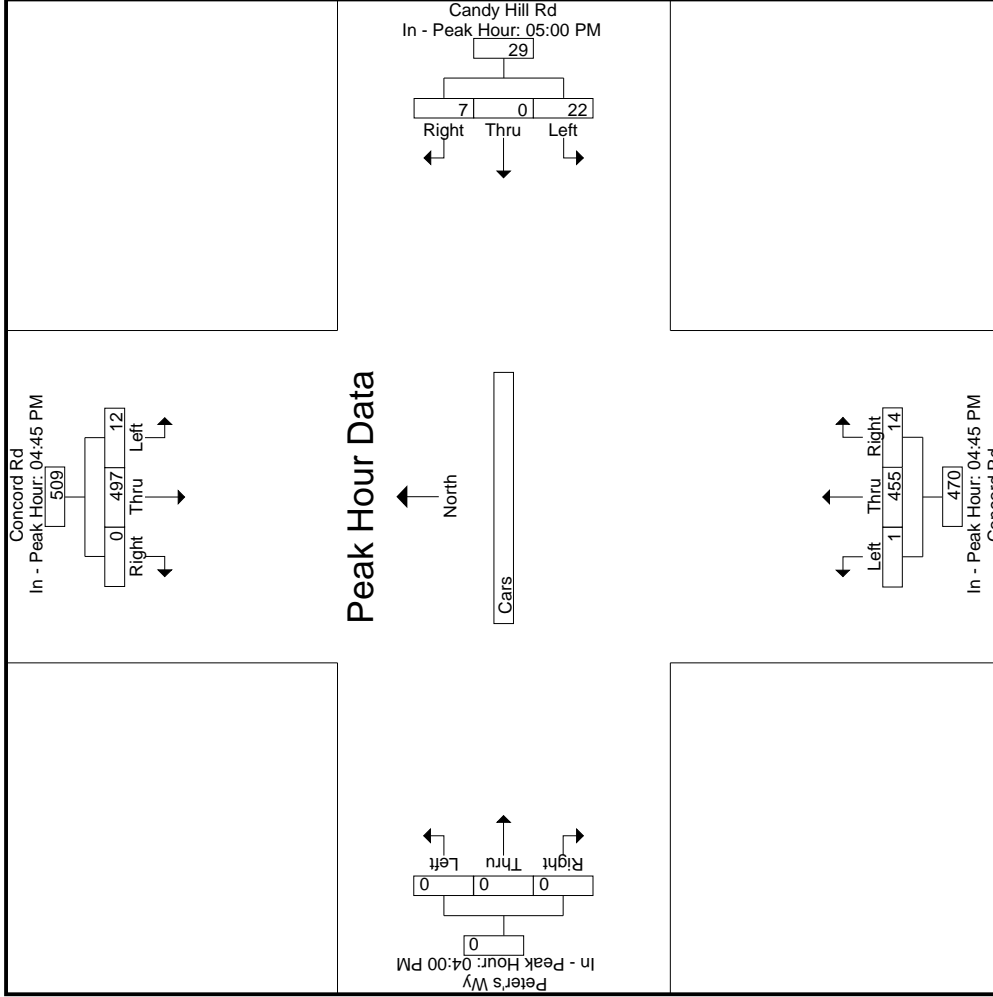


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
 Peak Hour for Each Approach Begins at:

	04:45 PM			05:00 PM			04:45 PM			04:00 PM					
+0 mins.	3	132	0	135	6	0	1	7	0	109	5	114	0	0	0
+15 mins.	3	114	0	117	6	0	3	9	1	115	4	120	0	0	0
+30 mins.	1	129	0	130	3	0	0	3	0	114	3	117	0	0	0
+45 mins.	5	122	0	127	7	0	3	10	0	117	2	119	0	0	0
Total Volume	12	497	0	509	22	0	7	29	1	455	14	470	0	0	0
% App. Total	2.4	97.6	0	75.9	0	0	24.1	0.2	96.8	3	0	0	0	0	0

Accurate Counts
978-664-2565

PHF | .600 | .941 | .000 | .943 | .786 | .000 | .583 | .725 | .250 | .972 | .700 | .979 | .000 | .000 | .000 | .000



Accurate Counts

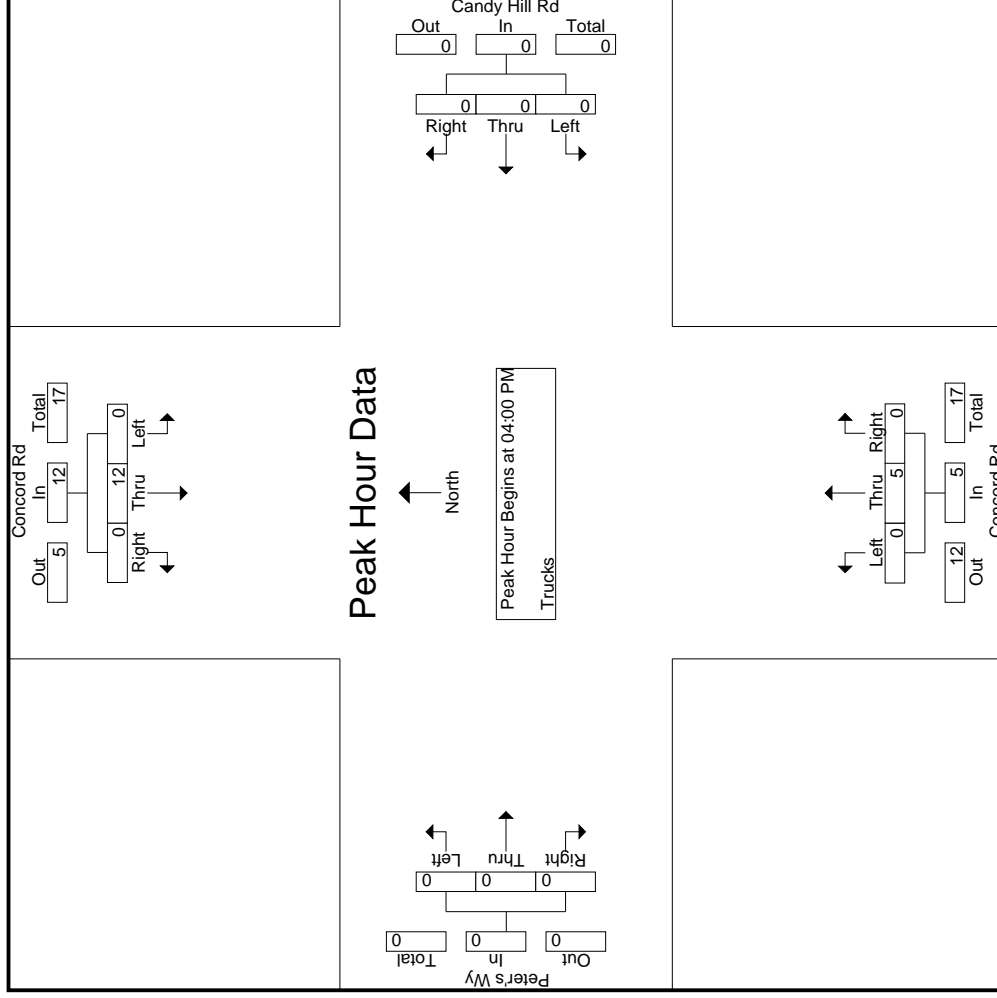
978-664-2565

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 9

Groups Printed- Trucks

Start Time	Concord Rd From North			Candy Hill Rd From East			Concord Rd From South			Peter's Wy From West			Int. Total
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	
04:00 PM	0	7	0	0	0	0	0	2	0	0	0	0	9
04:15 PM	0	3	0	0	0	0	0	0	0	0	0	0	3
04:30 PM	0	2	0	0	0	0	0	3	0	0	0	0	5
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	12	0	0	0	0	0	5	0	0	0	0	17
05:00 PM	0	2	0	0	0	0	0	0	1	0	0	0	3
05:15 PM	0	0	0	0	0	0	0	2	0	0	0	0	2
05:30 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
05:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
Total	0	5	0	0	0	0	0	3	1	0	0	0	9
Grand Total	0	17	0	0	0	0	0	8	1	0	0	0	26
Approch %	0	100	0	0	0	0	0	88.9	11.1	0	0	0	
Total %	0	65.4	0	0	0	0	0	30.8	3.8	0	0	0	

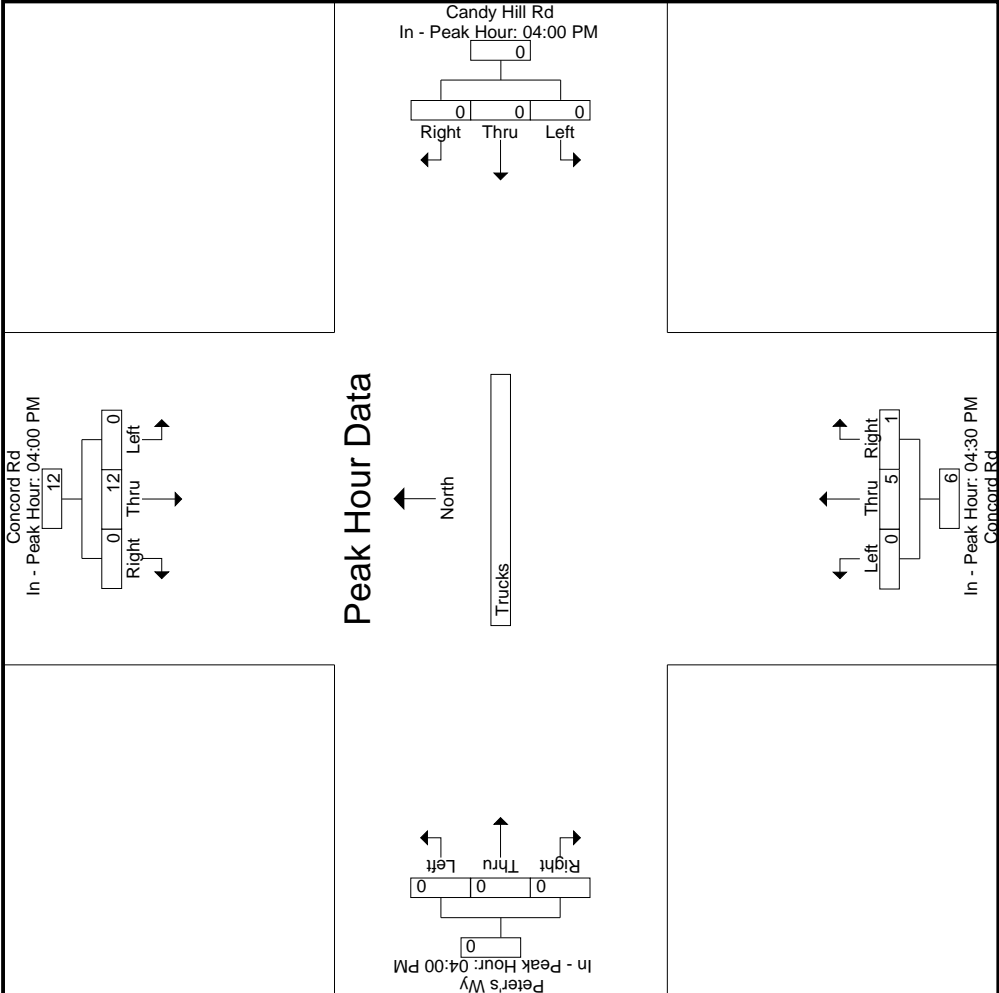


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:30 PM			04:00 PM		
+0 mins.	0	7	0	0	0	0	0	0	0
+15 mins.	0	3	0	0	0	0	0	0	0
+30 mins.	0	2	0	0	0	0	0	1	0
+45 mins.	0	0	0	0	0	0	2	0	0
Total Volume	0	12	0	0	0	0	5	1	6
% App. Total	0	100	0	0	0	0	83.3	16.7	0

Accurate Counts
978-664-2565

PHF | .000 | .429 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000



Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 13

Groups Printed- Bikes- Peds

Start Time	Concord Rd From North			Candy Hill Rd From East			Concord Rd From South			Peter's Wy From West			Exclu. Total	Inclu. Total	Int. Total	
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right				
04:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	0	0	0	1	0	0	0	0	0	0	2	2
05:00 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	1
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	2	0	0	0	2	0	2
Grand Total	0	1	0	0	0	0	0	1	0	2	0	0	0	2	2	4
Approch %	0	100	0	0	0	0	0	100	0	0	0	0	0	0	0	0
Total %	0	50	0	0	0	0	0	50	0	0	0	0	0	50	50	50

Accurate Counts

978-664-2565

N/S Street : Concord Road
 E/W Street : Candy Hill Rd / Peter's Way
 City/State : Sudbury, MA
 Weather : Clear

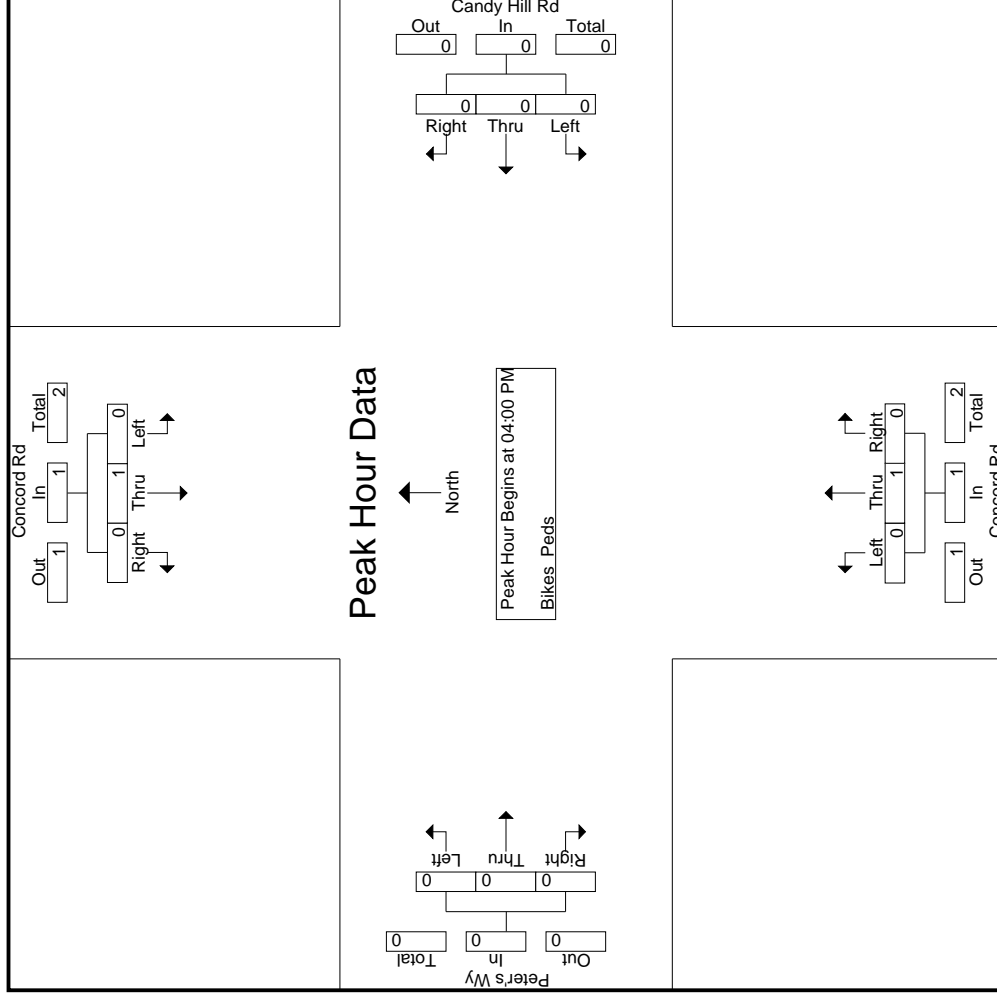
File Name : 17001003
 Site Code : 17001003
 Start Date : 5/24/2018
 Page No : 14

Start Time	Concord Rd From North			Candy Hill Rd From East			Concord Rd From South			Peter's Wy From West			Int. Total		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right		App. Total	App. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1															
Peak Hour for Entire Intersection Begins at 04:00 PM															
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	0	0	0	0	0	0	0	1	0	0	0	2
% App. Total	0	100	0	0	0	0	0	0	0	0	100	0	0	0	0
PHF	.000	.250	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.000	.000	.500

Accurate Counts
978-664-2565

N/S Street : Concord Road
E/W Street : Candy Hill Rd / Peter's Way
City/State : Sudbury, MA
Weather : Clear

File Name : 17001003
Site Code : 17001003
Start Date : 5/24/2018
Page No : 15

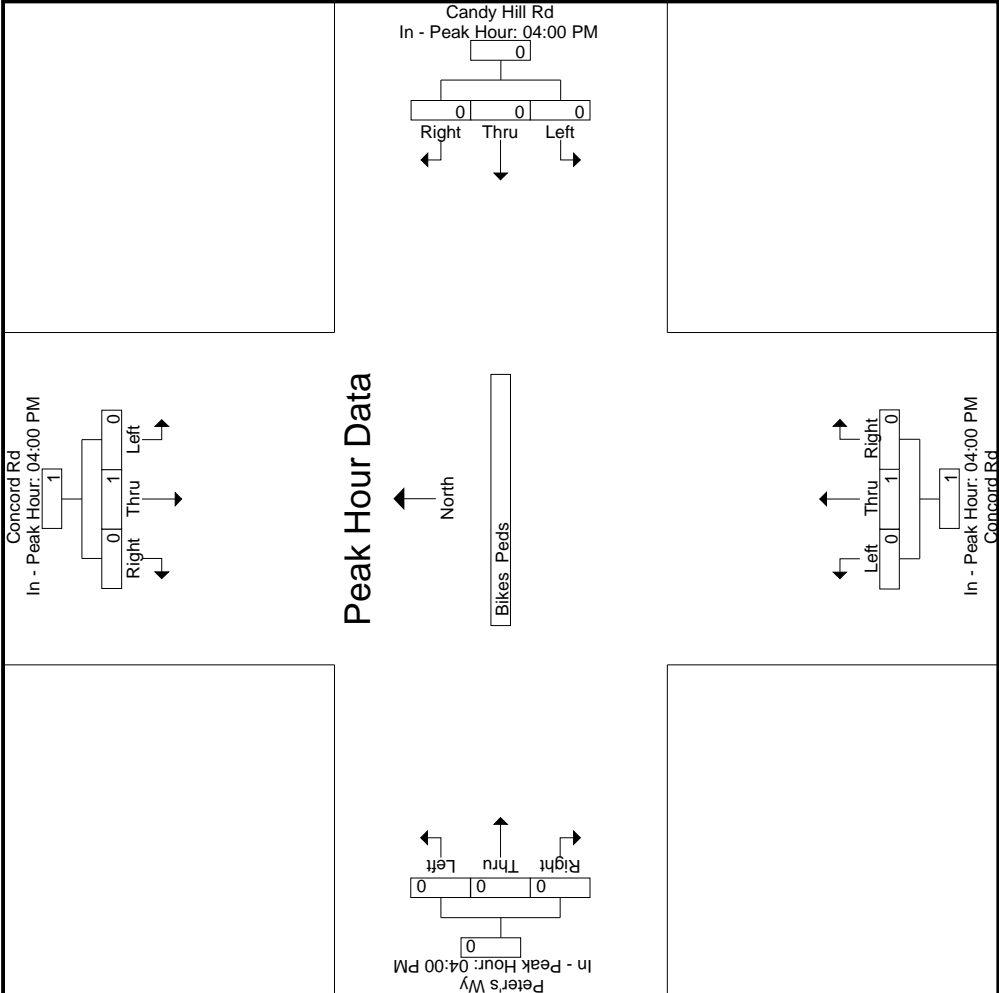


Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	0	0	0	0	0	0	1	0	0
+15 mins.	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	1	0	0	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0
Total Volume	0	1	0	0	0	0	1	0	0
% App. Total	0	100	0	0	0	0	100	0	0

Accurate Counts
978-664-2565

PHF | .000 | .250 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000 | .000



CRASH DATA: APPENDIX 3



Sudbury Station
Traffic Impact Assessment

Table - Vehicle Crash Data for the Years 2012 through 2016

	Hudson Rd./ Concord Rd./ Old Sudbury Rd. Intersection	Peckham Rd./ Hudson Rd. Intersection	Concord Rd./ Candy Hill Rd. Intersection
	<u>Signalized</u>	<u>Unsignalized</u>	<u>Unsignalized</u>
Crash Rate	0.68	0.34	0.48
Statewide Average Crash Rate	0.78	0.57	0.57
District 3 Average Crash Rate	0.89	0.61	0.61
Crashes			
2012	5	4	3
2013	6	2	3
2014	7	4	2
2015	11	2	2
2016	8	3	1
Total	37	15	11
Type			
Angle	9	6	4
Rear End	16	4	5
Head On	2	2	1
Sideswipe Same Direction	3	0	–
Sideswipe Opposite	5	1	–
Single Vehicle	2	2	1
Other	–	–	–
Category			
Property Damage	33	9	9
Personal Injury	4	6	1
Fatality	0	0	1
Weather			
Dry	29	10	7
Wet	7	3	1
Snow	1	2	1
Other	–	–	2
Time of Day			
7:00 to 9:00 AM	9	5	1
4:00 to 6:00 PM	5	5	3
Balance of Day	23	5	7

MassDOT Crash Report for SUDBURY for the year 2012

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Nonfatal Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection
3291733	SUDBURY	21-Sep-2012 5:11 PM		Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Turning left	V1: Westbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Dry	Dark - lighted roadway		HUDSON ROAD / CONCORD ROAD	
3336551	SUDBURY	12-Oct-2012 4:14 PM		Property damage only (none injured)	2	0	0	Angle	V1: Turning left / V2: Travelling straight ahead	V1: Northbound / V2: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V3: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Passenger car / V3: Passenger car	Dry	Daylight		336 CONCORD ROAD	
3336330	SUDBURY	17-Oct-2012 10:12 AM		Property damage only (none injured)	2	0	0	Angle	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic / V3: Travelling straight ahead	V1: Northbound / V2: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Passenger car / V3: Passenger car	Dry	Daylight		CONCORD ROAD Rte 27 / HUDSON ROAD Rte 27	
3355466	SUDBURY	14-Dec-2012 3:04 PM		Property damage only (none injured)	3	0	0	Rear-end	V1: Travelling straight ahead / V2: Slowing or stopped in traffic / V3: Travelling straight ahead	V1: Southbound / V2: Southbound / V3: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car / V3: Passenger car	Dry	Daylight		311 CONCORD ROAD	
3356335	SUDBURY	21-Dec-2012 1:39 PM		Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Turning left	V1: Northbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Wet	Daylight		OLD SUDBURY ROAD Rte 27 N / CONCORD ROAD / HUDSON ROAD	
3151736	SUDBURY	09-Apr-2012 6:47 AM		Property damage only (none injured)	3	0	0	Rear-end	V1: Travelling straight ahead / V2: Turning left / V3: Not reported	V1: Eastbound / V2: Eastbound / V3: Not reported	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Not reported	V1: Passenger car / V2: Passenger car / V3: Not reported	Dry	Daylight		46 HUDSON ROAD Rte 27 E	
3245780	SUDBURY	04-Jun-2012 4:18 PM		Property damage only (none injured)	3	0	0	Rear-end	V1: Travelling straight ahead / V2: Travelling straight ahead / V3: Travelling straight ahead	V1: Westbound / V2: Westbound / V3: Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V3: Passenger car	Wet	Daylight		HUDSON ROAD Rte 27 W / PEAKHAM ROAD	
3246273	SUDBURY	21-Jun-2012 10:00 AM		Non-fatal injury	1	1	0	Angle	V1: Turning right	V1: Westbound	V1: Collision with motor vehicle in traffic	V1: Passenger car	Dry	Daylight		36 HUDSON ROAD Rte 27 W / PEAKHAM ROAD	
3355516	SUDBURY	07-Dec-2012 5:36 PM		Property damage only (none injured)	2	0	0	Sideswipe, opposite direction	V1: Turning left / V2: Travelling straight ahead	V1: Westbound / V2: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Light truck/van, minivan, panel, pickup, sport utility with only four tires	Wet	Dark - lighted roadway		HUDSON ROAD Rte 27 / PEAKHAM ROAD	
3053959	SUDBURY	01-Mar-2012 3:06 PM		Property damage only (none injured)	2	0	0	Rear-end	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Ice	Daylight		402 CONCORD ROAD	
3155655	SUDBURY	01-May-2012 3:44 PM		Property damage only (none injured)	3	0	0	Single vehicle crash	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic / V3: Travelling straight ahead	V1: Northbound / V2: Southbound / V3: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V3: Single-unit truck	Wet	Daylight		377 CONCORD ROAD / CANDY HILL ROAD	
3291745	SUDBURY	26-Jun-2012 3:05 PM		Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Not reported	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Not reported	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Passenger car	Dry	Daylight		CONCORD ROAD / CANDY HILL ROAD	
3291780	SUDBURY	02-Aug-2012 10:50 AM		Property damage only (none injured)	1	0	0	Single vehicle crash	V1: Turning right	V1: Northbound	V1: Collision with guardrail	V1: Passenger car	Dry	Daylight		WATER ROW ROAD / OLD SUDBURY ROAD	
3336549	SUDBURY	10-Oct-2012 3:42 PM		Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Turning left	V1: Westbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Wet	Daylight		278 OLD SUDBURY ROAD	



MassDOT Crash Report for SUDBURY for the year 2013

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection
3399029	SUDBURY	22-Feb-2013 7:40 AM		Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Turning left	V1: Eastbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Light	Dry	Daylight	Clear		293 OLD SUDBURY ROAD
3399571	SUDBURY	13-Mar-2013 7:15 AM		Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Westbound / V2: Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Unknown vehicle configuration	Dry	Daylight	Clear	HUDSON ROAD / CONCORD ROAD	
3515955	SUDBURY	10-Jun-2013 9:14 AM		Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Not reported	V1: Northbound / V2: Not reported	V1: Collision with motor vehicle in traffic / V2: Not reported	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Passenger car	Dry	Daylight	Cloudy	CONCORD ROAD / OLD SUDBURY ROAD	
3743160	SUDBURY	07-Nov-2013 7:38 AM		Property damage only (none injured)	2	0	0	Angle	V1: Slowing or stopped in traffic / V2: Turning right	V1: Northbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Passenger car	Wet	Daylight	Cloudy	308 CONCORD ROAD	
3742681	SUDBURY	24-Nov-2013 1:26 PM		Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1: Slowing or stopped in traffic / V2: Overtaking/passing	V1: Eastbound / V2: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Light truck/van, minivan, panel, pickup, sport utility with only four tires	Dry	Daylight	Clear	269 OLD SUDBURY ROAD Rte 27 W	
3741303	SUDBURY	07-Dec-2013 6:55 PM		Property damage only (none injured)	2	0	0	Sideswipe, opposite direction	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Westbound / V2: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Light truck/van, minivan, panel, pickup, sport utility with only four tires	Dry	Dark - lighted roadway	Clear		10 HUDSON ROAD Rte 27 W
3401056	SUDBURY	22-Jan-2013 7:27 AM		Non-fatal injury	2	2	0	Angle	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Westbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Light truck/van, minivan, panel, pickup, sport utility with only four tires	Snow	Daylight	Clear	HUDSON ROAD / PEAKHAM ROAD	
3743191	SUDBURY	23-Dec-2013 3:27 PM		Property damage only (none injured)	1	0	0	Single vehicle crash	V1: Travelling straight ahead	V1: Southbound	V1: Collision with light pole or other post/support	V1: Passenger car	Wet	Daylight	Rain	55 HUDSON ROAD	
3525238	SUDBURY	30-Apr-2013 3:21 PM		Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Southbound / V2: Not reported	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Single-unit truck (2 axle) cab	Dry	Daylight	Clear	379 CONCORD ROAD	
3526127	SUDBURY	03-May-2013 3:38 PM		Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Light truck/van, minivan, panel, pickup, sport utility with only four tires	Dry	Daylight	Clear	384 CONCORD ROAD	
3630359	SUDBURY	20-Sep-2013 4:30 PM		Property damage only (none injured)	3	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic / V3: Slowing or stopped in traffic	V1: Northbound / V2: Northbound / V3: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Passenger car / V3: Light truck/van, minivan, panel, pickup, sport utility with only four tires	Dry	Daylight	Cloudy	CONCORD ROAD / CANDY HILL ROAD	
3655960	SUDBURY	11-Sep-2013 3:13 PM		Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Westbound / V2: Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Dry	Daylight	Clear	58 HUDSON ROAD	
3527455	SUDBURY	07-May-2013 5:42 PM		Property damage only (none injured)	2	0	0	Head-on	V1: Travelling straight ahead / V2: Entering traffic lane	V1: Westbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Light truck/van, minivan, panel, pickup, sport utility with only four tires	Dry	Daylight	Clear	PLYMPTON ROAD / CONCORD ROAD	

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Nonfatal Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection
3515837	SUDBURY	06-Jun-2013	3:19 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Dry	Daylight	Clear		332 CONCORD ROAD
3659685	SUDBURY	12-Jul-2013	5:50 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Dry	Daylight	Clear	CONCORD ROAD / PLYMPTON ROAD	
3655967	SUDBURY	10-Sep-2013	2:56 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Light truck/van, minivan, panel, pickup, sport utility with only four tires	Wet	Daylight	Cloudy		377 CONCORD ROAD
3742711	SUDBURY	13-Nov-2013	7:32 AM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1: Travelling straight ahead	V1: Eastbound	V1: Collision with tree		Dry	Daylight	Clear		88 PLYMPTON ROAD



MassDOT Crash Report for SUDBURY for the year 2014

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	A/Roadway Intersection	Distance from Nearest Roadway Intersection
3779154	SUDBURY	24-Jan-2014	9:48 AM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Not reported	Dry	Daylight	Clear	HUDSON ROAD Rte 27 S / CONCORD ROAD	
3795089	SUDBURY	17-Mar-2014	11:12 PM	Property damage only (none injured)	2	0	0	Sideswipe, opposite direction	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Northbound / V2: Southbound	V1: Collision with motor vehicle in traffic with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Unknown heavy truck, cannot classify	Dry	Daylight	Clear/Clear	HUDSON ROAD Rte 27 / CONCORD ROAD	
3908810	SUDBURY	09-Apr-2014	2:25 PM	Property damage only (none injured)	2	0	0	Sideswipe, opposite direction	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Eastbound / V2: Westbound	V1: Collision with motor vehicle in traffic with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Passenger car	Dry	Daylight	Clear	HUDSON ROAD Rte 27 S / CONCORD ROAD	
3988721	SUDBURY	04-Jun-2014	12:06 PM	Property damage only (none injured)	2	0	0	Head-on	V1: Turning left / V2: Travelling straight ahead	V1: Northbound / V2: Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Light truck/van, minivan, panel, pickup, sport utility with only four tires	Dry	Daylight	Clear/Cloudy	HUDSON ROAD Rte 27 W / CONCORD ROAD	
3989617	SUDBURY	23-Sep-2014	2:38 PM	Non-fatal injury	2	1	0	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Eastbound / V2: Eastbound	V1: Collision with motor vehicle in traffic with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Light truck/van, minivan, panel, pickup, sport utility with only four tires	Dry	Daylight	Clear	HUDSON ROAD Rte 27 / CONCORD ROAD	
3998088	SUDBURY	19-Nov-2014	4:52 PM	Property damage only (none injured)	2	0	0	Sideswipe, opposite direction	V1: Turning left / V2: Travelling straight ahead	V1: Eastbound / V2: Westbound	V1: Collision with motor vehicle in traffic with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Passenger car	Dry	Dark - lighted roadway	Clear	OLD SUDBURY ROAD / CONCORD ROAD	280 OLD SUDBURY ROAD
3998075	SUDBURY	07-Dec-2014	3:07 AM	Non-fatal injury	1	1	0	Single vehicle crash	V1: Travelling straight ahead	V1: Westbound	V1: Overturn/rollover	V1: Bus (seats for 7-15 people, school bus) with only four tires	Wet	Dark - lighted roadway	Clear	OLD SUDBURY ROAD / CONCORD ROAD	
3794341	SUDBURY	06-Feb-2014	8:31 AM	Non-fatal injury	2	2	0	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Eastbound / V2: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Passenger car	Snow	Daylight	Clear	HUDSON ROAD / CONCORD ROAD	
3897932	SUDBURY	01-May-2014	8:14 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic	V1: Westbound / V2: Westbound	V1: Collision with motor vehicle in traffic with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Passenger car	Dry	Daylight	Cloudy	OLD SUDBURY ROAD Rte 27 W	55 HUDSON ROAD Rte 27 W
3968689	SUDBURY	14-Aug-2014	6:00 PM	Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Turning left	V1: Westbound / V2: Southbound	V1: Collision with motor vehicle in traffic with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Passenger car	Dry	Daylight	Clear	OLD SUDBURY ROAD Rte 27 W / CONCORD ROAD	
3968683	SUDBURY	06-Sep-2014	7:11 AM	Non-fatal injury	2	2	0	Head-on	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Westbound / V2: Eastbound	V1: Collision with parked motor vehicle with parked motor vehicle	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Passenger car	Dry	Daylight	Clear	HUDSON ROAD Rte 27 E / PEAKHAM ROAD	
3964334	SUDBURY	29-Apr-2014	11:53 AM	Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires / V2: Passenger car	Dry	Daylight	Cloudy	CONCORD ROAD	377 CONCORD ROAD
4021903	SUDBURY	21-Nov-2014	5:36 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic with motor vehicle in traffic	V1: Light truck/van, minivan, panel, pickup, sport utility with only four tires	Dry	Dark - roadway not lighted	Clear/Clear	CONCORD ROAD / CANDY HILL ROAD	
3988738	SUDBURY	01-Aug-2014	10:26 PM	Property damage only (none injured)	1	0	0	Rear-end	V1: Turning right	V1: Southbound	V1: Collision with other fixed object (wall, building, tunnel, etc)	V1: Passenger car	Wet	Dark - roadway not lighted	Cloudy/Fog, smog, brake	Rte 27 / HUDSON ROAD / CONCORD ROAD	

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Fatal Injuries	Total Nonfatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection
3988112	SUDBURY	07-Nov-2014	2:27 AM	Non-fatal injury	1	0	1	Single vehicle crash	V1: Travelling straight ahead	V1: Westbound	V1: Collision with embankment	V1: Passenger car	Wet	Dark - lighted roadway	Rain	HUDSON ROAD / PEAKHAM ROAD	
3989431	SUDBURY	04-Jan-2014	12:54 PM	Non-fatal injury	2	0	2	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Northbound / V2: Northbound	V1: Collision with motor vehicle in traffic with motor vehicle in traffic	V1: Passenger car / V2: Unknown heavy truck, cannot classify	Dry	Daylight	Clear/Clear	OLD SUDBURY ROAD Rte 27 N / WATER ROW ROAD	
3794526	SUDBURY	07-Feb-2014	4:58 PM	Non-fatal injury	1	0	1	Single vehicle crash	V1: Travelling straight ahead	V1: Westbound	V1: Collision with utility pole only four tires	V1: Light truck/van, mini-van, sport utility with only four tires	Wet	Dusk	Clear	278 OLD SUDBURY ROAD	
3792107	SUDBURY	18-Feb-2014	11:33 AM	Property damage only (none injured)	3	0	3	Angle	V1: Entering traffic lane / V2: Travelling straight ahead / V3: Travelling straight ahead	V1: Northbound / V2: Northbound / V3: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	V1: Light truck/van, mini-van, panel, pickup, sport utility with only four tires / V2: Passenger car / V3: Light truck/van, mini-van, panel, pickup, sport utility with only four tires	Snow	Daylight	Snow	OLD SUDBURY ROAD Rte 27 S / WATER ROW ROAD	
3864333	SUDBURY	08-May-2014	3:45 PM	Property damage only (none injured)	2	0	0	Angle	V2: Travelling straight ahead	V1: Southbound / V2: Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck/van, mini-van, panel, pickup, sport utility with only four tires / V2: Light truck/van, mini-van, panel, pickup, sport utility with only four tires	Dry	Daylight	Clear	OLD SUDBURY ROAD Rte 27 W / CONCORD ROAD	
3884932	SUDBURY	29-Jul-2014	5:33 PM	Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Travelling straight ahead in traffic / V3: Slowing or stopped in traffic	V1: Westbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car / V3: Light truck/van, mini-van, panel, pickup, sport utility with only four tires	Dry	Daylight	Clear/Clear	326 CONCORD ROAD	
4011126	SUDBURY	24-Oct-2014	7:53 AM	Property damage only (none injured)	3	0	0	Rear-end	V1: Slowing or stopped in traffic / V3: Travelling straight ahead	V1: Westbound / V2: Westbound / V3: Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car / V3: Light truck/van, mini-van, panel, pickup, sport utility with only four tires	Wet	Daylight	Clear	278 OLD SUDBURY ROAD	
3897031	SUDBURY	07-Jul-2014	3:06 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1: Travelling straight ahead	V1: Northbound	V1: Collision with utility pole	V1: Light truck/van, mini-van, panel, pickup, sport utility with only four tires	Dry	Daylight	Clear	598 PEAKHAM ROAD	
3966861	SUDBURY	08-Sep-2014	4:53 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1: Travelling straight ahead	V1: Northbound	V1: Collision with other fixed object (wall, building, tunnel, etc)	V1: Passenger car	Dry	Daylight	Cloudy	602 PEAKHAM ROAD	



MassDOT Crash Report for SUDBURY for the year 2015

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Nonfatal Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection
4036466	SUDBURY	25-Jan-2015	10:48 AM	Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Eastbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires / V2: Passenger car / only four tires / V2: Passenger car	Wet	Daylight	Clear	HUDSON ROAD Rte 27 E / CONCORD ROAD / OLD SUDBURY ROAD Rte 27 W / CONCORD ROAD / HUDSON ROAD	
4027674	SUDBURY	18-Feb-2015	4:54 PM	Property damage only (none injured)	3	0	0	Rear-end	V1: Slowing or stopped in traffic / V3: Slowing or stopped in traffic	V1: Westbound / V2: Westbound / V3: Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	V1: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires / V2: Passenger car / only four tires / V2: Passenger car	Wet	Dusk	Snow	HUDSON ROAD	
4067864	SUDBURY	07-Mar-2015	8:19 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1: Travelling straight ahead	V1: Westbound	V1: Collision with highway traffic sign post	V1: Passenger car	Dry	Dark - roadway not lighted	Clear	HUDSON ROAD	
4067863	SUDBURY	11-Mar-2015	8:01 AM	Property damage only (none injured)	3	0	0	Rear-end	V1: Slowing or stopped in traffic / V3: Travelling straight ahead	V1: Eastbound / V2: Eastbound / V3: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	V1: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires / V2: Passenger car / V3: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires / V2: Passenger car	Wet	Daylight	Clear	HUDSON ROAD Rte 27 E	
4081715	SUDBURY	11-May-2015	9:49 AM	Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires / V2: Passenger car	Dry	Daylight	Clear	CONCORD ROAD / HUDSON ROAD	
4095451	SUDBURY	05-Jun-2015	12:26 PM	Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Eastbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires / V2: Passenger car	Dry	Daylight	Clear/Clear	CONCORD ROAD Rte 20 W / HUDSON ROAD Rte 27 E / OLD SUDBURY ROAD Rte 27 E	
4066840	SUDBURY	08-Jun-2015	8:30 AM	Non-fatal injury	2	1	0	Rear-end	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	V1: Eastbound / V2: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with cyclist (bicycle, tri-cycle, unicycle, pedal car)	V1: Passenger car / V2: Passenger car	Dry	Daylight	Clear	280 OLD SUDBURY ROAD Rte 27 E	
4081086	SUDBURY	17-Jul-2015	1:39 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	V1: Northbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Dry	Daylight	Cloudy	CONCORD ROAD / HUDSON ROAD	
4079862	SUDBURY	06-Aug-2015	10:09 AM	Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires	Dry	Daylight	Clear	301 CONCORD ROAD	
4159748	SUDBURY	31-Oct-2015	11:33 AM	Property damage only (none injured)	2	0	0	Sideswipe, opposite direction	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Northbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires	Dry	Daylight	Clear	CONCORD ROAD / HUDSON ROAD	
4133061	SUDBURY	08-Dec-2015	12:56 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires	Dry	Daylight	Cloudy	CONCORD ROAD / HUDSON ROAD	
4053463	SUDBURY	01-Apr-2015	8:23 AM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Eastbound / V2: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires	Dry	Daylight	Clear	HUDSON ROAD Rte 27 E / Rte 27	
4066848	SUDBURY	28-May-2015	4:51 PM	Non-fatal injury	2	3	0	Angle	V1: Travelling straight ahead / V2: Entering traffic lane	V1: Eastbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Dry	Daylight	Clear	HUDSON ROAD / PEAKHAM ROAD	
4035767	SUDBURY	20-Jan-2015	7:54 AM	Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Turning left	V1: Westbound / V2: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires / V2: Passenger car	Dry	Daylight	Clear	481 CONCORD ROAD	
4017896	SUDBURY	06-Feb-2015	3:57 PM	Non-fatal injury	2	1	0	Angle	V1: Travelling straight ahead / V2: Turning left	V1: Northbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Bus (seats for more than 15 people including driver)	Sand, mud, dirt, oil, gravel	Daylight	Clear	350 CONCORD ROAD	
4080656	SUDBURY	28-Jul-2015	12:43 PM	Property damage only (none injured)	2	0	0	Rear-to-rear	V1: Backing / V2: Slowing or stopped in traffic	V1: Northbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with zone maintenance equipment	V1: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires	Dry	Daylight	Clear	29 HUDSON ROAD Rte 27 N	
4135159	SUDBURY	24-Oct-2015	12:28 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1: Travelling straight ahead	V1: Westbound	V1: Collision with tree	V1: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires	Dry	Daylight	Cloudy	68 HUDSON ROAD Rte 27 S	
4162525	SUDBURY	31-Dec-2015	11:32 AM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1: Travelling straight ahead	V1: Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car	Wet	Daylight	Clear/Clear	59 HUDSON ROAD Rte 27 W	
4066805	SUDBURY	22-Jun-2015	5:56 PM	Property damage only (none injured)	2	0	0	Angle	V1: Turning left / V2: Travelling straight ahead	V1: Northbound / V2: Eastbound	V1: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Dry	Daylight	Clear	251 OLD SUDBURY ROAD	

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Nonfatal Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection
4159831	SUDBURY	17-Nov-2015	6:22 PM	Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Eastbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Dry	Dark - lighted roadway	Clear/Cloudy	OLD SUDBURY ROAD / WATER ROW	
4137190	SUDBURY	15-Oct-2015	3:01 PM	Property damage only (none injured)	2	0	0	Angle	V1: Turning left / V2: Turning left	V1: Southbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Dry	Daylight	Clear	OLD SUDBURY ROAD / WATER ROW	

MassDOT Crash Report for SUDBURY for the year 2016

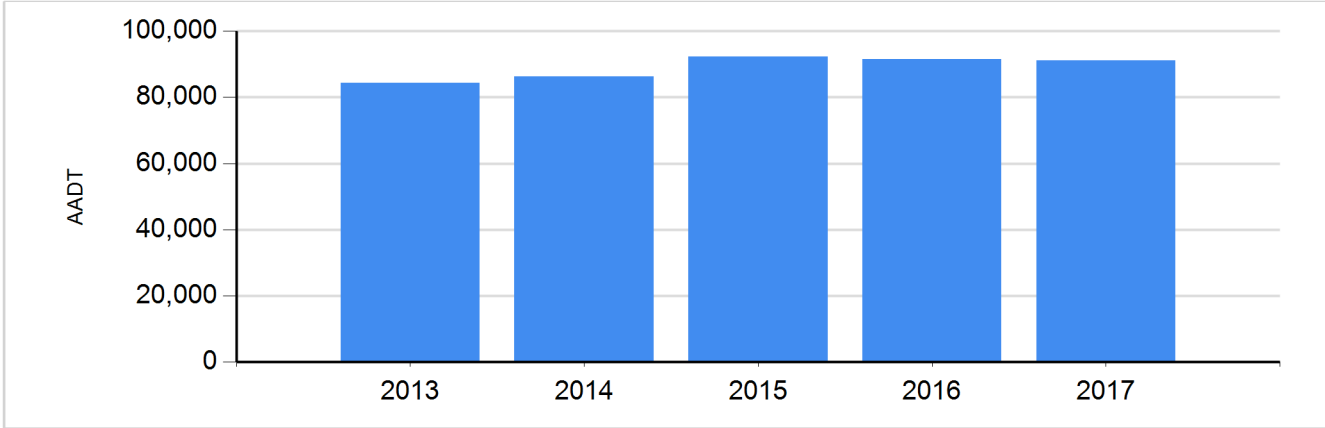
Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Nonfatal Injuries	Total Fatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection
4211823	SUDBURY	28-Mar-2016	4:53 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Turning left / V2: Turning left	V1: Westbound / V2: Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car / only four tires / V2: Light panel, pickup, sport utility with	Wet	Daylight	Cloudy/Rain	CONCORD ROAD / HUDSON ROAD	
4211787	SUDBURY	04-Apr-2016	8:56 AM	Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Light panel, pickup, sport utility with	Snow	Daylight	Snow	289 OLD SUDBURY ROAD Rte 27	
4213488	SUDBURY	16-Apr-2016	5:23 PM	Property damage only (none injured)	2	0	0	Sideswipe, same direction	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Northbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires	Dry	Daylight	Clear	CONCORD ROAD / HUDSON ROAD	
4213095	SUDBURY	14-Jun-2016	5:51 PM	Non-fatal injury	2	1	0	Rear-end	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Dry	Daylight	Clear	CONCORD ROAD / HUDSON ROAD / OLD SUDBURY ROAD	
4337000	SUDBURY	12-Sep-2016	3:51 PM	Property damage only (none injured)	3	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Slowing or stopped in traffic	V1: Eastbound / V2: Eastbound / V3: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic / V3: Collision with motor vehicle in traffic	V1: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires / V2: Light panel, pickup, sport utility with	Dry	Daylight	Clear	HUDSON ROAD Rte 27 E / SUDBURY ROAD Rte 27 E	
4344303	SUDBURY	19-Oct-2016	06:38 AM	Property damage only (none injured)	2	0	0	Rear-end	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Eastbound / V2: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Dry	Daylight	Clear/Cloudy	HUDSON ROAD / CONCORD ROAD	
4336882	SUDBURY	13-Nov-2016	1:59 PM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1: Turning right	V1: Southbound	V1: Collision with curb	V1: Passenger car	Dry	Dark - roadway not lighted	Clear	HUDSON ROAD Rte 27 E / CONCORD ROAD	
4337003	SUDBURY	14-Dec-2016	1:42 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: Southbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Single-unit truck (2-axle, 6-tires) / V2: Light truck (van, mini-van, panel, pickup, sport utility)	Dry	Daylight	Clear	330 CONCORD ROAD	
4213480	SUDBURY	20-Apr-2016	11:57 AM	Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Westbound / V2: Southbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Light truck (van, mini-van, panel, pickup, sport utility) with	Dry	Daylight	Clear	HUDSON ROAD / PEAKHAM ROAD	
4348057	SUDBURY	03-Jul-2016	10:20 AM	Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Eastbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Light truck (van, mini-van, panel, pickup, sport utility) with	Dry	Daylight	Clear	HUDSON ROAD / PEAKHAM ROAD	
4338879	SUDBURY	10-Dec-2016	5:48 PM	Non-fatal injury	1	1	0	Single vehicle crash	V1: Travelling straight ahead	V1: Westbound	V1: Collision with other fixed object (wall, building, tunnel, etc.)	V1: Light truck (van, mini-van, panel, pickup, sport utility) with only four tires	Dry	Dark - lighted roadway	Clear	29 HUDSON ROAD Rte 27 W	
4228166	SUDBURY	06-Apr-2016	3:44 PM	Fatal injury	2	5	1	Head-on	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Southbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Bus (seats for more than 15 people, including driver)	Not reported	Daylight	Cloudy	377 CONCORD ROAD	
4179641	SUDBURY	22-Jan-2016	4:30 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Eastbound / V2: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Dry	Dusk	Clear	HUDSON ROAD / PEAKHAM ROAD	
4212395	SUDBURY	08-Jun-2016	3:56 PM	Property damage only (none injured)	2	0	0	Rear-end	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Westbound / V2: Westbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Passenger car	Wet	Daylight	Cloudy/Rain	75 HUDSON ROAD	

Crash Number	City/Town Name	Crash Date	Crash Time	Crash Severity	Number of Vehicles	Total Fatal Injuries	Total Nonfatal Injuries	Manner of Collision	Vehicle Action Prior to Crash	Vehicle Travel Directions	Most Harmful Events	Vehicle Configuration	Road Surface Condition	Ambient Light	Weather Condition	At Roadway Intersection	Distance from Nearest Roadway Intersection
4167616	SUDBURY	05-Feb-2016	12:27 PM	Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	V1: Northbound / V2: Westbound	V1: Collision with motor vehicle in traffic with motor vehicle in traffic	V1: Passenger car / V2: Commercial heavy truck, school bus, school bus, school bus	Ice	Daylight	Snow	OLD SUDBURY ROAD / WATER ROW	
4213487	SUDBURY	22-Apr-2016	1:53 PM	Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Turning left	V1: Westbound / V2: Eastbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Passenger car / V2: Light truck/van, mini-van, panel, pickup, sport utility with only four tires	Dry	Daylight	Clear	Re 27 / OLD SUDBURY ROAD	
4360470	SUDBURY	12-Nov-2016	3:14 AM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1: Slowing or stopped in traffic	V1: Westbound	V1: Collision with other fixed object (wall, building, tunnel, etc.)	V1: Passenger car	Dry	Dark - unknown roadway lighting	Clear		254 OLD SUDBURY ROAD
4212430	SUDBURY	18-Jun-2016	00:11 AM	Non-fatal injury	1	1	0	Single vehicle crash	V1: Travelling straight ahead	V1: Southbound	V1: Collision with motor vehicle in traffic	V1: Passenger car	Dry	Dark - lighted roadway	Clear		310 CONCORD ROAD
4212356	SUDBURY	21-Mar-2016	7:32 AM	Property damage only (none injured)	2	0	0	Angle	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: Southbound / V2: Northbound	V1: Collision with motor vehicle in traffic / V2: Collision with motor vehicle in traffic	V1: Light truck/van, mini-van, panel, pickup, sport utility with only four tires / V2: Light truck/van, mini-van, panel, pickup, sport utility with only four tires	Snow	Daylight	Snow/Cloudy		75 WATER ROW
4211813	SUDBURY	04-Jul-2016	7:55 AM	Property damage only (none injured)	1	0	0	Single vehicle crash	V1: Travelling straight ahead	V1: Northbound	V1: Collision with utility pole	V1: Passenger car	Snow	Daylight	Snow/Cloudy		75 WATER ROW

MASSDOT TDMS COUNT DATA: APPENDIX 4

AADT by Year Comparison for 1/1/2013 - 12/31/2017
Criteria: On Road = INTERSTATE 495, Community = marlboro

District: **Location ID:** 390 **County Number:** 17 **Section:**
Highway System Number: **Begin Milepoint:** 58.540000 **End Milepoint:** 64.130000
Highway Number: **Length:** 5.590000 **Control:**

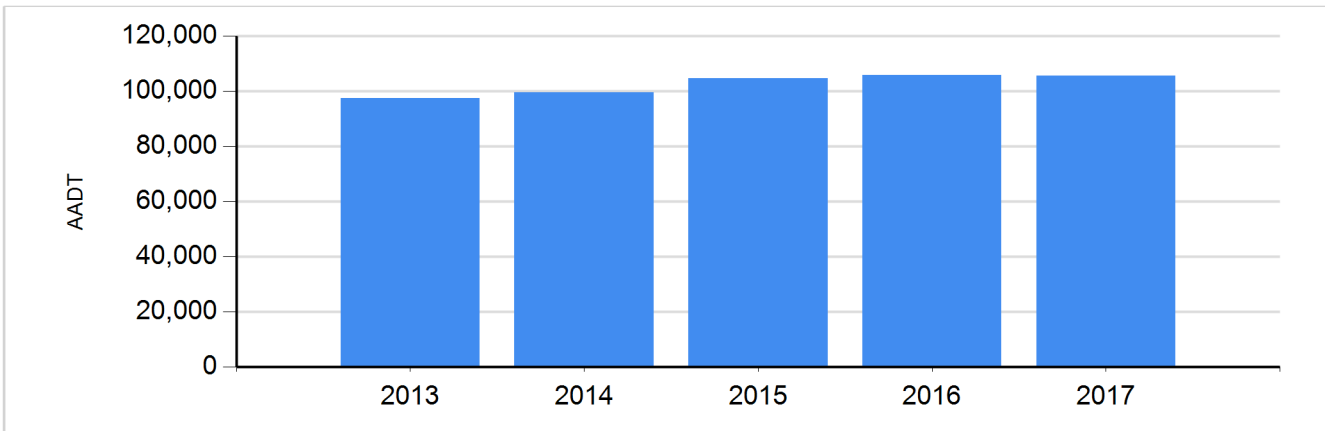


Year	AADT	% Change YOY
2013	84,259	
2014	86,324	2.5%
2015	92,263	6.9%
2016	91,415	-0.9%
2017	91,141	-0.3%

NOTE: Red text means percent change is >20%

AADT by Year Comparison for 1/1/2013 - 12/31/2017
Criteria: On Road = INTERSTATE 495, Community = Marlborough

District: **Location ID:** 4089 **County Number:** 17 **Section:**
Highway System Number: **Begin Milepoint:** 55.760000 **End Milepoint:** 66.360000
Highway Number: **Length:** 10.600000 **Control:**

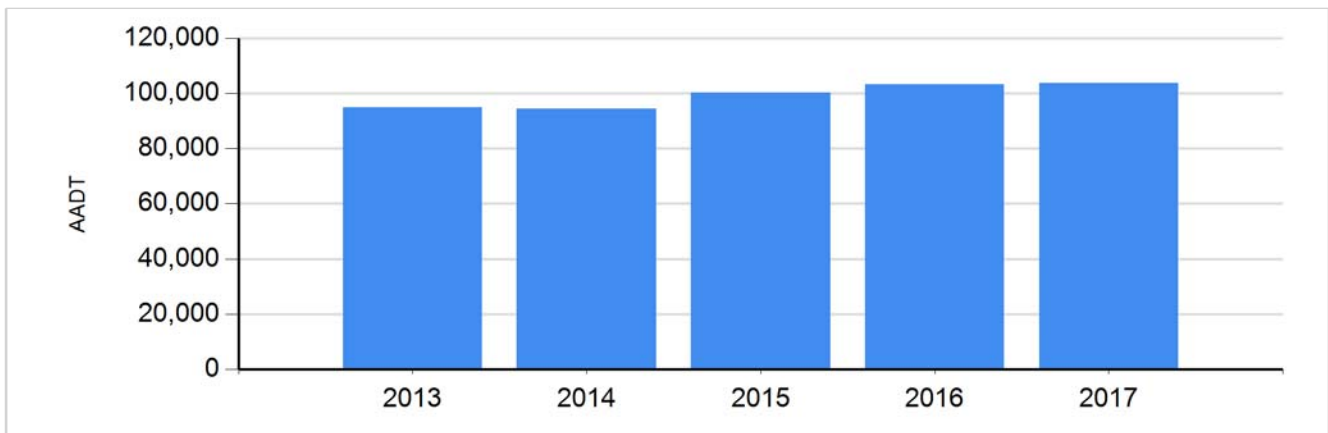


Year	AADT	% Change YOY
2013	97,440	
2014	99,463	2.1%
2015	104,694	5.3%
2016	105,810	1.1%
2017	105,493	-0.3%

NOTE: Red text means percent change is >20%

AADT by Year Comparison for 1/1/2013 - 12/31/2017
Criteria: On Road = INTERSTATE 495, Community = Bolton

District: **Location ID:** 9 **County Number:** 27 **Section:**
Highway System Number: **Begin Milepoint:** 51.560000 **End Milepoint:** 71.070000
Highway Number: **Length:** 19.510000 **Control:**



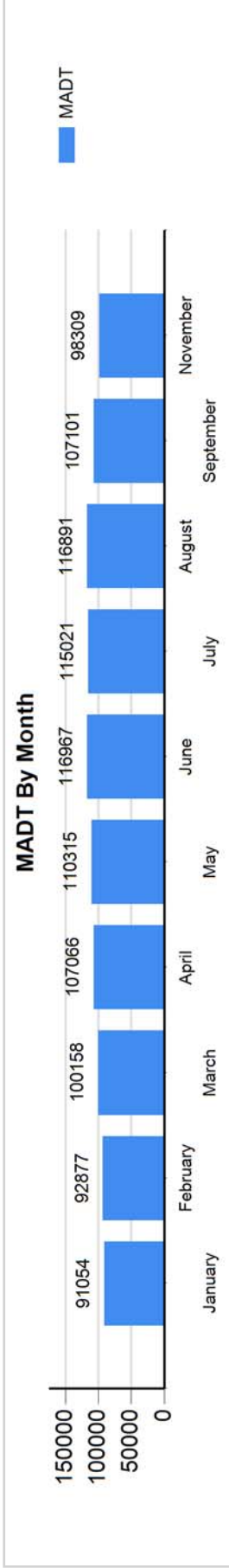
Year	AADT	% Change YOY
2013	94,802	0.7%
2014	94,541	-0.3%
2015	100,251	6.0%
2016	103,174	2.9%
2017	103,690	0.5%

NOTE: Red text means percent change is >20%

ADT by Day of Week by Month for 1/1/2016 - 12/31/2016
Criteria: On Road = INTERSTATE 495, Community = Marlborough

District **Location ID 4089** Located On **INTERSTATE 495**
 Community **Marlborough** Direction **2-WAY** AADT **105810**
 County **Middlesex** RoadBed **ML** Collection Type **HPMS**
 Factor Group **U1-Boston** Functional Class **(1) Interstate**

	Average Daily Number of Vehicles							Avg. Day as % of Year Avg.	Avg. Weekday (Mon-Thu)	Avg. Day as % of Avg. Weekday (Mon-Thu)	Avg. Weekday (Mon-Fri)	Avg. Day as % of Avg. Weekday (Mon-Fri)	
	Sun	Mon	Tue	Wed	Thu	Fri	Sat						
JAN	64,864	96,248	98,427	102,109	104,910	100,434	70,394	91,054	86.25%	100,424	90.67%	100,426	90.67%
FEB	71,516	88,668	98,309	102,030	107,339	101,538	80,748	92,877	87.97%	99,087	93.73%	99,577	93.27%
MAR	80,536	92,255	104,899	107,525	113,150	114,615	88,137	100,158	94.87%	104,457	95.88%	106,489	94.05%
APR	88,756	105,932	108,589	113,973	117,450	120,074	94,696	107,066	101.41%	111,486	96.04%	113,204	94.58%
MAY	90,684	105,263	114,170	117,608	120,875	124,214	99,396	110,315	104.49%	114,479	96.36%	116,426	94.75%
JUN	97,191	119,336	119,925	122,491	126,040	128,409	105,384	116,967	110.79%	121,948	95.92%	123,240	94.91%
JUL	95,043	109,139	119,872	123,538	124,303	126,896	106,362	115,021	108.95%	119,213	96.48%	120,750	95.26%
AUG	98,532	119,422	117,763	122,072	127,806	127,875	104,772	116,891	110.72%	121,766	96.00%	122,988	95.04%
SEP	91,175	83,488	114,440		124,216	128,444	100,845	107,101	101.44%	107,381	99.74%	112,647	95.08%
OCT													
NOV	90,473	110,746	106,386	103,016	92,698	91,310	93,536	98,309	93.12%	103,212	95.25%	100,831	97.50%
DEC													
Year	86,877	103,050	110,278	112,707	115,879	116,381	94,427	105,576		110,345	95.68%	111,658	94.55%



NOTE: VALUES ARE ROUNDED; TOTALS AND PERCENTS MAY NOT ADD UP.

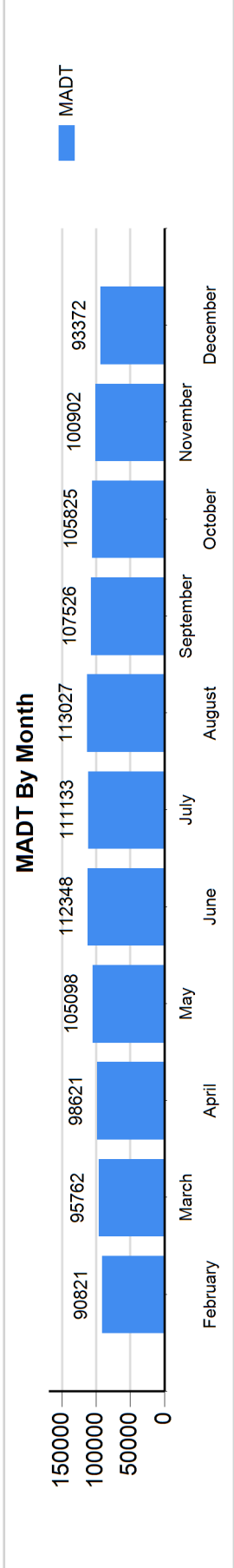
ADT by Day of Week by Month for 1/1/2016 - 12/31/2016
Criteria: On Road = INTERSTATE 495, Community = Bolton

District: Community Bolton
 County: Worcester
 Factor Group: R1

Location ID: 9
 Direction: 2-WAY
 RoadBed: ML

Located On: INTERSTATE 495
 AADT: 103174
 Collection Type: HPMS
 Functional Class: (1) Interstate

	Average Daily Number of Vehicles							Avg. Day (Mon-Sun)	Avg. Day as % of Year Avg.	Avg. Weekday (Mon-Thu)	Avg. Day as % of Avg. Weekday (Mon-Thu)	Avg. Weekday (Mon-Fri)	Avg. Day as % of Avg. Weekday (Mon-Fri)
	Sun	Mon	Tue	Wed	Thu	Fri	Sat						
JAN													
FEB	68,617	90,640	93,395	97,157	101,433	108,509	76,007	90,821	95,656	94.95%	98,227	92.46%	
MAR	79,855	90,966	99,410	101,867	107,097	108,928	82,219	95,762	99,835	95.92%	101,654	94.20%	
APR	78,348	94,527	101,723	106,765	109,343	113,082	86,569	98,621	103,090	95.67%	105,088	93.85%	
MAY	86,987	100,065	107,748	111,458	115,358	119,652	94,423	105,098	108,657	96.72%	110,856	94.81%	
JUN	95,359	113,915	114,323	116,841	121,109	124,107	100,788	112,348	116,547	96.40%	118,059	95.16%	
JUL	93,436	105,007	115,201	118,705	119,677	122,432	103,482	111,133	114,648	96.93%	116,204	95.64%	
AUG	97,716	114,873	112,437	117,082	122,980	123,753	102,351	113,027	116,843	96.73%	118,225	95.60%	
SEP	92,365	100,440	109,017	113,227	117,286	123,009	97,342	107,526	109,993	97.76%	112,596	95.50%	
OCT	87,173	105,960	109,641	108,505	114,980	119,954	94,570	105,825	109,772	96.40%	111,808	94.65%	
NOV	84,190	104,453	103,790	107,559	106,503	108,281	91,545	100,902	105,576	95.57%	106,117	95.09%	
DEC	72,672	87,583	103,622	107,648	100,611	105,162	76,313	93,372	99,866	93.50%	100,925	92.52%	
Year	85,156	100,766	106,392	109,710	112,398	116,079	91,419	103,130	107,317	96.10%	109,069	94.56%	



NOTE: VALUES ARE ROUNDED; TOTALS AND PERCENTS MAY NOT ADD UP.

TRIP GENERATION: APPENDIX 5



Trip Generation for Single-Family Detached Housing (210) [1]

Vehicle Trip Ends vs Dwelling Units on a Weekday

24 Hour Total

Setting/Location: General Urban/Suburban

Number of Studies: 159

Average Number of Dwelling Units: 264

Directional Distribution: 50% Entering; 50% Exiting

Average Vehicle Trip Ends vs Dwelling Units on a Weekday

where $x = 12$ Dwelling Units

Using Using In(X) Equation

$$\begin{aligned} T &= 0.92 \ln(X) + 2.71 && 50\% \text{ Enter; } 50\% \text{ Exit} \\ &= 148 \text{ Trips} && 74 \text{ Enter; } 74 \text{ Exit} \end{aligned}$$

Trip Generation for Single-Family Detached Housing (210) [1]

Vehicle Trip Ends vs Dwelling Units 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: 173

Average Number of Dwelling Units: 219

Directional Distribution: 50% Entering; 50% Exiting

Average Vehicle Trip Ends vs Dwelling Units on a Weekday

where $x = 12$ Dwelling Units

Using Using Linear Equation

$$\begin{aligned} T &= 0.71 X + 4.8 && 25\% \text{ Enter; } 75\% \text{ Exit} \\ &= 14 \text{ Trips} && 4 \text{ Enter; } 10 \text{ Exit} \end{aligned}$$

Trip Generation for Single-Family Detached Housing (210) [1]

Average Vehicle Trip Ends vs Dwelling Units 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: 190

Average Number of Dwelling Units: 242

Directional Distribution: 50% Entering; 50% Exiting

Average Vehicle Trip Ends vs Dwelling Units on a Weekday

where $x = 12$ Dwelling Units

Using Using In(X) Equation

$$\begin{aligned} T &= 0.96 \ln(X) + 0.2 && 63\% \text{ Enter; } 37\% \text{ Exit} \\ &= 14 \text{ Trips} && 9 \text{ Enter; } 5 \text{ Exit} \end{aligned}$$

[1] Institute of Transportation Engineers, Trip Generation Manual, 10th Edition,
September 2017 © 2017



Trip Generation for Multifamily Housing (Low Rise) (220) [1]

Vehicle Trip Ends vs Dwelling Units on a Weekday

24 Hour Total

Setting/Location: General Urban/Suburban

Number of Studies: 29

Average Number of Dwelling Units: 168

Directional Distribution: 50% Entering; 50% Exiting

Average Vehicle Trip Ends vs Dwelling Units on a Weekday

where $x = 18$ Dwelling Units

Using Using Average Rate

$$\begin{aligned} T &= 7.32 X && 50\% \text{ Enter; } 50\% \text{ Exit} \\ &= 132 \text{ Trips} && 66 \text{ Enter; } 66 \text{ Exit} \end{aligned}$$

Trip Generation for Multifamily Housing (Low Rise) (220) [1]

Vehicle Trip Ends vs Dwelling Units 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: 42

Average Number of Dwelling Units: 199

Directional Distribution: 50% Entering; 50% Exiting

Average Vehicle Trip Ends vs Dwelling Units on a Weekday

where $x = 18$ Dwelling Units

Using Using In(X) Equation

$$\begin{aligned} T &= 0.95 \ln(X) - 0.51 && 23\% \text{ Enter; } 77\% \text{ Exit} \\ &= 10 \text{ Trips} && 2 \text{ Enter; } 8 \text{ Exit} \end{aligned}$$

Trip Generation for Multifamily Housing (Low Rise) (220) [1]

Average Vehicle Trip Ends vs Dwelling Units 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: 50

Average Number of Dwelling Units: 187

Directional Distribution: 50% Entering; 50% Exiting

Average Vehicle Trip Ends vs Dwelling Units on a Weekday

where $x = 18$ Dwelling Units

Using Using In(X) Equation

$$\begin{aligned} T &= 0.89 \ln(X) + 0.02 && 63\% \text{ Enter; } 37\% \text{ Exit} \\ &= 14 \text{ Trips} && 9 \text{ Enter; } 5 \text{ Exit} \end{aligned}$$

[1] Institute of Transportation Engineers, Trip Generation Manual, 10th Edition,
September 2017 © 2017



Trip Generation for Multifamily Housing (Low Rise) (220) [1]

Vehicle Trip Ends vs Dwelling Units on a Weekday

24 Hour Total

Setting/Location: General Urban/Suburban

Number of Studies: 29

Average Number of Dwelling Units: 168

Directional Distribution: 50% Entering; 50% Exiting

Average Vehicle Trip Ends vs Dwelling Units on a Weekday

where $x = 36$ Dwelling Units

Using Using Average Rate

$$\begin{aligned} T &= 7.32 X && 50\% \text{ Enter; } 50\% \text{ Exit} \\ &= 264 \text{ Trips} && 132 \text{ Enter; } 132 \text{ Exit} \end{aligned}$$

Trip Generation for Multifamily Housing (Low Rise) (220) [1]

Vehicle Trip Ends vs Dwelling Units 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: 42

Average Number of Dwelling Units: 199

Directional Distribution: 50% Entering; 50% Exiting

Average Vehicle Trip Ends vs Dwelling Units on a Weekday

where $x = 36$ Dwelling Units

Using Using In(X) Equation

$$\begin{aligned} T &= 0.95 \ln(X) - 0.51 && 23\% \text{ Enter; } 77\% \text{ Exit} \\ &= 19 \text{ Trips} && 4 \text{ Enter; } 15 \text{ Exit} \end{aligned}$$

Trip Generation for Multifamily Housing (Low Rise) (220) [1]

Average Vehicle Trip Ends vs Dwelling Units 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: 50

Average Number of Dwelling Units: 187

Directional Distribution: 50% Entering; 50% Exiting

Average Vehicle Trip Ends vs Dwelling Units on a Weekday

where $x = 36$ Dwelling Units

Using Using In(X) Equation

$$\begin{aligned} T &= 0.89 \ln(X) + 0.02 && 63\% \text{ Enter; } 37\% \text{ Exit} \\ &= 25 \text{ Trips} && 16 \text{ Enter; } 9 \text{ Exit} \end{aligned}$$

[1] Institute of Transportation Engineers, Trip Generation Manual, 10th Edition,
September 2017 © 2017



Trip Generation for Multifamily Housing (Mid-Rise) (221) [1]

Vehicle Trip Ends vs Dwelling Units on a Weekday

24 Hour Total

Setting/Location: General Urban/Suburban

Number of Studies: 27

Average Number of Dwelling Units: 205

Directional Distribution: 50% Entering; 50% Exiting

Average Vehicle Trip Ends vs Dwelling Units on a Weekday

where x = 214 Dwelling Units

Using Using Linear Equation

$$\begin{aligned} T &= 5.45 X - 1.75 && 50\% \text{ Enter; } 50\% \text{ Exit} \\ &= 1165 \text{ Trips} && 583 \text{ Enter; } 582 \text{ Exit} \end{aligned}$$

Trip Generation for Multifamily Housing (Mid-Rise) (221) [1]

Vehicle Trip Ends vs Dwelling Units 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: 53

Average Number of Dwelling Units: 207

Directional Distribution: 50% Entering; 50% Exiting

Average Vehicle Trip Ends vs Dwelling Units on a Weekday

where x = 214 Dwelling Units

Using Using ln(X) Equation

$$\begin{aligned} T &= 0.98 \ln(X) - 0.98 && 26\% \text{ Enter; } 74\% \text{ Exit} \\ &= 73 \text{ Trips} && 19 \text{ Enter; } 54 \text{ Exit} \end{aligned}$$

Trip Generation for Multifamily Housing (Mid-Rise) (221) [1]

Average Vehicle Trip Ends vs Dwelling Units 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: 60

Average Number of Dwelling Units: 208

Directional Distribution: 50% Entering; 50% Exiting

Average Vehicle Trip Ends vs Dwelling Units on a Weekday

where x = 214 Dwelling Units

Using Using ln(X) Equation

$$\begin{aligned} T &= 0.96 \ln(X) - 0.63 && 61\% \text{ Enter; } 39\% \text{ Exit} \\ &= 92 \text{ Trips} && 56 \text{ Enter; } 36 \text{ Exit} \end{aligned}$$

[1] Institute of Transportation Engineers, Trip Generation Manual, 10th Edition,
September 2017 © 2017

TRAFFIC ASSIGNMENT: APPENDIX 6



TRAFFIC ASSIGNMENT USING US CENSUS 2010 JOURNEY TO WORK

Place of Work Minor Civil Division Name	Travel Mode	Workers in Commuting Flow	North Concord Rd.	East Rte 27	South Concord Rd	West Hudson Rd	Southwest Peckham Rd	Other Travel Mode
Acton town	Car, truck, or van: Drove alone	59	30	19		29	17	
Acton town	Car, truck, or van: Carpooled	14	7	19		7	17	
Bedford town	Car, truck, or van: Drove alone	32	32	27				
Belmont town	Car, truck, or van: Drove alone	39	20	27	19			
Burlington town	Car, truck, or van: Drove alone	182	91	28	17.2			
Cambridge city	Car, truck, or van: Drove alone	347	347	33	20.4			
Cambridge city	Car, truck, or van: Carpooled	29	29	33	19.7			
Cambridge city	Public transportation	56						
Chelmsford town	Car, truck, or van: Drove alone	76	38	32		38	30	
Chelmsford town	Car, truck, or van: Carpooled	15	8	32		7	30	
Concord town	Car, truck, or van: Drove alone	208	208	17				
Concord town	Car, truck, or van: Carpooled	8	8	17				
Framingham town	Car, truck, or van: Drove alone	566			566			
Hopkinton town	Car, truck, or van: Drove alone	25			13		12	15.1
Hopkinton town	Car, truck, or van: Carpooled	16			8		8	15.1
Hudson town	Car, truck, or van: Drove alone	96				96	15	
Lexington town	Car, truck, or van: Drove alone	202	101	26				
Lexington town	Car, truck, or van: Carpooled	18	9	25				
Lincoln town	Car, truck, or van: Drove alone	37	37	16				
Littleton town	Car, truck, or van: Drove alone	33	17	26		16	25	
Lowell city	Car, truck, or van: Drove alone	66	33	38		33	36	
Lowell city	Car, truck, or van: Carpooled	9	5	39		4	36	
Marlborough city	Car, truck, or van: Drove alone	209				105	19	8.8
Maynard town	Car, truck, or van: Drove alone	92				92	12	8.1
Natick town	Car, truck, or van: Drove alone	253		127	126			
Natick town	Car, truck, or van: Carpooled	60		30	30			
Newton city	Car, truck, or van: Drove alone	173		173	10			
Newton city	Car, truck, or van: Carpooled	37		37	14.7			
Sudbury town	Car, truck, or van: Drove alone	944	118	118	472	118		
Sudbury town	Car, truck, or van: Carpooled	59	7	7	31	7		
Sudbury town	Public transportation	36	36					
Sudbury town	Other travel mode	1,020						1,020
Waltham city	Car, truck, or van: Drove alone	296		296	10.4			
Waltham city	Car, truck, or van: Carpooled	9	9	10.4	25			
Waltham city	Other travel mode	31						31
Watertown Town city	Car, truck, or van: Drove alone	71	71	15.9	29			



Wayland town	Car, truck, or van: Drove alone	132				99	3.4	6	33	3.8	9						
Wayland town	Car, truck, or van: Carpooled	11				8	3.4	6	3	3.8	9						
Westford town	Car, truck, or van: Drove alone	88	21.2	31		57	6.7	13				88	18.8	28			
Weston town	Car, truck, or van: Drove alone	57	6.9	15		36	21.3	30									
Woburn city	Car, truck, or van: Drove alone	73	21.3	29		91	15.4	26									
Needham town	Car, truck, or van: Drove alone	91				9	15.4	26									
Needham town	Car, truck, or van: Carpooled	9				37	23.2	31									
Norwood town	Car, truck, or van: Drove alone	37				30	31.9	40									
Quincy city	Car, truck, or van: Drove alone	30				106	11.5	23									
Wellesley town	Car, truck, or van: Drove alone	106				964	23.1	34									
Boston city	Car, truck, or van: Drove alone	964				41	23.1	34									
Boston city	Car, truck, or van: Carpooled	41															
Boston city	Public transportation	141			141												
Boston city	Other travel mode	7															
Southborough town	Car, truck, or van: Drove alone	72													72	9.5	19
Southborough town	Car, truck, or van: Carpooled	22													22	9.5	19
Westborough town	Car, truck, or van: Drove alone	97													97	14.4	28
Worcester city	Car, truck, or van: Drove alone	83										83	25.3	37			
Total		7,484	1039	16%		2942			1282	20%		723	11%		440	7%	
Percent																	1058
																	6426
																	100%

Split trips when alternative routes are within 1/2 mile distance or 1 minute travel time.

Split trips when different routes are shown from Peter's Way or Hudson Rd.

All public transportation trips go to Lincoln commuter rail station.



Timed Runs between Wayland Country Club site and Sudbury Station Project Entrances

AM Peak Hour - June 7, 2018 Beginning at 7:30 AM

VIA Water Row, Plympton Rd, and Candy Hill Rd to the Peter's Way and Concord Road Intersection

Westbound to Sudbury Station Site

Min	Sec	
4	57	297
4	50	290
4	43	283
4	36	276
4	38	278
Average		
4	45	284.8

Eastbound to Wayland Country Club

Min	Sec	
5	24	324
5	40	340
4	38	278
4	38	278
4	45	285
Average		
5	1	301

Via Old Sudbury Rd and Hudson Rd to the Primary Site Drive/Hudson Road Intersection

Westbound to Sudbury Station Site

Min	Sec	
4	31	271
3	57	237
3	49	229
4	30	270
3	48	228
Average		
4	7	247

Eastbound to Wayland Country Club

Min	Sec	
4	59	299
5	1	301
5	25	325
5	0	300
5	3	303
Average		
5	6	305.6

PM Peak Hour - June 7, 2018 Beginning at 4:10 PM

J

Min	Sec	
4	50	290
5	19	319
4	33	273
5	36	336
5	18	318
Average		
5	7	307.2

Eastbound to Wayland Country Club

Min	Sec	
5	19	319
4	53	293
5	15	315
5	8	308
5	12	312
Average		
5	9	309.4

PM Peak Hour - June 7, 2018 Beginning at 4:10

Westbound to Sudbury Station Site

Min	Sec	
7	10	430
5	42	342
4	24	264
4	30	270
4	38	278
Average		
5	17	316.8

Eastbound to Wayland Country Club

Min	Sec	
4	29	269
3	48	228
3	34	214
4	4	244
3	26	206
Average		
3	52	232.2

SYNCHRO 10 ANALYSIS: APPENDIX 7

Sudbury Station Project
3: Concord Rd & Hudson Rd/Old Sudbury Rd

2018 Existing Volumes
Weekday AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	236	628	136	21	208	0	208	303	150	3	228	102
Future Volume (vph)	236	628	136	21	208	0	208	303	150	3	228	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	10.5		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			1.00	
Frt	1.00	0.97		1.00	1.00		1.00	0.94			0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1752	1798		1805	1863		1770	1756			1676	
Flt Permitted	0.45	1.00		0.07	1.00		0.16	1.00			0.93	
Satd. Flow (perm)	839	1798		142	1863		294	1756			1566	
Peak-hour factor, PHF	0.76	0.89	0.67	0.66	0.85	0.25	0.83	0.89	0.71	0.75	0.88	0.58
Adj. Flow (vph)	311	706	203	32	245	0	251	340	211	4	259	176
RTOR Reduction (vph)	0	7	0	0	0	0	0	13	0	0	16	0
Lane Group Flow (vph)	311	902	0	32	245	0	251	538	0	0	423	0
Heavy Vehicles (%)	3%	1%	6%	0%	2%	2%	2%	2%	2%	0%	4%	12%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	68.3	60.9		57.1	53.7		45.3	45.3			34.3	
Effective Green, g (s)	68.3	60.9		57.1	53.7		45.3	45.3			34.3	
Actuated g/C Ratio	0.51	0.45		0.42	0.40		0.34	0.34			0.25	
Clearance Time (s)	4.0	10.5		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	540	811		101	741		175	589			397	
v/s Ratio Prot	c0.07	c0.50		0.01	0.13		c0.07	0.31				
v/s Ratio Perm	0.22			0.13			c0.41				0.27	
v/c Ratio	0.58	1.11		0.32	0.33		1.43	0.91			1.06	
Uniform Delay, d1	20.9	37.0		31.4	28.2		43.8	43.0			50.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	1.5	67.2		1.8	0.3		224.9	20.9			63.3	
Delay (s)	22.4	104.3		33.2	28.5		268.7	63.9			113.7	
Level of Service	C	F		C	C		F	E			F	
Approach Delay (s)		83.4			29.0			128.0			113.7	
Approach LOS		F			C			F			F	

Intersection Summary

HCM 2000 Control Delay	95.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	135.0	Sum of lost time (s)	26.5
Intersection Capacity Utilization	106.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Sudbury Station Project
3: Concord Rd & Hudson Rd/Old Sudbury Rd

2018 Existing Volumes
Weekday AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	236	628	136	21	208	0	208	303	150	3	228	102
Future Volume (vph)	236	628	136	21	208	0	208	303	150	3	228	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	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			1.00	
Frt	1.00	0.97		1.00	1.00		1.00	0.94			0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1752	1798		1805	1863		1770	1756			1676	
Flt Permitted	0.46	1.00		0.08	1.00		0.19	1.00			1.00	
Satd. Flow (perm)	854	1798		148	1863		362	1756			1670	
Peak-hour factor, PHF	0.76	0.89	0.67	0.66	0.85	0.25	0.83	0.89	0.71	0.75	0.88	0.58
Adj. Flow (vph)	311	706	203	32	245	0	251	340	211	4	259	176
RTOR Reduction (vph)	0	6	0	0	0	0	0	13	0	0	16	0
Lane Group Flow (vph)	311	903	0	32	245	0	251	538	0	0	423	0
Heavy Vehicles (%)	3%	1%	6%	0%	2%	2%	2%	2%	2%	0%	4%	12%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	72.9	65.5		54.9	51.5		47.3	47.3			37.3	
Effective Green, g (s)	72.9	65.5		54.9	51.5		47.3	47.3			37.3	
Actuated g/C Ratio	0.54	0.48		0.41	0.38		0.35	0.35			0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	576	871		101	710		189	614			461	
v/s Ratio Prot	c0.07	c0.50		0.01	0.13		c0.06	0.31				
v/s Ratio Perm	0.22			0.12			c0.40				0.25	
v/c Ratio	0.54	1.04		0.32	0.35		1.33	0.88			0.92	
Uniform Delay, d1	18.3	34.8		32.7	29.8		45.7	41.2			47.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	1.0	40.3		1.8	0.3		179.4	16.1			23.0	
Delay (s)	19.3	75.1		34.5	30.1		225.1	57.3			70.4	
Level of Service	B	E		C	C		F	E			E	
Approach Delay (s)		60.9			30.6			109.8			70.4	
Approach LOS		E			C			F			E	

Intersection Summary

HCM 2000 Control Delay	73.7	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	135.1	Sum of lost time (s)	20.0
Intersection Capacity Utilization	101.4%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Sudbury Station Project
6: Peakham Rd/Ti Sales Dr & Hudson Rd/Hudson Rc

2018 Existing Volumes
Weekday AM Peak Hour

Intersection												
Int Delay, s/veh	134.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	632	19	116	373	2	30	3	414	3	1	2
Future Vol, veh/h	4	632	19	116	373	2	30	3	414	3	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	84	79	64	90	25	83	25	81	38	25	50
Heavy Vehicles, %	0	3	5	9	3	0	0	0	2	0	0	0
Mvmt Flow	8	752	24	181	414	8	36	12	511	8	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	422	0	0	776	0	0	1564	1564	764	1822	1572	418
Stage 1	-	-	-	-	-	-	780	780	-	780	780	-
Stage 2	-	-	-	-	-	-	784	784	-	1042	792	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.1	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1148	-	-	810	-	-	92	113	~ 404	60	111	639
Stage 1	-	-	-	-	-	-	391	409	-	391	409	-
Stage 2	-	-	-	-	-	-	389	407	-	280	404	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1148	-	-	810	-	-	68	79	~ 404	-	78	639
Mov Cap-2 Maneuver	-	-	-	-	-	-	68	79	-	-	78	-
Stage 1	-	-	-	-	-	-	386	404	-	386	290	-
Stage 2	-	-	-	-	-	-	270	288	-	-	399	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	3.2	\$ 468.8	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	287	1148	-	-	810	-	-	-
HCM Lane V/C Ratio	1.949	0.007	-	-	0.224	-	-	-
HCM Control Delay (s)	\$ 468.8	8.2	0	-	10.7	0	-	-
HCM Lane LOS	F	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	39.4	0	-	-	0.9	-	-	-

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

Sudbury Station Project
13: Concord Rd & Candy Hill Rd

2018 Existing Volumes
Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T	T	S	S
Traffic Vol, veh/h	15	4	526	22	2	417
Future Vol, veh/h	15	4	526	22	2	417
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	54	50	81	79	25	88
Heavy Vehicles, %	0	0	2	0	0	7
Mvmt Flow	28	8	649	28	8	474

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1153	663	0	0	677	0
Stage 1	663	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	220	465	-	-	924	-
Stage 1	516	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Platoon blocked, %			-	-		
Mov Cap-1 Maneuver	217	465	-	-	924	-
Mov Cap-2 Maneuver	217	-	-	-	-	-
Stage 1	510	-	-	-	-	-
Stage 2	620	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.1	0	0.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	246	924
HCM Lane V/C Ratio	-	-	0.145	0.009
HCM Control Delay (s)	-	-	22.1	8.9
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.5	0

Sudbury Station Project
3: Concord Rd & Hudson Rd/Old Sudbury Rd

2018 Existing Volumes
Weekday PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	167	323	269	45	565	3	352	291	37	0	229	223
Future Volume (vph)	167	323	269	45	565	3	352	291	37	0	229	223
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	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			1.00	
Frt	1.00	0.93		1.00	1.00		1.00	0.98			0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1805	1743		1770	1880		1787	1844			1765	
Flt Permitted	0.08	1.00		0.09	1.00		0.11	1.00			1.00	
Satd. Flow (perm)	151	1743		161	1880		208	1844			1765	
Peak-hour factor, PHF	0.95	0.92	0.89	0.62	0.79	0.75	0.91	0.91	0.71	0.25	0.88	0.89
Adj. Flow (vph)	176	351	302	73	715	4	387	320	52	0	260	251
RTOR Reduction (vph)	0	20	0	0	0	0	0	3	0	0	22	0
Lane Group Flow (vph)	176	633	0	73	719	0	387	369	0	0	489	0
Heavy Vehicles (%)	0%	1%	2%	2%	1%	0%	1%	1%	0%	0%	1%	0%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA			NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	62.2	52.2		52.2	46.2		60.2	60.2			32.1	
Effective Green, g (s)	62.2	52.2		52.2	46.2		60.2	60.2			32.1	
Actuated g/C Ratio	0.45	0.38		0.38	0.34		0.44	0.44			0.23	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	212	662		131	632		368	808			412	
v/s Ratio Prot	c0.07	0.36		0.02	c0.38		c0.18	0.20			c0.28	
v/s Ratio Perm	0.30			0.19			0.28					
v/c Ratio	0.83	0.96		0.56	1.14		1.05	0.46			1.19	
Uniform Delay, d1	35.6	41.4		33.3	45.6		43.0	27.1			52.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	23.2	24.4		5.1	80.1		61.1	1.9			105.9	
Delay (s)	58.8	65.9		38.4	125.7		104.1	28.9			158.5	
Level of Service	E	E		D	F		F	C			F	
Approach Delay (s)		64.4			117.6			67.3			158.5	
Approach LOS		E			F			E			F	

Intersection Summary

HCM 2000 Control Delay	96.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.07		
Actuated Cycle Length (s)	137.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	97.7%	ICU Level of Service	F
Analysis Period (min)	15		
c Critical Lane Group			

Sudbury Station Project
6: Peakham Rd/Ti Sales Dr & Hudson Rd/Hudson Rc

2018 Existing Volumes
Weekday PM Peak Hour

Intersection												
Int Delay, s/veh	136											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	614	20	171	953	2	44	0	144	3	0	4
Future Vol, veh/h	3	614	20	171	953	2	44	0	144	3	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	94	56	95	85	50	73	25	84	38	25	50
Heavy Vehicles, %	0	1	5	0	1	0	0	0	0	0	0	0
Mvmt Flow	8	653	36	180	1121	4	60	0	171	8	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1125	0	0	689	0	0	2174	2172	671	2256	2188	1123
Stage 1	-	-	-	-	-	-	687	687	-	1483	1483	-
Stage 2	-	-	-	-	-	-	1487	1485	-	773	705	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	628	-	-	915	-	-	~ 34	47	460	30	46	253
Stage 1	-	-	-	-	-	-	440	450	-	157	191	-
Stage 2	-	-	-	-	-	-	157	190	-	395	442	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	628	-	-	915	-	-	~ 19	22	460	11	21	253
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 19	22	-	11	21	-
Stage 1	-	-	-	-	-	-	431	441	-	154	91	-
Stage 2	-	-	-	-	-	-	72	90	-	243	433	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			1.4			\$ 1286.9			\$ 369.5		
HCM LOS							F			F		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	65	628	-	-	915	-	-	21
HCM Lane V/C Ratio	3.565	0.013	-	-	0.197	-	-	0.757
HCM Control Delay (s)	\$ 1286.9	10.8	0	-	9.9	0	-	\$ 369.5
HCM Lane LOS	F	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	24.4	0	-	-	0.7	-	-	2.1

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

Sudbury Station Project
 13: Concord Rd & Candy Hill Rd

2018 Existing Volumes
 Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	R	T	R	L	T
Traffic Vol, veh/h	18	4	458	15	12	500
Future Vol, veh/h	18	4	458	15	12	500
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	75	33	97	75	60	95
Heavy Vehicles, %	0	0	1	7	0	1
Mvmt Flow	24	12	472	20	20	526

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1048	482	0	0	492
Stage 1	482	-	-	-	-
Stage 2	566	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	255	588	-	-	1082
Stage 1	625	-	-	-	-
Stage 2	572	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	248	588	-	-	1082
Mov Cap-2 Maneuver	248	-	-	-	-
Stage 1	609	-	-	-	-
Stage 2	572	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.2	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	308	1082
HCM Lane V/C Ratio	-	-	0.117	0.018
HCM Control Delay (s)	-	-	18.2	8.4
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1

Sudbury Station Project
3: Concord Rd & Hudson Rd/Old Sudbury Rd

2025 No Build Volumes
Weekday AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	262	697	151	23	231	0	231	336	167	3	253	113
Future Volume (vph)	262	697	151	23	231	0	231	336	167	3	253	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	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			0.95	
Frt	1.00	0.97		1.00	1.00		1.00	0.94			0.94	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1752	1798		1805	1863		1770	1756			3165	
Flt Permitted	0.42	1.00		0.08	1.00		0.22	1.00			0.89	
Satd. Flow (perm)	780	1798		153	1863		411	1756			2825	
Peak-hour factor, PHF	0.76	0.89	0.67	0.66	0.85	0.25	0.83	0.89	0.71	0.75	0.88	0.58
Adj. Flow (vph)	345	783	225	35	272	0	278	378	235	4	288	195
RTOR Reduction (vph)	0	6	0	0	0	0	0	13	0	0	77	0
Lane Group Flow (vph)	345	1002	0	35	272	0	278	600	0	0	410	0
Heavy Vehicles (%)	3%	1%	6%	0%	2%	2%	2%	2%	2%	0%	4%	12%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	73.4	66.3		52.9	49.8		48.0	48.0			29.2	
Effective Green, g (s)	73.4	66.3		52.9	49.8		48.0	48.0			29.2	
Actuated g/C Ratio	0.54	0.49		0.39	0.37		0.35	0.35			0.21	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	560	875		97	681		292	618			605	
v/s Ratio Prot	c0.09	c0.56		0.01	0.15		0.10	c0.34				
v/s Ratio Perm	0.24			0.13			0.23				0.15	
v/c Ratio	0.62	1.14		0.36	0.40		0.95	0.97			0.68	
Uniform Delay, d1	19.3	34.9		33.8	32.1		37.3	43.4			49.2	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	2.0	78.7		2.3	0.4		39.7	29.7			3.0	
Delay (s)	21.3	113.7		36.1	32.5		77.0	73.1			52.2	
Level of Service	C	F		D	C		E	E			D	
Approach Delay (s)		90.1			32.9			74.3			52.2	
Approach LOS		F			C			E			D	

Intersection Summary		
HCM 2000 Control Delay	73.6	HCM 2000 Level of Service E
HCM 2000 Volume to Capacity ratio	1.08	
Actuated Cycle Length (s)	136.2	Sum of lost time (s) 20.0
Intersection Capacity Utilization	101.1%	ICU Level of Service G
Analysis Period (min)	15	
c Critical Lane Group		

Sudbury Station Project
6: Peakham Rd/Ti Sales Dr & Hudson Rd/Hudson Rc

2025 No Build Volumes
Weekday AM Peak Hour

Intersection												
Int Delay, s/veh	226.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	702	21	129	413	2	33	3	460	3	1	2
Future Vol, veh/h	4	702	21	129	413	2	33	3	460	3	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	84	79	64	90	25	83	25	81	38	25	50
Heavy Vehicles, %	0	3	5	9	3	0	0	0	2	0	0	0
Mvmt Flow	8	836	27	202	459	8	40	12	568	8	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	467	0	0	863	0	0	1737	1737	850	2023	1746	463
Stage 1	-	-	-	-	-	-	866	866	-	867	867	-
Stage 2	-	-	-	-	-	-	871	871	-	1156	879	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.1	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1105	-	-	750	-	-	69	88	~ 360	44	87	603
Stage 1	-	-	-	-	-	-	351	373	-	350	373	-
Stage 2	-	-	-	-	-	-	349	371	-	242	368	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1105	-	-	750	-	-	46	55	~ 360	-	55	603
Mov Cap-2 Maneuver	-	-	-	-	-	-	46	55	-	-	55	-
Stage 1	-	-	-	-	-	-	346	368	-	345	237	-
Stage 2	-	-	-	-	-	-	217	236	-	-	363	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	3.5	\$ 791.2	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	233	1105	-	-	750	-	-	-
HCM Lane V/C Ratio	2.659	0.007	-	-	0.269	-	-	-
HCM Control Delay (s)	\$ 791.2	8.3	0	-	11.6	0	-	-
HCM Lane LOS	F	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	52.7	0	-	-	1.1	-	-	-

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

Sudbury Station Project
 13: Concord Rd & Candy Hill Rd

2025 No Build Volumes
 Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W	W	T			T
Traffic Vol, veh/h	17	4	584	24	2	463
Future Vol, veh/h	17	4	584	24	2	463
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	54	50	81	79	25	88
Heavy Vehicles, %	0	0	2	0	0	7
Mvmt Flow	31	8	721	30	8	526

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1278	736	0	0	751	0
Stage 1	736	-	-	-	-	-
Stage 2	542	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	185	422	-	-	868	-
Stage 1	477	-	-	-	-	-
Stage 2	587	-	-	-	-	-
Platoon blocked, %			-	-	-	-
Mov Cap-1 Maneuver	183	422	-	-	868	-
Mov Cap-2 Maneuver	183	-	-	-	-	-
Stage 1	471	-	-	-	-	-
Stage 2	587	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.4	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	207	868
HCM Lane V/C Ratio	-	-	0.191	0.009
HCM Control Delay (s)	-	-	26.4	9.2
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	0.7	0

Sudbury Station Project
3: Concord Rd & Hudson Rd/Old Sudbury Rd

2025 No Build Volumes
Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	359	299	50	627	3	391	323	41	0	254	248
Future Volume (vph)	185	359	299	50	627	3	391	323	41	0	254	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	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			1.00	
Frt	1.00	0.93		1.00	1.00		1.00	0.98			0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1752	1711		1805	1861		1770	1824			1644	
Flt Permitted	0.07	1.00		0.08	1.00		0.10	1.00			1.00	
Satd. Flow (perm)	136	1711		151	1861		191	1824			1644	
Peak-hour factor, PHF	0.75	0.92	0.89	0.63	0.79	0.75	0.91	0.91	0.71	0.25	0.88	0.89
Adj. Flow (vph)	247	390	336	79	794	4	430	355	58	0	289	279
RTOR Reduction (vph)	0	19	0	0	0	0	0	3	0	0	22	0
Lane Group Flow (vph)	247	707	0	79	798	0	430	410	0	0	546	0
Heavy Vehicles (%)	3%	1%	6%	0%	2%	2%	2%	2%	2%	0%	4%	12%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA			NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	64.2	56.2		54.2	50.2		58.2	58.2			35.1	
Effective Green, g (s)	64.2	56.2		54.2	50.2		58.2	58.2			35.1	
Actuated g/C Ratio	0.47	0.41		0.39	0.37		0.42	0.42			0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	181	700		107	680		300	773			420	
v/s Ratio Prot	c0.10	0.41		0.02	0.43		c0.20	0.22			0.33	
v/s Ratio Perm	c0.54			0.27			c0.41					
v/c Ratio	1.36	1.01		0.74	1.17		1.43	0.53			1.30	
Uniform Delay, d1	39.9	40.6		34.0	43.6		42.7	29.4			51.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	195.4	36.3		23.1	93.1		213.2	2.6			151.2	
Delay (s)	235.2	76.9		57.1	136.7		255.8	32.0			202.3	
Level of Service	F	E		E	F		F	C			F	
Approach Delay (s)		117.1			129.5			146.2			202.3	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM 2000 Control Delay			142.8				HCM 2000 Level of Service				F	
HCM 2000 Volume to Capacity ratio			1.42									
Actuated Cycle Length (s)			137.3				Sum of lost time (s)		20.0			
Intersection Capacity Utilization			107.0%				ICU Level of Service				G	
Analysis Period (min)			15									
c Critical Lane Group												

Sudbury Station Project
6: Peakham Rd/Ti Sales Dr & Hudson Rd/Hudson Rc

2025 No Build Volumes
Weekday PM Peak Hour

Intersection												
Int Delay, s/veh	453.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	682	22	190	1058	2	49	0	160	3	0	4
Future Vol, veh/h	3	682	22	190	1058	2	49	0	160	3	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	94	56	95	85	50	73	25	84	38	25	50
Heavy Vehicles, %	0	3	5	9	3	0	0	0	2	0	0	0
Mvmt Flow	8	726	39	200	1245	4	67	0	190	8	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1249	0	0	765	0	0	2413	2411	746	2504	2428	1247
Stage 1	-	-	-	-	-	-	762	762	-	1647	1647	-
Stage 2	-	-	-	-	-	-	1651	1649	-	857	781	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.1	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	564	-	-	818	-	-	~ 23	33	413	20	32	214
Stage 1	-	-	-	-	-	-	400	416	-	127	158	-
Stage 2	-	-	-	-	-	-	126	158	-	355	408	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	564	-	-	818	-	-	~ 7	6	413	~ 4	6	214
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 7	6	-	~ 4	6	-
Stage 1	-	-	-	-	-	-	390	406	-	124	32	-
Stage 2	-	-	-	-	-	-	~ 24	32	-	186	398	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.5	\$ 4300.4	\$ 1349.1
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	26	564	-	-	818	-	-	8
HCM Lane V/C Ratio	9.908	0.014	-	-	0.244	-	-	1.987
HCM Control Delay (s)	\$ 4300.4	11.5	0	-	10.8	0	-	\$ 1349.1
HCM Lane LOS	F	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	32	0	-	-	1	-	-	3

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

Sudbury Station Project
13: Concord Rd & Candy Hill Rd

2025 No Build Volumes
Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	20	4	538	17	13	577
Future Vol, veh/h	20	4	538	17	13	577
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	75	30	73	84	38	50
Heavy Vehicles, %	0	0	2	0	0	7
Mvmt Flow	27	13	737	20	34	1154

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1969	747	0	0	757	0
Stage 1	747	-	-	-	-	-
Stage 2	1222	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	70	416	-	-	863	-
Stage 1	472	-	-	-	-	-
Stage 2	281	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	62	416	-	-	863	-
Mov Cap-2 Maneuver	62	-	-	-	-	-
Stage 1	420	-	-	-	-	-
Stage 2	281	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	77.6	0	0.3
HCM LOS	F		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	87	863
HCM Lane V/C Ratio	-	-	0.46	0.04
HCM Control Delay (s)	-	-	77.6	9.3
HCM Lane LOS	-	-	F	A
HCM 95th %tile Q(veh)	-	-	1.9	0.1

Sudbury Station Project
3: Concord Rd & Hudson Rd/Old Sudbury Rd

2025 Build Volumes "Approved Townhouse Project"

Weekday AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	265	705	155	23	234	0	232	336	167	3	253	114
Future Volume (vph)	265	705	155	23	234	0	232	336	167	3	253	114
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	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			1.00	
Frt	1.00	0.97		1.00	1.00		1.00	0.94			0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1752	1797		1805	1863		1770	1756			1675	
Flt Permitted	0.41	1.00		0.08	1.00		0.16	1.00			0.87	
Satd. Flow (perm)	756	1797		158	1863		306	1756			1465	
Peak-hour factor, PHF	0.76	0.89	0.67	0.66	0.85	0.25	0.83	0.89	0.71	0.75	0.88	0.58
Adj. Flow (vph)	349	792	231	35	275	0	280	378	235	4	288	197
RTOR Reduction (vph)	0	6	0	0	0	0	0	13	0	0	16	0
Lane Group Flow (vph)	349	1017	0	35	275	0	280	600	0	0	473	0
Heavy Vehicles (%)	3%	1%	6%	0%	2%	2%	2%	2%	2%	0%	4%	12%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	72.5	65.3		51.3	48.1		49.2	49.2			38.2	
Effective Green, g (s)	72.5	65.3		51.3	48.1		49.2	49.2			38.2	
Actuated g/C Ratio	0.53	0.48		0.38	0.35		0.36	0.36			0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	550	859		97	656		185	632			409	
v/s Ratio Prot	c0.09	c0.57		0.01	0.15		c0.08	0.34				
v/s Ratio Perm	0.24			0.13			c0.47				0.32	
v/c Ratio	0.63	1.18		0.36	0.42		1.51	0.95			1.16	
Uniform Delay, d1	20.1	35.6		34.4	33.6		43.3	42.4			49.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	2.4	94.5		2.3	0.4		256.9	25.2			94.8	
Delay (s)	22.5	130.1		36.7	34.0		300.2	67.6			143.9	
Level of Service	C	F		D	C		F	E			F	
Approach Delay (s)		102.7			34.3			140.5			143.9	
Approach LOS		F			C			F			F	

Intersection Summary

HCM 2000 Control Delay	113.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.31		
Actuated Cycle Length (s)	136.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	111.5%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Sudbury Station Project
6: Peakham Rd/Ti Sales Dr & Hudson Rd/Hudson Rc

2025 Build Volumes "Approved Townhouse Project"
Weekday AM Peak Hour

Intersection												
Int Delay, s/veh	226.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	703	21	130	415	2	33	3	460	3	1	2
Future Vol, veh/h	4	703	21	130	415	2	33	3	460	3	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	84	79	64	90	25	83	25	81	38	25	50
Heavy Vehicles, %	0	3	5	9	3	0	0	0	2	0	0	0
Mvmt Flow	8	837	27	203	461	8	40	12	568	8	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	469	0	0	864	0	0	1742	1742	851	2028	1751	465
Stage 1	-	-	-	-	-	-	867	867	-	871	871	-
Stage 2	-	-	-	-	-	-	875	875	-	1157	880	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.1	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1103	-	-	750	-	-	69	88	~ 360	43	87	602
Stage 1	-	-	-	-	-	-	350	373	-	349	371	-
Stage 2	-	-	-	-	-	-	347	370	-	241	368	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1103	-	-	750	-	-	46	55	~ 360	-	54	602
Mov Cap-2 Maneuver	-	-	-	-	-	-	46	55	-	-	54	-
Stage 1	-	-	-	-	-	-	345	368	-	344	235	-
Stage 2	-	-	-	-	-	-	214	234	-	-	363	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	3.5	\$ 791.2	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	233	1103	-	-	750	-	-	-
HCM Lane V/C Ratio	2.659	0.007	-	-	0.271	-	-	-
HCM Control Delay (s)	\$ 791.2	8.3	0	-	11.6	0	-	-
HCM Lane LOS	F	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	52.7	0	-	-	1.1	-	-	-

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

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	4	587	24	2	464
Future Vol, veh/h	17	4	587	24	2	464
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	54	50	81	79	25	88
Heavy Vehicles, %	0	0	2	0	0	7
Mvmt Flow	31	8	725	30	8	527

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1283	740	0	0	755
Stage 1	740	-	-	-	-
Stage 2	543	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	184	420	-	-	865
Stage 1	475	-	-	-	-
Stage 2	586	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	182	420	-	-	865
Mov Cap-2 Maneuver	182	-	-	-	-
Stage 1	469	-	-	-	-
Stage 2	586	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.6	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	206	865
HCM Lane V/C Ratio	-	-	0.192	0.009
HCM Control Delay (s)	-	-	26.6	9.2
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	0.7	0

Sudbury Station Project
 4: Hudson Rc/Hudson Rd & Primary Access Drive

2025 Build Volumes "Approved Townhouse Project"
 Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	0.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	1	1165	544	5	15	3
Future Vol, veh/h	1	1165	544	5	15	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1266	591	5	16	3

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	596	0	-	0	1862 594
Stage 1	-	-	-	-	594 -
Stage 2	-	-	-	-	1268 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	980	-	-	-	80 505
Stage 1	-	-	-	-	552 -
Stage 2	-	-	-	-	265 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	980	-	-	-	80 505
Mov Cap-2 Maneuver	-	-	-	-	80 -
Stage 1	-	-	-	-	550 -
Stage 2	-	-	-	-	265 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	53.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	980	-	-	-	93
HCM Lane V/C Ratio	0.001	-	-	-	0.21
HCM Control Delay (s)	8.7	0	-	-	53.7
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	0.7

Sudbury Station Project
3: Concord Rd & Hudson Rd/Old Sudbury Rd

2025 Build PM Volumes "Approved Townhouse Project"

Weekday PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	187	364	301	50	635	3	395	323	41	0	254	251
Future Volume (vph)	187	364	301	50	635	3	395	323	41	0	254	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	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			1.00	
Frt	1.00	0.93		1.00	1.00		1.00	0.98			0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1752	1712		1805	1861		1770	1824			1643	
Flt Permitted	0.08	1.00		0.09	1.00		0.09	1.00			1.00	
Satd. Flow (perm)	153	1712		172	1861		169	1824			1643	
Peak-hour factor, PHF	0.95	0.92	0.89	0.63	0.79	0.75	0.91	0.91	0.71	0.75	0.88	0.89
Adj. Flow (vph)	197	396	338	79	804	4	434	355	58	0	289	282
RTOR Reduction (vph)	0	20	0	0	0	0	0	4	0	0	23	0
Lane Group Flow (vph)	197	714	0	79	808	0	434	409	0	0	548	0
Heavy Vehicles (%)	3%	1%	6%	0%	2%	2%	2%	2%	2%	0%	4%	12%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA			NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	58.2	50.2		48.2	44.2		64.2	64.2			40.1	
Effective Green, g (s)	58.2	50.2		48.2	44.2		64.2	64.2			40.1	
Actuated g/C Ratio	0.42	0.37		0.35	0.32		0.47	0.47			0.29	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	181	625		107	599		313	852			479	
v/s Ratio Prot	c0.08	0.42		0.02	c0.43		c0.20	0.22			0.33	
v/s Ratio Perm	0.38			0.24			c0.44					
v/c Ratio	1.09	1.14		0.74	1.35		1.39	0.48			1.14	
Uniform Delay, d1	38.1	43.6		36.9	46.6		43.8	25.1			48.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	92.5	82.3		23.1	167.9		192.6	1.9			87.3	
Delay (s)	130.5	125.9		60.0	214.4		236.4	27.0			135.9	
Level of Service	F	F		E	F		F	C			F	
Approach Delay (s)		126.9			200.7			134.3			135.9	
Approach LOS		F			F			F			F	

Intersection Summary

HCM 2000 Control Delay	150.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	137.3	Sum of lost time (s)	20.0
Intersection Capacity Utilization	107.9%	ICU Level of Service	G
Analysis Period (min)	15		
c Critical Lane Group			

Sudbury Station Project
6: Peakham Rd/Ti Sales Dr & Hudson Rd/Hudson Rc

2025 Build PM Volumes "Approved Townhouse Project"
Weekday PM Peak Hour

Intersection												
Int Delay, s/veh	460.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	684	22	191	1059	2	49	0	161	3	0	4
Future Vol, veh/h	3	684	22	191	1059	2	49	0	161	3	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	94	56	95	85	50	73	25	84	38	25	50
Heavy Vehicles, %	0	3	5	9	3	0	0	0	2	0	0	0
Mvmt Flow	8	728	39	201	1246	4	67	0	192	8	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1250	0	0	767	0	0	2418	2416	748	2510	2433	1248
Stage 1	-	-	-	-	-	-	764	764	-	1650	1650	-
Stage 2	-	-	-	-	-	-	1654	1652	-	860	783	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.1	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	564	-	-	816	-	-	~ 23	33	412	19	32	213
Stage 1	-	-	-	-	-	-	399	416	-	126	158	-
Stage 2	-	-	-	-	-	-	125	158	-	353	407	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	564	-	-	816	-	-	~ 7	6	412	~ 3	6	213
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 7	6	-	~ 3	6	-
Stage 1	-	-	-	-	-	-	389	406	-	123	30	-
Stage 2	-	-	-	-	-	-	~ 23	30	-	184	397	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.5	\$ 4321	\$ 1899.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	26	564	-	-	816	-	-	6
HCM Lane V/C Ratio	9.953	0.014	-	-	0.246	-	-	2.649
HCM Control Delay (s)	\$ 4321	11.5	0	-	10.8	0	-	\$ 1899.6
HCM Lane LOS	F	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	32.1	0	-	-	1	-	-	3.1

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

Intersection						
Int Delay, s/veh	0.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	20	4	540	17	13	580
Future Vol, veh/h	20	4	540	17	13	580
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	75	33	97	75	60	95
Heavy Vehicles, %	0	0	2	0	0	7
Mvmt Flow	27	12	557	23	22	611

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1224	569	0	0	580
Stage 1	569	-	-	-	-
Stage 2	655	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	200	525	-	-	1004
Stage 1	570	-	-	-	-
Stage 2	521	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	193	525	-	-	1004
Mov Cap-2 Maneuver	193	-	-	-	-
Stage 1	551	-	-	-	-
Stage 2	521	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22.8	0	0.3
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	241	1004
HCM Lane V/C Ratio	-	-	0.161	0.022
HCM Control Delay (s)	-	-	22.8	8.7
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	0.6	0.1

Sudbury Station Project
 4: Hudson Rc/Hudson Rd & Primary Access Drive

2025 Build PM Volumes "Approved Townhouse Project"
 Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	3	845	1250	15	9	2
Future Vol, veh/h	3	845	1250	15	9	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	3	918	1359	16	10	2

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	1375	0	0 2291 1367
Stage 1	-	-	- 1367 -
Stage 2	-	-	- 924 -
Critical Hdwy	4.12	-	- 6.42 6.22
Critical Hdwy Stg 1	-	-	- 5.42 -
Critical Hdwy Stg 2	-	-	- 5.42 -
Follow-up Hdwy	2.218	-	- 3.518 3.318
Pot Cap-1 Maneuver	499	-	- 43 180
Stage 1	-	-	- 237 -
Stage 2	-	-	- 387 -
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	499	-	- 42 180
Mov Cap-2 Maneuver	-	-	- 42 -
Stage 1	-	-	- 234 -
Stage 2	-	-	- 387 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	100.7
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	499	-	-	-	49
HCM Lane V/C Ratio	0.007	-	-	-	0.244
HCM Control Delay (s)	12.3	0	-	-	100.7
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	0.8

Sudbury Station Project
3: Concord Rd & Hudson Rd/Old Sudbury Rd

2025 Build Traffic Volumes "Submitted Project"
Weekday AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	262	716	165	23	241	0	236	336	167	3	253	113
Future Volume (vph)	262	716	165	23	241	0	236	336	167	3	253	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	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			1.00	
Frt	1.00	0.96		1.00	1.00		1.00	0.94			0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1752	1794		1805	1863		1770	1756			1676	
Flt Permitted	0.40	1.00		0.08	1.00		0.17	1.00			0.87	
Satd. Flow (perm)	742	1794		156	1863		309	1756			1466	
Peak-hour factor, PHF	0.76	0.89	0.67	0.66	0.85	0.25	0.83	0.89	0.71	0.75	0.88	0.58
Adj. Flow (vph)	345	804	246	35	284	0	284	378	235	4	288	195
RTOR Reduction (vph)	0	7	0	0	0	0	0	13	0	0	16	0
Lane Group Flow (vph)	345	1043	0	35	284	0	284	600	0	0	471	0
Heavy Vehicles (%)	3%	1%	6%	0%	2%	2%	2%	2%	2%	0%	4%	12%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA		pm+pt	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	72.5	65.3		51.8	48.6		49.2	49.2			38.2	
Effective Green, g (s)	72.5	65.3		51.8	48.6		49.2	49.2			38.2	
Actuated g/C Ratio	0.53	0.48		0.38	0.36		0.36	0.36			0.28	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	541	858		97	663		186	632			410	
v/s Ratio Prot	c0.09	c0.58		0.01	0.15		c0.08	0.34				
v/s Ratio Perm	0.25			0.13			c0.47				0.32	
v/c Ratio	0.64	1.22		0.36	0.43		1.53	0.95			1.15	
Uniform Delay, d1	20.1	35.6		34.2	33.4		43.4	42.4			49.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	2.5	107.8		2.3	0.4		262.4	25.2			91.8	
Delay (s)	22.6	143.4		36.5	33.8		305.8	67.6			141.0	
Level of Service	C	F		D	C		F	E			F	
Approach Delay (s)		113.5			34.1			143.0			141.0	
Approach LOS		F			C			F			F	

Intersection Summary

HCM 2000 Control Delay	118.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.33		
Actuated Cycle Length (s)	136.5	Sum of lost time (s)	20.0
Intersection Capacity Utilization	112.6%	ICU Level of Service	H
Analysis Period (min)	15		
c Critical Lane Group			

Sudbury Station Project
6: Peakham Rd/Ti Sales Dr & Hudson Rd/Hudson Rc

2025 Build Traffic Volumes "Submitted Project"
Weekday AM Peak Hour

Intersection												
Int Delay, s/veh	234.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	704	21	134	421	2	33	3	462	3	1	2
Future Vol, veh/h	4	704	21	134	421	2	33	3	462	3	1	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	84	79	64	90	25	83	25	81	38	25	50
Heavy Vehicles, %	0	3	5	9	3	0	0	0	2	0	0	0
Mvmt Flow	8	838	27	209	468	8	40	12	570	8	4	4

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	476	0	0	865	0	0	1762	1762	852	2049	1771	472
Stage 1	-	-	-	-	-	-	868	868	-	890	890	-
Stage 2	-	-	-	-	-	-	894	894	-	1159	881	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.1	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	1097	-	-	749	-	-	67	85	~ 359	42	84	596
Stage 1	-	-	-	-	-	-	350	372	-	340	364	-
Stage 2	-	-	-	-	-	-	338	362	-	241	367	-
Platoon blocked, %		-	-	-	-	-						
Mov Cap-1 Maneuver	1097	-	-	749	-	-	44	52	~ 359	-	51	596
Mov Cap-2 Maneuver	-	-	-	-	-	-	44	52	-	-	51	-
Stage 1	-	-	-	-	-	-	345	367	-	335	226	-
Stage 2	-	-	-	-	-	-	204	224	-	-	362	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	3.6	\$ 822.8	
HCM LOS			F	-

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	228	1097	-	-	749	-	-	-
HCM Lane V/C Ratio	2.729	0.007	-	-	0.28	-	-	-
HCM Control Delay (s)	\$ 822.8	8.3	0	-	11.7	0	-	-
HCM Lane LOS	F	A	A	-	B	A	-	-
HCM 95th %tile Q(veh)	53.6	0	-	-	1.1	-	-	-

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

Sudbury Station Project
13: Concord Rd & Candy Hill Rd

2025 Build Traffic Volumes "Submitted Project"
Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	0.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	17	4	595	36	2	467
Future Vol, veh/h	17	4	595	36	2	467
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	54	50	81	79	25	88
Heavy Vehicles, %	0	0	2	0	0	7
Mvmt Flow	31	8	735	46	8	531

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	1305	758	0	0	781
Stage 1	758	-	-	-	-
Stage 2	547	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2
Pot Cap-1 Maneuver	178	410	-	-	845
Stage 1	466	-	-	-	-
Stage 2	584	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	176	410	-	-	845
Mov Cap-2 Maneuver	176	-	-	-	-
Stage 1	460	-	-	-	-
Stage 2	584	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.5	0	0.1
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	199	845
HCM Lane V/C Ratio	-	-	0.198	0.009
HCM Control Delay (s)	-	-	27.5	9.3
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	0.7	0

Sudbury Station Project
 4: Hudson Rc/Hudson Rd & Primary Access Drive

2025 Build Traffic Volumes "Submitted Project"
 Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	4	1165	544	15	33	13
Future Vol, veh/h	4	1165	544	15	33	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	1266	591	16	36	14

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	607	0	-	0	1873 599
Stage 1	-	-	-	-	599 -
Stage 2	-	-	-	-	1274 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	971	-	-	-	79 502
Stage 1	-	-	-	-	549 -
Stage 2	-	-	-	-	263 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	971	-	-	-	78 502
Mov Cap-2 Maneuver	-	-	-	-	78 -
Stage 1	-	-	-	-	541 -
Stage 2	-	-	-	-	263 -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	70.3
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	971	-	-	-	102
HCM Lane V/C Ratio	0.004	-	-	-	0.49
HCM Control Delay (s)	8.7	0	-	-	70.3
HCM Lane LOS	A	A	-	-	F
HCM 95th %tile Q(veh)	0	-	-	-	2.2

Sudbury Station Project
21: Concord Rd & Peter's Way

2025 Build Traffic Volumes "Submitted Project"
Weekday AM Peak Hour

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	23	0	0	608	480	4
Future Vol, veh/h	23	0	0	608	480	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	25	0	0	661	522	4

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1185	524	526	0	-	0
Stage 1	524	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	209	553	1041	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	514	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	209	553	1041	-	-	-
Mov Cap-2 Maneuver	209	-	-	-	-	-
Stage 1	594	-	-	-	-	-
Stage 2	514	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	24.6	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1041	-	209	-	-
HCM Lane V/C Ratio	-	-	0.12	-	-
HCM Control Delay (s)	0	-	24.6	-	-
HCM Lane LOS	A	-	C	-	-
HCM 95th %tile Q(veh)	0	-	0.4	-	-

Sudbury Station Project
3: Concord Rd & Hudson Rd/Old Sudbury Rd

2025 Build Traffic Volumes "Submitted Project"
Weekday PM Peak Hour

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	185	380	308	50	647	3	405	323	41	0	254	248
Future Volume (vph)	185	380	308	50	647	3	405	323	41	0	254	248
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.0	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			1.00	
Frt	1.00	0.93		1.00	1.00		1.00	0.98			0.93	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00			1.00	
Satd. Flow (prot)	1752	1714		1805	1861		1770	1824			1644	
Flt Permitted	0.07	1.00		0.08	1.00		0.10	1.00			1.00	
Satd. Flow (perm)	134	1714		148	1861		191	1824			1644	
Peak-hour factor, PHF	0.75	0.92	0.89	0.63	0.79	0.75	0.86	0.91	0.71	0.25	0.88	0.89
Adj. Flow (vph)	247	413	346	79	819	4	471	355	58	0	289	279
RTOR Reduction (vph)	0	19	0	0	0	0	0	3	0	0	22	0
Lane Group Flow (vph)	247	740	0	79	823	0	471	410	0	0	546	0
Heavy Vehicles (%)	3%	1%	6%	0%	2%	2%	2%	2%	2%	0%	4%	12%
Turn Type	pm+pt	NA		pm+pt	NA		pm+pt	NA			NA	
Protected Phases	5	2		1	6		3	8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	64.2	56.2		55.2	51.2		58.2	58.2			35.1	
Effective Green, g (s)	64.2	56.2		55.2	51.2		58.2	58.2			35.1	
Actuated g/C Ratio	0.47	0.41		0.40	0.37		0.42	0.42			0.26	
Clearance Time (s)	4.0	4.0		4.0	4.0		4.0	4.0			4.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0			3.0	
Lane Grp Cap (vph)	168	701		107	693		300	773			420	
v/s Ratio Prot	c0.10	0.43		0.02	0.44		c0.22	0.22			0.33	
v/s Ratio Perm	c0.59			0.27			c0.45					
v/c Ratio	1.47	1.06		0.74	1.19		1.57	0.53			1.30	
Uniform Delay, d1	38.7	40.6		34.1	43.1		42.7	29.4			51.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00			1.00	
Incremental Delay, d2	241.0	49.7		23.1	98.5		272.1	2.6			151.2	
Delay (s)	279.7	90.2		57.2	141.6		314.8	32.0			202.3	
Level of Service	F	F		E	F		F	C			F	
Approach Delay (s)		136.7			134.2			182.6			202.3	
Approach LOS		F			F			F			F	
Intersection Summary												
HCM 2000 Control Delay			159.2			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.54									
Actuated Cycle Length (s)			137.3			Sum of lost time (s)		20.0				
Intersection Capacity Utilization			108.8%			ICU Level of Service			G			
Analysis Period (min)			15									
c Critical Lane Group												

Sudbury Station Project
6: Peakham Rd/Ti Sales Dr & Hudson Rd

2025 Build Traffic Volumes "Submitted Project"
"Weekday PM Peak Hour"

Intersection												
Int Delay, s/veh	539.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	690	22	193	1063	2	49	0	165	3	0	4
Future Vol, veh/h	3	690	22	193	1063	2	49	0	165	3	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	38	94	56	95	85	50	73	25	84	38	25	50
Heavy Vehicles, %	0	3	5	9	3	0	0	0	2	0	0	0
Mvmt Flow	8	734	39	203	1251	4	67	0	196	8	0	8

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	1255	0	0	773	0	0	2433	2431	754	2527	2448	1253
Stage 1	-	-	-	-	-	-	770	770	-	1659	1659	-
Stage 2	-	-	-	-	-	-	1663	1661	-	868	789	-
Critical Hdwy	4.1	-	-	4.19	-	-	7.1	6.5	6.22	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.281	-	-	3.5	4	3.318	3.5	4	3.3
Pot Cap-1 Maneuver	561	-	-	812	-	-	~ 22	32	409	19	32	212
Stage 1	-	-	-	-	-	-	396	413	-	125	156	-
Stage 2	-	-	-	-	-	-	124	156	-	350	405	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	561	-	-	812	-	-	~ 6	5	409	~ 3	5	212
Mov Cap-2 Maneuver	-	-	-	-	-	-	~ 6	5	-	~ 3	5	-
Stage 1	-	-	-	-	-	-	386	403	-	122	27	-
Stage 2	-	-	-	-	-	-	~ 21	27	-	177	395	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.1	1.5	\$ 5033.6	\$ 1899.6
HCM LOS			F	F

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	23	561	-	-	812	-	-	6
HCM Lane V/C Ratio	11.459	0.014	-	-	0.25	-	-	2.649
HCM Control Delay (s)	\$ 5033.6	11.5	0	-	10.9	0	-	\$ 1899.6
HCM Lane LOS	F	B	A	-	B	A	-	F
HCM 95th %tile Q(veh)	33.1	0	-	-	1	-	-	3.1

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

Sudbury Station Project
 13: Concord Rd & Candy Hill Rd

2025 Build Traffic Volumes "Submitted Project"
 Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	33	4	545	17	13	589
Future Vol, veh/h	33	4	545	17	13	589
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	75	33	97	75	60	92
Heavy Vehicles, %	0	0	2	0	0	7
Mvmt Flow	44	12	562	23	22	640

Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1258	574	0	0	585	0
Stage 1	574	-	-	-	-	-
Stage 2	684	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	190	522	-	-	1000	-
Stage 1	567	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	184	522	-	-	1000	-
Mov Cap-2 Maneuver	184	-	-	-	-	-
Stage 1	548	-	-	-	-	-
Stage 2	505	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	27.7	0	0.3
HCM LOS	D		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	214	1000
HCM Lane V/C Ratio	-	-	0.262	0.022
HCM Control Delay (s)	-	-	27.7	8.7
HCM Lane LOS	-	-	D	A
HCM 95th %tile Q(veh)	-	-	1	0.1

Sudbury Station Project
4: Hudson Rd & Primary Access Drive

2025 Build Traffic Volumes "Submitted Project
"Weekday PM Peak Hour

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	13	845	1250	34	30	8
Future Vol, veh/h	13	845	1250	34	30	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	918	1359	37	33	9

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	1396	0	-	0	2324 1378
Stage 1	-	-	-	-	1378 -
Stage 2	-	-	-	-	946 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	490	-	-	-	41 177
Stage 1	-	-	-	-	234 -
Stage 2	-	-	-	-	377 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	490	-	-	-	39 177
Mov Cap-2 Maneuver	-	-	-	-	39 -
Stage 1	-	-	-	-	220 -
Stage 2	-	-	-	-	377 -

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	230.5
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	490	-	-	-	47
HCM Lane V/C Ratio	0.029	-	-	-	0.879
HCM Control Delay (s)	12.6	0	-	-	230.5
HCM Lane LOS	B	A	-	-	F
HCM 95th %tile Q(veh)	0.1	-	-	-	3.6

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	7	0	555	597	25
Future Vol, veh/h	0	7	0	555	597	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	8	0	603	649	27

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1266	663	676	0	-	0
Stage 1	663	-	-	-	-	-
Stage 2	603	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	187	461	915	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	546	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	187	461	915	-	-	-
Mov Cap-2 Maneuver	187	-	-	-	-	-
Stage 1	512	-	-	-	-	-
Stage 2	546	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.9	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	915	-	461	-	-
HCM Lane V/C Ratio	-	-	0.017	-	-
HCM Control Delay (s)	0	-	12.9	-	-
HCM Lane LOS	A	-	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

SIGHT DISTANCE: APPENDIX 8



Primary Access Drive/Hudson Road Intersection

Westbound 85th Percentile Speed 32 Miles per Hour Measured on 5/24/2018

Stopping Sight Distance for Level Ground

$$d = 1.47Vt + 1.075 V^2 / a$$

where

t = break reaction time, 2.5 seconds

V = speed MPH

a = deceleration rate = 11.2 ft per second

$$V = 32 \quad \text{SSD} = 215.9$$

Intersection Sight Distance

Case B1 - Left Turn from Stop on the Minor Road

$$d = 1.47V t_g$$

where

V = speed MPH

t_g = time gap for minor road vehicle to enter the major road

$$V = 32 \quad \text{ISD} = 352.8$$
$$t_g = 7.5$$

x $t_g = 7.5$ seconds for passenger car

$t_g = 9.5$ seconds for truck

$t_g = 11.5$ seconds for combination truck

Case B2 - Right Turn from Stop on the Minor Road

$$d = 1.47V t_g$$

where

V = speed MPH

t_g = time gap for minor road vehicle to enter the major road

$$V = 32 \quad \text{ISD} = 305.8$$
$$t_g = 6.5$$

x $t_g = 6.5$ seconds for passenger car

$t_g = 8.5$ seconds for truck

$t_g = 10.5$ seconds for combination truck



Concord Road/Peter's Way Intersection

Northbound 85th Percentile Speed 37 Miles per Hour Measured on 5/24/2018

Stopping Sight Distance for Level Ground

$$d = 1.47Vt + 1.075 V^2 / a$$

where

t = break reaction time, 2.5 seconds

V = speed MPH

a = deceleration rate = 11.2 ft per second

$$V = 37 \quad \text{SSD} = 267.4$$

Intersection Sight Distance

Case B1 - Left Turn from Stop on the Minor Road

$$d = 1.47V t_g$$

where

V = speed MPH

t_g = time gap for minor road vehicle to enter the major road

$$V = 37 \quad \text{ISD} = 407.9$$
$$t_g = 7.5$$

x $t_g = 7.5$ seconds for passenger car

$t_g = 9.5$ seconds for truck

$t_g = 11.5$ seconds for combination truck

Case B2 - Right Turn from Stop on the Minor Road

$$d = 1.47V t_g$$

where

V = speed MPH

t_g = time gap for minor road vehicle to enter the major road

$$V = 37 \quad \text{ISD} = 353.5$$
$$t_g = 6.5$$

x $t_g = 6.5$ seconds for passenger car

$t_g = 8.5$ seconds for truck

$t_g = 10.5$ seconds for combination truck