



TOWN OF ACTON
472 Main Street
Acton, Massachusetts, 01720
Telephone (978) 264-9632
Fax (978) 264-9630

BOARD OF APPEALS

INTERDEPARTMENTAL COMMUNICATION

To: *Fire Department, Water District, Conservation Commission, Board of Health, Planning Board, Engineering Department, Historical Commission, Transportation Advisory Committee, Recreation Commission, Municipal Properties, Acton Housing Authority, Finance Committee and Acton Community Housing Corporation.*

Date: *April 7, 2008*

From: *Cheryl Frazier, Board of Appeals Secretary*

Subject: *BOA 40B Hearing, 48 & 54 Old Powdermill Road, Alexan Concord*

Please find attached the supplemental information letter prepared in support of the proposed Alexan Concord residential development to be located off Old Powder Mill Road in Concord, Massachusetts.

Ref: 4984

April 4, 2008



Mr. C. William Barrett, Chairman
Town of Concord Zoning Board of Appeals
Town of Concord
141 Keyes Road
Concord, MA 01742

Re: Alexan Concord
48 Old Powder Mill Road
Concord, Massachusetts

Dear Chairman Barrett:

Vanasse & Associates, Inc. (VAI) has prepared supplemental information in support of the February 2008 Amended Traffic Impact and Access Study (TIAS) that was submitted by VAI for the proposed Alexan Concord residential development to be located at 48 Old Powder Mill Road in Concord, Massachusetts (the "Project"). This information has been prepared in response to comments received from the Town of Concord Zoning Board of Appeals (ZBA) at the March 13, 2008 public hearing concerning the Project, as well as comments raised in the March 12, 2008 *Review of Traffic Impact and Access Study* memorandum prepared by Vanasse Hangen Brustlin, Inc. (VHB), the Town of Concord's independent review consultant, concerning their review of the Amended TIAS. The following specific items are addressed in this document:

1. Assessment of Concord Public School bus routes that will serve the Project;
2. Collection and assessment of additional vehicle travel speed data for Sudbury Road and Powder Mill Road;
3. Evaluation of lines of sight at the intersection of Old Powder Mill Road at Sudbury Road based on the results of the additional vehicle travel speed data;
4. Analysis of motor vehicle crashes at the intersections of Route 62/Route 27/Summer Street (Maynard); Route 62/Route 27/Waltham Street (Maynard); and Route 117/Powder Mill Road/Mossman Road (Sudbury); based on motor vehicle crash data provided by the local police departments;
5. Development of suggested safety improvements for the Route 62/Route 27/Summer Street and Route 62/Route 27/Waltham Street intersections should the planned improvements to be completed at these intersections associated with the 129 Parker Street project not advance; and
6. Evaluation of the traffic patterns of existing residential developments in the area as they may relate to the trip assignments used for the Project.

The information contained within the Amended TIAS with regard to the study area intersections; the traffic volume projections for the project; the associated traffic operations analysis; and the conclusions

and recommendations presented therein; remain valid and are supplemented by the information presented as a part of this assessment. *As a result of this supplemental data, the analysis results and the findings and recommendations presented in the Amended TLAS have been further substantiated and validated. As concluded therein and reviewed and concurred with by the Town's independent review consultant, with the implementation of the recommended improvement measures, safe and efficient access will be provided to the Project and the Project can be accommodated on the transportation infrastructure.*

The following summarizes the supplemental information.

1. CONCORD PUBLIC SCHOOL BUS ROUTES

The Transportation Coordinator for the Concord Public School system was contacted in order to determine existing and future bus routes in the area that would serve the Project. At present, there are no bus routes that directly serve immediate Project locus. There are two existing bus routes that travel along Route 62 and Old Marlboro Road within the Town of Concord near the Acton and Sudbury town lines, respectively. The bus route near the Acton town line generally follows Route 62 westbound toward Acton and then reverses direction at Forest Ridge Road to return toward Concord. The bus route near the Sudbury town line follows Old Marlboro Road toward Sudbury (where the roadway becomes Powers Road) and then reverses direction at the town line to return to Concord.

Based on discussions with the Transportation Coordinator for the Concord Public School system, it is anticipated that school bus service to the Project would be accommodated through an extension of the existing bus route that travels along Route 62. It is envisioned that the bus route would travel along Route 62 to Sudbury Road, enter the Project site, and then follow the reverse direction to return. The School Department does not anticipate that Powder Mill Road or Powers Road will be used by school buses to service the site given the current school bus routing and the desire to minimize school bus travel through adjacent towns.

2. SPOT SPEED MEASUREMENTS

In response to comments raised by VHB in their March 12, 2008 review memorandum, additional vehicle travel speed measurements were performed over a continuous 48-hour weekday period in March 2008 at three locations: Sudbury Road/Powder Mill Road north and south of Old Powder Mill Road; and Powder Mill Road, north of Tavern Circle. The speed measurements were completed using a pneumatic speed measuring device (ATR). Table 1 summarizes the additional vehicle travel speed measurements.

Table 1
VEHICLE TRAVEL SPEED MEASUREMENTS

	Sudbury Road, North of Old Powder Mill Road		Powder Mill Road, South of Old Powder Mill Road		Powder Mill Road, North of Tavern Circle	
	Northbound	Southbound	Northbound	Southbound	Northbound	Southbound
Mean Travel Speed (mph)	21	26	22	23	34	33
85 th Percentile Speed (mph)	30	32	26	27	39	39
Posted Speed Limit (mph)	30 ^a	30 ^a	30 ^a	30 ^a	30	30

^a"Prima facie" speed limit.
 mph = miles per hour.

As can be seen in Table 1, the mean (average) vehicle travel speed along Sudbury Road, north of Old Powder Mill Road, was found to be approximately 24 miles per hour (mph). The average measured 85th percentile vehicle travel speed, or the speed at which 85 percent of the observed vehicles traveled at or below, was found to be approximately 31 mph. To the south of Old Powder Mill Road (along Powder Mill Road), the mean travel speed was found to be approximately 22 mph, with the average measured 85th percentile vehicle travel speed found to be approximately 27 mph. The 85th percentile vehicle travel speed is used as the basis of engineering design and in the evaluation of sight distances, and is often used in establishing posted speed limits. *These measurements are generally consistent with the vehicle travel speed measurements presented in the Amended TIAS and used as the basis of the sight distance evaluation at the intersection of Sudbury Road at Old Powder Mill Road (access to the Project); however, the 85th percentile approach speed from the north (southbound) was found to be slightly above the prior measurement (32 mph based on the current measurement vs. 28 mph as presented in the Amended TIAS).*

The mean vehicle travel speed along Powder Mill Road, north of Tavern Circle, was found to be approximately 34 mph, with the average measured 85th percentile vehicle travel speed found to be approximately 39 mph, or 9 mph above the posted speed limit of 30 mph.

With respect to the posted speed limit along Sudbury Road and Powder Mill Road, a speed limit of 30 mph is posted for Powder Mill Road in the Town of Sudbury; however, no speed limit is posted for Sudbury Road. Pursuant to M.G.L. Chapter 90, Section 17, the "prima facie" speed limit¹ for Sudbury Road would be 30 mph. As such, *lines of sight at the intersection of Sudbury Road/Powder Mill Road at Old Powder Mill have been reevaluated based on 30 mph or the measured 85th percentile vehicle travel speed, whichever was found to be greater. This information is provided in the next section.*

¹The prima facie speed limit is defined in the M.G.L. as the rate of speed greater than which would be considered reasonable and proper to operate a motor vehicle.



3. SIGHT DISTANCE EVALUATION

As a result of the additional speed measurements and evaluation of both the posted and “prima facie” speed limits on Sudbury Road/Powder Mill Road approaching Old Powder Mill Road, an updated evaluation of lines of sight at the intersection of Sudbury Road at Old Powder Mill Road was completed in accordance with MassHighway and American Association of State Highway and Transportation Officials (AASHTO)² standards. Consistent with the measurements conducted as a part of the Amended TIAS, both stopping sight distance (SSD) and intersection sight distance (ISD) measurements were evaluated.

In brief, SSD is the distance required by a vehicle traveling at the design speed of a roadway, on wet pavement, to stop prior to striking an object in its travel path. ISD or corner sight distance (CSD) is the sight distance required by a driver entering or crossing an intersecting roadway to perceive an on-coming vehicle and safely complete a turning or crossing maneuver with on-coming traffic. In accordance with AASHTO and MassHighway standards, at a minimum, sufficient SSD must be provided at an intersection. The updated sight line measurements for the subject intersection are presented in Table 2.

Table 2
SIGHT DISTANCE MEASUREMENTS

Intersection/Sight Distance Measurement	Required Minimum (Feet) ^a	Measured (Feet)
<i>Sudbury Road at Old Powder Mill Road</i>		
<i>Stopping Sight Distance:</i>		
Sudbury Road approaching from the north	220	283
Sudbury Road/Powder Mill Road approaching from the south	220	180
<i>Intersection Sight Distance:</i>		
Looking to the north from Old Powder Mill Road	220	306
Looking to the south from Old Powder Mill Road	220	230

^aRecommended minimum values obtained from *A Policy on Geometric Design of Highways and Streets, Fifth Edition*; American Association of State Highway and Transportation Officials (AASHTO); 2004, and based on a 32 mph approach speed on Sudbury Road.

As can be seen in Table 2 and consistent with the conclusion of the sight distance evaluation presented in the Amended TIAS, with the exception of the sight line for motorists approaching Old Powder Mill from the south along Powder Mill Road (SSD), the measured sight lines approaching the intersection (SSD) and for motorists exiting Old Powder Mill Road (ISD) were found to meet or exceed the recommended minimum sight distance requirements for a 32 mph approach speed along Sudbury Road/Powder Mill Road, consistent with the measured 85th percentile vehicle travel speed approaching the intersection and in excess of both the posted and “prima facie” speed limits.

²*A Policy on Geometric Design of Highways and Streets, Fifth Edition*; American Association of State Highway and Transportation Officials (AASHTO); 2004.



The sight line approaching Old Powder Mill Road from the south along Powder Mill Road is limited due to the crest vertical curve that exists just south of the intersection. In order to increase the sight line to the intersection from the south and as presented in the Amended TIAS, the planned improvements to Sudbury Road/Powder Mill Road will include the milling of the crest vertical curve in order to reduce the elevation of the roadway and provide the required line of sight. Given that the sight line to be improved is located completely within the limits of the existing pavement area, these improvements can be achieved within the available public right-of-way subject to receipt of the necessary approvals. With the reduction in the elevation of the vertical curve, the sight line approaching Old Powder Mill Road from the south along Powder Mill Road will be at least 220 feet and will meet or exceed the required minimum line of sight for the appropriate approach speed.

4. MOTOR VEHICLE CRASH ANALYSIS

As presented in the Amended TIAS, the intersections of Route 117 at Powder Mill Road and Mossman Road (Sudbury); Summer Street and Waltham Street at Route 27 and Route 62 (Maynard); and Route 27 and Route 62 at Waltham Street (Maynard); were found to have a motor vehicle crash rate above the MassHighway average for a signalized or unsignalized intersection, as appropriate, for the MassHighway District in which the intersection is located. In order to complete a detailed review of the potential factors that may be contributing to the motor vehicle crashes occurring at these intersections, motor vehicle crash reports were obtained from the Police Departments of the Towns of Maynard and Sudbury, as appropriate. The crash reports were obtained for the three-year period between January 2005 and December 2007, inclusive. Detailed motor vehicle collision diagrams were prepared for each intersection based on this information and are presented in the Appendix attached hereto. The following summarizes the local police department data obtained for the subject intersections.

Route 117 at Powder Mill Road and Mossman Road

Based on a review of the motor vehicle crash reports obtained from the Town of Sudbury Police Department for the intersection of Route 117 at Powder Mill Road and Mossman Road, a total of 11 motor vehicle crashes were reported at the subject intersection within the aforementioned three-year review period. The majority of the crashes occurring at the intersection involved property damage only (10 out of 11); occurred on a weekday (11 out of 11); and were classified as angle-type collisions (9 out of 11). This data is generally consistent with the motor vehicle crash analysis for the intersection presented in the Amended TIAS.

A review of the detailed crash records and the associated collision diagrams indicates that the majority of the collisions involved a motorist entering the intersection from either Powder Mill Road or Mossman Road (STOP-sign controlled) that failed to yield to on-coming traffic along Route 117. This type of collision may be the result of inadequate sight distances for vehicles approaching the intersection combined with vehicle travel speeds that are not conducive to the geometry of the intersection; inadequate roadway lighting; and/or inadequate or missing signs or pavement markings.

As presented in the Amended TIAS, in order to address the predominance of motor vehicle collisions reported at the intersection of Route 117 at Powder Mill Road and Mossman Road, the following recommendations are offered:

- Trim, remove and/or maintain vegetation or other potential sight line obstructions located within the public right-of-way at and approaching the intersection.
- Install advance “intersection ahead” warning signs (graphic symbol) on all approaches to the intersection in accordance with the provisions of the Manual on Uniform Traffic Control Devices (MUTCD).³
- Replace all signs and pavement markings at the intersection.

In addition, it is suggested that the Town of Sudbury Police Department conduct a periodic speed enforcement program along Route 117 approaching the intersection.

Summer Street and Waltham Street at Route 27 and Route 62

Based on a review of the motor vehicle crash reports obtained from the Town of Maynard Police Department for the signalized intersection of Summer Street and Waltham Street at Route 27 and Route 62, a total of 18 motor vehicle crashes were reported at the subject intersection within the aforementioned three-year review period. The majority of the crashes occurring at the intersection involved property damage only (17 out of 18); occurred on a weekday (15 out of 18); and were classified as rear-end type collisions (8 out of 18). This data is generally consistent with the motor vehicle crash analysis for the intersection presented in the Amended TIAS with regard to the predominant crash type, severity and day of occurrence.

A review of the detailed crash records and the associated collision diagrams indicates that the majority of the collisions involved a motorist striking the rear of a vehicle stopped at the intersection. This type of collision may be the result of driver inattentiveness; inefficient traffic signal timing and/or phasing; vehicle detection system operation (or lack thereof); and/or the proximity of commercial driveways to the intersection. As presented in the Amended TIAS, improvements are to be completed at this intersection in conjunction with the 129 Parker Street development project that will be designed to address disproportionate number of motor vehicle crashes occurring at the intersection. However, at the request of the Concord ZBA, VAI has developed a series of recommended safety improvements to be completed at this intersection should the improvements associated with the 129 Parker Street project not advance. These improvements are detailed in the next section.

Route 27 and Route 62 at Waltham Street

Based on a review of the motor vehicle crash reports obtained from the Town of Maynard Police Department for the signalized intersection of Route 27 and Route 62 at Waltham Street, a total of 40 motor vehicle crashes were reported at the subject intersection within the aforementioned three-year review period. The majority of the crashes occurring at the intersection of involved property damage only (35 out of 40); occurred on a weekday (34 out of 40); and were classified as turning movement type collisions (20 out of 40). This data is generally consistent with the motor vehicle crash analysis for the intersection presented in the Amended TIAS.

A review of the detailed crash records and the associated collision diagrams indicates that the majority of the collisions occurred along the Waltham Street west leg of the intersection and at or proximate to the

³ *Manual on Uniform Traffic Control Devices*; Federal Highway Administration; Washington, DC; 2003.

driveway serving the Tedeschi's Food Shop parking lot. The most prevalent type of crash occurring at the Tedeschi's driveway intersection involved a motorist turning left from Waltham Street into the Tedeschi's parking lot that collided with a vehicle traveling eastbound along Waltham Street. This type of collision may be the result of vehicle queues that extend from the intersection past the Tedeschi's driveway that limit lines of sight to the west for a motorist turning left into the driveway. Vehicles turning left into the Tedeschi's driveway must cross two lanes of eastbound traffic in order to enter the driveway. When vehicle queues extend past the Tedeschi's driveway, drivers are unable to adequately see both lanes of approaching traffic. As presented in the Amended TIAS, improvements are to be completed at this intersection in conjunction with the 129 Parker Street development project that will be designed to address disproportionate number of motor vehicle crashes occurring at the intersection. However, at the request of the Concord ZBA, VAI has developed a series of recommended safety improvements to be completed at this intersection should the improvements associated with the 129 Parker Street project not advance. These improvements are detailed in the next section.

5. POTENTIAL MAYNARD INTERSECTION IMPROVEMENTS

At the request of the Concord ZBA, VAI has developed a series of potential improvements for the intersections of Summer Street and Waltham Street at Route 27 and Route 62 (Maynard), and Route 27 and Route 62 at Waltham Street (Maynard) that are designed to address the disproportionate number of motor vehicle crashes occurring at these intersections should the improvements associated with the 129 Parker Street development not advance. The following summarizes our recommendations.

Summer Street and Waltham Street at Route 27 and Route 62

This signalized intersection was found to have a motor vehicle crash rate that exceeded the MassHighway District 3 average for a signalized intersection. Should the 129 Parker Street project not proceed, the following recommendations are offered to reduce the number of motor vehicle crashes occurring at the intersection:

1. Upgrade and replace existing signs and pavement markings at and in advance of the intersection and supplement as necessary (including the installation of warning signs in advance of the intersection along all approaches).
2. Review and adjust the traffic signal timing and phasing, with particular emphasis on the yellow and all-red clearance times.
3. Inspect, repair and/or replace the vehicle detection system.
4. Clean and/or relamp and adjust as necessary the existing signal indications in order to improve visibility.

In addition, a review of sight lines at and approaching the intersection should be completed in conjunction with the above improvements and appropriate remedial measures undertaken within the public right-of-way to address any deficiencies that are found. The recommended improvements will result in improved traffic operations (i.e., reduced motorist delays and vehicle queuing) and should reduce the frequency of occurrence of motor vehicle collisions at the intersection.

Route 27 and Route 62 at Waltham Street

This signalized intersection was found to have a motor vehicle crash rate that exceeded the MassHighway District 3 average for a signalized intersection. Should the 129 Parker Street project not proceed, the following recommendations are offered to reduce the number of motor vehicle crashes occurring at the intersection:

1. Upgrade and replace existing signs and pavement markings at and in advance of the intersection and supplement as necessary (including the installation of warning signs in advance of the intersection along all approaches).
2. Review and adjust the traffic signal timing and phasing, with particular emphasis on the yellow and all-red clearance times.
3. Inspect, repair and/or replace the vehicle detection system.
4. Clean and/or relamp and adjust as necessary the existing signal indications in order to improve visibility.

In addition, a review of sight lines at and approaching the intersection should be completed in conjunction with the above improvements and appropriate remedial measures undertaken within the public right-of-way to address any deficiencies that are found. The recommended improvements will result in improved traffic operations (i.e., reduced motorist delays and vehicle queuing) and should reduce the frequency of occurrence of motor vehicle collisions at the intersection.

6. RESIDENTIAL TRAFFIC PATTERNS

At the request of the Concord ZBA, VAI evaluated traffic patterns at three roadways serving residential communities in the area in order to validate the expected trip distribution pattern for the Project that was presented in the Amended TIAS. As suggested by the Concord ZBA, existing trip patterns were evaluated for Westside Drive, Brook Trail Road and Edgewood Road, all of which serve residential communities and are expected to exhibit trip patterns similar to the Project. In order to complete this evaluation, peak-period turning movement counts (TMCs) were conducted at the intersections of Sudbury Road at Westside Drive, Route 62 at Brook Trail Road and Route 62 at Edgewood Road during the weekday morning (7:00 to 9:00 AM) and evening (4:00 to 6:00 PM) peak periods. For the purpose of this evaluation, only vehicles entering and exiting the residential roadways were counted. Further, given that Brook Trail Road and Edgewood Road serve the same residential neighborhood, the entering and exiting trips for both roadways were added together. Table 3 summarizes the traffic count data by direction for each location.

Table 3
TURNING MOVEMENT COUNT SUMMARY

	Westside Drive			Brook Trail Road/ Edgewood Road		
	To/From North	To/From South	Total	To/From East	To/From West	Total
Weekday Morning Peak Hour	20	3	23	158	41	199
Weekday Evening Peak Hour	12	1	13	147	56	203

As can be seen in Table 3, 20 out of 23 vehicles (87%) that entered or exited Westside Drive were observed to travel to/from the north on Sudbury Road (toward Route 62) during the weekday morning peak period, with 12 out of 13 vehicles (92%) observed to travel to/from the north during the weekday evening peak period.

At the intersections of Brook Trail Road at Route 62 and Edgewood Road at Route 62, 158 out of 199 vehicles (79%) that entered or exited Brook Trail Road and Edgewood Road were observed to travel to/from the east on Route 62 (toward West Concord Center) during the weekday morning peak period, with 147 out of 203 vehicles (72%) observed to travel to/from the east during the weekday evening peak period.

Based on a review of this information, the trip pattern assumed for the Project and presented in the Amended TIAS that reflected 75 percent of the trips associated with the Project oriented to/from the north along Sudbury Road and toward Route 62, with the remaining 25 percent oriented to/from the south along Powder Mill Road and toward Route 117, is consistent with the observed residential traffic patterns in the area.

SUMMARY

VAI has prepared supplemental information in support of the Amended TIAS submitted in support of the Project in response to comments raised by the Town of Concord ZBA and the Town's independent review consultant, VHB. The specific areas where additional information was requested included: 1) assessment of public school bus routes for the Project; 2) collection of additional vehicle travel speed data along Sudbury Road/Powder Mill Road; 3) evaluation of sight lines at the intersection of Sudbury Road/Powder Mill Road at Old Powder Mill Road based on the additional speed data; 4) analysis of motor vehicle crash data from local police department records at three intersections that were found to exceed the MassHighway crash rate; 5) development of suggested safety improvements at two intersections in Maynard in the event that the planned improvements to be completed as a part of the 129 Parker Street development are not advanced; and 6) evaluation of the trip patterns of other residential developments in the area.



Mr. C. William Barrett, Chairman
Town of Concord Zoning Board of Appeals
April 4, 2008
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As a result of this supplemental data, the analysis results and the findings and recommendations presented in the Amended TIAS have been further substantiated and validated. As concluded therein and reviewed and concurred with by the Town's independent review consultant, with the implementation of the recommended improvement measures, safe and efficient access will be provided to the Project and the Project can be accommodated on the transportation infrastructure.

If you should have any questions regarding this supplemental information or would like to discuss our findings and recommendation in more detail, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.



Jeffrey S. Dirk, P.E., PTOE
Vice President

JSD/jsd

Attachment

cc: J. Quitter, P.E. - VHB
J. Torg, R. Hewitt, P.E. - Trammell Crow Residential
D. Horwitz, Esquire - Goulston & Storrs
L. Beals, P.E. - Beals Associates, Inc.
RDV, MS, File

APPENDIX

VEHICLE TRAVEL SPEED MEASUREMENTS
MOTOR VEHICLE COLLISION DIAGRAMMS
MANUAL TURNING MOVEMENT COUNTS

VEHICLE TRAVEL SPEED MEASUREMENTS

Accurate Counts
978-664-2565

Location : Sudbury Road South of
City/State : Westside Drive
County : Sudbury, MA
Counter : 10310
Southbound

498400S1
Site Code: 49840001

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
03/18/08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22-31	1
02:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	17-26	1
03:00	0	0	0	1	0	1	0	0	0	0	0	0	0	0	2	23-32	7
04:00	0	0	1	4	2	1	0	0	0	0	0	0	0	0	8	26-35	21
05:00	0	0	4	10	11	2	0	0	0	0	0	0	0	0	27	26-35	86
06:00	0	2	8	58	28	1	0	0	0	0	0	0	0	0	97	26-35	212
07:00	8	6	26	135	77	5	0	0	0	0	0	0	0	0	257	26-35	160
08:00	4	16	39	115	45	5	0	0	0	0	0	0	0	0	224	26-35	120
09:00	0	0	16	55	21	4	0	0	0	0	0	0	0	0	96	25-34	76
10:00	4	1	15	46	18	0	1	0	0	0	0	0	0	0	85	24-33	64
11:00	1	2	13	45	18	1	0	0	0	0	0	0	0	0	80	24-33	63
12 PM	4	4	20	60	21	1	0	0	0	0	0	0	0	0	110	22-31	81
13:00	1	2	19	44	21	1	0	0	0	0	0	0	0	0	88	22-31	65
14:00	5	0	21	40	19	4	0	0	0	0	0	0	0	0	89	21-30	61
15:00	2	0	13	34	23	5	0	0	0	0	0	0	0	0	77	26-35	57
16:00	4	2	19	68	19	1	0	0	0	0	0	0	0	0	113	22-31	88
17:00	7	5	19	57	31	3	2	0	0	0	0	0	0	0	124	26-35	88
18:00	2	2	26	40	33	4	0	0	0	0	0	0	0	0	107	25-34	73
19:00	0	0	21	33	18	3	0	0	0	0	0	0	0	0	75	21-30	54
20:00	0	0	5	26	11	1	1	0	0	0	0	0	0	0	44	26-35	37
21:00	0	1	8	14	9	0	0	0	0	0	0	0	0	0	32	23-32	24
22:00	0	0	1	3	5	0	0	0	0	0	0	0	0	0	9	25-34	8
23:00	0	0	0	1	1	1	0	0	0	0	0	0	0	0	3	27-36	3
Total	42	43	294	889	432	44	4	0	0	0	0	0	0	0	1748		
Percent	2.4%	2.5%	16.8%	50.9%	24.7%	2.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

AM Peak Vol.	07:00	08:00	07:00	07:00	07:00	07:00	10:00
AM Peak Vol.	8	16	39	135	77	5	1
PM Peak Vol.	7	5	26	68	33	5	2

Location : Sudbury Road South of
 Westside Drive
 City/State: Sudbury, MA
 Counter : 10310

Accurate Counts
 978-664-2565

Site Code: 49840001
 498400S1

Start Time	1	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	60	61	65	70	71	75	76	799	Total	Pace	Number			
03/19/08	1	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	60	61	65	70	71	75	76	799	Total	Speed	in			
01:00	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	22-31	*	3	
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	0	0	0	2	2	3	3	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
06:00	0	0	0	0	2	2	11	11	14	31	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25
07:00	2	2	8	10	31	31	157	157	45	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	202
08:00	8	10	10	19	36	36	104	104	36	36	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	141
09:00	12	3	3	19	35	35	54	54	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73
10:00	15	4	4	22	35	35	54	54	11	11	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	57
11:00	20	2	2	19	38	38	54	54	16	16	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58
12 PM	22	4	4	25	51	51	61	61	19	19	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76
13:00	26	10	10	27	38	38	44	44	8	8	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65
14:00	26	6	6	20	27	27	20	20	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	64
15:00	24	6	6	16	16	16	44	44	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
16:00	26	4	4	25	33	33	33	33	11	11	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
17:00	32	6	6	20	25	25	34	34	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	59
18:00	30	6	6	20	20	20	60	60	17	17	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80
19:00	12	2	2	30	32	32	32	32	11	11	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	49
20:00	10	4	4	14	14	14	17	17	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	52
21:00	7	1	1	13	10	10	10	10	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31
22:00	5	2	2	6	6	6	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	23
23:00	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11
Total	276	72	367	789	274	19	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1801	7-16		2		
Percent	15.3%	4.0%	20.4%	43.8%	15.2%	1.1%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%						
AM Peak	11:00	08:00	08:00	07:00	07:00	05:00																					07:00					
Vol	20	10	36	157	45	2																					243					
PM Peak	17:00	13:00	19:00	17:00	12:00	12:00	13:00	15:00																			17:00					
Vol	32	10	30	60	19	2	1	1																			137					
Total	318	115	661	1678	706	83	7	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3549					
Percent	9.0%	3.2%	18.6%	47.3%	19.9%	1.8%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%						

Stats
 10 MPH Pace Speed : 26-35 MPH
 Number in Pace : 2384
 Percent in Pace : 67.2%
 Number of Vehicles > 25 MPH : 2455
 Percent of Vehicles > 25 MPH : 69.2%
 Mean Speed(Average) : 26 MPH

15th Percentile : 21 MPH
 50th Percentile : 28 MPH
 85th Percentile : 32 MPH
 95th Percentile : 35 MPH

Accurate Counts
978-664-2565

Location : Sudbury Road South of
 Location : Westside Drive
 City/State: Sudbury, MA
 Counter : 10310

498400S1
 Site Code: 49840001

Start Time	16		21		26		31		36		41		46		51		56		61		66		71		76		Pace Number In Pace	
	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	00	05	10	15	20	25	30	35	Total		
03/18/08	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17-26	2
01:00	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	18-27	2
02:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12-21	1	
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*	
04:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	17-26	1	
05:00	0	1	2	6	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	24-33	11	
06:00	2	0	4	5	12	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	26-35	17	
07:00	10	1	14	27	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	68	22-31	43	
08:00	6	5	36	57	16	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	121	21-30	93	
09:00	1	0	21	46	23	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95	24-33	70	
10:00	1	1	14	34	14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	65	22-31	49	
11:00	2	2	17	39	19	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	82	24-33	59	
12 PM	3	5	32	48	23	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	115	21-30	80	
13:00	4	5	26	37	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	86	21-30	63	
14:00	4	1	25	47	15	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	95	21-30	72	
15:00	0	3	38	88	21	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	152	21-30	126	
16:00	1	7	46	114	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	205	21-30	160	
17:00	7	6	62	148	44	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	271	21-30	210	
18:00	4	6	38	97	28	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	176	21-30	135	
19:00	1	1	20	60	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	89	21-30	80	
20:00	0	0	12	18	10	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	21-30	30	
21:00	0	2	3	18	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31	23-32	24	
22:00	0	0	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	24-33	5	
23:00	0	0	1	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	23-32	9	
Total	46	46	413	901	313	30	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1750			
Percent	2.6%	2.6%	23.6%	51.5%	17.9%	1.7%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	07:00	08:00	08:00	08:00	09:00	09:00	09:00	09:00	09:00	09:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00		
PM Peak	17:00	16:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00	17:00		
Vol.	10	5	36	57	23	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	121		
Vol.	7	7	62	148	44	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	271		

Location : Sudbury Road South of
 Location : Westside Drive
 City/State: Sudbury, MA
 Counter : 10310

Accurate Counts
 978-664-2565

Northbound

Site Code: 49840001
 498400S1

Start Time	1	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	70	71	75	76	799	Total	Pace Speed	Number in Pace	
03/19/08	15	20																									3	19-28	3	
01:00	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7-16	1	
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	22-31	1	
06:00	0	0	0	0	0	9	8	6	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	23-32	10	
07:00	2	2	2	12	9	31	8	6	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	20-29	24	
08:00	4	11	4	36	36	43	10	10	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	56	21-30	56	
09:00	20	4	4	36	32	32	11	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104	21-30	104	
10:00	37	15	15	15	15	18	5	5	5	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	92	19-28	92	
11:00	61	19	19	29	29	9	2	2	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	121	16-25	121	
12 PM	93	15	15	26	26	14	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	151	1-10	151	
13:00	50	31	31	30	30	8	4	4	4	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	124	16-25	124	
14:00	44	37	37	32	32	9	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	124	16-25	124	
15:00	90	37	37	49	49	15	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	195	16-25	195	
16:00	168	39	39	49	49	22	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	275	1-10	275	
17:00	145	61	61	61	61	21	3	3	3	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	295	16-25	295	
18:00	119	43	43	57	57	17	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	238	16-25	238	
19:00	40	40	40	19	13	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	101	15-24	101	
20:00	29	16	16	13	13	5	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	66	16-25	66	
21:00	18	16	16	4	4	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	11-20	40	
22:00	9	5	5	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18	11-20	18	
23:00	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	17-26	5	
Total	921	394	482	269	70	7	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2148		2148	
Percent	42.9%	18.3%	22.4%	12.5%	3.3%	0.3%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak	11:00	11:00	08:00	08:00	09:00	10:00	11:00																					11:00		
Vol.	61	19	36	43	11	2	1																					121		
PM Peak	16:00	17:00	17:00	16:00	16:00	17:00	17:00	15:00	15:00																			17:00		
Vol.	158	61	61	22	7	2	1	1	1																			295		
Total	967	440	895	1170	383	37	3	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3898			
Percent	24.8%	11.3%	23.0%	30.0%	9.8%	0.9%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				

Stats
 10 MPH Pace Speed : 21-30 MPH
 Number in Pace : 2065
 Percent in Pace : 53.0%
 Number of Vehicles > 25 MPH : 1596
 Percent of Vehicles > 25 MPH : 40.9%
 Mean Speed(Average) : 21 MPH

Location : Sudbury Road South of
 Westside Drive
 City/State: Sudbury, MA
 Counter : 10310

Accurate Counts
 978-664-2565

Southbound, Northbound

Site Code: 49840001
 498400S1

Start Time	1	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	60	65	70	75	76	Total	Pace Speed	Number in Pace	
03/19/08	0	0	0	0	1	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	22-31	6	
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	8-17	3	
03:00	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	22-31	1	
04:00	0	0	0	0	2	2	3	3	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	7	19-28	7	
05:00	4	0	0	0	4	4	17	17	16	16	2	2	0	0	0	0	0	0	0	0	0	0	0	43	26-35	33	
06:00	0	0	3	0	3	4	48	48	37	37	1	1	0	0	0	0	0	0	0	0	0	0	0	120	25-34	85	
07:00	4	0	10	0	43	43	188	188	54	54	0	0	0	0	0	0	0	0	0	0	0	0	0	299	26-35	242	
08:00	12	0	21	7	72	72	147	147	46	46	2	2	0	0	0	0	0	0	0	0	0	0	0	300	21-30	219	
09:00	32	0	21	7	55	55	86	86	24	24	0	0	0	0	0	0	0	0	0	0	0	0	0	204	21-30	141	
10:00	52	0	19	7	37	37	53	53	16	16	4	4	0	0	0	0	0	0	0	0	0	0	0	181	21-30	90	
11:00	81	0	21	2	48	48	47	47	18	18	2	2	1	0	0	0	0	0	0	0	0	0	0	218	21-30	95	
12 PM	115	0	19	7	51	51	65	65	22	22	2	2	0	0	0	0	0	0	0	0	0	0	0	0	218	21-30	95
13:00	76	0	41	13	57	57	46	46	12	12	2	2	1	0	0	0	0	0	0	0	0	0	0	0	235	20-29	116
14:00	64	0	43	43	52	52	53	53	17	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	230	20-29	103
15:00	114	0	38	38	65	65	48	48	12	12	3	3	0	0	0	0	0	0	0	0	0	0	0	0	283	21-30	113
16:00	184	0	43	43	74	74	56	56	18	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	378	21-30	136
17:00	177	0	67	67	81	81	81	81	20	20	4	4	1	0	0	0	0	0	0	0	0	0	0	0	432	21-30	162
18:00	149	0	44	44	74	74	49	49	12	12	2	2	1	0	0	0	0	0	0	0	0	0	0	0	331	20-29	123
19:00	52	0	42	42	49	49	24	24	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	170	16-25	91
20:00	39	0	20	20	27	27	22	22	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	114	18-27	49
21:00	25	0	17	17	17	17	12	12	8	8	1	1	0	0	0	0	0	0	0	0	0	0	0	0	80	16-25	34
22:00	14	0	7	7	8	8	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36	18-27	17
23:00	3	0	2	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	18-27	3
Total	1197	466	849	1058	344	26	5	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3949			
Percent	30.3%	11.8%	21.5%	26.8%	8.7%	0.7%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak	11:00	08:00	08:00	07:00	07:00	10:00	11:00																				
Vol	81	21	72	188	54	4	1																				
PM Peak	18:00	17:00	17:00	17:00	12:00	17:00	13:00	18:00	18:00																		
Vol	184	67	81	81	22	4	1	2	1																		
Total	1285	555	1556	2848	1089	100	10	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7447		
Percent	17.3%	7.5%	20.9%	38.2%	14.6%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				

Stats
 10 MPH Pace Speed : 21-30 MPH
 Number in Pace : 4404
 Percent in Pace : 59.1%
 Number of Vehicles > 25 MPH : 4051
 Mean Speed(Average) : 24 MPH

Accurate Counts
978-664-2565

Location : Sudbury Road South of
Location : Old Powder Mill Road
City/State: Sudbury, MA
Counter : 10011
Northbound

498400S2
Site Code: 49840002

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
03/18/08	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	12-21	2
01:00	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	17-26	2
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	7-16	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	12-21	1
05:00	0	4	8	1	0	0	0	0	0	0	0	0	0	0	13	17-26	13
06:00	2	6	8	10	0	0	0	0	0	0	0	0	0	0	26	20-29	18
07:00	7	5	43	10	1	0	0	0	0	0	0	0	0	0	66	21-30	53
08:00	14	30	56	18	0	0	0	0	0	0	0	0	0	0	118	16-25	86
09:00	5	16	48	26	1	1	0	0	0	0	0	0	0	0	97	21-30	74
10:00	3	6	34	20	0	0	0	0	0	0	0	0	0	0	63	21-30	54
11:00	1	8	34	23	3	0	0	0	0	0	0	0	0	0	69	21-30	57
12 PM	1	21	37	22	1	0	0	0	0	0	0	0	0	0	82	18-27	60
13:00	9	16	43	15	1	0	0	0	0	0	0	0	0	0	84	16-25	59
14:00	1	12	39	23	0	0	0	0	0	0	0	0	0	0	75	21-30	62
15:00	8	29	71	23	2	0	0	0	0	0	0	0	0	0	133	16-25	100
16:00	6	22	103	38	2	0	0	0	0	0	0	0	0	0	171	21-30	141
17:00	19	23	134	39	2	1	0	0	0	0	0	0	0	0	218	21-30	173
18:00	8	25	95	29	1	0	0	0	0	0	0	0	0	0	158	20-29	124
19:00	2	22	53	10	0	0	0	0	0	0	0	0	0	0	87	16-25	75
20:00	0	12	20	6	3	0	0	0	0	0	0	0	0	0	41	16-25	32
21:00	0	4	19	6	0	0	0	0	0	0	0	0	0	0	29	17-26	25
22:00	0	2	2	2	0	0	0	0	0	0	0	0	0	0	6	18-27	6
23:00	1	1	7	0	0	0	0	0	0	0	0	0	0	0	9	15-24	8
Total	87	266	857	322	17	2	0	0	0	0	0	0	0	0	1551		
Percent	5.6%	17.2%	55.3%	20.8%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	09:00	11:00	09:00									08:00		
Vol.	14	30	56	26	3	1									118		
PM Peak	17:00	15:00	17:00	17:00	20:00	17:00									17:00		
Vol.	19	29	134	39	3	1									218		

Location : Sudbury Road South of
 Old Powder Mill Road
 City/State: Sudbury, MA
 Counter : 10011

Accurate Counts
 978-664-2565

Northbound
 Site Code: 49840002

Start Time	1	16	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	70	71	75	76	Total	Pace Speed	Number in Pace	
03/19/08	15	20	25	25	30	30	35	35	40	40	45	45	50	50	55	55	60	60	65	70	70	75	75	999	3	17-26	3	
01:00	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12-21	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	4	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	3	5	11	3	5	5	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	6	14	31	31	11	11	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	11	21	57	57	12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	4	20	56	35	14	14	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	4	18	35	35	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	5	10	38	38	15	15	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PM	0	20	43	43	10	10	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	11	19	36	36	10	10	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	4	15	37	37	16	16	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	15	27	72	72	26	26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	11	53	86	86	19	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	11	41	94	94	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	6	44	109	109	23	23	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	4	27	38	38	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	1	16	26	26	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	3	10	11	11	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	5	6	6	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	2	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	99	372	797	797	209	209	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1488			
Percent	6.7%	25.0%	53.6%	53.6%	14.0%	14.0%	0.7%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak	08:00	08:00	08:00	08:00	11:00	11:00																			08:00			
PM Peak	15:00	16:00	18:00	18:00	15:00	12:00																			18:00			
Vol	11	21	57	57	15	15	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	184			
Total	186	638	1089	1089	266	266	28	28	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3039			
Percent	6.1%	21.0%	54.4%	54.4%	17.5%	17.5%	0.9%	0.9%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				

Stats
 10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 2292
 Percent in Pace : 75.4%
 Number of Vehicles > 25 MPH : 561
 Percent of Vehicles > 25 MPH : 18.5%
 Mean Speed(Average) : 22 MPH

15th Percentile : 18 MPH
 50th Percentile : 23 MPH
 85th Percentile : 26 MPH
 95th Percentile : 29 MPH

Location : Sudbury Road South of
 Old Powder Mill Road
 City/State: Sudbury, MA
 Counter : 10011

Accurate Counts
 978-664-2565

Southbound Site Code: 49840002 498400S2

Start Time	1	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	70	71	75	76	999	Total	Pace	Number in Pace
03/19/08	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	17-26	4
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12-21	1
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*	
05:00	0	0	1	1	3	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	20-29	11
06:00	0	0	11	11	43	0	22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	76	21-30	65
07:00	7	7	21	21	112	0	46	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	187	21-30	158
08:00	2	2	26	26	94	0	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	156	21-30	130
09:00	5	5	14	14	50	0	17	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	87	18-27	67
10:00	3	3	14	14	35	0	17	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	71	18-27	52
11:00	3	3	15	15	35	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	73	21-30	55
12 PM	2	2	17	17	46	0	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80	16-25	63
13:00	3	3	20	20	45	0	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	79	16-25	65
14:00	1	1	21	21	49	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	90	16-25	70
15:00	6	6	17	17	33	0	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	70	16-25	50
16:00	4	4	24	24	47	0	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	83	16-25	71
17:00	6	6	31	31	60	0	27	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	127	16-25	91
18:00	4	4	16	16	42	0	14	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	16-25	58
19:00	6	6	23	23	28	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	67	16-25	51
20:00	0	0	4	4	28	0	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	17-26	34
21:00	1	1	3	3	19	0	8	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	19-28	27
22:00	3	3	3	3	7	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	15	18-27	12
23:00	0	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	13-22	3
Total	56	56	282	282	782	0	301	0	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1431		
Percent	3.9%	3.9%	19.7%	19.7%	54.6%	0.0%	21.0%	0.0%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM	07:00	08:00	07:00	07:00	07:00	10:00																						07:00		
Peak	7	26	112	46	2																							187		
Vol.	15:00	17:00	17:00	17:00	17:00																							17:00		
Peak	6	31	60	27	3																							127		
Vol.	123	543	1679	610	25																							2980		
Total	4.1%	18.2%	56.3%	20.5%	0.8%																									
Percent																														

Stats

10 MPH Pace Speed : 21-30 MPH
 Number in Pace : 2289
 Percent in Pace : 76.8%
 Number of Vehicles > 25 MPH : 635
 Percent of Vehicles > 25 MPH : 21.3%
 Mean Speed(Average) : 23 MPH

15th Percentile : 18 MPH
 50th Percentile : 23 MPH
 85th Percentile : 27 MPH
 95th Percentile : 29 MPH

Accurate Counts
978-664-2565

Location : Sudbury Road South of
Location : Old Powder Mill Road
City/State: Sudbury, MA
Counter : 10011
Northbound, Southbound

Site Code: 49840002
498400S2

Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	Pace Speed	Number in Pace
03/18/08	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	12-21	2
01:00	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2	17-26	2
02:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	12-21	2
03:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	17-26	1
04:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	13-22	2
05:00	1	5	11	3	0	0	0	0	0	0	0	0	0	0	0	20	16-25	16
06:00	2	13	58	35	0	0	0	0	0	0	0	0	0	0	0	108	21-30	93
07:00	13	26	152	65	3	0	0	0	0	0	0	0	0	0	0	259	21-30	217
08:00	18	54	169	54	3	0	0	0	0	0	0	0	0	0	0	298	17-26	224
09:00	9	36	106	37	1	1	0	0	0	0	0	0	0	0	0	190	18-27	144
10:00	7	21	73	36	1	1	0	0	0	0	0	0	0	0	0	138	21-30	109
11:00	6	21	81	34	6	0	0	0	0	0	0	0	0	0	0	148	21-30	115
12 PM	4	38	80	32	3	0	0	0	0	0	0	0	0	0	0	157	16-25	118
13:00	12	34	88	33	1	0	0	0	0	0	0	0	0	0	0	168	17-26	123
14:00	2	31	89	39	0	0	0	0	0	0	0	0	0	0	0	161	20-29	128
15:00	17	45	107	35	3	0	0	0	0	0	0	0	0	0	0	207	16-25	152
16:00	17	45	172	54	2	0	0	0	0	0	0	0	0	0	0	290	21-30	226
17:00	25	46	206	57	3	1	0	0	0	0	0	0	0	0	0	338	21-30	263
18:00	14	42	158	59	1	0	0	0	0	0	0	0	0	0	0	274	21-30	217
19:00	3	35	96	25	1	0	0	0	0	0	0	0	0	0	0	160	16-25	131
20:00	1	16	52	16	3	0	0	0	0	0	0	0	0	0	0	88	17-26	69
21:00	0	14	37	8	0	0	0	0	0	0	0	0	0	0	0	59	16-25	51
22:00	2	2	6	6	1	0	0	0	0	0	0	0	0	0	0	17	19-28	12
23:00	1	1	8	1	0	0	0	0	0	0	0	0	0	0	0	11	17-26	10
Total	154	527	1754	631	32	2	0	0	0	0	0	0	0	0	0	3100		
Percent	5.0%	17.0%	56.6%	20.4%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

AM	08:00	08:00	08:00	07:00	11:00	09:00	08:00
Peak	18	54	169	65	6	1	298
Vol.	17:00	17:00	17:00	18:00	12:00	17:00	17:00
Peak	25	46	206	59	3	1	338
Vol.							

Location : Sudbury Road South of
 Location : Old Powder Mill Road
 City/State: Sudbury, MA
 Counter : 10011

Accurate Counts
 978-664-2565

Northbound, Southbound

Site Code: 49840002
 498400S2

Start Time	1	15	20	21	25	26	30	31	35	36	40	41	45	50	51	55	56	60	61	65	70	71	75	76	799	Total	Pace	Number in Pace		
03/19/08	0	0	1	4	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	18-27	7	
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12-21	1	
03:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	12-21	1		
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*	*	
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19-28	24	19	
06:00	0	0	0	11	11	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21-30	100	81	
07:00	3	16	54	54	27	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21-30	250	200	
08:00	13	35	143	143	57	57	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	19-28	259	201	
09:00	13	47	151	151	48	48	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17-26	182	141	
10:00	9	34	106	106	31	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16-25	139	102	
11:00	7	32	70	70	28	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16-25	143	108	
12 PM	8	25	73	73	35	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16-25	155	126	
13:00	2	37	89	89	25	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16-25	157	120	
14:00	14	39	81	81	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16-25	163	122	
15:00	5	36	86	86	35	35	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16-25	210	149	
16:00	21	44	105	105	40	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16-25	252	210	
17:00	15	77	133	133	27	27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16-25	261	226	
18:00	17	72	154	154	52	52	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16-25	298	261	
19:00	10	60	151	151	37	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16-25	142	116	
20:00	1	50	66	66	16	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16-25	84	74	
21:00	1	20	54	54	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16-25	57	43	
22:00	4	13	13	13	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16-25	27	21	
23:00	3	8	8	8	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	17-26	7	7	
Total	185	654	1979	1979	510	510	21	21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2919	17-26	2919	7
Percent	5.3%	22.4%	54.1%	54.1%	17.5%	17.5%	0.7%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AM Peak	07:00	08:00	08:00	07:00	07:00																									
PM Peak	15:00	16:00	17:00	17:00	17:00																									
Vol.	21	77	154	154	52	52	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	298	17:00	298	
Total	309	1181	3333	3333	1141	1141	53	53	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6019		6019	
Percent	5.1%	19.6%	55.4%	55.4%	19.0%	19.0%	0.9%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Stats

10 MPH Pace Speed : 16-25 MPH
 Number in Pace : 4514
 Percent in Pace : 75.0%
 Number of Vehicles > 25 MPH : 1196
 Percent of Vehicles > 25 MPH : 19.9%
 Mean Speed(Average) : 22 MPH

Accurate Counts
978-664-2565

Location : Sudbury Road North of
Location : Tavern Circle
City/State: Sudbury, MA
Counter : 10122
Northbound

498400S3
Site Code: 49840003

Start Time	15	16	21	25	26	31	35	36	41	45	46	50	51	55	56	60	61	65	66	70	71	75	76	999	Total	Pace Speed	Number in Pace
03/18/08	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	22-31	2	
01:00	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17-26	1	
02:00	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	22-31	1	
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
04:00	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	
05:00	0	0	0	0	1	5	5	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	30-39	12	
06:00	1	0	3	3	1	5	5	8	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	33-42	15	
07:00	3	0	4	4	1	22	22	36	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	68	31-40	58	
08:00	4	0	6	6	11	57	44	45	11	3	1	0	0	0	0	0	0	0	0	0	0	0	0	122	31-40	97	
09:00	1	2	0	0	1	24	24	34	5	5	1	0	0	0	0	0	0	0	0	0	0	0	0	105	31-40	89	
10:00	2	0	1	1	2	17	17	38	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	69	31-40	58	
11:00	0	2	0	0	5	33	33	34	8	8	1	0	0	0	0	0	0	0	0	0	0	0	0	85	31-40	55	
12 PM	2	1	2	2	4	26	26	29	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	77	31-40	67	
13:00	1	1	3	3	7	33	33	32	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	78	31-40	65	
14:00	1	1	2	2	2	33	33	32	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	78	31-40	65	
15:00	2	1	5	5	13	51	51	52	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	134	31-40	103	
16:00	9	0	2	2	8	60	60	81	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	171	31-40	141	
17:00	3	1	2	2	9	96	96	104	8	8	1	0	0	0	0	0	0	0	0	0	0	0	0	224	31-40	200	
18:00	3	0	1	1	12	69	69	69	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	163	31-40	138	
19:00	1	1	2	2	10	43	43	31	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	91	31-40	74	
20:00	3	0	1	1	3	19	19	12	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	43	31-40	31	
21:00	1	0	3	3	4	13	13	10	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	34	31-40	23	
22:00	0	0	0	0	0	2	2	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	31-40	7	
23:00	0	0	0	0	1	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	30-39	9	
Total	38	10	37	37	97	625	625	673	108	108	5	5	0	0	1	1	0	0	0	0	0	0	0	0	1594		
Percent	2.4%	0.6%	2.3%	2.3%	6.1%	39.2%	39.2%	42.2%	6.8%	6.8%	0.3%	0.3%	0.0%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak Vol.	4	2	6	6	11	57	57	45	11	11	1	1	0	0	1	1	0	0	0	0	0	0	0	0	122	08:00	
PM Peak Vol.	9	1	5	5	13	96	96	104	11	11	1	1	0	0	1	1	0	0	0	0	0	0	0	0	17:00	224	

Accurate Counts
978-664-2565

Location : Sudbury Road North of
Tavern Circle
City/State: Sudbury, MA
Counter : 10122

Site Code: 49840003
498400S3

Start Time	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	60	61	65	70	71	75	76	999	Total	Pace Speed	Number In Pace	
03/19/08	1	0	0	0	0	1	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	27-36	3	
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	27-36	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	3	0	0	0	0	2	2	2	7	12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	5	2	2	3	3	8	8	28	28	18	18	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	6	4	4	10	10	17	17	66	66	19	19	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	3	0	0	1	1	9	9	45	36	36	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	2	1	1	5	5	2	2	37	15	15	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	4	4	43	24	24	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PM	0	1	1	0	0	8	8	36	28	28	2	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	1	0	0	2	2	14	14	30	30	23	23	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	2	0	0	3	3	6	6	39	30	20	20	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	4	2	2	6	6	14	14	66	47	47	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	4	0	0	0	0	21	21	87	87	45	45	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	9	0	0	0	0	22	22	89	52	52	4	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	6	0	0	0	0	27	27	97	53	53	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	2	2	2	2	2	19	19	35	20	14	14	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	12	12	20	11	11	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	0	0	0	0	0	10	10	3	3	6	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	9	9	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	0	3	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	50	12	44	208	740	431	39	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1527	28-37	5	
Percent	3.3%	0.8%	2.9%	13.6%	48.5%	28.2%	2.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
AM Peak	09:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00	09:00	10:00													08:00			
Vol.	6	4	10	17	66	36	4	1																		125			
PM Peak	17:00	15:00	15:00	18:00	18:00	18:00	18:00	18:00	18:00	18:00	16:00	12:00														18:00			
Vol.	9	2	6	27	97	53	5	1																		187			
Total	88	22	81	305	1365	1104	147	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3121			
Percent	2.8%	0.7%	2.6%	9.8%	43.7%	35.4%	4.7%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				

Stats
10 MPH Pace Speed : 31-40 MPH
Number In Pace : 2469
Percent In Pace : 79.1%
Number of Vehicles > 25 MPH : 2930
Percent of Vehicles > 25 MPH : 93.9%
Mean Speed(Average) : 34 MPH

Accurate Counts
978-664-2565

Location : Sudbury Road North of
Tavern Circle
City/State: Sudbury, MA
Counter : 10122
Southbound

Site Code: 49840003
498400S3

Start Time	15	16	20	21	25	26	31	35	36	41	45	46	50	51	55	56	60	61	65	66	70	71	75	76	999	Total	Pace Speed	Number in Pace	
03/18/08	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	2	0	0	0	0	4	45	17	29	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	3	1	1	5	4	17	82	32	75	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	3	1	1	4	2	14	95	32	63	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	2	2	0	2	2	14	32	35	25	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	1	1	5	42	9	26	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	1	0	0	2	2	9	42	11	19	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 PM	2	1	1	1	1	11	41	11	19	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00	4	0	0	2	2	13	38	24	20	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00	1	0	0	1	1	7	40	16	25	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00	2	1	1	1	1	7	34	16	20	8	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	4	0	0	4	4	16	58	37	37	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:00	3	0	1	5	5	16	64	33	40	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:00	3	0	1	7	7	12	55	34	28	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19:00	1	0	0	1	1	13	34	4	16	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
20:00	0	0	0	0	0	4	20	6	5	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21:00	1	0	0	1	1	6	16	1	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	1	1	1	6	1	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	32	7	38	195	742	503	72	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Percent	2.0%	0.4%	2.4%	12.3%	46.6%	31.6%	4.5%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

AM Peak Vol.	07:00	09:00	12:00	18:00	07:00	08:00	14:00	17:00	15:00	07:00	08:00	18:00	19:00
3	2	2	1	7	5	23	95	75	7	08:00	196	17:00	128

Accurate Counts
978-664-2565

Location : Sudbury Road North of
Tavern Circle
City/State: Sudbury, MA
Counter : 10122

Southbound

Site Code: 49840003
498400S3

Start Time	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	70	71	75	76	999	Total	Pace Speed	Number In Pace	
03/19/08	0	0	0	0	0	0	0	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	28-37	4	
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*	*
03:00	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	22-31	1	
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*	*
05:00	1	0	0	0	0	0	0	2	2	8	8	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	33-42	15	
06:00	0	0	0	0	0	0	0	33	33	29	29	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31-40	72	
07:00	3	2	2	10	10	17	100	100	54	54	54	2	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	31-40	189	
08:00	6	0	0	2	2	21	89	89	45	45	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31-40	163	
09:00	0	0	0	0	0	12	46	46	26	26	26	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31-40	85	
10:00	1	0	0	1	1	9	35	35	21	21	21	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31-40	71	
11:00	1	0	0	2	2	14	29	29	18	18	18	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31-40	73	
12 PM	0	1	1	4	4	15	41	41	15	15	15	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	29-38	81	
13:00	2	2	2	4	4	15	38	38	15	15	15	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	26-35	78	
14:00	0	0	0	3	3	12	39	39	32	32	32	3	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	31-40	91	
15:00	2	0	0	1	1	10	44	44	15	15	15	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	31-40	74	
16:00	2	0	0	1	1	18	34	34	23	23	23	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	29-38	80	
17:00	1	0	0	1	1	26	66	66	36	36	36	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	31-40	138	
18:00	1	1	0	2	2	13	51	51	17	17	17	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28-37	85	
19:00	1	0	0	1	1	22	32	32	9	9	9	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	26-35	66	
20:00	0	0	0	0	0	5	25	25	5	5	5	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26-35	38	
21:00	0	0	0	1	1	4	18	18	7	7	7	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	28-37	31	
22:00	0	0	0	0	0	5	9	9	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	26-35	16	
23:00	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27-36	1	
Total	21	5	33	229	734	388	32	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1452		1	
Percent AM	1.4%	0.3%	2.3%	15.8%	50.6%	26.7%	2.2%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				
Peak Vol	8	2	10	21	190	84	4	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	189			
PM Peak Vol	2	2	4	26	66	36	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	138			
Total Vol	53	12	71	424	1478	891	104	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3043			
Percent	1.7%	0.4%	2.3%	13.9%	48.5%	29.3%	3.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%				

Stats
10 MPH Pace Speed : 31-40 MPH
Number In Pace : 2367
Percent In Pace : 77.8%
Number of Vehicles > 25 MPH : 2907
Percent of Vehicles > 25 MPH : 95.5%
Mean Speed(Average) : 33 MPH

Accurate Counts
978-664-2565

Location : Sudbury Road North of
Tavern Circle
City/State: Sudbury, MA
Counter : 10122

Site Code: 49840003
498400S3

Time	1	15	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	60	61	65	70	71	75	76	Total	Face Speed	Number in Face
03/19/08	1	0	0	0	0	1	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	8	29-38	7
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:00	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00	8	4	4	13	12	11	25	128	72	41	72	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00	12	4	4	12	1	21	38	155	64	64	62	3	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:00	3	0	0	1	1	21	91	62	36	8	8	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	3	1	0	6	2	18	72	47	36	6	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00	1	0	0	2	6	23	77	46	38	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
12 PM	0	2	2	5	6	29	68	78	52	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
13:00	3	2	2	6	6	18	78	68	52	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
14:00	2	0	0	6	6	24	62	68	62	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
15:00	6	2	2	7	7	39	121	110	62	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
16:00	6	0	0	1	1	24	62	68	62	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
17:00	10	0	0	2	2	48	155	88	88	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
18:00	7	0	0	1	1	40	148	67	70	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
19:00	3	2	2	2	2	41	148	67	70	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
20:00	0	0	0	4	4	17	45	16	16	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
21:00	0	0	0	7	7	14	21	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
22:00	0	0	0	0	0	14	10	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23:00	0	0	0	0	0	14	10	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	71	17	77	437	1474	819	71	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2979	31-40	6
Percent	2.4%	0.5%	2.3%	14.7%	48.9%	27.4%	2.4%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100%		
AM	08:00	07:00	07:00	08:00	08:00	07:00	10:00	07:00																			
PM	17:00	12:00	15:00	17:00	17:00	17:00	17:00	17:00																			
Peak	10	2	7	48	155	88	8	3																			
Vol	141	34	152	729	2841	1995	251	20																			
Percent	2.3%	0.6%	2.5%	11.8%	46.1%	32.4%	4.1%	0.3%																			

Stats

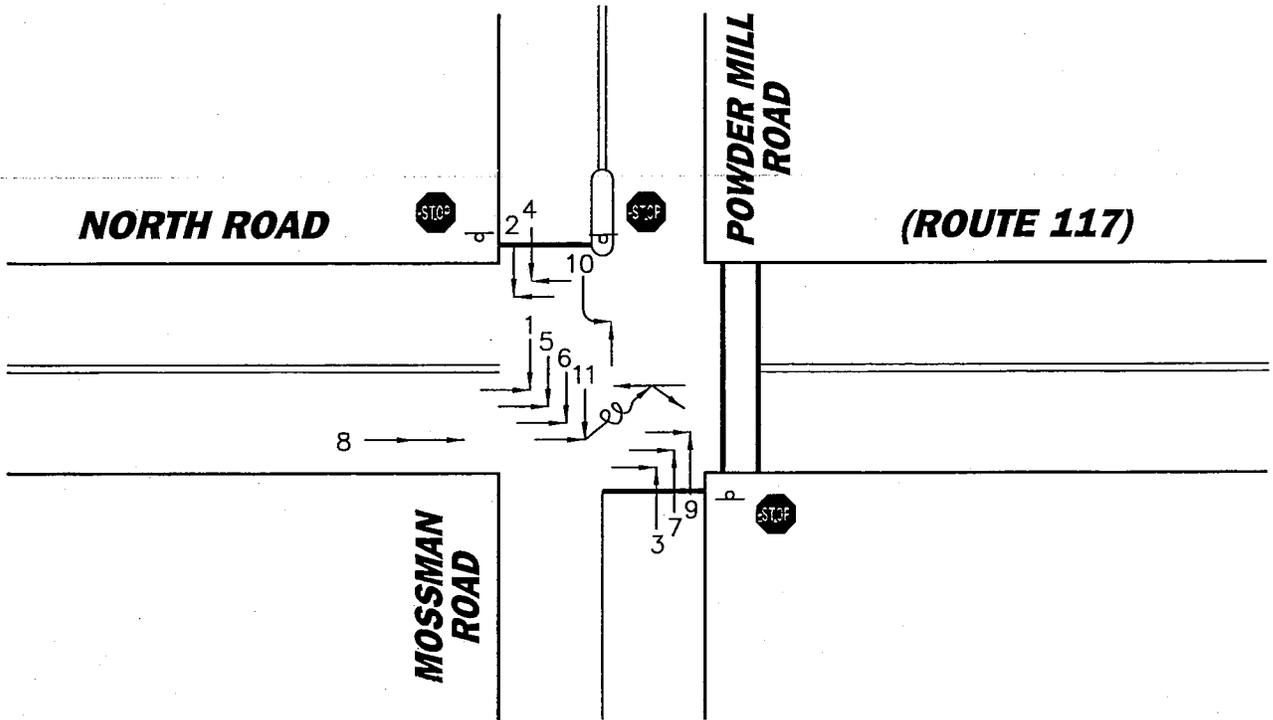
10 MPH Pace Speed : 31-40 MPH
Number in Pace : 4836
Percent in Pace : 78.5%
Number of Vehicles > 25 MPH : 5837
Percent of Vehicles > 25 MPH : 94.7%
Mean Speed(Average) : 34 MPH

15th Percentile : 30 MPH
50th Percentile : 34 MPH
85th Percentile : 39 MPH
95th Percentile : 40 MPH

MOTOR VEHICLE COLLISION DIAGRAMS

Summer Street and Waltham Street at Route 27 and Route 62
Route 27 and Route 62 at Waltham Street
Route 117 at Powder Mill Road and Mossman Road

Route 117 at Powder Mill Road and Mossman Road



CRASH TYPE						Severity	
Angle (A)		Turning Movement (TM)		Severity PD = Property Damage Only PI = Personal Injury			
Rear End (RE)		Backing Up (BU)					
Head On (HO)		Lane Change (LC)					
Fixed Object (FO)		Out of Control (OC)					
Side Swipe (SS)		Pedest./Bicycle (P/B)					
CRASH #	DATE	DAY	TIME	SEV.	CRASH TYPE	No. OF VEHICLES	CAUSE
1	4/27/05	Wed.	15:33	PD	A	2	Stop-sign violation.
2	5/19/05	Thurs.	7:23	PD	A	2	Glare from sun blinded driver.
3	7/7/05	Tues.	12:02	PD	A	2	Failure to grant right of way.
4	9/20/05	Tues.	7:30	PD	A	2	Failure to grant right of way.
5	3/17/06	Fri.	8:52	PD	A	2	Failure to grant right of way.
6	6/19/06	Mon.	11:25	PI	A	2	Failure to grant right of way.
7	11/23/06	Thurs.	12:00	PD	A	2	Failure to grant right of way.
8	2/6/07	Tues.	7:40	PD	RE	2	Distracted Driver.
9	2/6/07	Tues.	14:31	PD	A	2	Failure to grant right of way.
10	3/29/07	Thurs.	7:55	PD	TM	2	Glare from sun blinded driver.
11	12/5/07	Wed.	15:28	PD	A	3	Failure to grant right of way.

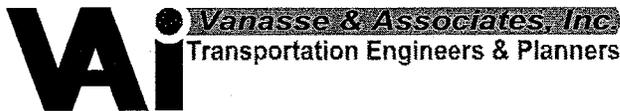
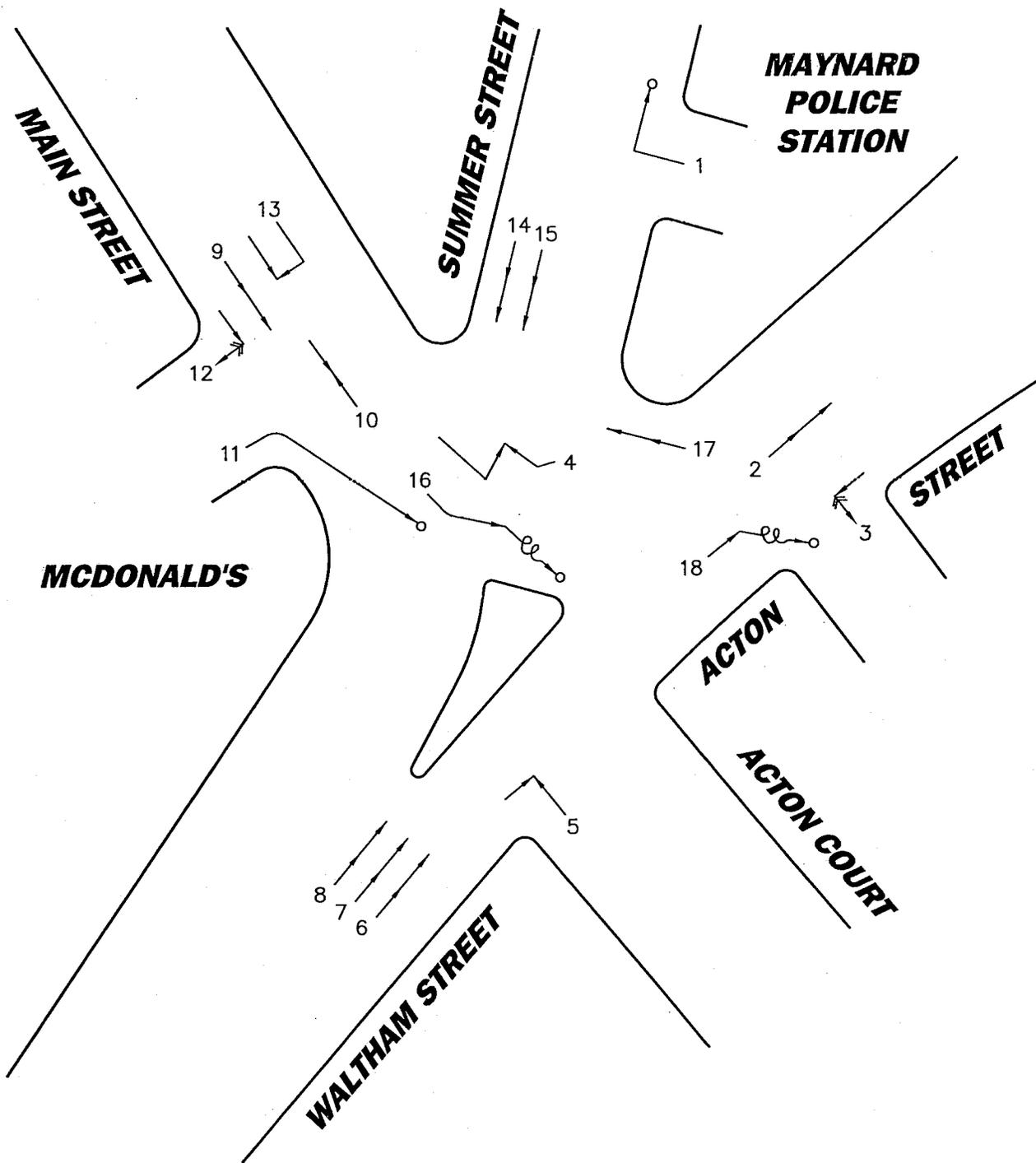


Figure 1a

Collision Diagram
 Route 117 at Powder Mill Road
 and Mossman Road
 January 2005 Through
 December 2007

Summer Street and Waltham Street at Route 27 and Route 62



Not To Scale

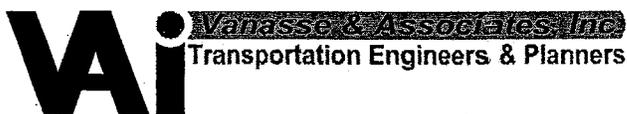
Wai Vanasse & Associates, Inc.
Transportation Engineers & Planners

Figure 2a

Collision Diagram
Summer Street and Waltham Street
at Acton Street and Main Street
January 2005 Through
December 2007

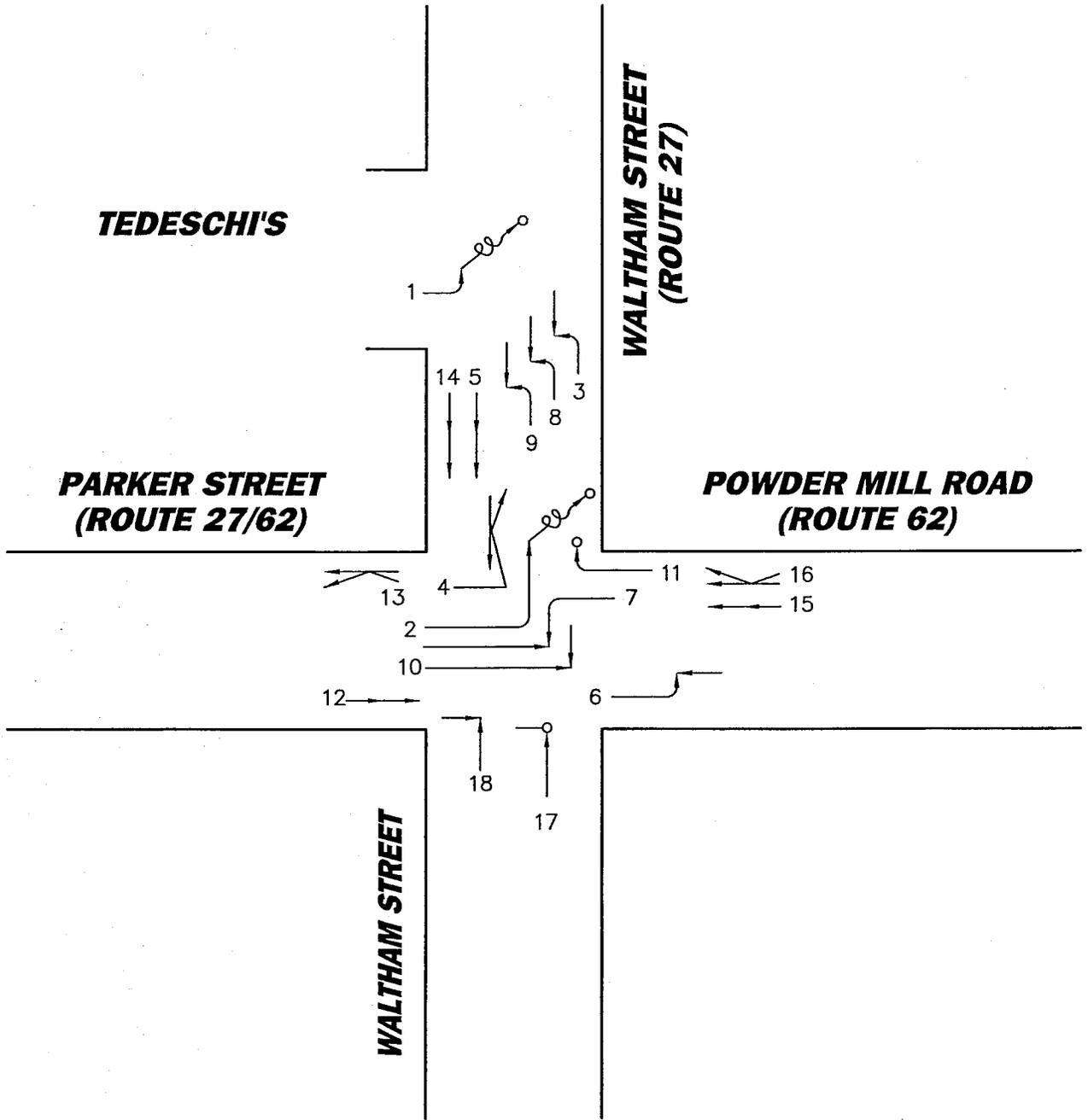
CRASH TYPE						Severity	
Angle (A)		Turning Movement (TM)		Severity PD = Property Damage Only PI = Personal Injury			
Rear End (RE)		Backing Up (BU)					
Head On (HO)		Lane Change (LC)					
Fixed Object (FO)		Out of Control (OC)					
Side Swipe (SS)		Pedest./Bicycle (P/B)					
CRASH #	DATE	DAY	TIME	SEV.	CRASH TYPE	No. OF VEHICLES	CAUSE
1	7/25/05	Mon.	8:22	PD	FO	1	Driver misjudged turning maneuver.
2	10/22/05	Sat.	17:05	PD	RE	2	Inattentive driver.
3	10/31/05	Mon.	14:30	PD	BU	2	Inattentive driver.
4	11/22/05	Tue.	16:32	PD	TM	2	Failure to grant right of way.
5	12/08/05	Thur.	8:19	PD	A	2	Failure to grant right of way.
6	12/12/05	Mon.	17:00	PD	RE	2	Failure to use care/caution.
7	2/22/06	Wed.	18:15	PD	RE	2	Failure to stop.
8	9/20/06	Wed.	8:24	PD	RE	2	Failure to stop.
9	10/01/06	Sun.	14:55	PD	RE	2	Failure to stop.
10	10/14/06	Sat.	23:04	PD	HO	2	Driver proceeded wrong way on one-way street.
11	12/29/06	Fri.	15:50	PD	FO	1	Distracted driver.
12	1/10/07	Wed.	8:30	PD	BU	2	Failure to grant right of way.
13	3/02/07	Fri.	15:44	PD	TM	2	Failure to grant right of way.
14	3/06/07	Tue.	15:43	PD	RE	2	Failure to stop.
15	3/09/07	Fri.	15:28	PI	RE	2	Failure to stop.
16	3/16/07	Fri.	15:20	PD	FO	1	Icy roadway conditions.
17	12/13/07	Thur.	13:23	PD	RE	2	Icy roadway conditions.
18	12/13/07	Thur.	23:45	PD	FO	1	Icy roadway conditions.

Figure 2b



Collision Diagram
Summer Street and Waltham Street
at Acton Street and Main Street
January 2005 Through
December 2007

Route 27 and Route 62 at Waltham Street



 Not To Scale

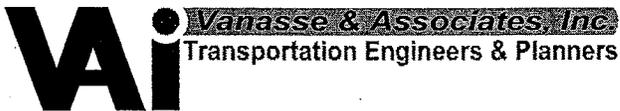
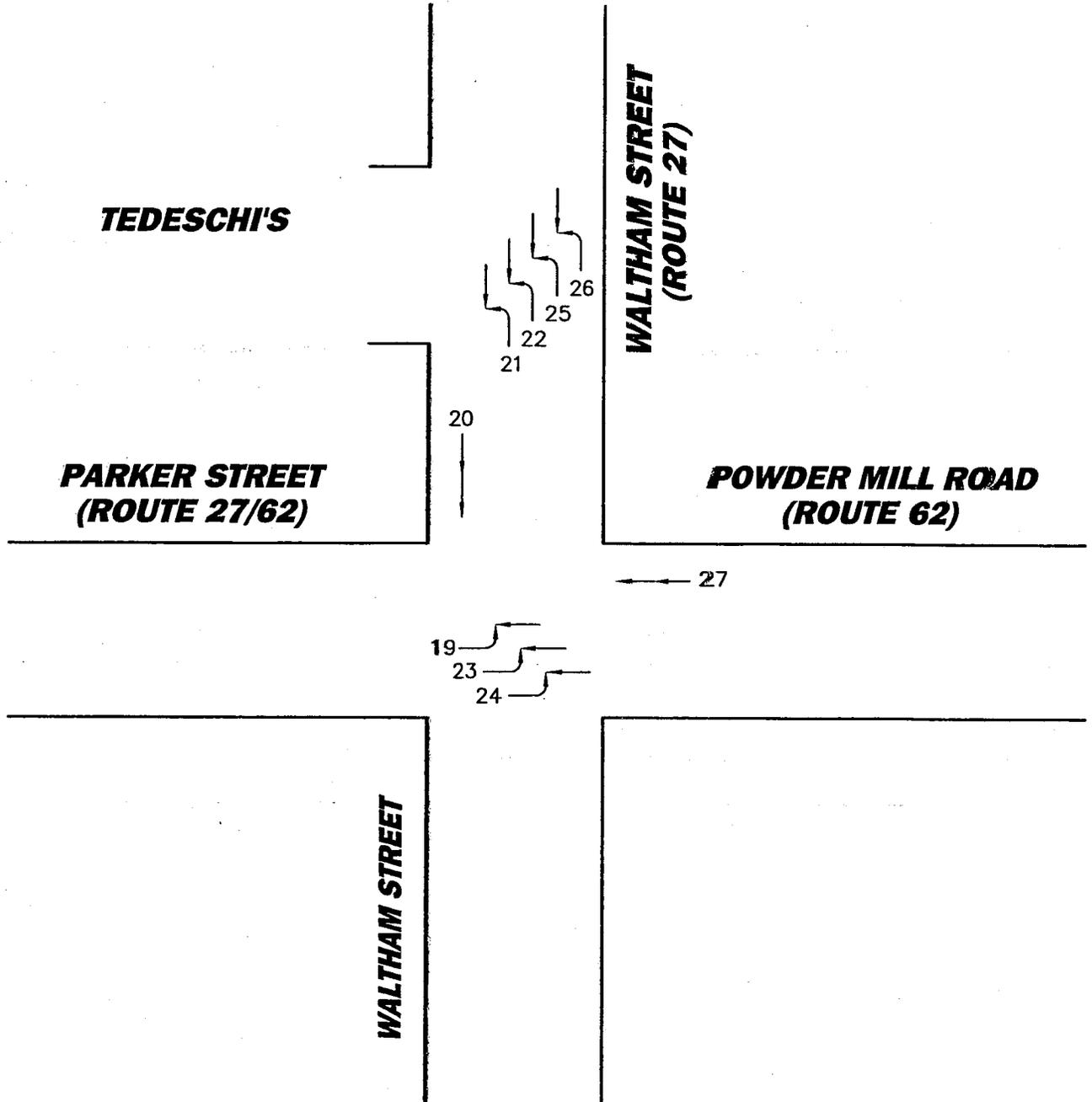


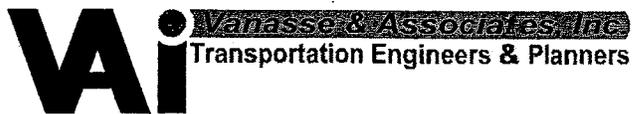
Figure 3a

**Collision Diagram
Waltham Street at Powder Mill Road
and Parker Street
January 2005 Through
December 2005**

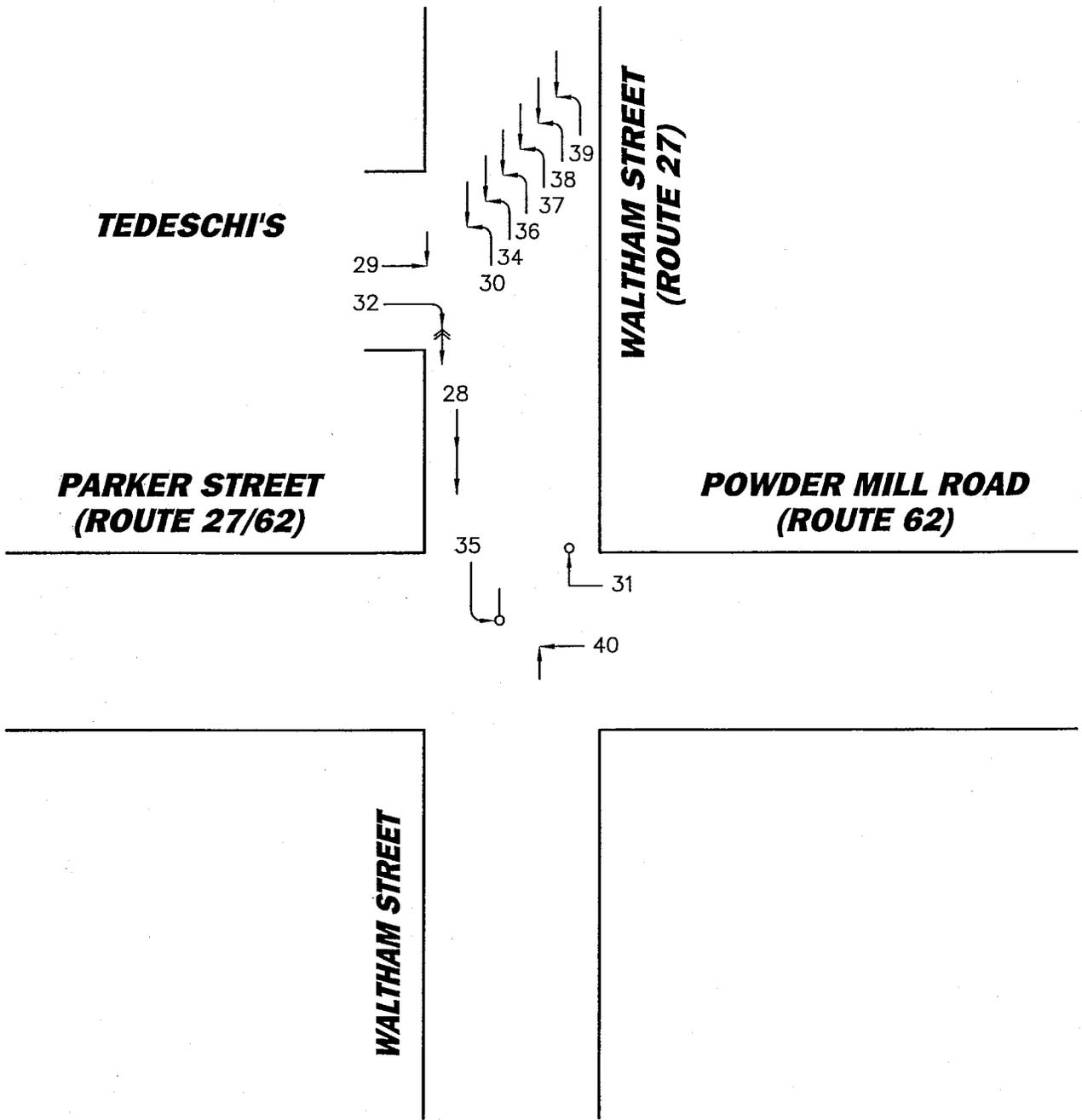


 Not To Scale

Figure 3b



**Collision Diagram
Waltham Street at Powder Mill Road
and Parker Street
January 2006 Through
December 2006**



 Not To Scale

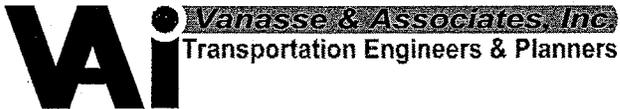
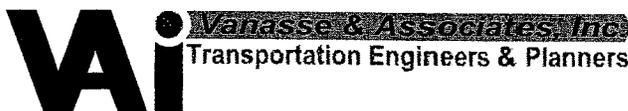


Figure 3c

**Collision Diagram
Waltham Street at Powder Mill Road
and Parker Street
January 2007 Through
December 2007**

CRASH TYPE							
Angle (A)		Turning Movement (TM)		Severity PD = Property Damage Only PI = Personal Injury			
Rear End (RE)		Backing Up (BU)					
Head On (HO)		Lane Change (LC)					
Fixed Object (FO)		Out of Control (OC)					
Side Swipe (SS)		Pedest./Bicycle (P/B)					
CRASH #	DATE	DAY	TIME	SEV.	CRASH TYPE	No. OF VEHICLES	CAUSE
1	1/12/05	Wed.	00:29	PD	FO	1	Snow on roadway.
2	2/21/05	Mon.	08:28	PD	FO	1	Snow on roadway.
3	4/04/05	Mon.	15:21	PD	TM	2	Failure to grant right of way.
4	5/02/05	Mon.	23:17	PD	TM	2	Failure to keep right when turning.
5	5/16/05	Mon.	8:17	PD	RE	2	Distracted driver.
6	5/20/05	Fri.	16:13	PD	TM	2	Failure to grant right of way.
7	6/07/05	Tue.	6:55	PD	TM	2	Failure to grant right of way.
8	8/02/05	Tue.	8:05	PD	TM	2	Failure to grant right of way.
9	9/14/05	Wed.	11:20	PD	TM	2	Failure to grant right of way.
10	10/16/05	Sun.	10:50	PI	A	2	Red light violation.
11	10/18/05	Tue.	13:05	PD	FO	1	Driver misjudged turning maneuver.
12	10/19/05	Wed.	17:35	PD	RE	2	Driver lost consciousness.
13	11/01/05	Tue.	13:43	PD	SS	2	Failure to grant right of way.
14	11/14/05	Mon.	7:53	PD	RE	2	Failure to stop.
15	11/14/05	Mon.	17:00	PD	RE	2	Distracted driver.
16	11/22/05	Tue.	19:25	PD	SS	2	Failure to grant right of way.
17	11/26/05	Sat.	18:35	PD	B	1	Inattentive bicyclist.
18	12/4/05	Sun.	19:54	PD	A	2	Failure to use care in stopping.
19	1/13/06	Fri.	22:22	PD	TM	2	Failure to grant right of way.
20	1/13/06	Fri.	7:53	PD	RE	3	Failure to stop.
21	1/16/06	Mon.	8:04	PD	TM	2	Failure to grant right of way.
22	2/21/06	Tue.	8:41	PD	TM	2	Failure to grant right of way.
23	7/03/06	Mon.	13:09	PI	TM	2	Failure to grant right of way.
24	7/12/06	Wed.	21:32	PD	TM	2	Failure to grant right of way.
25	8/10/06	Thur.	8:39	PD	TM	2	Failure to grant right of way.
26	8/30/06	Wed.	17:05	PD	TM	2	Failure to grant right of way.
27	11/12/06	Sun.	16:30	PD	RE	2	Failure to stop.
28	1/08/07	Mon.	10:55	PD	RE	2	Failure to stop.
29	1/26/07	Fri.	9:56	PD	A	2	Failure to grant right of way.
30	1/31/07	Wed.	7:51	PI	TM	2	Failure to grant right of way.

Figure 3d

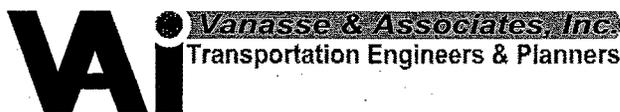


Collision Diagram
Waltham Street at Powder Mill Road
and Parker Street
January 2005 Through
December 2007

CRASH TYPE						Severity	
Angle (A)		Turning Movement (TM)				PD = Property Damage Only PI = Personal Injury	
Rear End (RE)		Backing Up (BU)					
Head On (HO)		Lane Change (LC)					
Fixed Object (FO)		Out of Control (OC)					
Side Swipe (SS)		Pedest./Bicycle (P/B)					

CRASH #	DATE	DAY	TIME	SEV.	CRASH TYPE	No. OF VEHICLES	CAUSE
31	4/02/07	Mon.	17:55	PD	FO	1	Truck driver misjudged turning maneuver.
32	8/22/07	Wed.	9:46	PD	BU	2	Inattentive driver.
33	9/14/07	Fri.	12:25	PD	TM	2	Failure to grant right of way.
34	9/18/07	Tue.	8:55	PD	TM	2	Failure to grant right of way.
35	9/21/07	Fri.	13:38	PD	B	2	Failure to use care turning left.
36	9/27/07	Thur.	14:51	PI	TM	2	Failure to use care turning left.
37	10/13/07	Sat.	10:12	PI	TM	2	Failure to grant right of way.
38	10/15/07	Mon.	12:00	PD	TM	2	Failure to grant right of way.
39	11/03/07	Sat.	10:37	PD	TM	2	Failure to grant right of way.
40	11/09/07	Fri.	16:50	PD	A	2	Failure to grant right of way.

Figure 3e



Collision Diagram
 Waltham Street at Powder Mill Road
 and Parker Street
 January 2005 Through
 December 2007

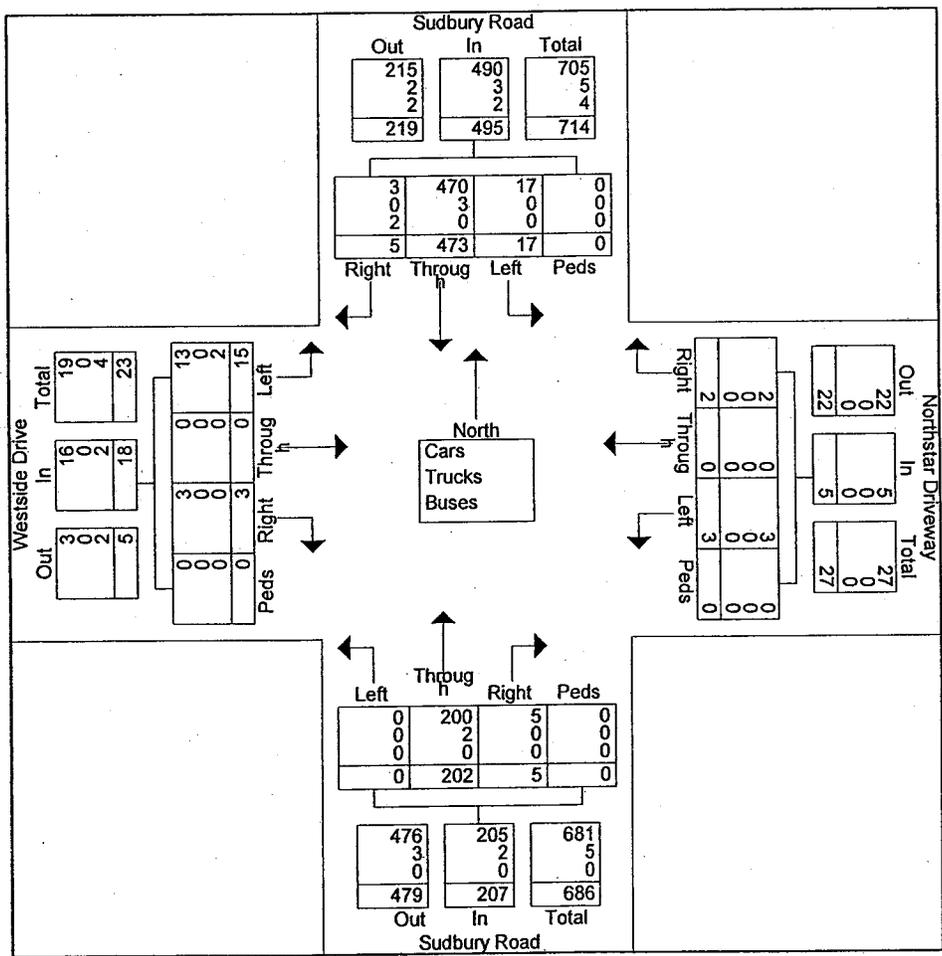
MANUAL TURNING MOVEMENT COUNTS

Vanasse & Associates
 Sudbury Road at Westside Drive
 Acton, MA
 Weather: Clear

File Name : 489401am
 Site Code : 00489401
 Start Date : 03/18/2008
 Page : 1

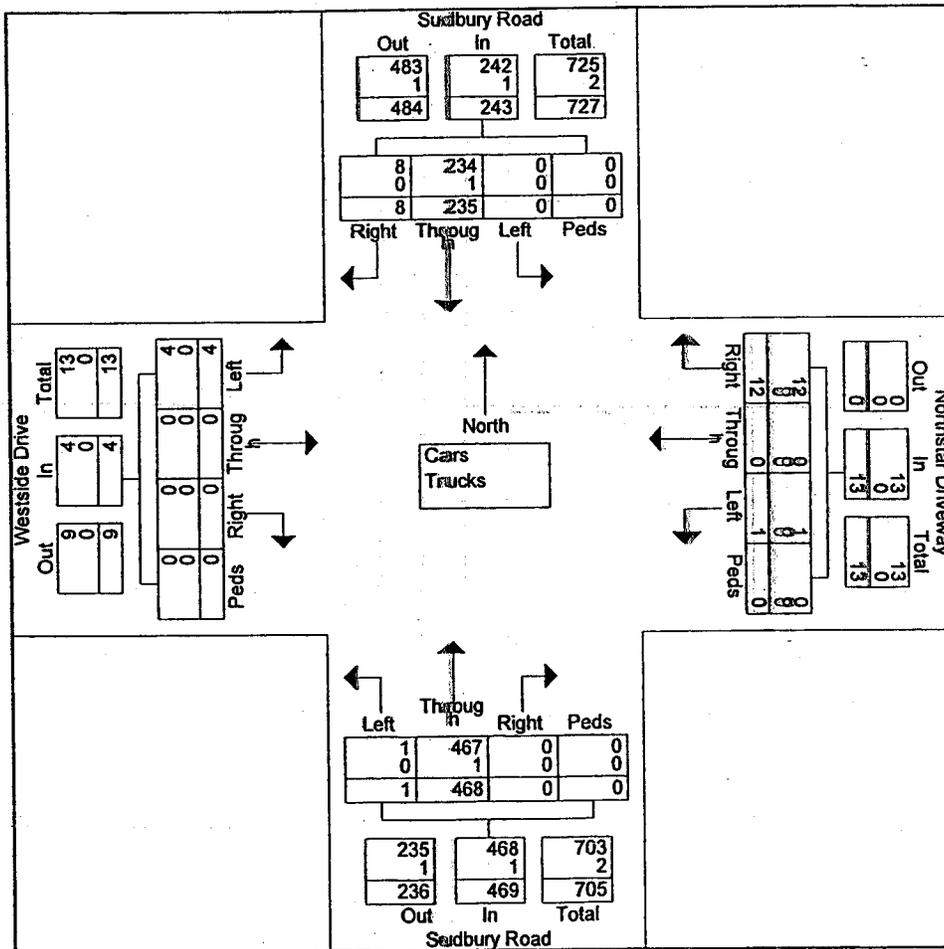
Groups Printed: Cars - Trucks - Buses

End Time	Sudbury Road From North				Northstar Driveway From East				Sudbury Road From South				Westside Drive From West				Int. Total
	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:15	0	62	1	0	0	0	0	0	0	19	0	0	0	0	2	0	84
07:30	0	72	3	0	0	0	0	0	0	24	0	0	1	0	0	0	100
07:45	0	66	1	0	0	0	0	0	0	16	0	0	0	0	1	0	84
08:00	4	66	2	0	0	0	0	0	0	20	0	0	0	0	3	0	95
Total	4	266	7	0	0	0	0	0	0	79	0	0	1	0	6	0	363
08:15	0	62	1	0	1	0	0	0	1	25	0	0	0	0	3	0	93
08:30	0	53	4	0	0	0	0	0	2	20	0	0	0	0	1	0	80
08:45	1	47	3	0	0	0	1	0	1	39	0	0	2	0	5	0	99
09:00	0	45	2	0	1	0	2	0	1	39	0	0	0	0	0	0	90
Total	1	207	10	0	2	0	3	0	5	123	0	0	2	0	9	0	362
Grand Total	5	473	17	0	2	0	3	0	5	202	0	0	3	0	15	0	725
Apprch %	1.0	95.6	3.4	0.0	40.0	0.0	60.0	0.0	2.4	97.6	0.0	0.0	16.7	0.0	83.3	0.0	
Total %	0.7	65.2	2.3	0.0	0.3	0.0	0.4	0.0	0.7	27.9	0.0	0.0	0.4	0.0	2.1	0.0	



Groups Printed: Cars - Trucks

End Time	Sudbury Road From North				Northstar Driveway From East				Sudbury Road From South				Westside Drive From West				Int. Total
	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
16:15	0	24	0	0	1	0	0	0	0	41	0	0	0	0	0	0	
16:30	2	30	0	0	1	0	0	0	0	45	0	0	0	0	0	0	
16:45	0	37	0	0	2	0	1	0	0	52	0	0	0	0	1	0	
17:00	2	19	0	0	1	0	0	0	0	59	0	0	0	0	2	0	
Total	4	110	0	0	5	0	1	0	0	197	0	0	0	0	3	0	
17:15	0	35	0	0	0	0	0	0	0	62	0	0	0	0	0	0	
17:30	1	25	0	0	5	0	0	0	0	65	1	0	0	0	0	0	
17:45	2	27	0	0	0	0	0	0	0	77	0	0	0	0	1	0	
18:00	1	38	0	0	2	0	0	0	0	67	0	0	0	0	0	0	
Total	4	125	0	0	7	0	0	0	0	271	1	0	0	0	1	0	
Grand Total	8	235	0	0	12	0	1	0	0	468	1	0	0	0	4	0	
Apprch %	3.3	96.7	0.0	0.0	92.3	0.0	7.7	0.0	0.0	99.8	0.2	0.0	0.0	0.0	100.0	0.0	
Total %	1.1	32.2	0.0	0.0	1.6	0.0	0.1	0.0	0.0	64.2	0.1	0.0	0.0	0.0	0.5	0.0	

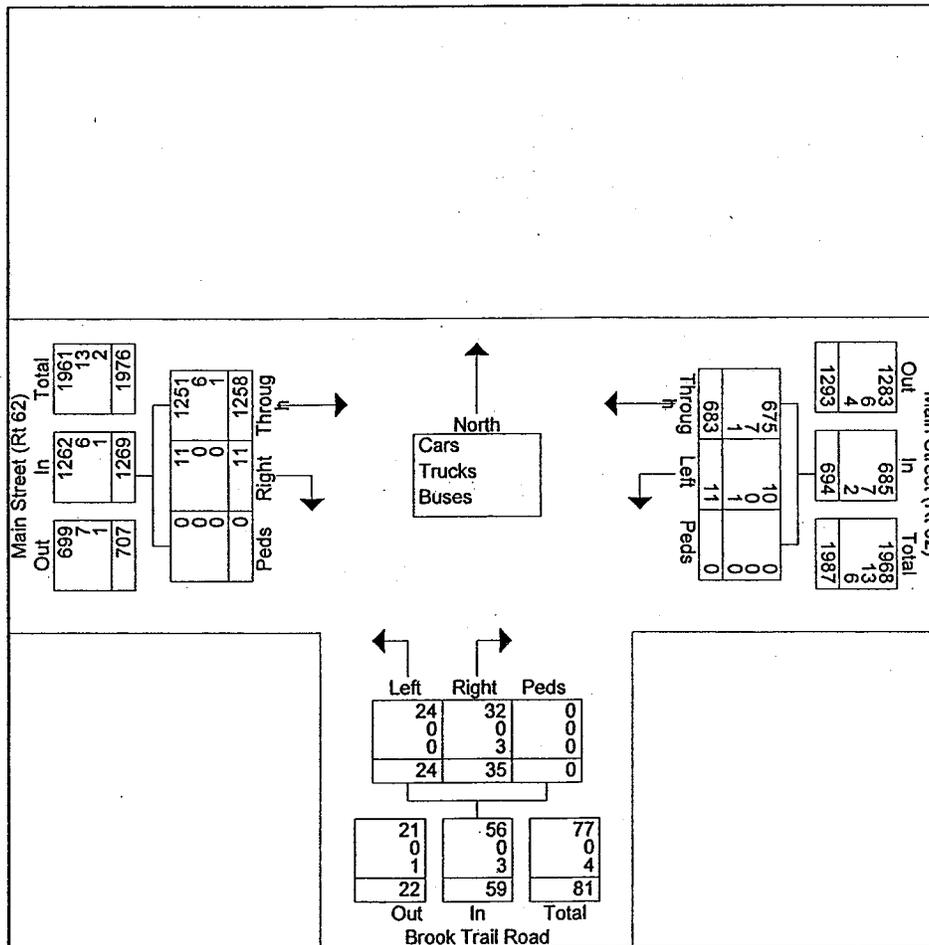


Vanasse & Associates
 Main Street (Rt 62) at Brook Trail Road
 Concord, MA
 Weather: Clear

File Name : 498402am
 Site Code : 00498402
 Start Date : 03/25/2008
 Page : 1

Groups Printed: Cars - Trucks - Buses

End Time	Main Street (Rt 62) From East				Brook Trail Road From South				Main Street (Rt 62) From West				Int. Total
	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:15	0	50	0	0	5	0	5	0	0	126	0	0	186
07:30	0	54	2	0	3	0	3	0	0	173	0	0	235
07:45	0	75	3	0	7	0	2	0	2	158	0	0	247
08:00	0	86	1	0	5	0	4	0	2	202	0	0	300
Total	0	265	6	0	20	0	14	0	4	659	0	0	968
08:15	0	99	1	0	7	0	1	0	4	153	0	0	265
08:30	0	107	1	0	4	0	1	0	1	164	0	0	278
08:45	0	102	0	0	1	0	2	0	2	132	0	0	239
09:00	0	110	3	0	3	0	6	0	0	150	0	0	272
Total	0	418	5	0	15	0	10	0	7	599	0	0	1054
Grand Total	0	683	11	0	35	0	24	0	11	1258	0	0	2022
Apprch %	0.0	98.4	1.6	0.0	59.3	0.0	40.7	0.0	0.9	99.1	0.0	0.0	
Total %	0.0	33.8	0.5	0.0	1.7	0.0	1.2	0.0	0.5	62.2	0.0	0.0	

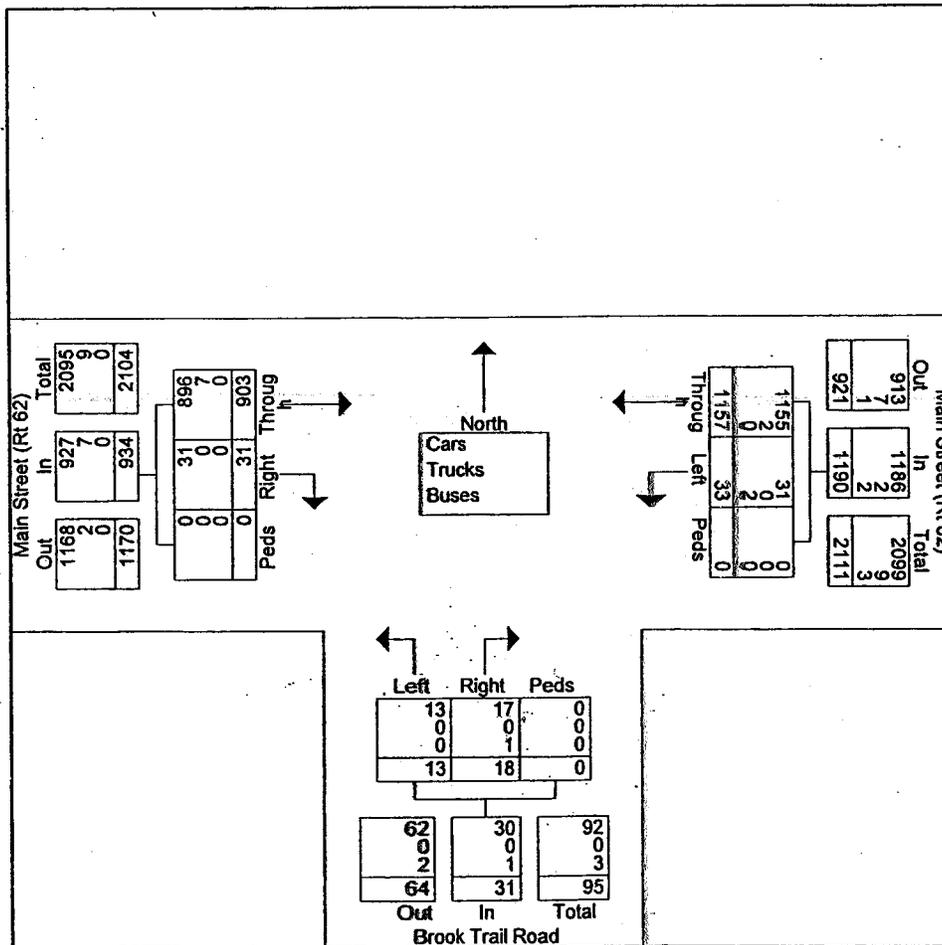


Vanasse & Associates
 Main Street (Rt 62) at Brook Trail Road
 Concord, MA
 Weather: Clear

File Name : 498402pm
 Site Code : 00498402
 Start Date : 03/26/2008
 Page : 1

Groups Printed: Cars - Trucks - Buses

End Time	Main Street (Rt 62) From East				Brook Trail Road From South				Main Street (Rt 62) From West				Int. Total
	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
16:15	0	124	1	0	1	0	3	0	4	98	0	0	231
16:30	0	144	3	0	3	0	4	0	6	96	0	0	256
16:45	0	140	5	0	4	0	0	0	3	83	0	0	235
17:00	0	149	2	0	1	0	1	0	5	102	0	0	260
Total	0	557	11	0	9	0	8	0	18	379	0	0	982
17:15	0	148	3	0	1	0	0	0	5	133	0	0	290
17:30	0	154	8	0	1	0	1	0	2	126	0	0	292
17:45	0	136	3	0	4	0	2	0	3	128	0	0	276
18:00	0	162	8	0	3	0	2	0	3	137	0	0	315
Total	0	600	22	0	9	0	5	0	13	524	0	0	1173
Grand Total	0	1157	33	0	18	0	13	0	31	903	0	0	2155
Apprch %	0.0	97.2	2.8	0.0	58.1	0.0	41.9	0.0	3.3	96.7	0.0	0.0	
Total %	0.0	53.7	1.5	0.0	0.8	0.0	0.6	0.0	1.4	41.9	0.0	0.0	

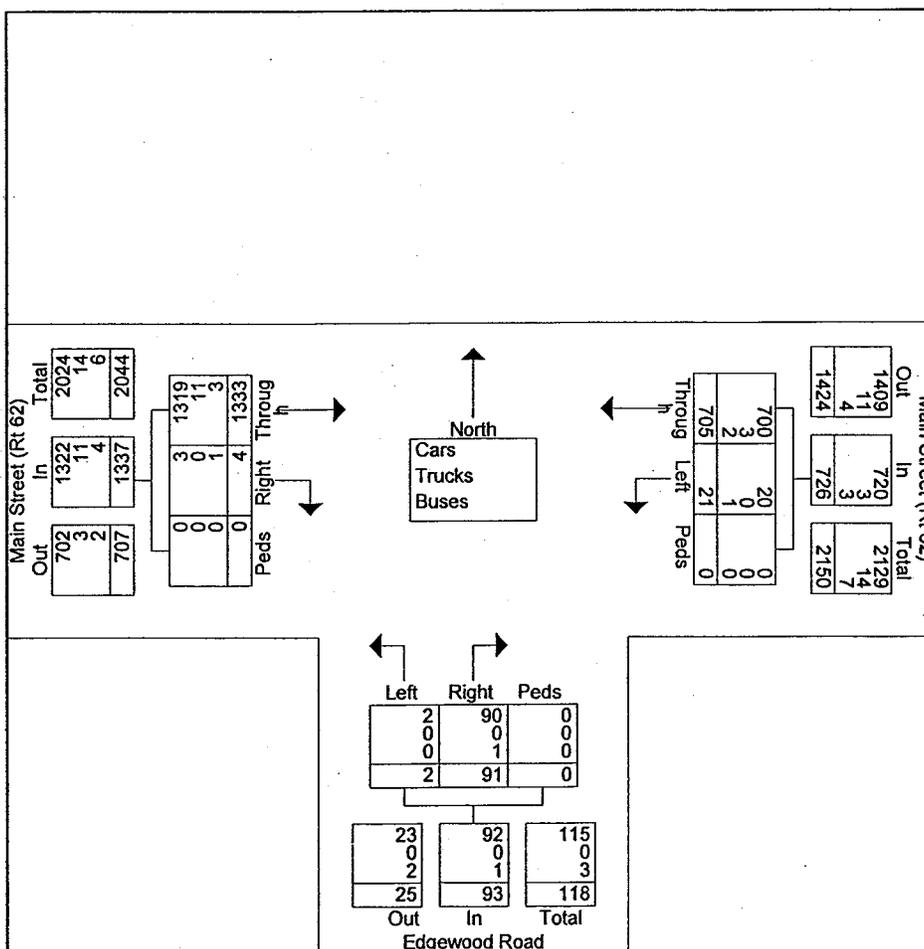


Vanasse & Associates
 Main Street (Rt 62) at Edgewood Road
 Concord, MA
 Weather: Clear

File Name : 498403am
 Site Code : 00498403
 Start Date : 03/27/2008
 Page : 1

Groups Printed: Cars - Trucks - Buses

End Time	Main Street (Rt 62) From East				Edgewood Road From South				Main Street (Rt 62) From West				Int. Total
	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
07:15	0	49	3	0	12	0	0	0	1	146	0	0	211
07:30	0	69	1	0	16	0	1	0	0	158	0	0	245
07:45	0	86	4	0	13	0	0	0	0	189	0	0	292
08:00	0	78	3	0	11	0	0	0	0	204	0	0	296
Total	0	282	11	0	52	0	1	0	1	697	0	0	1044
08:15	0	102	4	0	9	0	0	0	1	175	0	0	291
08:30	0	112	1	0	13	0	1	0	1	157	0	0	285
08:45	0	84	0	0	10	0	0	0	0	154	0	0	248
09:00	0	125	5	0	7	0	0	0	1	150	0	0	288
Total	0	423	10	0	39	0	1	0	3	636	0	0	1112
Grand Total	0	705	21	0	91	0	2	0	4	1333	0	0	2156
Apprch %	0.0	97.1	2.9	0.0	97.8	0.0	2.2	0.0	0.3	99.7	0.0	0.0	
Total %	0.0	32.7	1.0	0.0	4.2	0.0	0.1	0.0	0.2	61.8	0.0	0.0	



Vanasse & Associates
 Main Street (Rt 62) at Edgewood Road
 Concord, MA
 Weather: Clear

File Name : 498403pm
 Site Code : 00498403
 Start Date : 03/26/2008
 Page : 1

Groups Printed: Cars - Trucks - Buses

End Time	Main Street (Rt 62) From East				Edgewood Road From South				Main Street (Rt 62) From West				Int. Total
	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	Right	Throug h	Left	Peds	
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
16:15	0	135	9	0	3	0	0	0	0	96	0	0	243
16:30	0	133	2	0	1	0	0	0	0	90	0	0	227
16:45	0	150	7	0	4	0	0	0	1	93	0	0	256
17:00	0	154	9	0	4	0	0	0	0	101	0	0	269
Total	0	572	27	0	12	0	0	0	1	380	0	0	995
17:15	0	152	8	0	4	0	0	0	2	142	0	0	308
17:30	0	173	9	0	5	0	0	0	0	127	0	0	316
17:45	0	154	13	0	4	0	0	0	1	136	0	0	309
18:00	0	174	11	0	3	0	0	0	2	138	0	0	328
Total	0	653	41	0	16	0	0	0	5	543	0	0	1261
Grand Total	0	1225	68	0	28	0	0	0	6	923	0	0	2256
Apprch %	0.0	94.7	5.3	0.0	82.4	0.0	17.6	0.0	0.6	99.4	0.0	0.0	
Total %	0.0	54.3	3.0	0.0	1.2	0.0	0.3	0.0	0.3	40.9	0.0	0.0	

