

Ref: 9633

April 19, 2024

Mr. Richard S. Novak, Chair
Sherborn Zoning Board of Appeals
Town Hall
19 Washington Street
Sherborn, MA 01770

Re: Response to Engineering Peer Review - Traffic
Washington Street Sherborn Homes Residential Development – 121-129 Washington Street
Sherborn, Massachusetts

Dear Chair Novak and Member of the Zoning Board of Appeals:

Vanasse & Associates, Inc. (VAI) is providing responses to the comments that were raised in the April 4, 2024 *Engineering Peer Review – Traffic* letter prepared by Tetra Tech (TT) concerning their review of the September 5, 2023 *Transportation Impact Assessment* (the “September 2023 TIA”) that was prepared by VAI in support of the proposed multifamily residential development to be located at 121-129 Washington Street (Route 16) in Sherborn, Massachusetts (hereafter referred to as the “Project”). Listed below are the comments that were identified by TT in the subject letter followed by our response on behalf of the Project proponent.

Project Study Area Intersection

Comment 1: *The TIA evaluated three intersections along Washington Street (Route 16): Greenwood Street, Woodland Street and the proposed site driveway. Tetra Tech recommends that the Applicant provide an evaluation of the Washington Street/Old Orchard Road intersection given its proximity to the site (approximately 125 feet east of the proposed site driveway).*

Response: As requested, the study area that was evaluated in the September 2023 TIA has been expanded to include the intersection of Washington Street at Old Orchard Road. Turning movement counts were conducted at the intersection on Thursday, April 11, 2024, from 7:00 to 9:00 AM and from 4:00 to 6:00 PM. Based on a review of MassDOT seasonal adjustment factors for Urban Groups 3 roadways (other principal arterials, the functional classifications of Route 16), traffic volumes during the month of April are approximately 6.4 percent above average-month conditions and, as such, a seasonal adjustment was not required. Based on updated guidance from MassDOT,¹ further adjustment of the traffic count data to account for the impact on traffic volumes and trip patterns resulting from the COVID-19 pandemic was not required.

¹*Traffic and Safety Engineering 25% Design Submission Guidelines*; MassDOT; Revised March 31, 2022.

For the purpose of this evaluation and to be consistent with the traffic volume networks and analyses that are presented in the September 2023 TIA, the April 2024 peak-hour traffic volumes for the Washington Street/Old Orchard Road intersection were incorporated on to the 2023 Existing traffic volume networks and are shown on Figure 3R, with the corresponding 2029 No-Build and 2029 Build condition traffic volumes shown on Figures 4R and 7R, respectively. A detailed discussion of the methodology used to develop the 2030 No-Build and 2030 Build condition traffic volumes is presented in the September 2023 TIA. The traffic operations analysis for the Washington Street/Old Orchard Road intersection is shown in Table 6A. As shown therein, no change in level of service was shown to occur for any movement at the intersection over No-Build conditions as a result of the addition of Project-related traffic, with all movements from Old Orchard Road shown to continue to operate at level-of-service (LOS) C during both peak hours and Project-related impacts defined as an increase in average motorist delay of less than 1.0 seconds that was not shown to result in an increase in vehicle queuing.

Study Time Periods

Comment 2:

The study includes an impact analysis of the weekday morning (7am-9am) and weekday evening (4pm-6pm) peak periods when the combination of site-generated traffic and volumes on the adjacent roadways is expected to be greatest. The time periods chosen for detailed analysis are generally appropriate for the residential uses proposed.

Response:

No response required.

Traffic Volumes

Comment 3:

Automated traffic recorder counts (ATRs), including speed data, were conducted on Tuesday, February 14, 2024 and Wednesday, February 15, 2024 on Washington Street in the vicinity of the site. Turning movement count (TMC) data was also collected at the study area intersections on Tuesday, February 14, 2024 when schools were in session. The TIA states that a 3 percent adjustment (increase) was applied to the observed traffic volumes to account for seasonal fluctuations based on data published by the Massachusetts Department of Transportation (MassDOT). Tetra Tech generally concurs with this methodology.

Response:

No response required.

Public Transportation

Comment 4:

The TIA states that regularly scheduled public transportation service is not provided within the Town of Sherborn. The TIA states that the Sherborn Council of Aging provides discounted taxi rides through an agreement with JFK Transportation. The trip generation estimates presented in the TIA do not take a credit (reduction) for transit use. Tetra Tech generally concurs with this methodology.

Response: No response required.

Crash Analysis

Comment 5: *The TIA includes a crash analysis for the existing study intersections between 2016 and 2020 based on MassDOT crash data. The current MassDOT crash database includes data through 2022 (years 2021 and 2022 are still open and subject to change pending MassDOT's completion of processing all crash reports for these two years). Tetra Tech recommends that the Applicant review the two additional years of data to confirm the findings are consistent with the 2016 through 2020 data. The backup crash data and crash rate worksheets should be provided in the appendix for the Town's review.*

Response: The MassDOT motor vehicle crash analysis has been updated to: i) include crash data through 2022; ii) include collisions with wildlife or fixed objects that occurred in the vicinity of the study intersections but are not necessarily associated with a specific roadway or intersection defect (these crashes were not included in Table 4 of the September 2023 TIA); and iii) incorporate crash data for the Washington Street/Old Orchard Road intersection. The expanded motor vehicle crash data is presented in Table 4R, with the back-up crash data and supporting Crash Rate Worksheets attached. The expanded crash analysis continues to indicate a low incidence of motor vehicle crashes at the study area intersections, with the calculated motor vehicle crash rates at all of the study intersections found to be below the MassDOT statewide and District average crash rates for similar intersections for the MassDOT Highway Division District in which the intersections are located (District 3).

Study Time Horizon

Comment 6: *The TIA utilized a seven-year planning horizon (2030 Future Year condition) which is consistent with MassDOT traffic study guidelines.*

Response: No response required.

Future No-Build Traffic Volumes

Comment 7: *A one-and-a-half percent per year growth rate was applied to the 2023 Existing Conditions peak hour traffic volumes (for the 7-year forecast period from 2023 to 2030) to estimate peak hour traffic volumes in the planning year 2030 based on MassDOT count data. Tetra Tech generally agrees with this methodology.*

Response: No response required.

Comment 8: *The TIA indicated that the Applicant consulted with Town of Sherborn Planning staff to identify specific background development Projects for consideration in the development of future traffic volumes. The TIA determined that the traffic associated with the background projects identified could be generally accounted for in the background growth rate. The background projects listed in the TIA are generally located more than 1 mile from the 121-129 Washington Street project's*



TIA study area with multiple travel routes between the site and these area background developments. Therefore, Tetra Tech generally concurs with the use of a general traffic growth rate to account for traffic increases associated with these area background development projects in the development of future year traffic volumes.

Response: No response required

Trip Generation

Comment 9: Vehicle trip generation estimates for the proposed Project were based on trip generation rates presented in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th Edition for Land Use Code (LUC) 220 (Multifamily Housing – Low-Rise) applied to on 40 units. Tetra Tech generally agrees with this methodology.

Response: No response required.

Trip Distribution/Assignment

Comment 10: The trip distribution patterns presented in the TIA were based on existing travel patterns and US Census Journey to Work data which is generally consistent with standard industry practice for the proposed residential land uses. Tetra Tech generally concurs with this methodology.

Response: No response required.

Intersection Operational Analysis

Comment 11: The TIA states that it utilized the capacity analysis methodologies from the Highway Capacity Manual (HCM) 6th Editions using Synchro software. Tetra Tech generally concurs with this methodology.

Response: No response required.

Sight Distance

Comment 12: The TIA states that it conducted a sight distance analysis at the proposed site driveway on Washington Street based on AASHTO's A Policy on Geometric Design of Highways and Streets, 7th Edition (2018). It is recommended that the supporting sight distance calculations be provided to the Town for review.

Response: The sight distance calculations are attached.

Comment 13: Tetra Tech recommends that the sight distance plans and profiles for the site driveway be added to the site plans to confirm that adequate sight distance will be provided at this location. Any existing vegetation or guardrail required to be removed to provide adequate sight lines should be identified for the Town's review. Additionally, the Applicant should ensure that all proposed landscaping

and signage internal to the site (where vehicle conflicts may occur) will not impede sight lines.

Response: A sight triangle plan is attached that depicts the sight lines at the Project site driveway intersection with Washington Street in plan view (topographic information within the sight triangle area was not included as a part of the ground survey) and includes: i) photographs of the features that are located within the sight triangles; and ii) a note stating the following:

“Signs, landscaping and other features located within sight triangle areas shall be designed, installed, and maintained so as not to exceed 2.5-feet in height. Snow accumulation (windrows) located within sight triangle areas that exceed 3.5-feet in height or that would otherwise inhibit sight lines shall be promptly removed.”

As recommended in the September 2023 TIA, trees and vegetation location within the sight triangle areas should be selectively trimmed or removed and maintained. As shown on the sight triangle plan, the subject vegetation is located within the public right-of-way along Washington Street.

Comment 14: *The TIA recommends that any snow windrows at the proposed site driveway be promptly removed to sufficiently ensure adequate sight distance. Tetra Tech generally concurs with this recommendation.*

Response: No response required.

Site and Emergency Vehicle Access/Circulation

Comment 15: *The project site plan included in the TIA attachments is inconsistent with the January 23, 2024 (revised February 9, 2024) site plan. Tetra Tech recommends that the Applicant confirm the latest site layout plan proposed for the project and confirm that no updates to the traffic assessment are warranted as a result of the change in site layout.*

Response: The latest Site Plan for the Project is attached and includes a 22-foot wide driveway as requested by the Fire Chief. There are no other changes to the Site Plan that would impact the analysis or findings that are presented in the September 2023 TIA.

Comment 16: *The Applicant included a turning analysis of a fire ladder truck. The analysis indicates that a ladder truck may need to use the majority of the site driveway width when entering/exiting the site. Additionally, the proposed grade of the site driveway is stated to be approximately 8 percent. Tetra Tech recommends that the Applicant review the site access and circulation with the Fire Department to confirm that the Town’s largest emergency apparatus can adequately access the site.*

Response: The Applicant has been and will continue to consult with the Fire Department as the Project advances through the approval process.



Comment 17: *The site plan indicates that the site driveway will be 22 feet wide between the parking field and Route 16. Tetra Tech recommends that on-street parking be prohibited along this portion of the site driveway to ensure that site access and circulation is not impeded.*

Response: On-street parking will be prohibited along the Project site driveway between the parking field and Route 16. “No Parking” signs will be installed along both sides of the driveway to indicate this restriction.

Comment 18 *Tetra Tech recommends that the Applicant describe anticipated trash removal and delivery vehicle operations. Tetra Tech recommends that the Applicant conduct a truck turning analysis of trash removal vehicles and the largest delivery vehicle anticipated at the site to ensure that they can be adequately accommodated on-site without impeding site access and circulation particularly in areas where the site driveway would potentially require a truck to navigate the site in reverse.*

Response: Trash/recycling will be deposited by residents in containers that will be stored in the enclosed dumpster area located to the east of the proposed building. The contracted waste collection company will collect trash/recycling in this area. Delivery vehicles will be accommodated in the pull-out area that is located parallel to the entrance plaza. Vehicle turning analyses are attached for a single-unit truck (SU-30) that demonstrate that the subject design vehicle is able to access the Project site and maneuver to serve the delivery vehicle area and the dumpster enclosure in an unimpeded manner.

Comment 19: *Tetra Tech recommends that the site driveway be signed and marked with Stop sign control consistent with the Manual on Uniform Traffic Control Devices (MUTCD).*

Response: A STOP-sign and marked STOP-line will be added to the Site Plans.

Comment 20(1): *Tetra Tech recommends that the Applicant label the snow storage areas and ensure that adequate snow storage will be available on-site without impeding parking, site access, sight distance and circulation.*

Response: A snow storage plan is attached.

Comment 20(2): *The TIA recommends a sidewalk be constructed along one side of the driveway that should connect the proposed building to Route 16, where a widened sidewalk area should be provided to serve as a school bus waiting area. Tetra Tech agrees with this suggestion and recommends that the Applicant discuss the potential bus stop location(s) with the Dover-Sherborn School Department staff.*

Response: The Applicant will discuss the location of the school bus stop for the Project with the Dover-Sherborn School Department and will provide the appropriate accommodations at the stop location.

Mr. Richard S. Novak, Chair
Sherborn Zoning Board of Appeals
April 19, 2024
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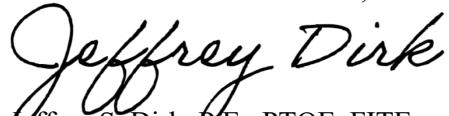
Comment 22: *There are currently no dedicated pedestrian or bicycle accommodations along Route 16 in the site vicinity. Tetra Tech recommends that the Applicant explore the feasibility of implementing such accommodations in the study area, including but not limited to, a non-vehicular connection to the nearby Bailey Trail System trailhead and existing sidewalk on Old Orchard Road.*

Response: The Applicant will work with the Town to explore the feasibility of establishing pedestrian and bicycle accommodations along Route 16 that connect to the Bailey Trail System trailhead and the existing sidewalk on Old Orchard Road.

We trust that this information is responsive to the comments that were identified in the April 4, 2024 letter prepared by TT concerning their review of the Project. If you should have any questions or would like to discuss our responses in more detail, please feel free to contact me.

Sincerely,

VANASSE & ASSOCIATES, INC.



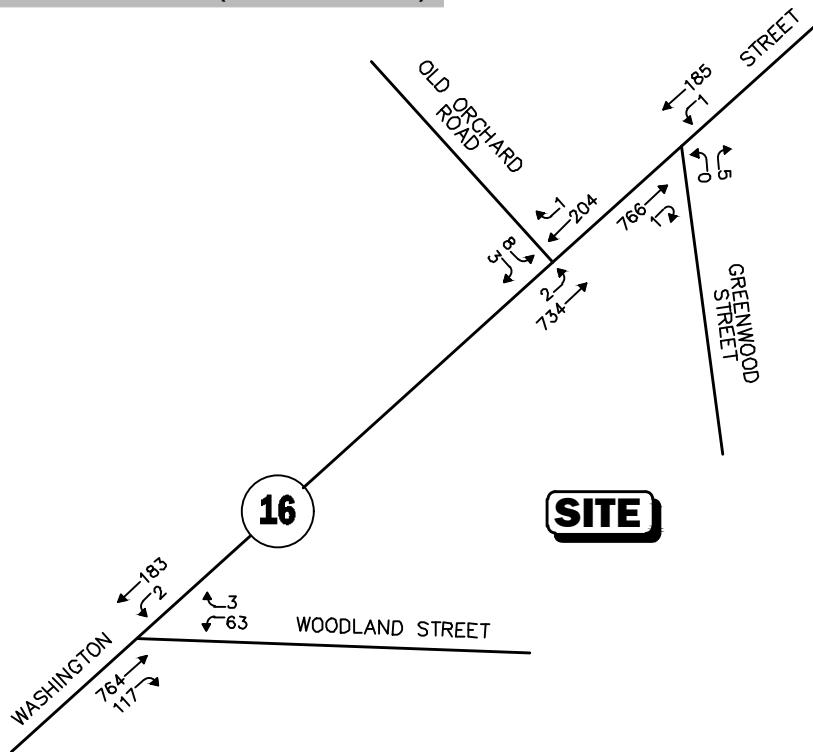
Jeffrey S. Dirk, P.E., PTOE, FITE
Managing Partner

Professional Engineer in CT, MA, ME, NH, RI, and VA

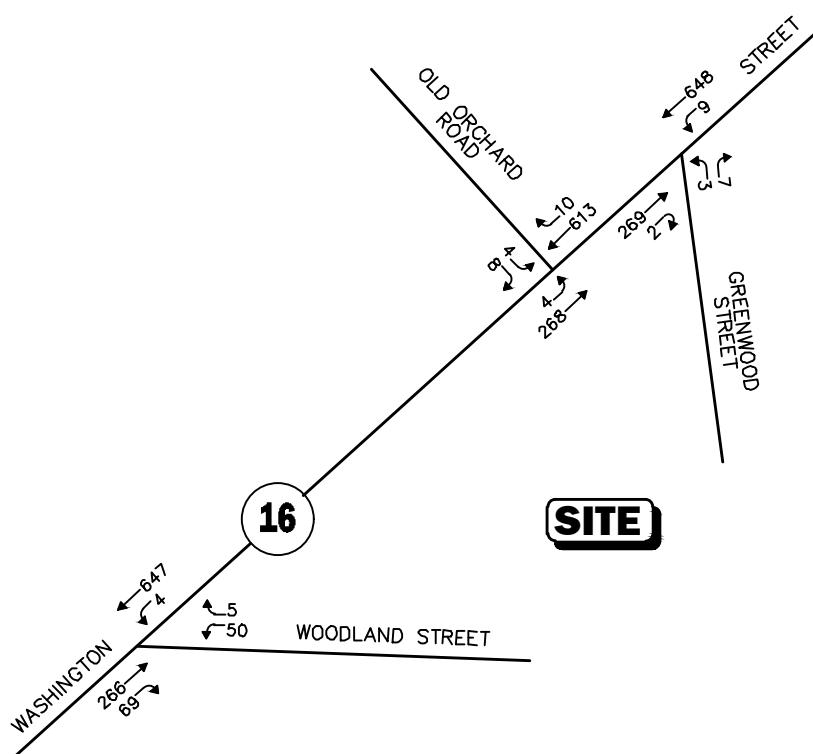
JSD/jsd

Attachments

WEEKDAY MORNING PEAK HOUR (7:00 - 8:00 AM)



WEEKDAY EVENING PEAK HOUR (4:15 - 5:15 PM)



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

Not To Scale

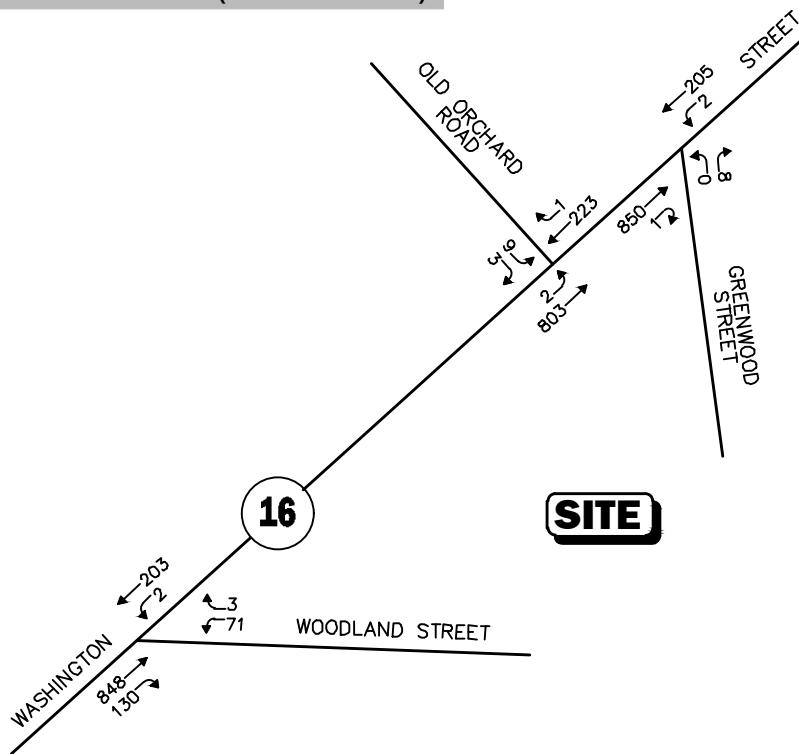
Figure 3R



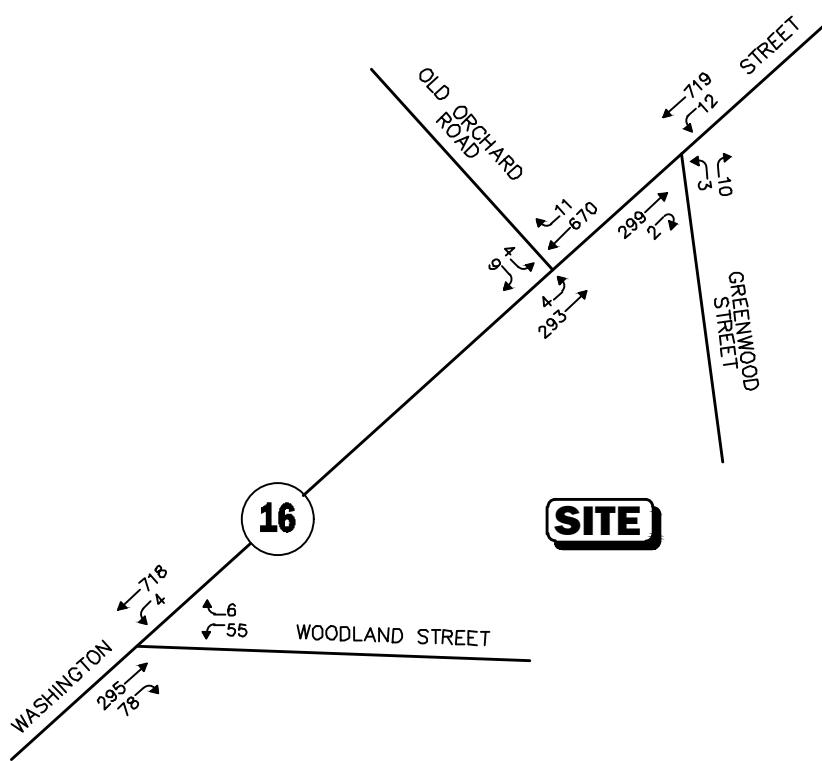
Vanasse & Associates inc

2023 Existing Peak-Hour Traffic Volumes

WEEKDAY MORNING PEAK HOUR (7:00 - 8:00 AM)



WEEKDAY EVENING PEAK HOUR (4:15 - 5:15 PM)

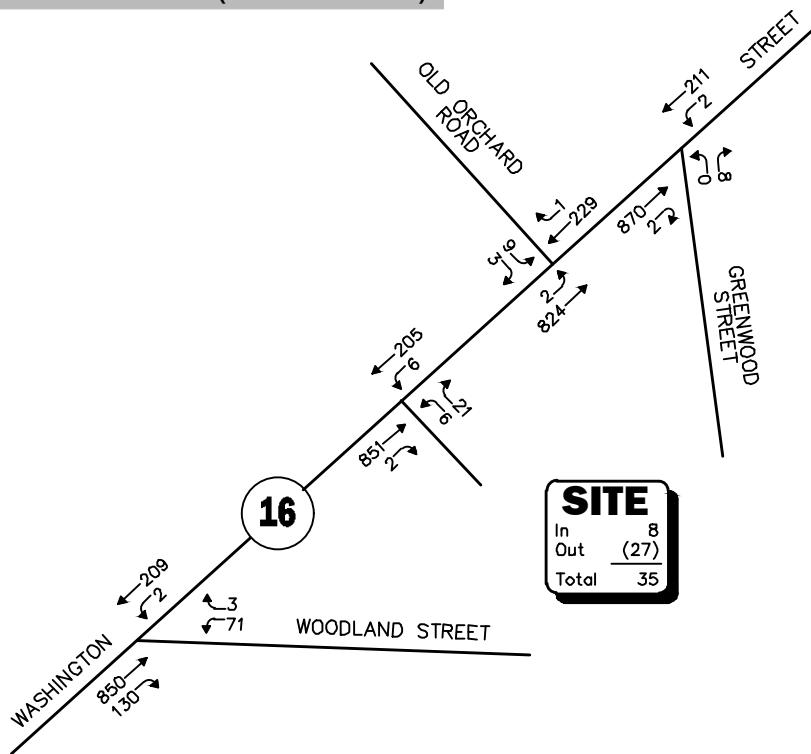


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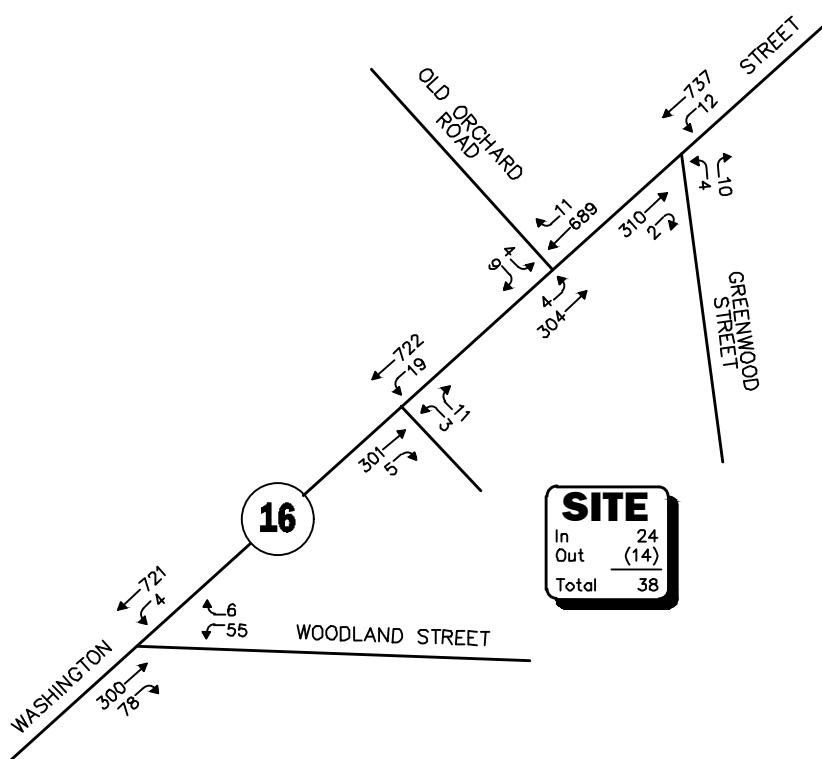
Figure 4R

2030 No-Build
Peak-Hour Traffic Volumes

WEEKDAY MORNING PEAK HOUR (7:00 - 8:00 AM)



WEEKDAY EVENING PEAK HOUR (4:15 - 5:15 PM)



Not To Scale

Figure 7R

2030 Build
Peak-Hour Traffic Volumes

Table 4R
MOTOR VEHICLE CRASH DATA SUMMARY^a

	Rte. 16/ Woodland St.	Rte. 16/ Greenwood St.	Rte. 16/ Old Orchard Rd.	Rte. 16/ Project Site
Traffic Control Type ^b	U	U	U	U
<i>Year:</i>				
2016	4	0	0	0
2017	3	1	0	0
2018	2	0	1	0
2019	1	1	1	0
2020	0	0	1	0
2021	4	2	0	0
<u>2022</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>1</u>
Total	16	4	3	1
Average	2.29	0.57	0.43	0.14
Crash Rate ^c	0.50	0.15	0.11	0.04
MassDOT Crash Rate: ^d	0.57/0.61	0.57/0.61	0.57/0.61	0.57/0.61
Significant? ^e	No	No	No	No
<i>Type:</i>				
Angle	4	0	0	0
Head-On	0	0	0	0
Rear-End	2	1	1	0
Sideswipe	0	1	0	0
Fixed Object	4	0	1	0
Wildlife	4	2	1	1
Pedestrian/Bicycle	0	0	0	0
<u>Unknown/Other</u>	<u>2</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	16	4	3	1
<i>Conditions:</i>				
Clear	11	4	2	1
Cloudy	1	0	0	0
Rain	1	0	0	0
Snow/Ice	3	0	1	0
<u>Not Reported/Other</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	16	4	3	1
<i>Lighting:</i>				
Daylight	7	2	1	1
Dawn/Dusk	3	2	1	0
Dark (Road Lit)	3	0	0	0
<u>Dark (Road Unlit)</u>	<u>3</u>	<u>0</u>	<u>1</u>	<u>0</u>
Total	16	4	3	1
<i>Day of Week:</i>				
Monday-Friday	14	3	3	0
Saturday	1	1	0	1
<u>Sunday</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	16	4	3	1
<i>Severity:</i>				
Property Damage Only	12	4	3	1
Non-fatal Injury	4	0	0	0
Fatalities	0	0	0	0
<u>Not Reported</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	16	4	3	1

^aSource: MassDOT Safety Management/Traffic Operations Unit records, 2016 through 2020.

^bTraffic Control Type: S = signalized, U = unsignalized.

^cCrash rate per million vehicles entering the intersection.

^dStatewide/District crash rate.

^eThe intersection crash rate is significant if it is found to exceed the MassDOT crash rate for the MassDOT Highway Division District in which the Project is located (District 3).

Table 6A
UNSIGNALIZED INTERSECTION LEVEL-OF-SERVICE AND VEHICLE QUEUE SUMMARY

Unsignalized Intersection/Peak-Hour/Movement	2023 Existing				2030 No-Build				2030 Build			
	Demand ^a	Delay ^b	LOS ^c	Queue ^d 95 th	Demand	Delay	LOS	Queue 95 th	Demand	Delay	LOS	Queue 95 th
Route 16 at Woodland Street												
<i>Weekday Morning:</i>												
Woodland Street NWB LT/RT	66	25.2	D	1	74	32.1	D	2	74	32.5	D	2
Route 16 NEB TH/RT	881	0.0	A	0	978	0.0	A	0	980	0.0	A	0
Route 16 SWB LT/TH	185	0.1	A	0	205	0.1	A	0	211	0.1	A	0
<i>Weekday Evening:</i>												
Woodland Street NWB LT/RT	55	23.5	C	1	61	29.3	D	2	61	29.6	D	2
Route 16 NEB TH/RT	336	0.0	A	0	373	0.0	A	0	378	0.0	A	0
Route 16 SWB LT/TH	651	0.0	A	0	722	0.0	A	0	725	0.0	A	0
Route 16 at Greenwood Street												
<i>Weekday Morning:</i>												
Greenwood Street NB LT/RT	5	16.0	C	0	8	17.8	C	0	8	18.2	C	0
Route 16 NEB TH/RT	767	0.0	A	0	851	0.0	A	0	872	0.0	A	0
Route 16 SWB LT/TH	186	0.1	A	0	207	0.1	A	0	213	0.1	A	0
<i>Weekday Evening:</i>												
Greenwood Street NB LT/RT	10	12.7	B	0	13	12.9	B	0	14	13.9	B	0
Route 16 NEB TH/RT	271	0.0	A	0	301	0.0	A	0	312	0.0	A	0
Route 16 SWB LT/TH	657	0.1	A	0	731	0.1	A	0	749	0.1	A	0
Route 16 at Old Orchard Road												
<i>Weekday Morning:</i>												
Old Orchard Road EB LT/RT	11	18.7	C	0	12	21.3	C	0	12	22.1	C	0
Route 16 NB LT/TH	736	0.0	A	0	805	0.0	A	0	826	0.0	A	0
Route 16 SB TH/RT	205	0.0	A	0	224	0.0	A	0	230	0.0	A	0
<i>Weekday Evening:</i>												
Old Orchard Road EB LT/RT	12	14.4	B	0	13	15.2	C	0	13	15.6	C	0
Route 16 NB LT/TH	272	0.1	A	0	297	0.1	A	0	308	0.1	A	0
Route 16 SB TH/RT	623	0.0	A	0	681	0.0	A	0	700	0.0	A	0
Route 16 at the Project Site Driveway												
<i>Weekday Morning:</i>												
Project Site Driveway NWB LT/RT	--	--	--	--	--	--	--	--	27	18.7	C	1
Route 16 NEB TH/RT	--	--	--	--	--	--	--	--	853	0.0	A	0
Route 16 SWB LT/TH	--	--	--	--	--	--	--	--	211	0.3	A	0
<i>Weekday Evening:</i>												
Project Site Driveway NWB LT/RT	--	--	--	--	--	--	--	--	14	12.9	B	0
Route 16 NEB TH/RT	--	--	--	--	--	--	--	--	306	0.0	A	0
Route 16 SWB LT/TH	--	--	--	--	--	--	--	--	741	0.2	A	0

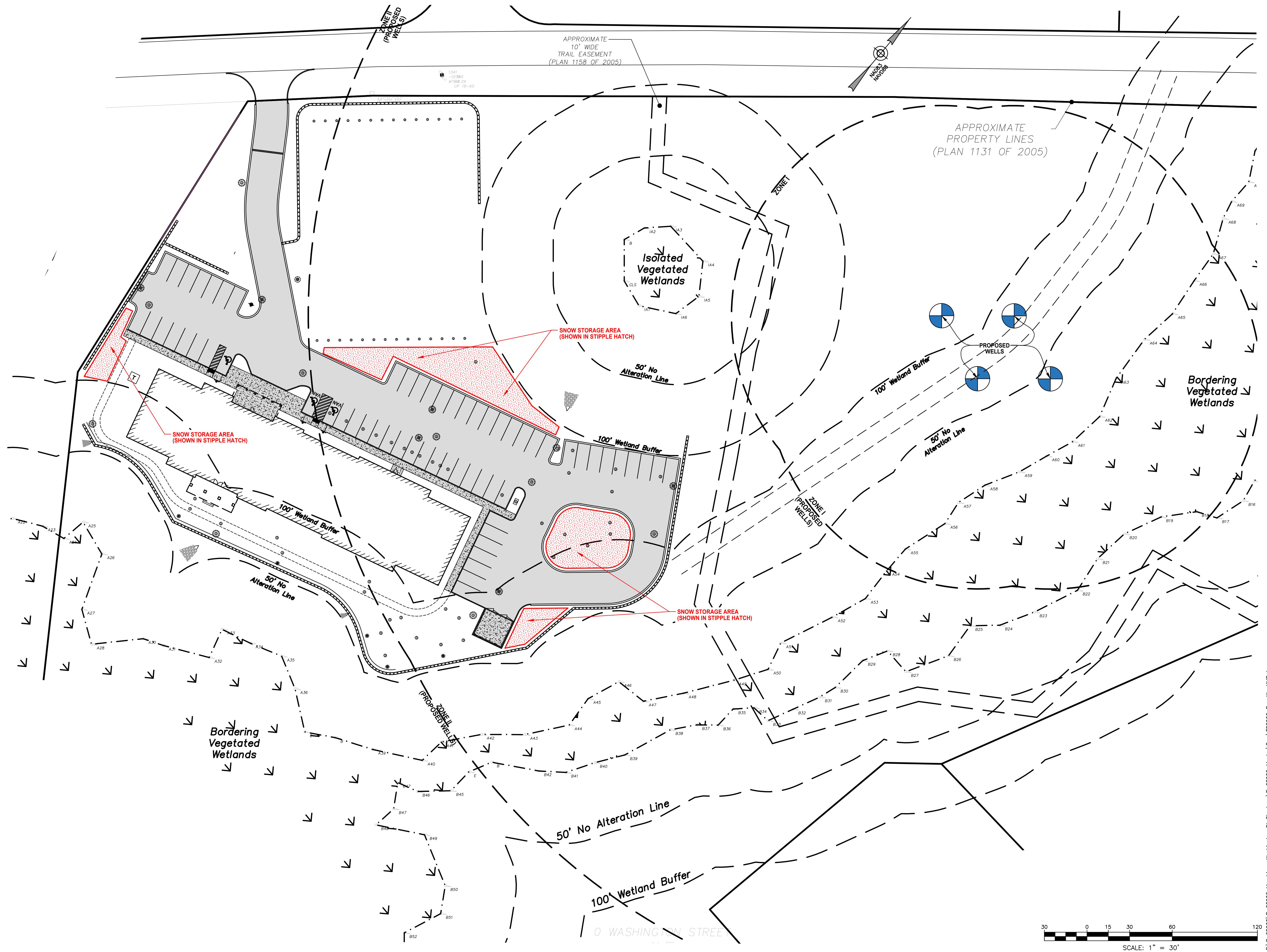
^aDemand in vehicles per hour.

^bAverage control delay per vehicle (in seconds).

^cLevel of service.

^dQueue length in vehicles.

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



PARCEL ID:
MAP 7, LOT 0, BLOCK 49

ISSUED FOR:
COMPREHENSIVE PERMIT APPLICATION

1 BEC 2/9/24 DESIGN DEVELOPMENT
NO. APP DATE DESCRIPTION

DATE: **JANUARY 23, 2024**

SCALE: **1" = 30'**

DESIGN: **KMR** DRAFTED: **KMR/JAL** CHECKED: **JAL/BEC**

PROJECT TITLE:

WASHINGTON STREET SHERBORN HOMES

0 WASHINGTON STREET
SHERBORN, MASSACHUSETTS 01770

Sheet Title:

SNOW STORAGE EXHIBIT PLAN

Sheet: **1 OF 1**
Project No.: **F-25902**

SNOW



Figure 1

Sight Triangle Plan
Washington Street (Route 16) at
Site Driveway

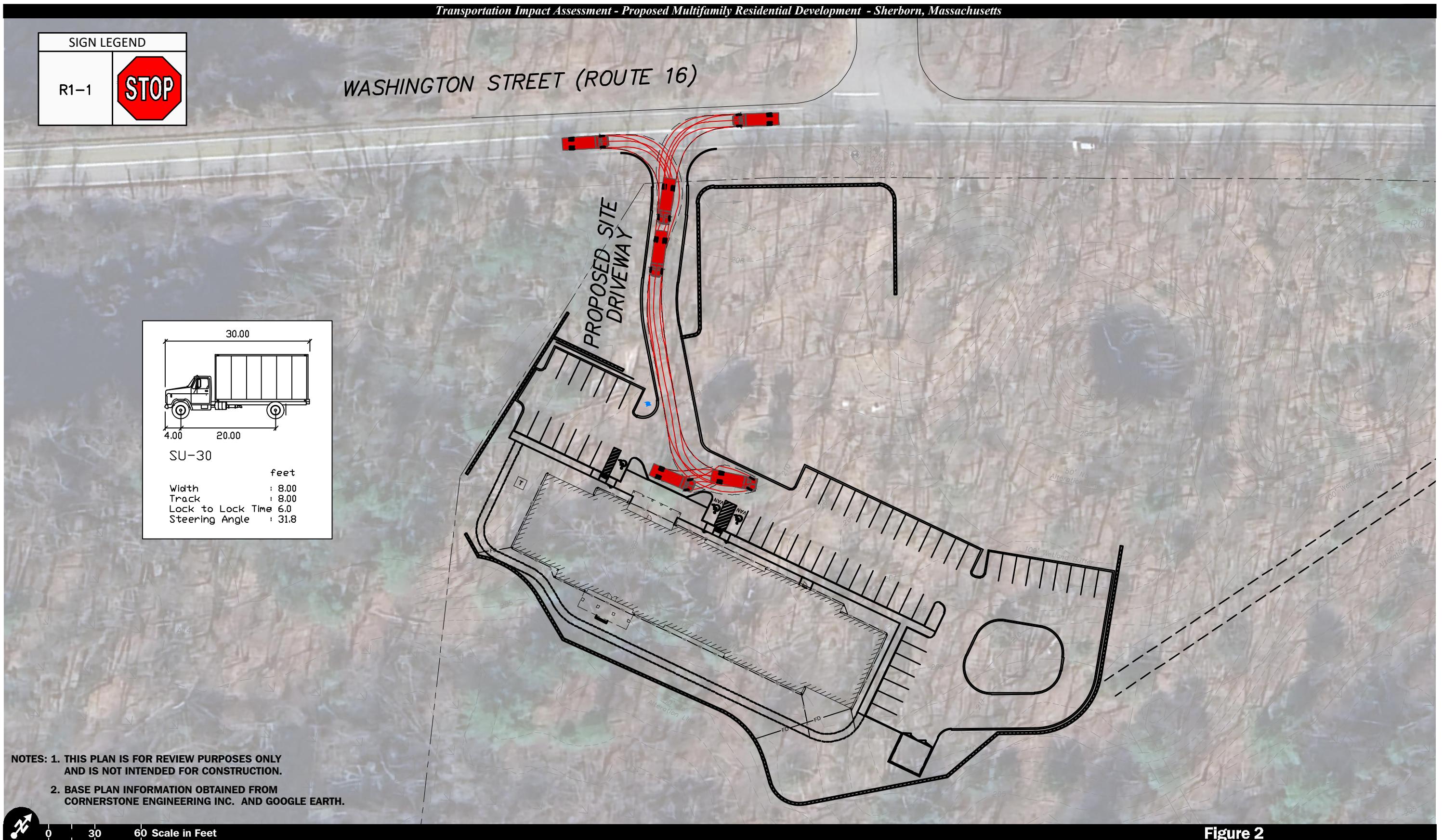


Figure 2
SU-30 Turning Analysis
Entering Site

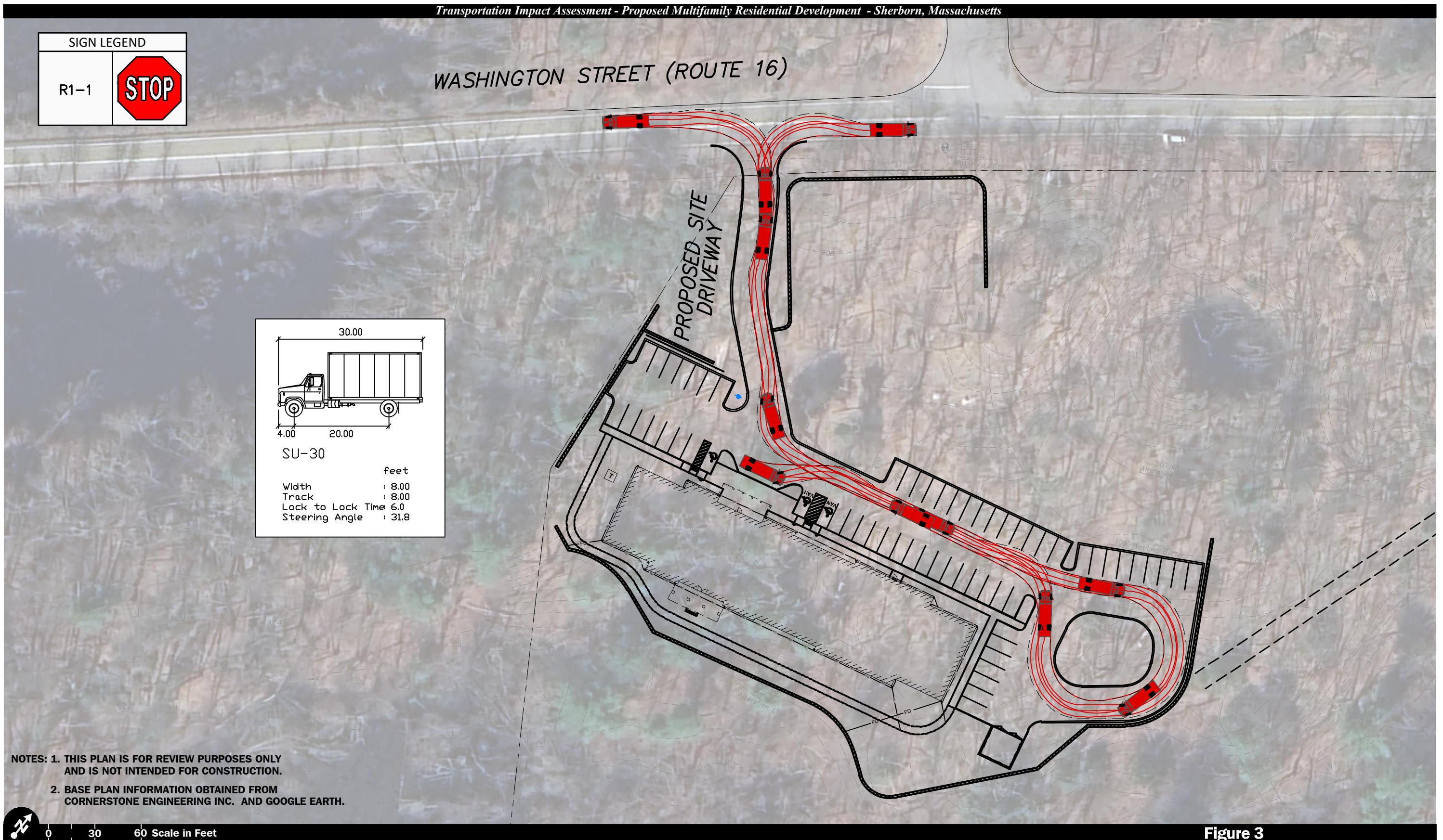


Figure 3
SU-30 Turning Analysis
Exiting Site

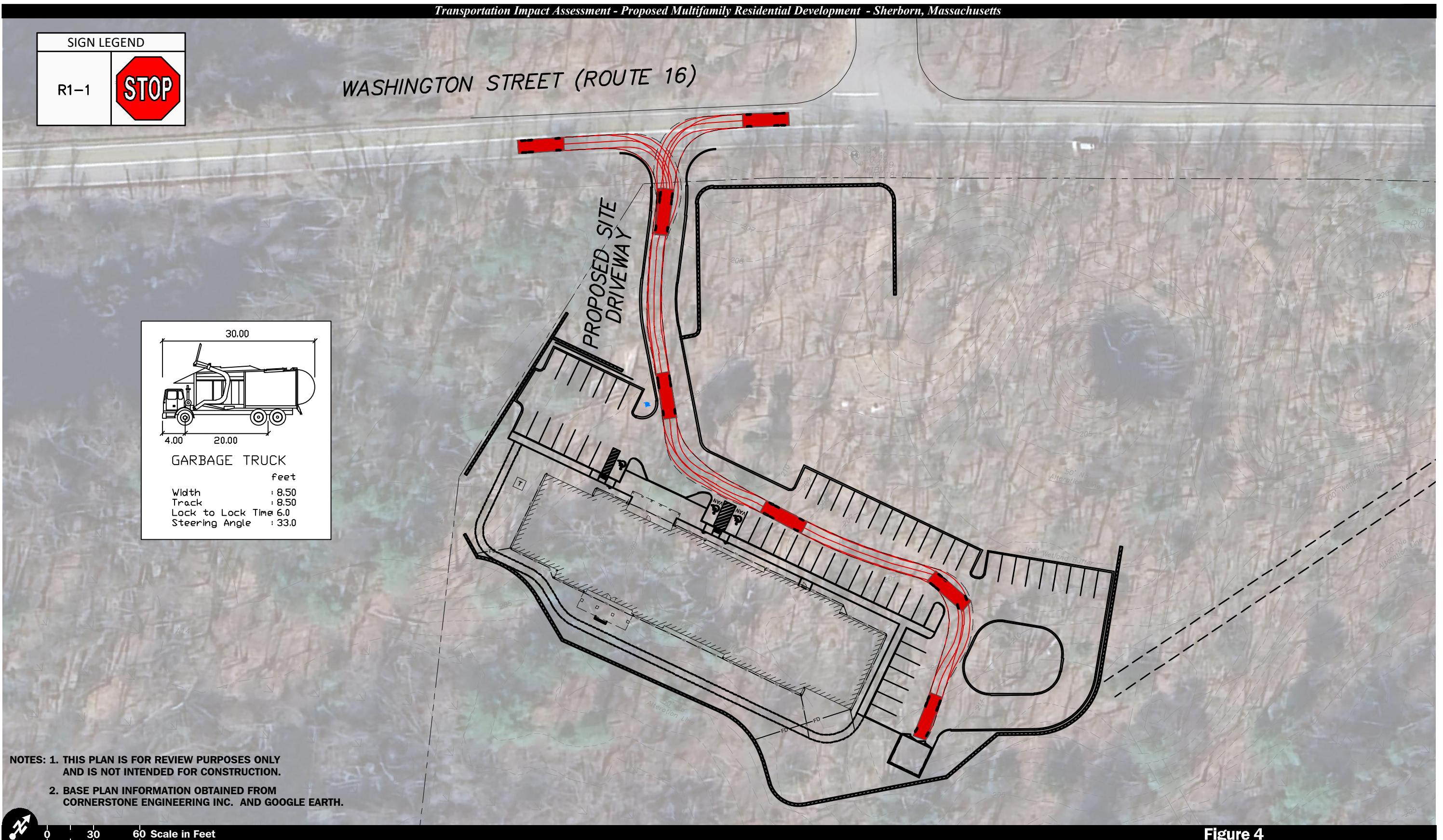


Figure 4
Garbage Truck Turning Analysis
Entering Site

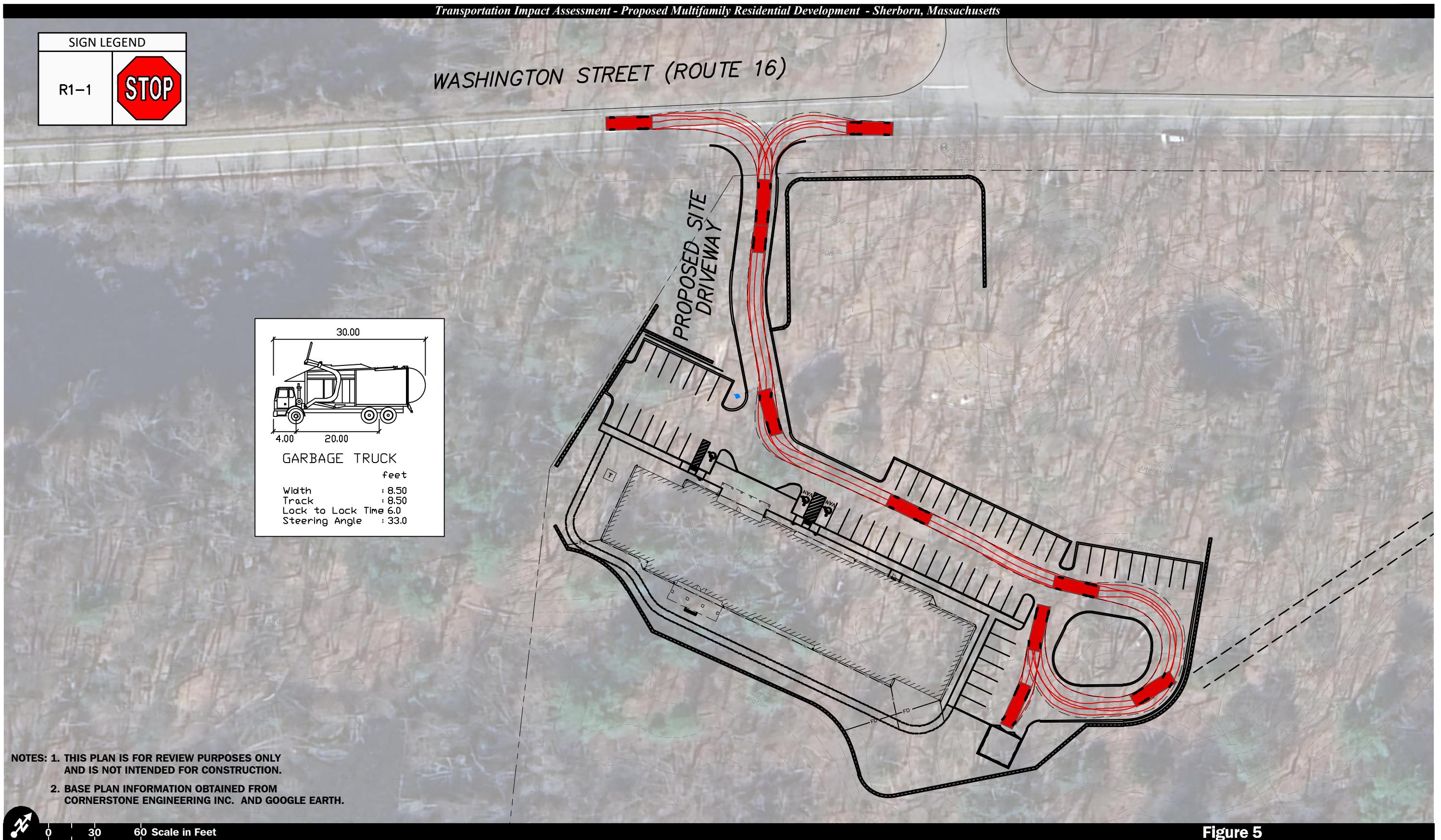


Figure 5
Garbage Truck Turning Analysis
Exiting Site

ATTACHMENTS

TURNING MOVEMENT COUNT DATA
SEASONAL ADJUSTMENT DATA
MASSDOT CRASH DATA
MASSDOT CRASH RATE WORKSHEETS
SIGHT DISTANCE CALCULATIONS
CAPACITY ANALYSIS WORKSHEETS

TURNING MOVEMENT COUNT DATA

Accurate Counts

978-664-2565

N/S Street : Old Orchard Road
 E/W Street : Washington Street
 City/State : Sherborn, MA
 Weather : Cloudy

File Name : 96330001
 Site Code : 96330001
 Start Date : 4/11/2024
 Page No : 1

Groups Printed- Cars - Trucks

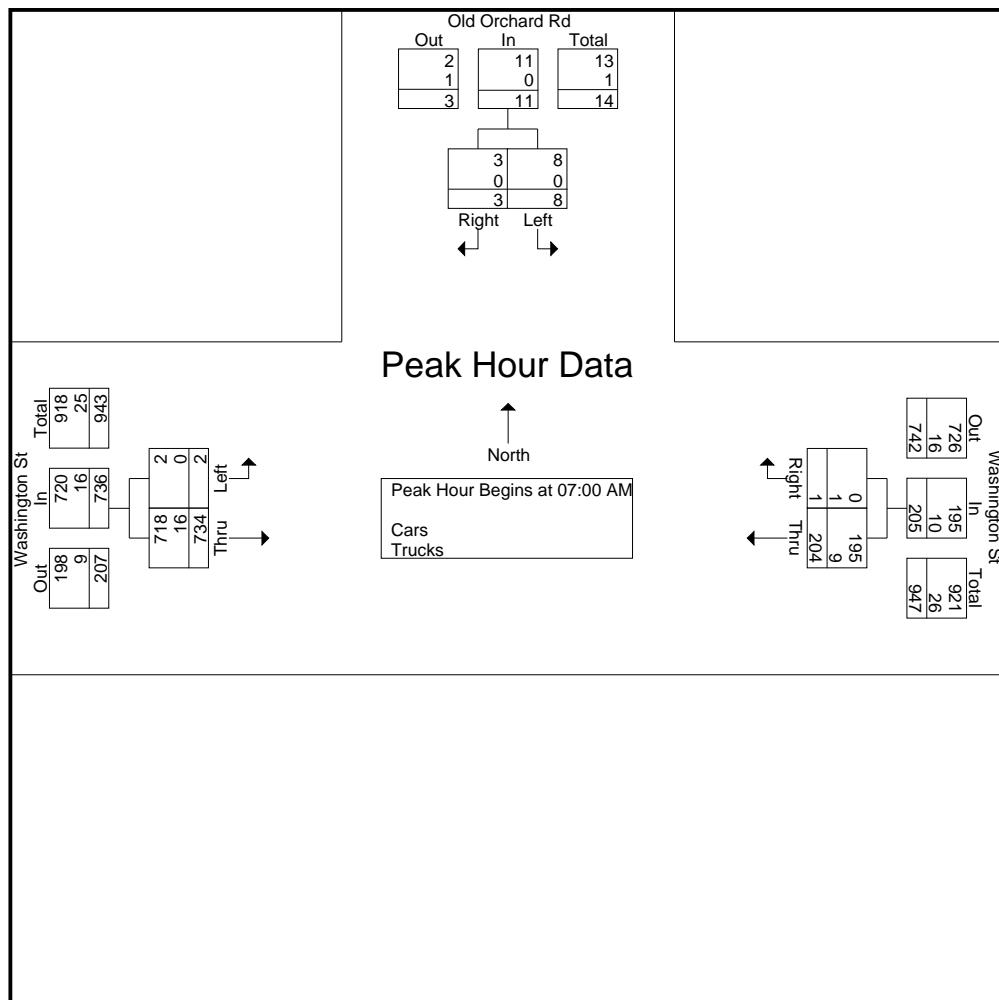
		Old Orchard Rd From North		Washington St From East		Washington St From West		
Start Time		Left	Right	Thru	Right	Left	Thru	Int. Total
07:00 AM		0	0	49	0	0	231	280
07:15 AM		3	1	50	1	0	186	241
07:30 AM		2	1	51	0	2	158	214
07:45 AM		3	1	54	0	0	159	217
Total		8	3	204	1	2	734	952
08:00 AM		4	1	31	2	0	139	177
08:15 AM		2	1	51	1	0	172	227
08:30 AM		1	2	46	2	1	165	217
08:45 AM		5	0	49	2	0	123	179
Total		12	4	177	7	1	599	800
Grand Total		20	7	381	8	3	1333	1752
Apprch %		74.1	25.9	97.9	2.1	0.2	99.8	
Total %		1.1	0.4	21.7	0.5	0.2	76.1	
Cars		20	7	357	6	3	1303	1696
% Cars		100	100	93.7	75	100	97.7	96.8
Trucks		0	0	24	2	0	30	56
% Trucks		0	0	6.3	25	0	2.3	3.2

		Old Orchard Rd From North			Washington St From East			Washington St From West			
Start Time		Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	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 07:00 AM											
07:00 AM		0	0	0	49	0	49	0	231	231	280
07:15 AM		3	1	4	50	1	51	0	186	186	241
07:30 AM		2	1	3	51	0	51	2	158	160	214
07:45 AM		3	1	4	54	0	54	0	159	159	217
Total Volume		8	3	11	204	1	205	2	734	736	952
% App. Total		72.7	27.3		99.5	0.5		0.3	99.7		
PHF		.667	.750	.688	.944	.250	.949	.250	.794	.797	.850
Cars		8	3	11	195	0	195	2	718	720	926
% Cars		100	100	100	95.6	0	95.1	100	97.8	97.8	97.3
Trucks		0	0	0	9	1	10	0	16	16	26
% Trucks		0	0	0	4.4	100	4.9	0	2.2	2.2	2.7

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 2



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

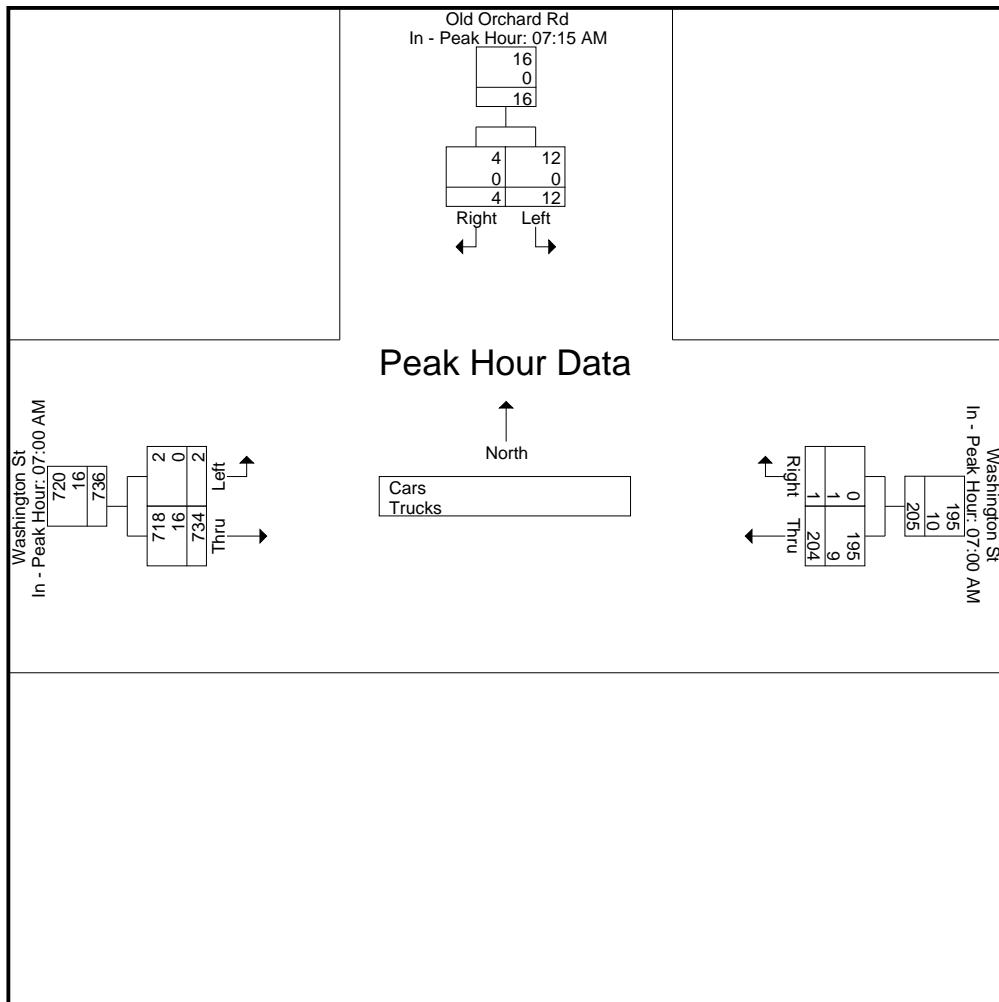
Peak Hour for Each Approach Begins at:

	07:15 AM			07:00 AM			07:00 AM		
+0 mins.	3	1	4	49	0	49	0	231	231
+15 mins.	2	1	3	50	1	51	0	186	186
+30 mins.	3	1	4	51	0	51	2	158	160
+45 mins.	4	1	5	54	0	54	0	159	159
Total Volume	12	4	16	204	1	205	2	734	736
% App. Total	75	25		99.5	0.5		0.3	99.7	
PHF	.750	1.000	.800	.944	.250	.949	.250	.794	.797
Cars	12	4	16	195	0	195	2	718	720
% Cars	100	100	100	95.6	0	95.1	100	97.8	97.8
Trucks	0	0	0	9	1	10	0	16	16
% Trucks	0	0	0	4.4	100	4.9	0	2.2	2.2

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 4

Groups Printed- Cars

		Old Orchard Rd From North		Washington St From East		Washington St From West		
Start Time		Left	Right	Thru	Right	Left	Thru	Int. Total
07:00 AM		0	0	45	0	0	224	269
07:15 AM		3	1	49	0	0	184	237
07:30 AM		2	1	49	0	2	154	208
07:45 AM		3	1	52	0	0	156	212
Total		8	3	195	0	2	718	926
08:00 AM		4	1	26	1	0	137	169
08:15 AM		2	1	49	1	0	163	216
08:30 AM		1	2	41	2	1	163	210
08:45 AM		5	0	46	2	0	122	175
Total		12	4	162	6	1	585	770
Grand Total		20	7	357	6	3	1303	1696
Apprch %		74.1	25.9	98.3	1.7	0.2	99.8	
Total %		1.2	0.4	21	0.4	0.2	76.8	

**Old Orchard Rd
From North**

**Washington St
From East**

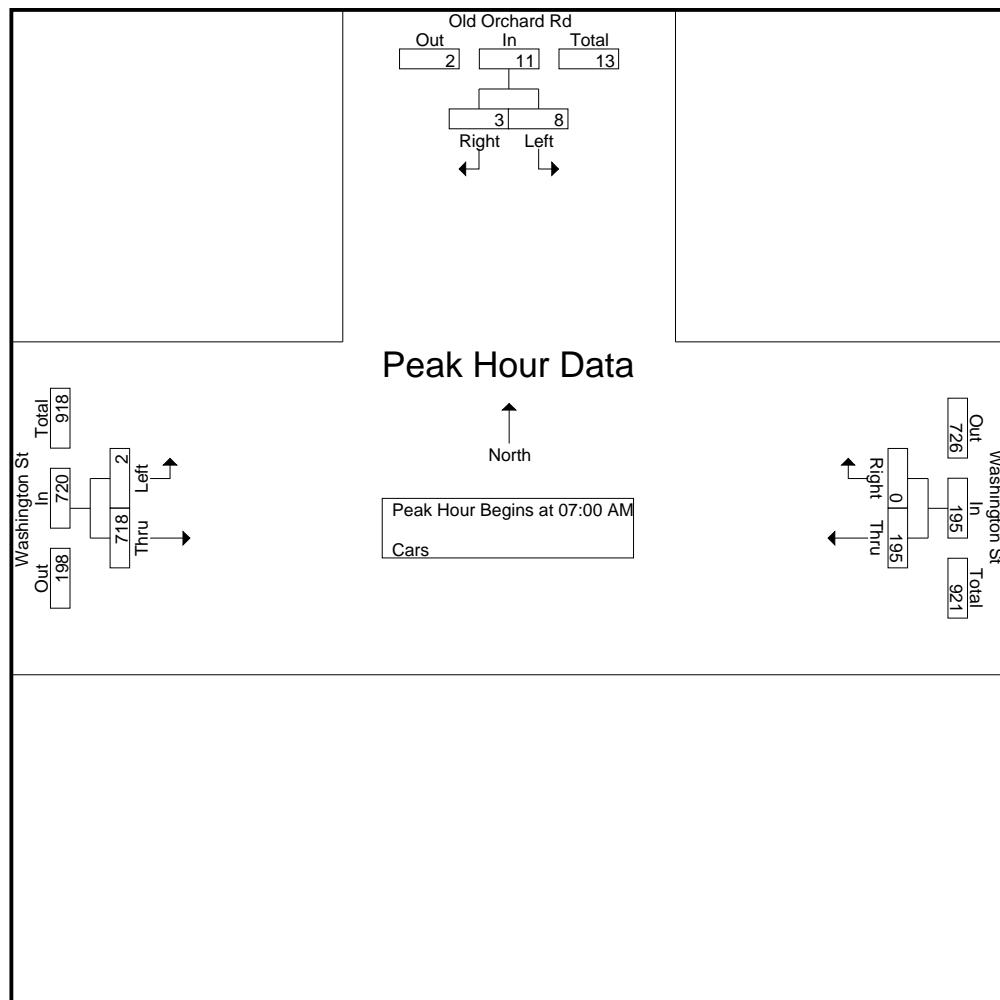
**Washington St
From West**

Old Orchard Rd From North		Washington St From East			Washington St From West					
Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	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 07:00 AM										
07:00 AM	0	0	0	45	0	45	0	224	224	269
07:15 AM	3	1	4	49	0	49	0	184	184	237
07:30 AM	2	1	3	49	0	49	2	154	156	208
07:45 AM	3	1	4	52	0	52	0	156	156	212
Total Volume	8	3	11	195	0	195	2	718	720	926
% App. Total	72.7	27.3		100	0		0.3	99.7		
PHF	.667	.750	.688	.938	.000	.938	.250	.801	.804	.861

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 5



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

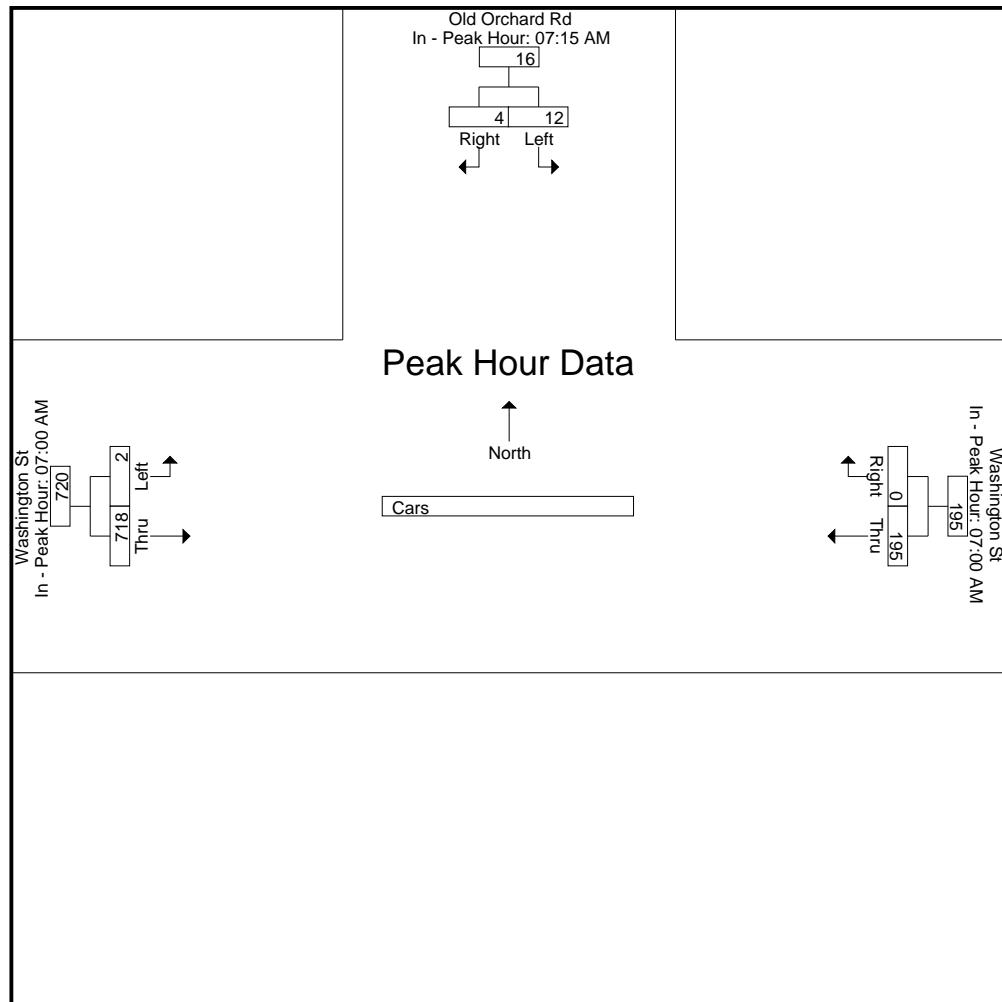
Peak Hour for Each Approach Begins at:

	07:15 AM			07:00 AM			07:00 AM		
+0 mins.	3	1	4	45	0	45	0	224	224
+15 mins.	2	1	3	49	0	49	0	184	184
+30 mins.	3	1	4	49	0	49	2	154	156
+45 mins.	4	1	5	52	0	52	0	156	156
Total Volume	12	4	16	195	0	195	2	718	720
% App. Total	75	25		100	0		0.3	99.7	
PHF	.750	1.000	.800	.938	.000	.938	.250	.801	.804

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 6



Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 7

Groups Printed- Trucks

		Old Orchard Rd From North		Washington St From East		Washington St From West		Int. Total
Start Time		Left	Right	Thru	Right	Left	Thru	
07:00 AM		0	0	4	0	0	7	11
07:15 AM		0	0	1	1	0	2	4
07:30 AM		0	0	2	0	0	4	6
07:45 AM		0	0	2	0	0	3	5
Total		0	0	9	1	0	16	26
08:00 AM		0	0	5	1	0	2	8
08:15 AM		0	0	2	0	0	9	11
08:30 AM		0	0	5	0	0	2	7
08:45 AM		0	0	3	0	0	1	4
Total		0	0	15	1	0	14	30
Grand Total		0	0	24	2	0	30	56
Apprch %		0	0	92.3	7.7	0	100	
Total %		0	0	42.9	3.6	0	53.6	

**Old Orchard Rd
From North**

**Washington St
From East**

**Washington St
From West**

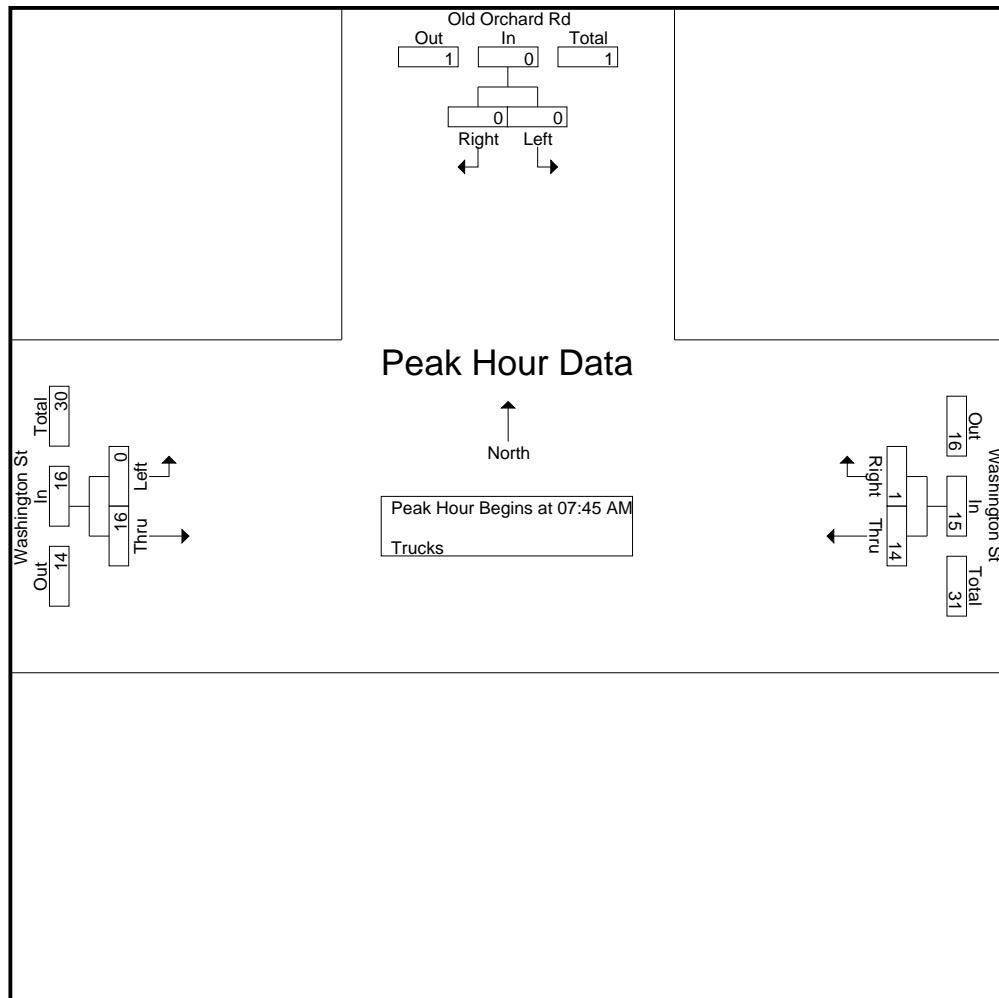
Start Time		Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:45 AM											
07:45 AM		0	0	0	2	0	2	0	3	3	5
08:00 AM		0	0	0	5	1	6	0	2	2	8
08:15 AM		0	0	0	2	0	2	0	9	9	11
08:30 AM		0	0	0	5	0	5	0	2	2	7
Total Volume		0	0	0	14	1	15	0	16	16	31
% App. Total		0	0		93.3	6.7		0	100		
PHF		.000	.000	.000	.700	.250	.625	.000	.444	.444	.705

Accurate Counts

978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 8



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

Peak Hour Analysis From 07:00 AM to 08:00 AM

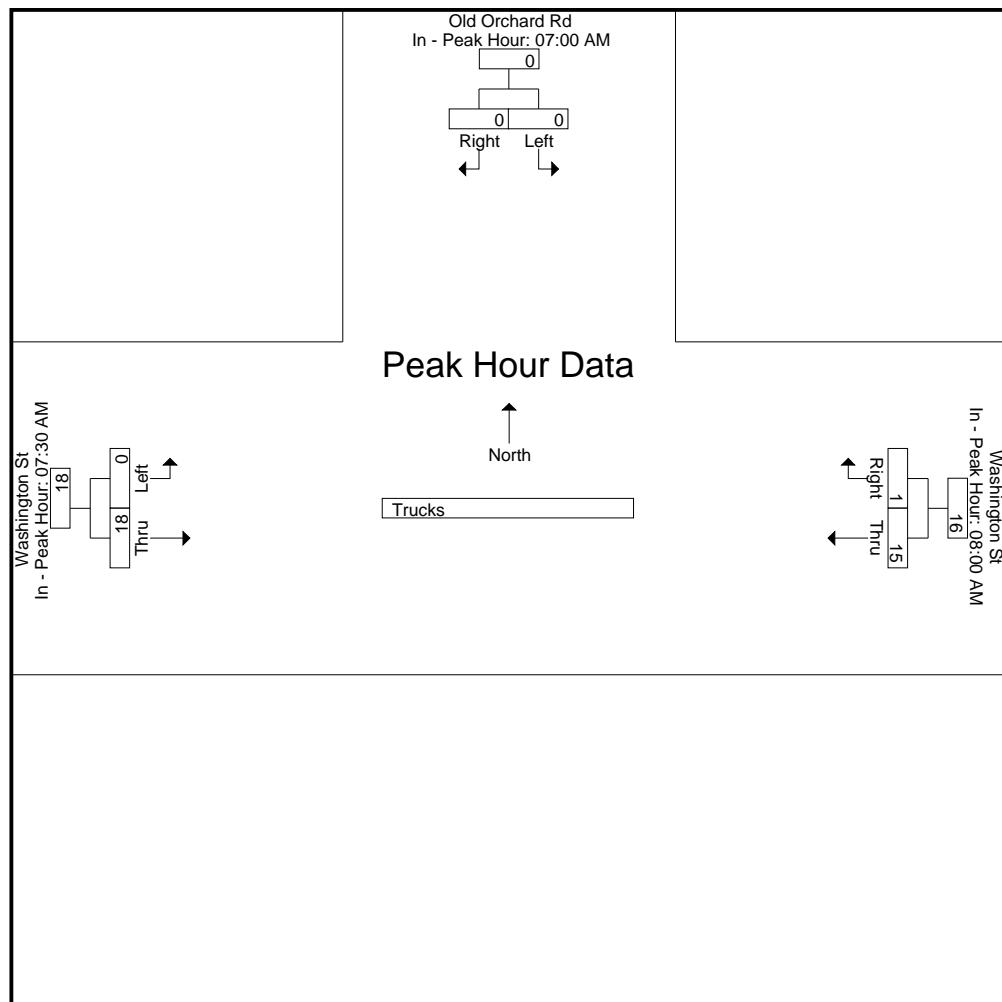
Peak Hour for Each Approach Begins at:

Peak Hour for Each Approach Begins at:	07:00 AM	08:00 AM	07:30 AM		
+0 mins.	0	0	0	5	1
+15 mins.	0	0	0	2	0
+30 mins.	0	0	0	5	0
+45 mins.	0	0	0	3	0
Total Volume	0	0	0	15	1
% App. Total	0	0	0	93.8	6.2
PHE	.000	.000	.000	.750	.250
				.667	
				.000	.500
					.500

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 9



Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 10

Groups Printed- Bikes Peds

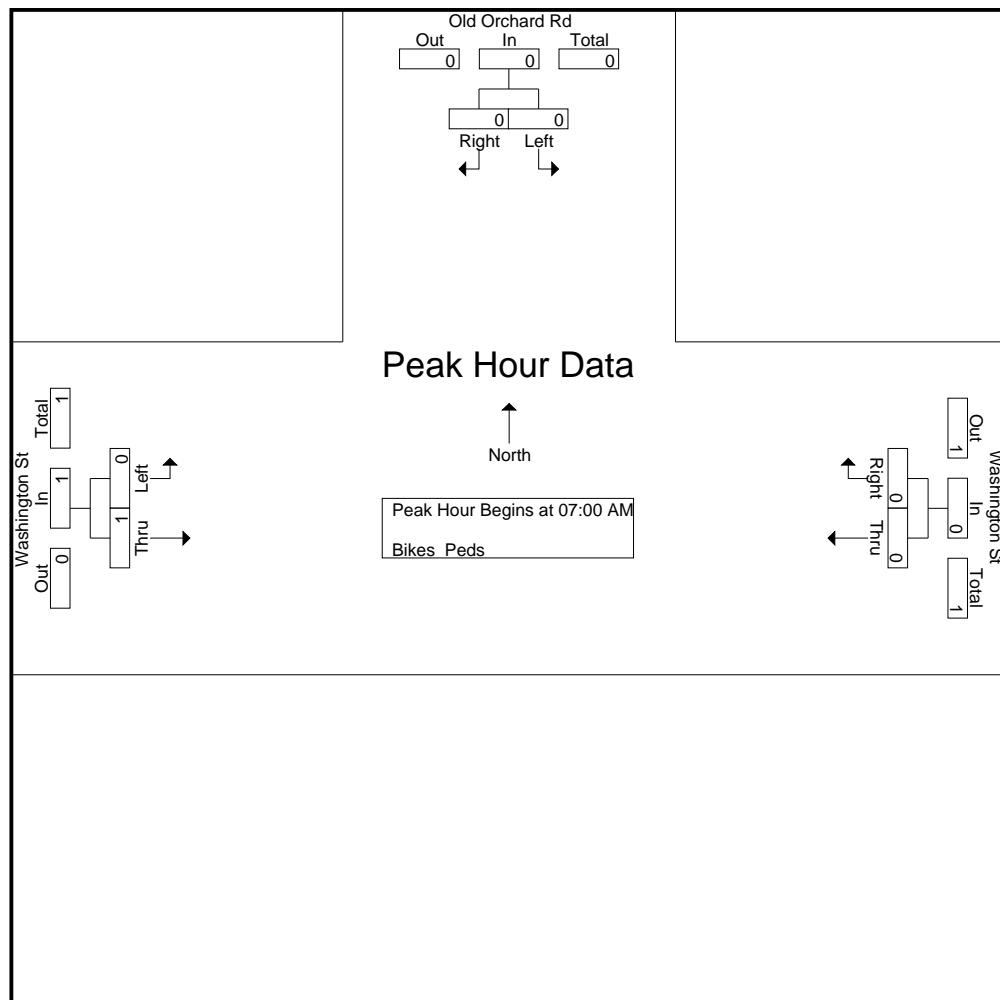
	Old Orchard Rd From North			Washington St From East			Washington St From West						
	Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds	Excl. Total	Incl. Total	Int. Total
07:00 AM		0	0	0	0	0	0	0	1	0	0	1	1
07:15 AM		0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM		0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM		0	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	1	0	0	1	1
08:00 AM		0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM		0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM		0	0	0	0	0	0	0	0	0	0	0	0
08:45 AM		0	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0	0	0	0	0
Grand Total		0	0	0	0	0	0	0	1	0	0	1	1
Apprch %		0	0	0	0	0	0	0	100	0	0	100	100
Total %		0	0	0	0	0	0	0	100	0	0	100	100

	Old Orchard Rd From North			Washington St From East			Washington St From West					
	Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	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 07:00 AM												
07:00 AM		0	0	0	0	0	0	0	1	1	1	1
07:15 AM		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
07:45 AM		0	0	0	0	0	0	0	0	0	0	0
Total Volume		0	0	0	0	0	0	0	1	1	1	1
% App. Total		0	0	0	0	0	0	0	100	0	100	100
PHF		.000	.000	.000	.000	.000	.000	.000	.250	.250	.250	.250

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 11



Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1

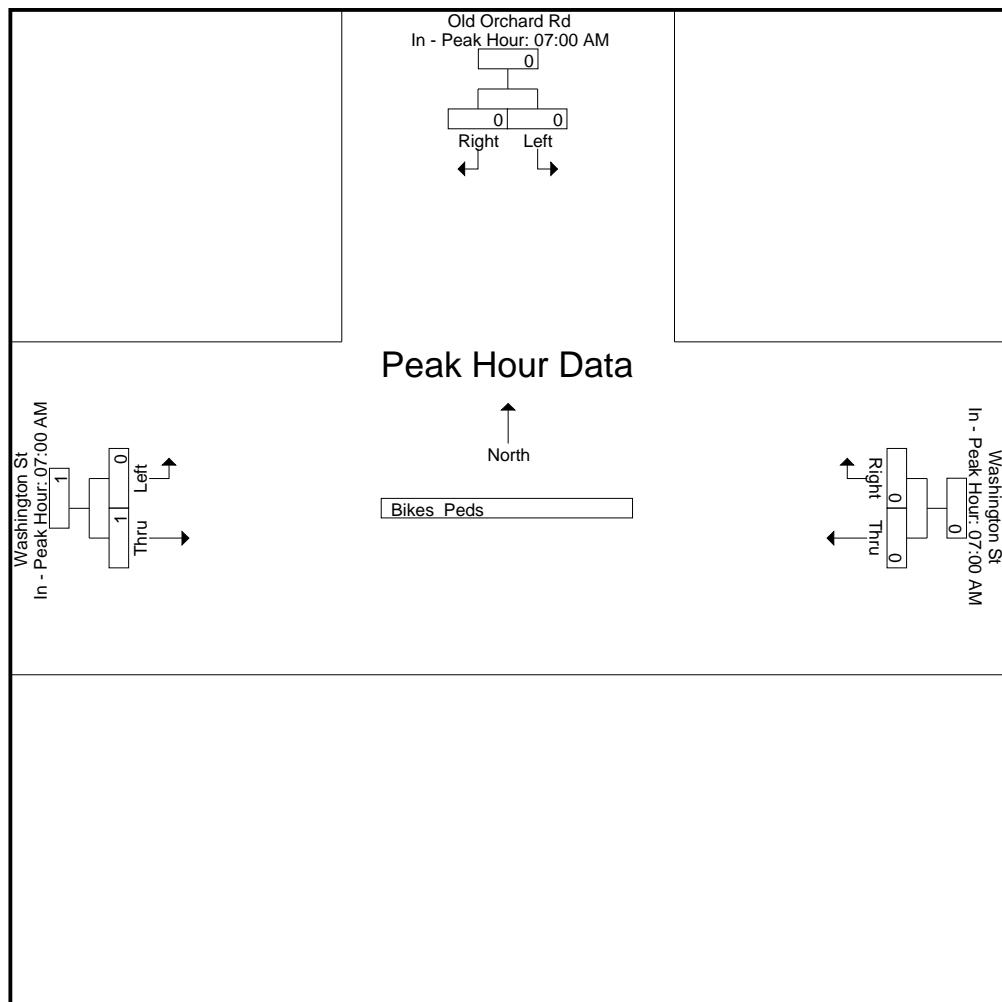
Peak Hour for Each Approach Begins at:

	07:00 AM			07:00 AM			07:00 AM		
+0 mins.	0	0	0	0	0	0	0	1	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	1	1
% App. Total	0	0	0	0	0	0	0	100	100
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.250

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 12



Accurate Counts

978-664-2565

N/S Street : Old Orchard Road
 E/W Street : Washington Street
 City/State : Sherborn, MA
 Weather : Cloudy

File Name : 96330001
 Site Code : 96330001
 Start Date : 4/11/2024
 Page No : 1

Groups Printed- Cars - Trucks

		Old Orchard Rd From North		Washington St From East		Washington St From West		
Start Time		Left	Right	Thru	Right	Left	Thru	Int. Total
04:00 PM		1	1	115	0	0	61	178
04:15 PM		0	1	123	1	1	74	200
04:30 PM		1	0	133	1	1	65	201
04:45 PM		3	1	153	1	1	62	221
Total		5	3	524	3	3	262	800
05:00 PM		0	1	150	2	2	67	222
05:15 PM		0	3	155	4	0	65	227
05:30 PM		1	3	155	3	1	74	237
05:45 PM		3	0	157	0	0	55	215
Total		4	7	617	9	3	261	901
Grand Total		9	10	1141	12	6	523	1701
Apprch %		47.4	52.6	99	1	1.1	98.9	
Total %		0.5	0.6	67.1	0.7	0.4	30.7	
Cars		8	10	1132	11	5	521	1687
% Cars		88.9	100	99.2	91.7	83.3	99.6	99.2
Trucks		1	0	9	1	1	2	14
% Trucks		11.1	0	0.8	8.3	16.7	0.4	0.8

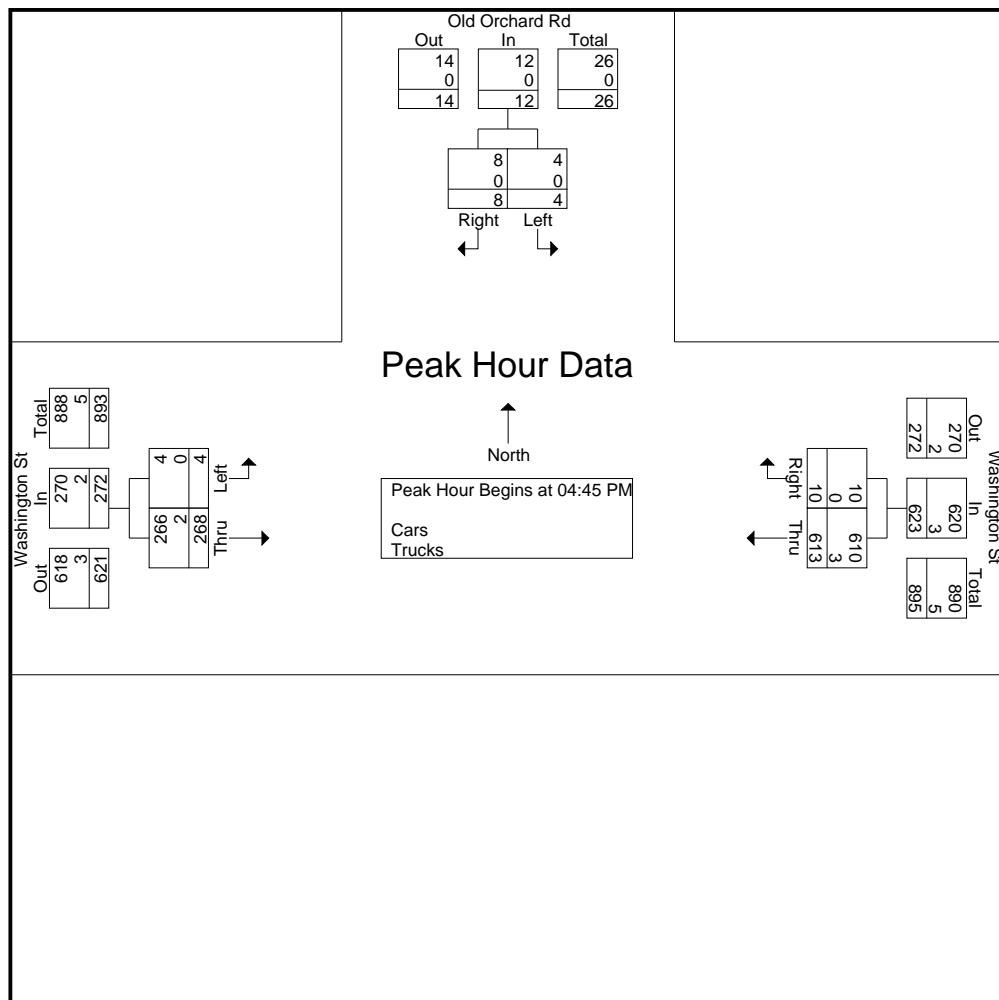
		Old Orchard Rd From North			Washington St From East			Washington St From West			
Start Time		Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 04:45 PM											
04:45 PM		3	1	4	153	1	154	1	62	63	221
05:00 PM		0	1	1	150	2	152	2	67	69	222
05:15 PM		0	3	3	155	4	159	0	65	65	227
05:30 PM		1	3	4	155	3	158	1	74	75	237
Total Volume		4	8	12	613	10	623	4	268	272	907
% App. Total		33.3	66.7		98.4	1.6		1.5	98.5		
PHF		.333	.667	.750	.989	.625	.980	.500	.905	.907	.957
Cars		4	8	12	610	10	620	4	266	270	902
% Cars		100	100	100	99.5	100	99.5	100	99.3	99.3	99.4
Trucks		0	0	0	3	0	3	0	2	2	5
% Trucks		0	0	0	0.5	0	0.5	0	0.7	0.7	0.6

Accurate Counts

978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 2



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

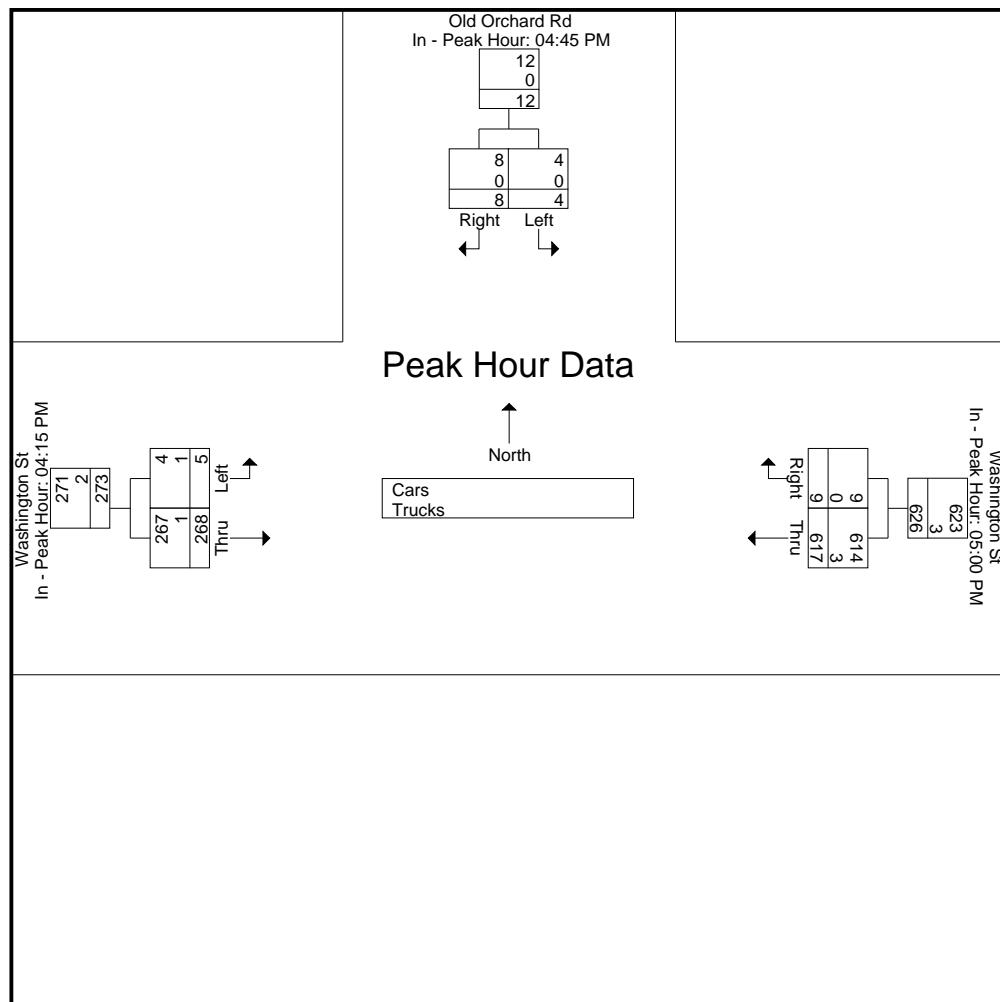
Peak Hour Analysis From 04:00 AM to 05:00 AM

Peak Hour for Each Approach Begins at:

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 3



Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 4

Groups Printed- Cars

		Old Orchard Rd From North		Washington St From East		Washington St From West		
Start Time		Left	Right	Thru	Right	Left	Thru	Int. Total
04:00 PM		0	1	112	0	0	61	174
04:15 PM		0	1	121	1	0	74	197
04:30 PM		1	0	132	0	1	65	199
04:45 PM		3	1	153	1	1	61	220
Total		4	3	518	2	2	261	790
05:00 PM		0	1	149	2	2	67	221
05:15 PM		0	3	154	4	0	65	226
05:30 PM		1	3	154	3	1	73	235
05:45 PM		3	0	157	0	0	55	215
Total		4	7	614	9	3	260	897
Grand Total		8	10	1132	11	5	521	1687
Apprch %		44.4	55.6	99	1	1	99	
Total %		0.5	0.6	67.1	0.7	0.3	30.9	

**Old Orchard Rd
From North**

**Washington St
From East**

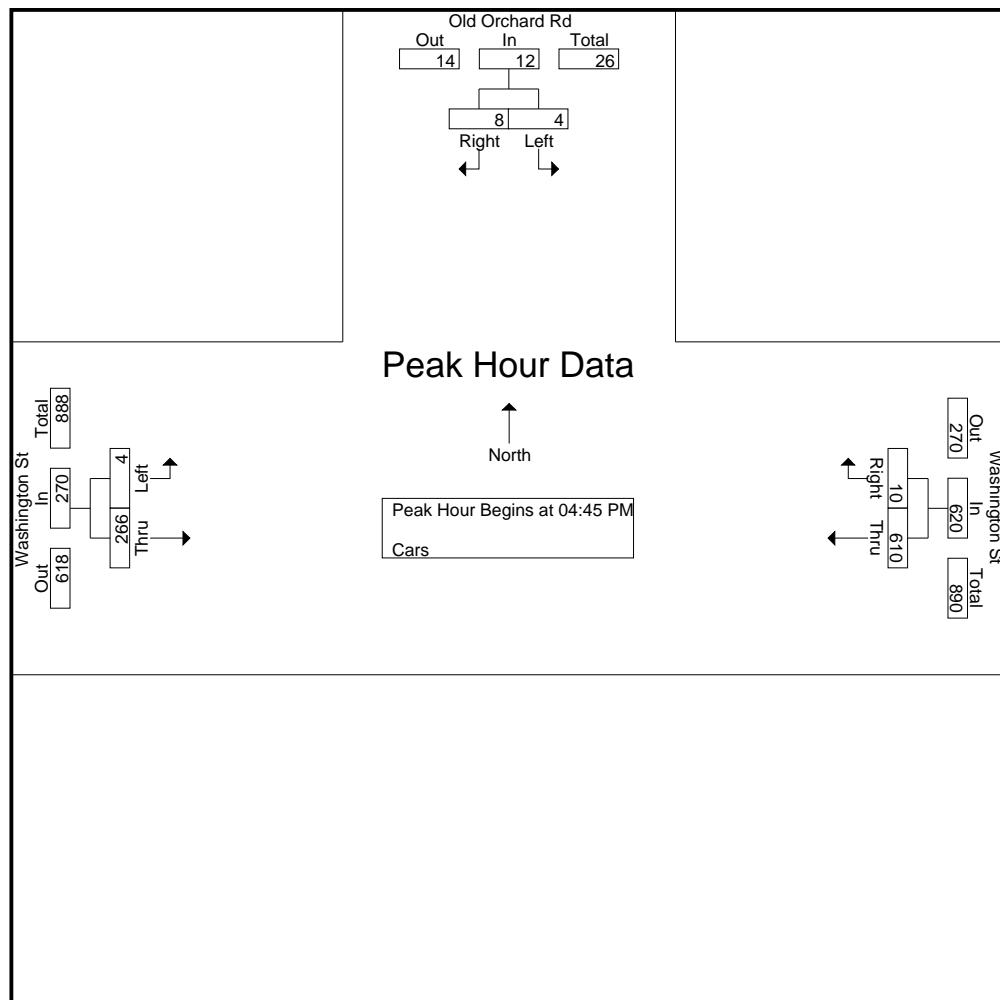
**Washington St
From West**

Start Time		Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. 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	1	4	153	1	154	1	61	62	220
05:00 PM		0	1	1	149	2	151	2	67	69	221
05:15 PM		0	3	3	154	4	158	0	65	65	226
05:30 PM		1	3	4	154	3	157	1	73	74	235
Total Volume		4	8	12	610	10	620	4	266	270	902
% App. Total		33.3	66.7		98.4	1.6		1.5	98.5		
PHF		.333	.667	.750	.990	.625	.981	.500	.911	.912	.960

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 5



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

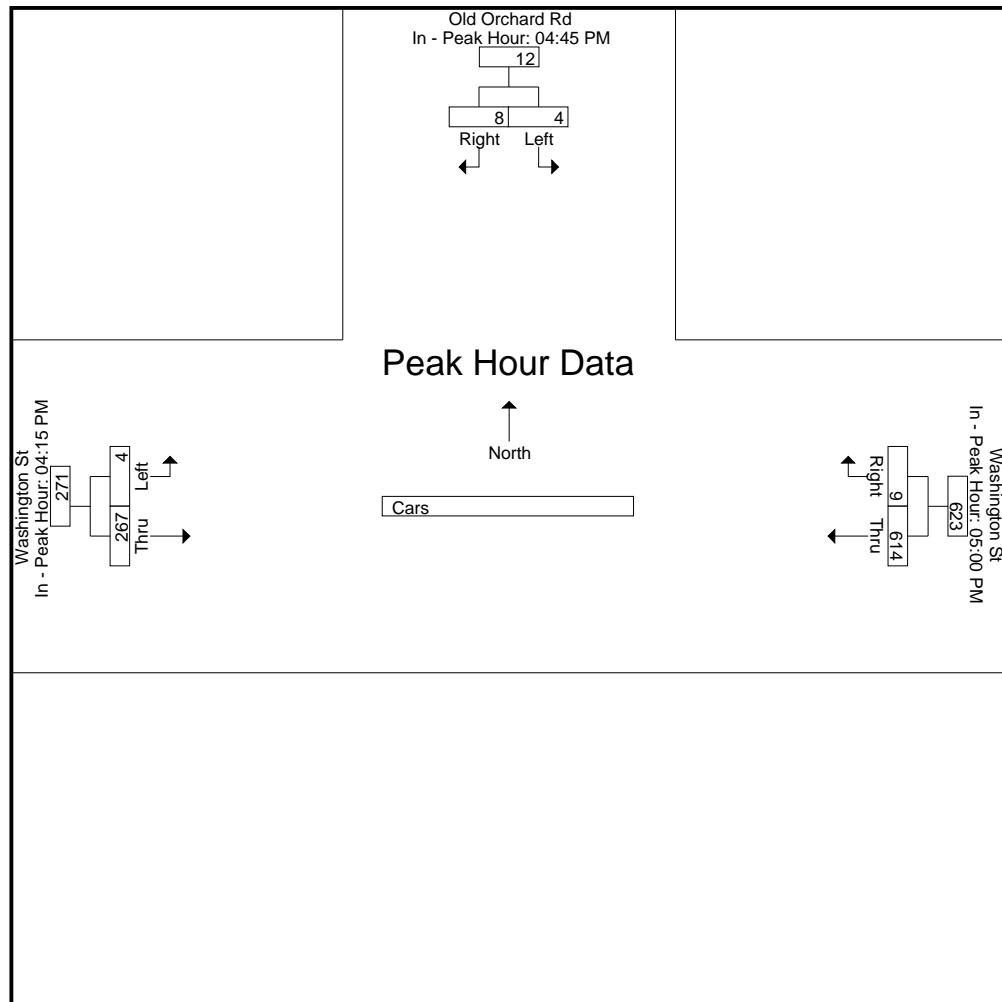
Peak Hour for Each Approach Begins at:

	04:45 PM		05:00 PM		04:15 PM	
+0 mins.	3	1	4	149	2	151
+15 mins.	0	1	1	154	4	158
+30 mins.	0	3	3	154	3	157
+45 mins.	1	3	4	157	0	157
Total Volume	4	8	12	614	9	623
% App. Total	33.3	66.7		98.6	1.4	
PHF	.333	.667	.750	.978	.563	.986
					4	267
					1.5	98.5
					.500	.902
						.916

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 6



Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 7

Groups Printed- Trucks

		Old Orchard Rd From North		Washington St From East		Washington St From West		Int. Total
Start Time		Left	Right	Thru	Right	Left	Thru	
04:00 PM		1	0	3	0	0	0	4
04:15 PM		0	0	2	0	1	0	3
04:30 PM		0	0	1	1	0	0	2
04:45 PM		0	0	0	0	0	1	1
Total		1	0	6	1	1	1	10
05:00 PM		0	0	1	0	0	0	1
05:15 PM		0	0	1	0	0	0	1
05:30 PM		0	0	1	0	0	1	2
05:45 PM		0	0	0	0	0	0	0
Total		0	0	3	0	0	1	4
Grand Total		1	0	9	1	1	2	14
Apprch %		100	0	90	10	33.3	66.7	
Total %		7.1	0	64.3	7.1	7.1	14.3	

**Old Orchard Rd
From North**

**Washington St
From East**

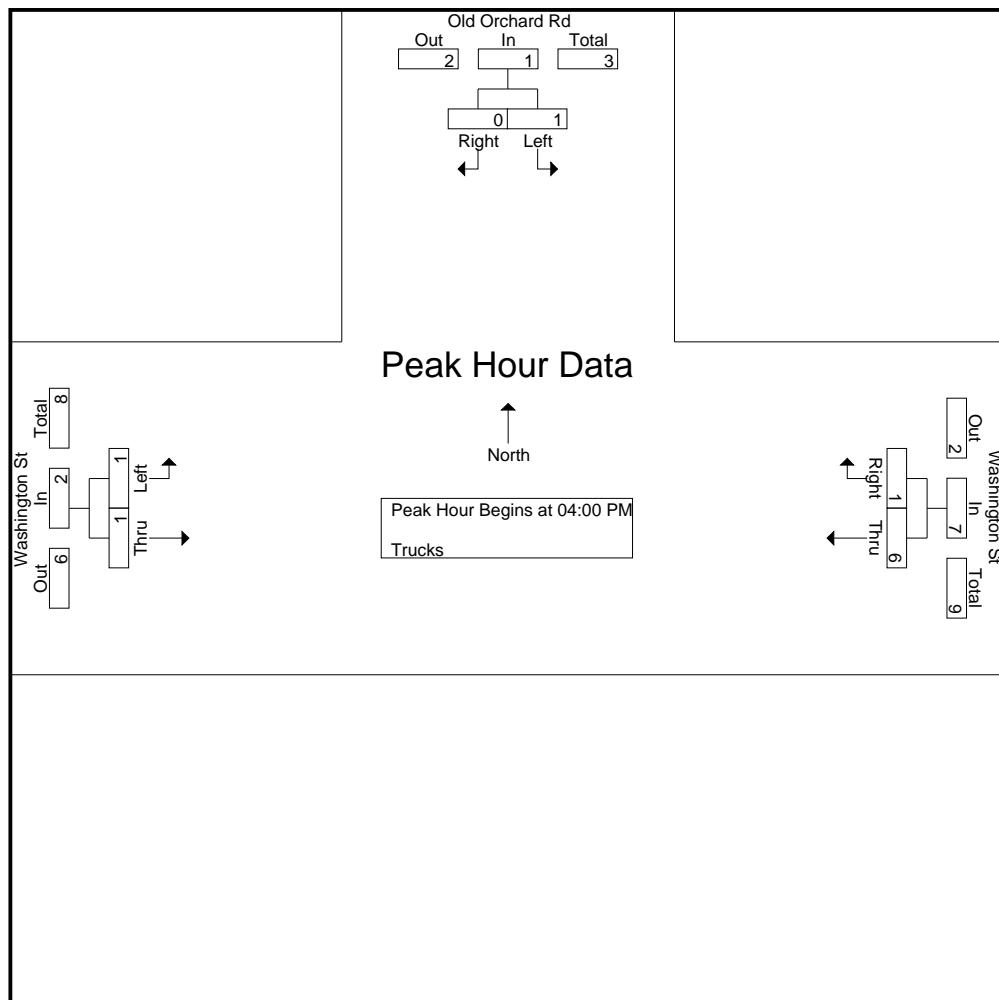
**Washington St
From West**

Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. 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	1	0	1	3	0	3	0	0	0	4
04:15 PM	0	0	0	2	0	2	1	0	1	3
04:30 PM	0	0	0	1	1	2	0	0	0	2
04:45 PM	0	0	0	0	0	0	0	1	1	1
Total Volume	1	0	1	6	1	7	1	1	2	10
% App. Total	100	0		85.7	14.3		50	50		
PHF	.250	.000	.250	.500	.250	.583	.250	.250	.500	.625

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 8



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

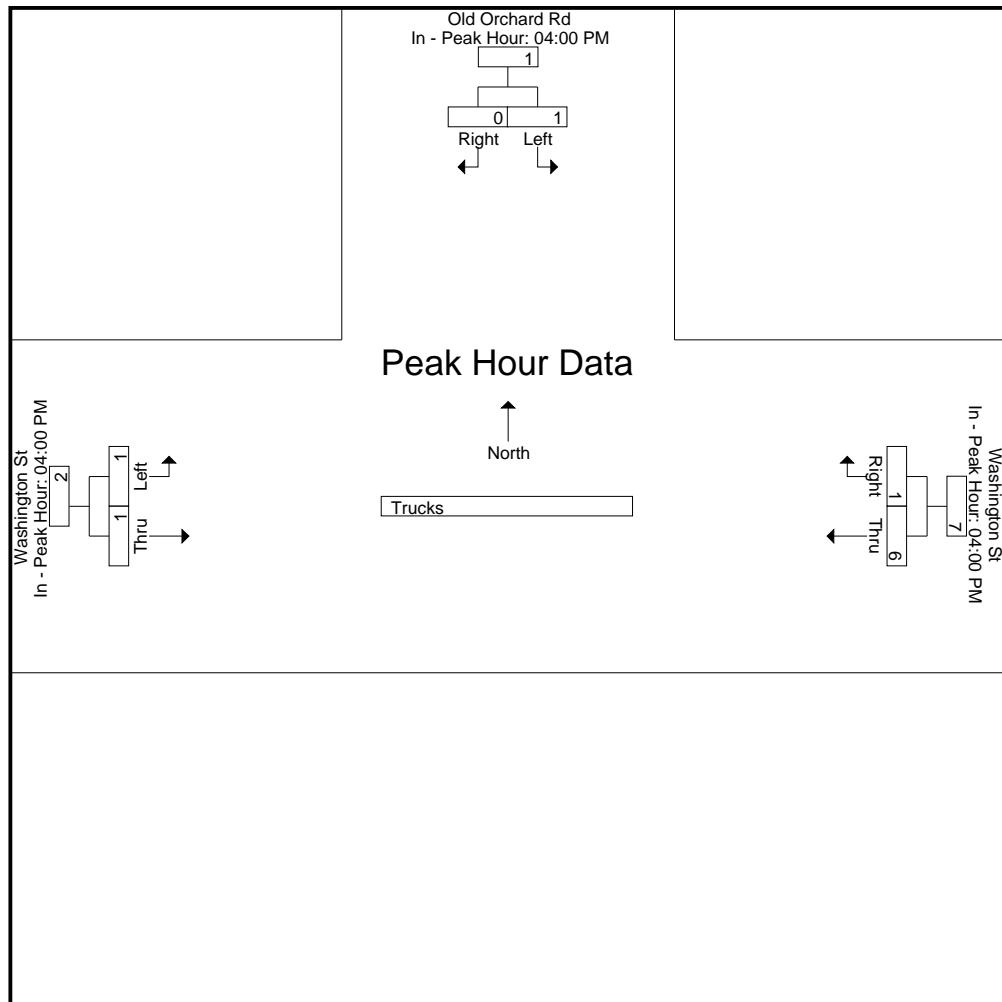
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM		
+0 mins.	1	0	1	3	0	3	0	0	0
+15 mins.	0	0	0	2	0	2	1	0	1
+30 mins.	0	0	0	1	1	2	0	0	0
+45 mins.	0	0	0	0	0	0	0	1	1
Total Volume	1	0	1	6	1	7	1	1	2
% App. Total	100	0		85.7	14.3		50	50	
PHF	.250	.000	.250	.500	.250	.583	.250	.250	.500

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 9



Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 10

Groups Printed- Bikes Peds

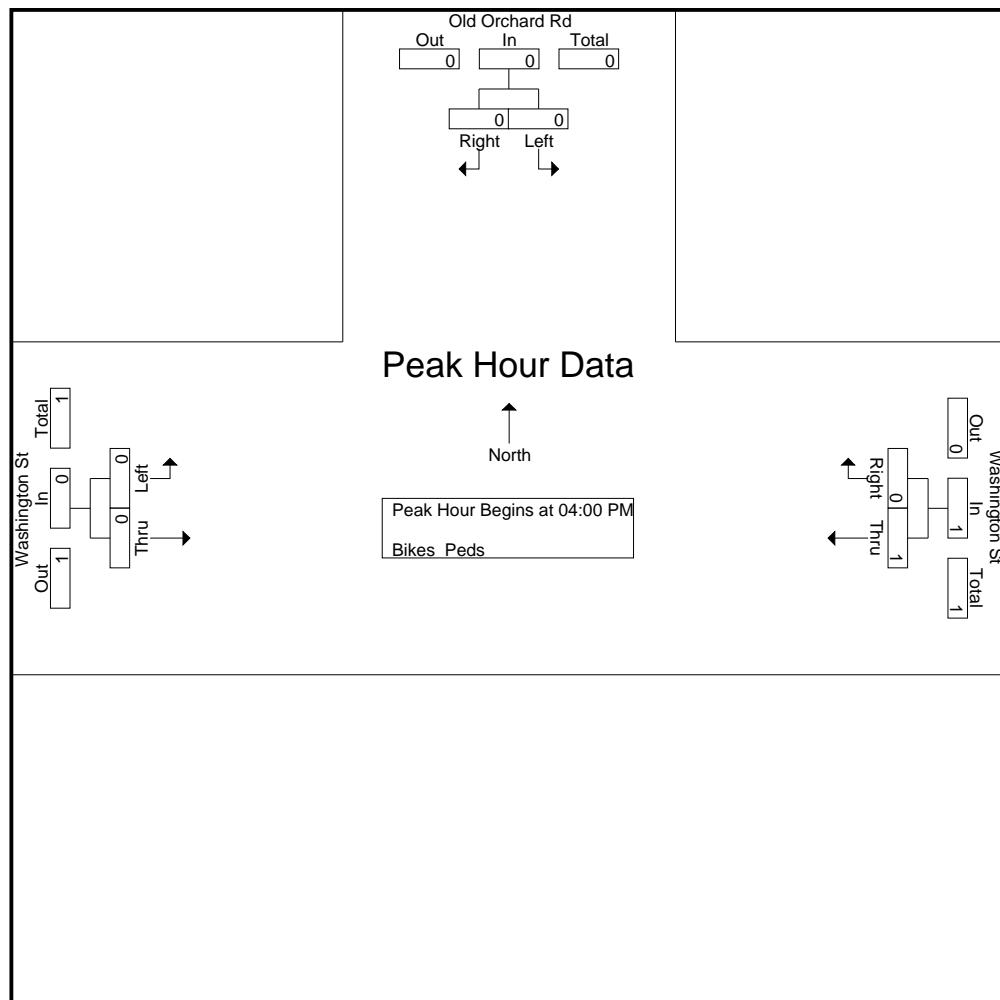
	Old Orchard Rd From North			Washington St From East			Washington St From West						
	Start Time	Left	Right	Peds	Thru	Right	Peds	Left	Thru	Peds	Excl. Total	Incl. Total	Int. Total
04:00 PM		0	0	0	0	0	0	0	0	0	0	0	0
04:15 PM		0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM		0	0	0	1	0	0	0	0	0	0	1	1
04:45 PM		0	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	1	0	0	0	0	0	0	1	1
05:00 PM		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
05:30 PM		0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM		0	0	0	0	0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0	0	0	0	0
Grand Total		0	0	0	1	0	0	0	0	0	0	1	1
Apprch %		0	0		100	0		0	0				
Total %		0	0		100	0		0	0		0	100	

	Old Orchard Rd From North			Washington St From East			Washington St From West					
	Start Time	Left	Right	App. Total	Thru	Right	App. Total	Left	Thru	App. Total	Int. 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
04:15 PM		0	0	0	0	0	0	0	0	0	0	0
04:30 PM		0	0	0	1	0	1	0	0	0	0	1
04:45 PM		0	0	0	0	0	0	0	0	0	0	0
Total Volume		0	0	0	1	0	1	0	0	0	0	1
% App. Total		0	0		100	0		0	0			
PHF		.000	.000	.000	.250	.000	.250	.000	.000	.000	.250	

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 11



Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1

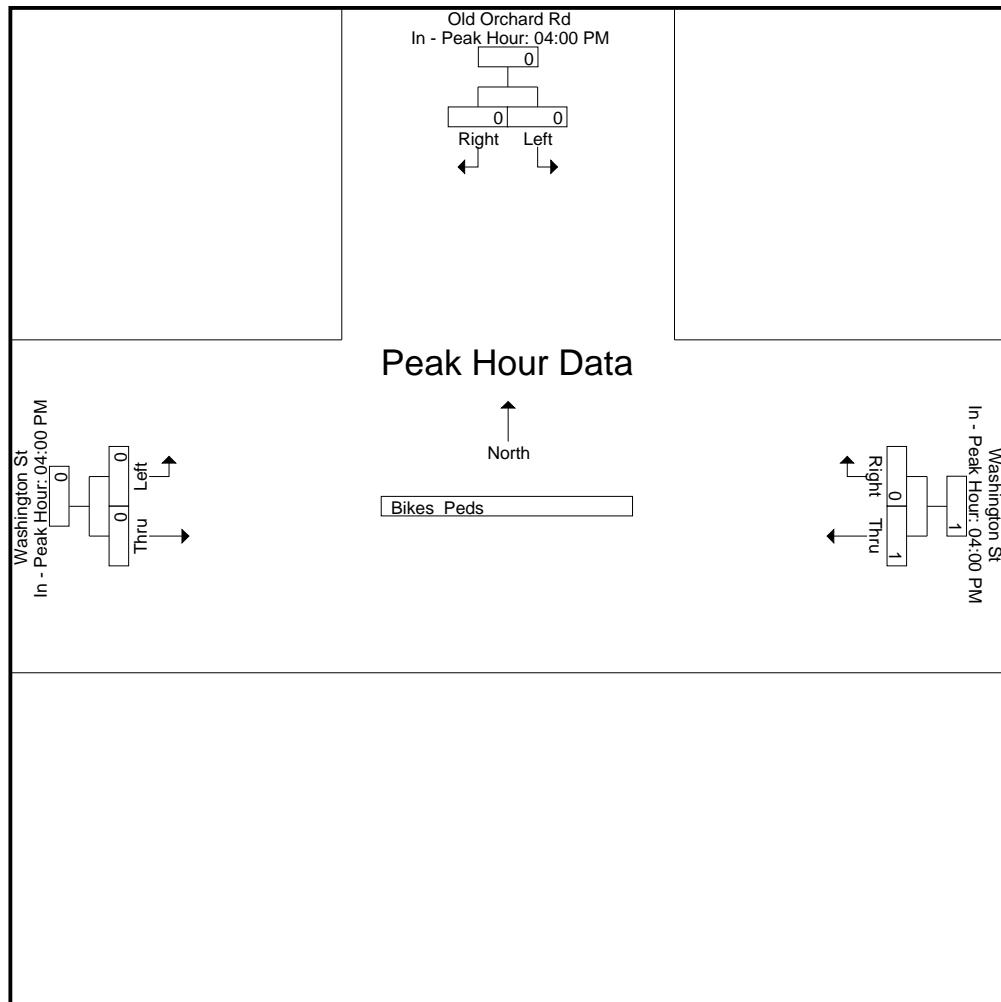
Peak Hour for Each Approach Begins at:

	04:00 PM			04:00 PM			04:00 PM			
+0 mins.	0	0	0	0	0	0	0	0	0	0
+15 mins.	0	0	0	0	0	0	0	0	0	0
+30 mins.	0	0	0	1	0	1	0	0	0	0
+45 mins.	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	1	0	1	0	0	0	0
% App. Total	0	0	0	100	0	0	0	0	0	0
PHF	.000	.000	.000	.250	.000	.250	.000	.000	.000	.000

Accurate Counts
978-664-2565

N/S Street : Old Orchard Road
E/W Street : Washington Street
City/State : Sherborn, MA
Weather : Cloudy

File Name : 96330001
Site Code : 96330001
Start Date : 4/11/2024
Page No : 12



SEASONAL ADJUSTMENT DATA

Massachusetts Highway Department
 Statewide Traffic Data Collection
 2019 Weekday Seasonal Factors

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

Round off:

0-999 = 10

>1000 = 100

U = Urban

R = Rural

1 - Interstate

2 - Freeway and Expressway

3 - Other Principal Arterial

4 - Minor Arterial

5 - Major Collector

6 - Minor Collector

7 - Local Road and Street

Recreational - East Group - Cape Cod (all towns) including the town of Plymouth south of Route 3A (stations

7014, 7079, 7080, 7090, 7091, 7092, 7093, 7094, 7095, 7096, 7097, 7108 and 7178), Martha's Vineyard and Nantucket.

Recreational - West Group - Continuous Stations 2 and 189 including stations

1066, 1067, 1083, 1084, 1085, 1086, 1087, 1088, 1089, 1090, 1091, 1092, 1093, 1094, 1095, 1096, 1097, 1098, 1099, 1100, 1101, 1102, 1103, 1104, 1105, 1106, 1107, 1108, 1113, 1114, 1116, 2196, 2197 and 2198.

MASSDOT CRASH DATA

Washington Street at Greenwood Street Motor Vehicle Crash Data

Crash Number	Crash Date	Day	Crash Severity	Crash Time	Crash Year	First Harmful Event	Light Conditions	Manner of Collision	Road Surface Condition	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions
4474520	12/21/2017	Thu	Property damage only (none injured)	6:08 AM	2017	Collision with animal - deer	Dawn	Single vehicle crash	Dry	V1: Travelling straight ahead	V1: W	Clear
4654662	01/16/2019	Wed	Property damage only (none injured)	1:12 PM	2019	Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: E / V2: E	Clear
4917644	01/09/2021	Sat	Property damage only (none injured)	6:48 AM	2021	Collision with animal - deer	Daylight	Single vehicle crash	Dry	V1: Travelling straight ahead	V1: N	Clear
5036161	11/17/2021	Wed	Property damage only (none injured)	5:35 PM	2021	Collision with parked motor vehicle	Dusk	Sideswipe, same direction	Dry	V1: Parked / V2: Travelling straight ahead	V1: W / V2: W	Clear

Washington Street at Old Orchard Road Motor Vehicle Crash Data

Crash Number	Crash Date	Day	Crash Severity	Crash Time	Crash Year	First Harmful Event	Light Conditions	Manner of Collision	Road Surface Condition	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions
4498121	02/07/2018	Wed	Property damage only (none injured)	5:02 PM	2018	Collision with utility pole	Dark - roadway not lighted	Single vehicle crash	Ice	V1: Travelling straight ahead	V1: W	Rain/Snow
4684855	03/12/2019	Tue	Property damage only (none injured)	4:44 PM	2019	Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	V1: E / V2: E	Clear
4895160	11/03/2020	Tue	Property damage only (none injured)	5:30 PM	2020	Collision with animal - deer	Dusk	Single vehicle crash	Dry	V1: Travelling straight ahead	V1: W	Clear

Washington Street at the Project Site Driveway Motor Vehicle Crash Data

Crash Number	Crash Date	Day	Crash Severity	Crash Time	Crash Year	First Harmful Event	Light Conditions	Manner of Collision	Road Surface Condition	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions
5158747	10/01/2022	Sat	Property damage only (none injured)	12:27 PM	2022	Collision with animal - deer	Daylight	Single vehicle crash	Dry	V1: Travelling straight ahead	V1: E	Clear

Washington Street at Woodland Street Motor Vehicle Crash Data

Crash Number	Crash Date	Day	Crash Severity	Crash Time	Crash Year	First Harmful Event	Light Conditions	Manner of Collision	Road Surface Condition	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Travel Directions (All Vehicles)	Weather Conditions
4276031	10/31/2016	Mon	Property damage only (none injured)	4:13 AM	2016	Collision with animal - deer	Dawn	Single vehicle crash	Dry	V1: Travelling straight ahead	V1: E	Clear
4294536	12/05/2016	Mon	Property damage only (none injured)	8:09 AM	2016	Collision with motor vehicle in traffic	Daylight	Rear-end	Snow	V1: Travelling straight ahead / V2: Slowing or stopped in traffic	V1: E / V2: E	Snow/Cloudy
4140536	01/19/2016	Tue	Property damage only (none injured)	3:38 PM	2016	Collision with motor vehicle in traffic	Daylight	Rear-end	Dry	V1: Slowing or stopped in traffic / V2: Travelling straight ahead	V1: W / V2: W	Clear
4255434	09/28/2016	Wed	Property damage only (none injured)	8:34 AM	2016	Collision with motor vehicle in traffic	Daylight	Angle	Dry	V1: Travelling straight ahead / V2: Turning left	V1: E / V2: N	Cloudy
4364619	05/14/2017	Sun	Non-fatal injury	8:46 PM	2017	Collision with motor vehicle in traffic	Dark - lighted roadway	Angle	Wet	V1: Travelling straight ahead / V2: Travelling straight ahead	V1: W / V2: E	Rain
4415169	08/28/2017	Mon	Property damage only (none injured)	8:32 PM	2017	Collision with motor vehicle in traffic	Dark - roadway not lighted	Angle	Dry	V1: Travelling straight ahead / V2: Turning left	V1: E / V2: N	Clear
4326337	02/13/2017	Mon	Property damage only (none injured)	2:51 PM	2017	Collision with unknown fixed object	Daylight	Single vehicle crash	Snow	V1: Turning right	V1: E	Clear
4592654	09/04/2018	Tue	Non-fatal injury	9:06 PM	2018	Collision with embankment	Dark - lighted roadway	Single vehicle crash	Dry	V1: Travelling straight ahead	V1: N	Clear
4626631	11/21/2018	Wed	Property damage only (none injured)	5:07 PM	2018	Collision with animal - deer	Dark - roadway not lighted	Single vehicle crash	Dry	V1: Travelling straight ahead	V1: W	Snow/Rain
4672028	02/21/2019	Thu	Property damage only (none injured)	6:09 AM	2019	Collision with tree	Dawn	Single vehicle crash	Wet	V1: Travelling straight ahead	V1: E	Snow/Sleet, hail (freezing rain or drizzle)
5043660	12/04/2021	Sat	Non-fatal injury	2:40 AM	2021	Collision with utility pole	Dark - lighted roadway	Single vehicle crash	Dry	V1: Travelling straight ahead	V1: W	Clear
4995161	08/05/2021	Thu	Non-fatal injury	6:21 AM	2021	Collision with utility pole	Daylight	Single vehicle crash	Wet	V1: Travelling straight ahead	V1: W	Clear
4990109	07/26/2021	Mon	Property damage only (none injured)	5:31 PM	2021	Collision with motor vehicle in traffic	Daylight	Angle	Dry	V1: Overtaking/passing / V2: Turning left	V1: E / V2: W	Clear
5031763	11/10/2021	Wed	Property damage only (none injured)	9:58 PM	2021	Collision with unknown fixed object	Dark - roadway not lighted	Single vehicle crash	Dry	V1: Backing	V1: W	Clear
5140435	08/08/2022	Mon	Property damage only (none injured)	6:23 PM	2022	Collision with animal - deer	Daylight	Single vehicle crash	Dry	V1: Travelling straight ahead	V1: W	Clear
5178589	11/07/2022	Mon	Property damage only (none injured)	4:23 PM	2022	Collision with animal - deer	Dusk	Single vehicle crash	Dry	V1: Travelling straight ahead	V1: E	Clear

MASSDOT CRASH RATE WORKSHEETS

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Sherborn COUNT DATE : 2/14/2023

DISTRICT : 3 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street (Route 16)

MINOR STREET(S) : Woodland Street

**INTERSECTION
DIAGRAM
(Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NEB	SWB	NWB			
PEAK HOURLY VOLUMES (AM) :	881	185	66			1,132
"K" FACTOR :	0.090	INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :				12,578
TOTAL # OF CRASHES :	16	# OF YEARS :	7	AVERAGE # OF CRASHES PER YEAR (A) :		

CRASH RATE CALCULATION : **0.50** RATE =
$$\frac{(A * 1,000,000)}{(V * 365)}$$

Comments : Below MassDOT Statewide and District Average Crash Rates

Project Title & Date: 9633 - Proposed Multifamily Residential Development

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Sherborn COUNT DATE : 2/14/2023

DISTRICT : 3 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street (Route 16)

MINOR STREET(S) : Greenwood Street

**INTERSECTION
DIAGRAM
(Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NEB	SWB	NB			
PEAK HOURLY VOLUMES (AM) :	767	186	5			958

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

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

Comments : Below MassDOT Statewide and District Average Crash Rates

Project Title & Date: 9633 - Proposed Multifamily Residential Development

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Sherborn COUNT DATE : 4/11/2024

DISTRICT : 3 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street (Route 16)

MINOR STREET(S) : Old Orchard Road

**INTERSECTION
DIAGRAM
(Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NEB	SWB	NB			
PEAK HOURLY VOLUMES (AM) :	734	205	11			950

" K " FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

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

Comments : Below MassDOT Statewide and District Average Crash Rates

Project Title & Date: 9633 - Proposed Multifamily Residential Development

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Sherborn COUNT DATE : 2/14/2023

DISTRICT : 3 UNSIGNALIZED : SIGNALIZED :

~ INTERSECTION DATA ~

MAJOR STREET : Washington Street (Route 14)

MINOR STREET(S) : Project Site Driveway

**INTERSECTION
DIAGRAM
(Label Approaches)**



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NEB	SWB	NWB			
PEAK HOURLY VOLUMES (AM) :	767	185	-			952

"K" FACTOR : INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

TOTAL # OF CRASHES : # OF YEARS : AVERAGE # OF CRASHES PER YEAR (A) :

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

Comments : Below MassDOT Statewide and District Average Crash Rates

Project Title & Date: 9633 - Proposed Multifamily Residential Development

SIGHT DISTANCE CALCULATIONS

Sight Distance Calculations

Stopping Sight Distance (SSD)

$$SSD = 1.47 Vt + 1.075 \frac{V^2}{a}$$

Where:

SSD = stopping sight distance

V = design speed

t = brake reaction time, 2.5 seconds

a = deceleration rate, 11.2 ft/s

$$SSD = 1.47(50)(2.5) + 1.075 \frac{50^2}{11.2} = 423.7 \text{ ft} \sim 425 \text{ ft}$$

Intersection Sight Distance (ISD)

$$ISD = 1.47 V_{major} t_g$$

Where:

ISD = intersection sight distance

V_{major} = design speed of major roadway

t_g = time gap for minor road vehicles to enter major road

ISD for right-turn exiting Project site driveway

$$ISD = 1.47 (50)(6.5) = 477.8 \text{ ft} \sim 480 \text{ ft}$$

ISD for left-turn exiting Project site driveway

$$ISD = 1.47 (50)(7.5) = 551.3 \text{ ft} \sim 555 \text{ ft}$$

CAPACITY ANALYSIS WORKSHEETS

Route 16 at Old Orchard Road

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			A	B	
Traffic Vol, veh/h	8	3	2	734	204	1
Future Vol, veh/h	8	3	2	734	204	1
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	69	69	80	80	95	95
Heavy Vehicles, %	0	0	0	2	4	100
Mvmt Flow	12	4	3	918	215	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1140	216	216	0	-	0
Stage 1	216	-	-	-	-	-
Stage 2	924	-	-	-	-	-
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	224	829	1366	-	-	-
Stage 1	825	-	-	-	-	-
Stage 2	390	-	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	223	829	1366	-	-	-
Mov Cap-2 Maneuver	223	-	-	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	390	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	18.7	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1366	-	279	-	-	
HCM Lane V/C Ratio	0.002	-	0.057	-	-	
HCM Control Delay (s)	7.6	0	18.7	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			A	B	
Traffic Vol, veh/h	4	8	4	268	613	10
Future Vol, veh/h	4	8	4	268	613	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	91	91	98	98
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	5	11	4	295	626	10
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	934	631	636	0	-	0
Stage 1	631	-	-	-	-	-
Stage 2	303	-	-	-	-	-
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	297	485	957	-	-	-
Stage 1	534	-	-	-	-	-
Stage 2	754	-	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	296	485	957	-	-	-
Mov Cap-2 Maneuver	296	-	-	-	-	-
Stage 1	531	-	-	-	-	-
Stage 2	754	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.4	0.1		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	957	-	400	-	-	
HCM Lane V/C Ratio	0.005	-	0.04	-	-	
HCM Control Delay (s)	8.8	0	14.4	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			A	B	
Traffic Vol, veh/h	9	3	2	803	223	1
Future Vol, veh/h	9	3	2	803	223	1
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	69	69	80	80	95	95
Heavy Vehicles, %	0	0	0	2	4	100
Mvmt Flow	13	4	3	1004	235	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1246	236	236	0	-	0
Stage 1	236	-	-	-	-	-
Stage 2	1010	-	-	-	-	-
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	194	808	1343	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	355	-	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	193	808	1343	-	-	-
Mov Cap-2 Maneuver	193	-	-	-	-	-
Stage 1	804	-	-	-	-	-
Stage 2	355	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	21.3	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1343	-	238	-	-	
HCM Lane V/C Ratio	0.002	-	0.073	-	-	
HCM Control Delay (s)	7.7	0	21.3	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W		A	B		
Traffic Vol, veh/h	4	9	4	293	670	11
Future Vol, veh/h	4	9	4	293	670	11
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	75	91	91	98	98
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	5	12	4	322	684	11

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1020	690	695	0	-	0
Stage 1	690	-	-	-	-	-
Stage 2	330	-	-	-	-	-
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	264	449	910	-	-	-
Stage 1	502	-	-	-	-	-
Stage 2	733	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	263	449	910	-	-	-
Mov Cap-2 Maneuver	263	-	-	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	733	-	-	-	-	-

Approach	EB	NB	SB
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HCM Control Delay, s 15.2 0.1 0

HCM LOS C

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	910	-	369	-	-
HCM Lane V/C Ratio	0.005	-	0.047	-	-
HCM Control Delay (s)	9	0	15.2	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			A	B	
Traffic Vol, veh/h	9	3	2	824	229	1
Future Vol, veh/h	9	3	2	824	229	1
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	69	69	80	80	95	95
Heavy Vehicles, %	0	0	0	2	4	100
Mvmt Flow	13	4	3	1030	241	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1278	242	242	0	-	0
Stage 1	242	-	-	-	-	-
Stage 2	1036	-	-	-	-	-
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	802	1336	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	345	-	-	-	-	-
Platoon blocked, %		-	-	-	-	-
Mov Cap-1 Maneuver	184	802	1336	-	-	-
Mov Cap-2 Maneuver	184	-	-	-	-	-
Stage 1	799	-	-	-	-	-
Stage 2	345	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	22.1	0		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1336	-	228	-	-	
HCM Lane V/C Ratio	0.002	-	0.076	-	-	
HCM Control Delay (s)	7.7	0	22.1	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			A	B	
Traffic Vol, veh/h	4	9	4	304	689	11
Future Vol, veh/h	4	9	4	304	689	11
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	75	91	91	98	98
Heavy Vehicles, %	0	0	0	1	1	0
Mvmt Flow	5	12	4	334	703	11
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1051	709	714	0	-	0
Stage 1	709	-	-	-	-	-
Stage 2	342	-	-	-	-	-
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	253	438	895	-	-	-
Stage 1	491	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	252	438	895	-	-	-
Mov Cap-2 Maneuver	252	-	-	-	-	-
Stage 1	489	-	-	-	-	-
Stage 2	724	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	15.6	0.1		0		
HCM LOS	C					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	895	-	357	-	-	
HCM Lane V/C Ratio	0.005	-	0.049	-	-	
HCM Control Delay (s)	9	0	15.6	-	-	
HCM Lane LOS	A	A	C	-	-	
HCM 95th %tile Q(veh)	0	-	0.2	-	-	