

# **Traffic Impact and Access Study**

**Proposed Residential Development  
61 Duval Road  
Sutton, Massachusetts**

Submitted to:

**Towns of Douglas and Sutton  
September 2021**

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## EXECUTIVE SUMMARY

Tetra Tech has reviewed the potential traffic impacts associated with the proposed residential development to be located on Duval Road in Sutton, Massachusetts and Forest Street in Douglas, Massachusetts. The project site consists of two parcels totaling approximately 130 acres. One parcel is located on the south side of the road at 61 Duval Road in Sutton (approximately 5 acres) and the second parcel is located immediately to the south (approximately 125 acres) in Douglas, Massachusetts. The existing site consists of a single-family home on the 61 Duval Road parcel while the Douglas parcel is currently vacant. The project proposes to construct 30 new single-family homes. The existing single-family home is proposed to remain. Access to the site will be provided by two full-access subdivision roadways – one each on Duval Road in Sutton and on Forest Street in Douglas.

A summary of the study methodology and key findings is presented below.

### Study Methodology

The study evaluates existing and future traffic operations (with and without the proposed project) at the project site access intersections with the regional roadway system and key study intersections in the vicinity of the site. The study provides a detailed analysis of intersection capacity during the weekday morning and weekday evening commuter peak hours, when the combination of existing traffic on the surrounding area roadways and new traffic associated with the proposed residential development would be greatest.

The 2021 Existing weekday morning and weekday evening peak hour traffic volumes at the study area intersections were established based on traffic counts collected in July 2021. The 2021 Existing peak hour traffic volumes were then projected to the future design year of 2028, by which time the proposed project is expected to be built and occupied. The 2021 Existing traffic volumes were grown by 2 percent per year for the seven-year forecast period (2021 to 2028) to reflect the 2028 No Build (Without Project). The traffic increases associated with the currently proposed project were then added to the 2028 No Build peak hour traffic volumes to reflect the future 2028 Build (With Project) conditions.

Intersection capacity analyses were then conducted for each of the study intersections for the 2021 Existing, 2028 No Build (Without Project) and 2028 Build (With Project) weekday morning and weekday evening peak hour traffic volumes to identify existing and projected traffic deficiencies near the project site.

### Future Site-Generated Traffic

Vehicle trip generation estimates for the currently proposed 31-unit single-family home residential development were developed based on data presented in the Institute of Transportation Engineers' (ITE) publication *Trip Generation Manual, 10th Edition* for the closest available land use (Land Use 210 – Single-Family Detached Housing).

The ITE data indicates that the proposed residential development, including the existing single-family home on-site, is expected to generate approximately 23 vehicle trips (6 entering trips and 17 exiting trips) during the weekday morning peak hour and 31 vehicle trips (20 entering trips and 11 exiting trips) during the weekday evening peak.

### Project Trip Distribution

The project vehicle trips will be distributed to the surrounding roadway network via two proposed subdivision roadway intersections (one each on Duval Road and Forest Street), thus limiting potential traffic increases at any one driveway location. The proposed project vehicle trips were assigned to the surrounding area roadways based on US Census Journey to Work data for the Towns of Sutton and Douglas as well as existing travel patterns.

## **Intersection Capacity Analysis**

To quantify potential traffic impacts associated with the proposed residential development, Tetra Tech conducted intersection capacity analyses at key intersections near the project site for the 2021 Existing, 2028 No Build (Without Project), and 2028 Build (With Project) weekday morning and weekday evening peak hour traffic conditions.

The capacity analyses indicate the existing study intersections operate well below capacity with minimal delay at LOS A operations under existing and future year conditions with and without the project. The project is expected to have no material impact on study area intersection operations. The proposed subdivision roadway intersections with Duval Road and Forest Street are also expected to operate well below capacity with minimal delay at LOS A operations.

## **Roadway Safety**

Crash data was obtained from the crash database on the MassDOT website for the latest six-year period available (January 2015 through December 2020). One crash was reported at the study area intersections over the six-year study period which occurred at the Duval Road/Torrey Road intersection. Because the peak hour intersection volumes are very low, the crash rate for the Duval Road/Torrey Road intersection is consistent with the Statewide average and slightly above the District-wide average for unsignalized intersections even though there was only one reported crash. The incident involved a single vehicle collision in May 2020 under dark roadway conditions (nighttime). The MassDOT crash data indicated that the collision resulted in suspected minor injury. The crash analysis results do not indicate an unusually high crash frequency at study area intersections given the existing traffic demands. The crash analysis results do not indicate an unusually high crash frequency at study area intersections given the existing traffic demands.

Two crashes were reported to have occurred on Duval Road between Torrey Road and Mumford Road and each crash involved a single vehicle collision with a tree. One crash occurred at 1:52 PM in April 2019 under clear weather and dry roadway conditions with the driver reported as having been distracted by an electronic device. A second crash occurred at 1:40 AM in October 2020 under foggy conditions and resulted in a possible injury. The resulting crash rate for the Duval Roadway segment between Torrey Road and Mumford Road exceeds the statewide average. However, no discernable crash patterns were identified with one crash potentially involving a distracted driver and the other crash occurring under poor visibility (fog) conditions. Additionally, the two reported crashes occurred in different locations along Duval Road.

One crash was reported along Belvoir Avenue at 3:28 PM in June 2017 under clear weather and dry roadway conditions. The crash was a sideswipe type collision with a parked vehicle resulting in property damage only. Driver inattention was cited for the driver of the moving vehicle.

## **Sight Distance**

Review of available sight distances at the proposed subdivision roadway intersections with Forest Street indicate that SSD and ISD criteria are satisfied for the observed 85<sup>th</sup> percentile travel speeds. Sight lines at the proposed subdivision roadway on Duval Road satisfy minimum AASHTO criteria for the regulatory speed limit of 30 mph. However, sight lines are restricted based on the observed 85<sup>th</sup> percentile travel speed of 40 mph. To enhance driveway awareness of the proposed subdivision roadway intersection with Duval Road, it is recommended that advance intersection warning signage for Manual on Uniform Traffic Control Devices (MUTCD) W2-2 be installed in both travel directions on Duval Road in accordance with MUTCD standards.

## INTRODUCTION

### 1.1 PROJECT DESCRIPTION

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The project site is shown in Figure 1 and consists of two parcels totaling approximately 130 acres. One parcel is located on the south side of the road at 61 Duval Road in Sutton, Massachusetts (approximately 5 acres) and the second parcel is located immediately to the south (approximately 125 acres) in Douglas, Massachusetts. The existing site consists of a single-family home on the 61 Duval Road parcel while the Douglas parcel is currently vacant. The project proposes to construct 30 new single-family homes. The existing home is proposed to remain. Access to the site will be provided by two full-access subdivision roadways – one each on Duval Road in Sutton and on Forest Street in Douglas.

### 1.2 STUDY METHODOLOGY

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The traffic study methodology is consistent with Massachusetts Department of Transportation (MassDOT) *Traffic Impact Assessment* guidelines. The traffic impact and access study (TIAS) provides a detailed analysis of existing and future traffic operations (both with and without the proposed development) during the weekday morning and weekday evening peak hours at the study area intersections (including the proposed subdivision roadways along Duval Road and Forest Street).

This study was conducted in three phases. The first phase involved an inventory of existing traffic conditions in the vicinity of the site. As part of the existing conditions assessment, peak period traffic volume data was collected at the existing study area intersections in July 2021. A field visit was conducted to inventory roadway and intersection geometries and traffic control and to observe the general operational characteristics for each of the study area intersections. MassDOT crash data for the most recent six-year period available (2015 to 2020) was also reviewed.

The second phase of the study builds upon the data collected in the first phase and establishes the framework for evaluating potential traffic impacts associated with the project. The 2021 Existing peak hour traffic volumes were then projected to the design year 2028. The future 2028 No Build (Without Project) traffic volumes were assumed to include traffic increases resulting from general background traffic growth as well as specific development projects that are planned in the area. Traffic increases associated with the project were then added to the No Build traffic volumes to reflect the future 2028 Build (With Project) weekday morning and weekday evening peak hour volumes.

In the third phase of this study, the existing and projected future traffic operations at each of the study intersections were analyzed to identify potential traffic operational deficiencies and, if warranted, potential improvements to improve traffic flow.

## EXISTING CONDITIONS

The effective evaluation of potential transportation impacts associated with the project requires a thorough understanding of the existing traffic conditions on the roadways and intersections in the vicinity of the project site. The existing conditions assessment consists of an inventory of the roadway and intersection geometries and traffic control devices; collection of peak period traffic volumes; field observations; safety analysis; review of pedestrian, bicycle, and transit services; and analysis of existing traffic operations.

### 2.1 STUDY AREA ROADWAYS

The site consists of an approximate 5-acre parcel located at 61 Duval Road and an approximate 125-acre parcel immediately to the south in Douglas. The site will be accessed by a proposed subdivision roadway which will intersect Duval Road to the north and Forest Street to the west. The project-generated traffic will travel to and from the site via the following key study area roadways.

**Duval Road.** Duval Road is classified as a local roadway and is under local (Town of Sutton) jurisdiction. It has a generally straight alignment with some horizontal and vertical curvature in the vicinity of the site. Duval Road is accessed by Mumford Road to the east and Torrey Road to the west. Duval Road approaches both Mumford Road and Torrey Road at a downgrade. It has a two-lane cross-section, with one travel lane in each direction and is approximately 22 feet wide in the vicinity of the site. Currently, pavements markings are not provided along Duval Road except for Stop line markings at the intersections with Mumford Road and Torrey Road. There are no posted speed limit signs and land use along this roadway consists of single-family homes.

**Mumford Road.** Mumford Road is classified as a local roadway and is under local (Town of Sutton) jurisdiction. It generally runs in a north-south orientation and connects Duval Road to Main Street to the north and the Town line with Douglas to the south. Mumford Road generally has a two-lane cross-section, with one travel lane in each direction within the study area. Currently, pavements markings are not provided along Mumford Road except for Stop line markings at the intersection with Main Street. There are 30 mile per hour (mph) warning signs posted along Mumford Road southbound upon departing Main Street and Mumford Road northbound approaching Duval Road. Land use along this roadway primarily consists of single-family homes.

**Torrey Road.** Torrey Road is classified as a local roadway and is under local (Town of Sutton) jurisdiction. It generally runs in a north-south orientation and connects Duval Road to Manchaug Road to the north and the Town line with Douglas to the south. Torrey Road generally has a two-lane cross-section, with one travel lane in each direction within the study area. A 30-mph warning sign is posted along Torrey Road northbound just north of Duval Road. Land use along this roadway primarily consists of single-family homes.

**Birch Street.** Birch Street is classified as a local roadway and is under local (Town of Douglas) jurisdiction. It generally runs in a north-south orientation and connects Fairfax Way and Belvoir Avenue to the Town line with Sutton to the north and NW Main Street to the south. Birch Street generally has a two-lane cross-section, with one travel lane in each direction within the study area. Just south of Belvoir Avenue, the posted regulatory speed limit is 35 mph in the vicinity of house #53 and 58. Land use along this roadway primarily consists of single-family homes.

**Forest Street.** Forest Street is classified as a local roadway and is a private roadway. It has a generally straight alignment and is approximately 17 feet wide in the site vicinity. Forest Street is a residential neighborhood roadway and is accessed by Fairfax Way, Belvoir Avenue and Irene Street to the west.



Duval Road has a two-lane cross-section, with one travel lane in each direction and has no pavement markings or posted speed limit signs along the roadway. Land use along this roadway consists of single-family homes.

**Fairfax Way.** Fairfax Way is classified as a local roadway and has a generally straight alignment. Fairfax Way is a residential neighborhood roadway and is accessed by Birch Street to the west and Forest Street to the east. Fairfax Way has a two-lane cross-section, with one travel lane in each direction and has no pavement markings or posted speed limit signs along the roadway. Land use along this roadway consists of single-family homes.

**Belvoir Avenue.** Belvoir Avenue is classified as a local roadway and has a generally straight alignment. Belvoir Avenue is a residential neighborhood roadway and is accessed by Birch Street to the west, to the east by Forest Street and to the south by Lucy Street. Belvoir Avenue has a two-lane cross-section, with one travel lane in each direction and has no pavement markings or posted speed limit signs along the roadway. Land use along this roadway consists of single-family homes.

## **2.2 STUDY AREA INTERSECTIONS**

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The study area intersections chosen for detailed analysis are shown in Figure 1 and are listed below:

1. Duval Road at Torrey Road (Unsignalized)
2. Duval Road at Mumford Road (Unsignalized)
3. Birch Street at Fairfax Way (Unsignalized)
4. Birch Street at Belvoir Avenue (Unsignalized)
5. Duval Road at Proposed Subdivision Roadway (Unsignalized)
6. Forest Street at Proposed Subdivision Roadway (Unsignalized)

The existing lane geometry and traffic control at each of the study intersections is documented in the capacity analysis provided in the appendix of this report and detailed for the key intersections below.

**Duval Road at Torrey Road.** Duval Road intersects Torrey Road to form a three-legged, unsignalized intersection. Each approach consists of a single, general-purpose travel lane. The Duval Road westbound approach to the intersection operates under Stop-sign control. Dedicated pedestrian and bicycle accommodations are not provided at the intersection. Adjacent land use at the intersection consists of single-family homes.

**Duval Road at Mumford Road.** Duval Road intersects Mumford Road to form a three-legged, unsignalized intersection. Each approach consists of a single, general-purpose travel lane. The Duval Road eastbound approach to the intersection operates under Stop-sign control. Dedicated pedestrian and bicycle accommodations are not provided at the intersection. Adjacent land use at the intersection consists of single-family homes.

**Birch Street at Fairfax Way.** Fairfax Way intersects Birch Street to form a three-legged, unsignalized intersection. Each approach consists of a single, general-purpose travel lane. The Fairfax Way westbound approach to the intersection does not have a Stop bar or sign. Pedestrian and bicycle accommodations are not provided at the intersection. Adjacent land use at the intersection consists of single-family homes.

**Birch Street at Belvoir Avenue.** Belvoir Avenue intersects Birch Street to form a three-legged, unsignalized intersection. Each approach consists of a single, general-purpose travel lane. The Belvoir Avenue westbound approach to the intersection operates under Stop-sign control. Pedestrian and bicycle

accommodations are not provided at the intersection. Adjacent land use at the intersection consists of single-family homes.

## 2.3 EXISTING TRAFFIC VOLUMES

Peak period intersection turning movement counts (TMCs) and Automatic traffic recorder (ATR) counts were collected in July 2021 to establish existing traffic levels for key roadways and intersections in the vicinity of the project site. A brief description of the daily and peak periods traffic volume data obtained for this study is presented below.

### 2.3.1 Daily Traffic Volumes

ATR counts were conducted along Duval Road and Forest Street in the site vicinity on Wednesday, July 21, 2021. According to 2019 MassDOT weekday seasonal factors, the seasonal adjustment factors for urban local roads in July is 0.92. To provide a conservative analysis, the traffic count data was not adjusted downward. The ATR data indicates that Duval Road carries a total two-way traffic volume of 280 vehicles per day (vpd) and Forest Street carries 27 vpd on a typical weekday. A detailed summary of the ATR data is presented in Table 1. The ATR traffic volume data is provided in Appendix A.

**Table 1      Weekday Daily Traffic Volume Summary**

Roadway Segment	Daily (vpd) <sup>1</sup>	AM Peak Hour Volume (vph) <sup>2</sup>	AM Peak Hour Travel Split	PM Peak Hour Volume (vph)	PM Peak Hour Travel Split
Duval Road at #61	280	21	57% EB	35	57% WB
Forest Street at #5	27	2	50% NB	4	75% NB

Based on average of automatic traffic recorder counts collected on July 21, 2021

1) vpd = vehicles per day

2) vph = vehicles per hour

Speed data was also collected with the ATRs that were placed on Duval Road and Forest Street. As summarized in Table 2, the observed average and 85<sup>th</sup> percentile travel speeds on Duval Road were 35 mph and 40 mph, respectively. On Forest Street, the observed travel speeds were well below the prima facie speed limit of 30 mph. The ATR speed data are provided in Appendix B.

**Table 2      Travel Speed Summary**

Roadway Segment	Direction	Regulatory Speed Limit (mph) <sup>1</sup>	Average Observed Travel Speed (mph)	85 <sup>th</sup> Percentile Observed Travel Speed (mph)
Duval Road at #61	EB	30	35	40
	WB	30	35	40
Forest Street at #5	NB	30	13	17
	SB	30	14	18

Based on automatic traffic recorder counts collected on July 21, 2021

1) No posted speed limit signs are provided on Duval Road or Forest Street. Regulatory speed limit based on an assumed prima facie speed limit of 30 miles per hour (mph) for both roadways.

## 2.3.2 Peak Hour Traffic Volumes

The combined critical peak demand periods of site traffic and adjacent street traffic will occur during the weekday morning and weekday evening commuter peak hours. The TMCs were conducted at the study intersections on Wednesday, July 21, 2021. The TMC data was collected during the typical weekday morning and weekday evening commuter peak periods (from 7:00 AM to 9:00 AM and from 4:00 PM to 6:00 PM). The turning movement counts are provided in Appendix A.

### 2.3.2.1 Peak Hour Volume Adjustments

Seasonal traffic volume data was reviewed to determine if seasonal adjustments were necessary for the traffic counts collected in July. According to 2019 MassDOT weekday seasonal factors, the seasonal adjustment factors for urban local roads in July is 0.92. To provide a conservative analysis, the peak hour traffic count data was not adjusted downward. The MassDOT permanent count station data is provided in Appendix C. The 2021 Existing Condition weekday peak hour traffic volumes are presented in Figure 2.

## 2.4 PUBLIC TRANSPORTATION

The Worcester Regional Transit Authority (WRTA) operates bus service via WRTA Route A through the northeasterly portion of the Town of Sutton and WRTA Route B in neighboring Northbridge with a stop at the Walmart located at the Town line with Sutton. However, both of these services are located more than 8 miles from the site and, therefore, are unlikely to be used by the residents of the proposed residential development. The route information is provided in Appendix D.

## 2.5 PEDESTRIAN AND BICYCLE ACCOMMODATIONS

Dedicated pedestrian and bicycle accommodations are generally not provided in the study area. There are also no marked shoulders along roadways within the study area.

## 2.6 CRASH ANALYSIS

Crash data was obtained from the crash database on the MassDOT website for the latest six-year period available (January 2015 through December 2020). The MassDOT crash database has finalized data for 2015 through 2017. Data from 2018 through 2020 is available but has not yet been finalized (closed) by MassDOT and is subject to change. Table 3 presents a summary of the reported crashes. The crash data, if any, and crash rate calculations for each study intersection are provided in Appendix E.

One crash was reported at the study area intersections over the six-year study period which occurred at the Duval Road/Torrey Road intersection. Because the peak hour intersection volumes are very low, the crash rate for the Duval Road/Torrey Road intersection is consistent with the Statewide average and slightly above the District-wide average for unsignalized intersections even though there was only reported crash. The incident involved a single vehicle collision in May 2020 under dark roadway conditions (nighttime). The MassDOT crash data indicated that the collision resulted in suspected minor injury. The crash analysis results do not indicate an unusually high crash frequency at study area intersections given the existing traffic demands. The crash analysis results do not indicate an unusually high crash frequency at study area intersections given the existing traffic demands.

Two crashes were reported to have occurred on Duval Road between Torrey Road and Mumford Road and each crash involved a single vehicle collision with a tree. One crash occurred at 1:52 PM in April 2019 under clear weather and dry roadway conditions with the driver reported as having been distracted by an electronic device. A second crash occurred at 1:40 AM in October 2020 under foggy conditions and resulted in a possible injury. The resulting crash rate for the Duval Roadway segment between Torrey Road and Mumford Road exceeds the statewide average. However, no discernable crash patterns were identified with one crash potentially involving a distracted driver and the other crash occurring under poor visibility (fog) conditions. Additionally, the two reported crashes occurred in different locations along Duval Road.

One crash was reported along Belvoir Avenue at 3:28 PM in June 2017 under clear weather and dry roadway conditions. The crash was a sideswipe type collision with a parked vehicle resulting in property damage only. Driver inattention was cited for the driver of the moving vehicle.

**Table 3      Crash Data Summary (2015-2020)<sup>1</sup>**

	INTERSECTION				ROADWAY SEGMENT
	Duval Road at Torrey Road	Duval Road at Mumford Road	Birch Street at Fairfax Way	Birch Street at Belvoir Avenue	Duval Road
<b>Year</b>					
2015	0	0	0	0	0
2016	0	0	0	0	0
2017	0	0	0	0	0
2018	0	0	0	0	0
2019	0	0	0	0	1
<u>2020</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>Type</b>					
Angle	0	0	0	0	0
Rear-end	0	0	0	0	0
Head-on	0	0	0	0	0
Sideswipe	0	0	0	0	0
Single Vehicle	1	0	0	0	2
<u>Other/Unknown</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>Severity</b>					
Property	0	0	0	0	0
Injury	1	0	0	0	1
Fatality	0	0	0	0	0
<u>Unknown</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>Non-Motorists</b>					
Pedestrians	0	0	0	0	0
Bicyclists	0	0	0	0	0
Vehicles Only	0	0	0	0	0
<u>Other/Unknown</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Weather</b>					
Clear	1	0	0	0	1
Cloudy	0	0	0	0	0
Rain	0	0	0	0	0
Snow	0	0	0	0	0
<u>Other/Unknown</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>Time</b>					
7am to 9am	0	0	0	0	0
9am to 4pm	0	0	0	0	1
4pm to 6pm	0	0	0	0	0
<u>6pm to 7am</u>	<u>1</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>Crash Rates<sup>2</sup></b>	<b>0.62</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>3.62</b>

1) Based on crash data obtained from MassDOT's online crash portable. Crashes occurring from 2018 to 2020 are included but have not yet been finalized by MassDOT.

2) Crash rates per million entering vehicles (MEV) calculated using MassDOT Worksheets. MassDOT average unsignalized crash rates are 0.57 statewide and 0.61 districtwide. MassDOT average urban local roadway segment crash rate is 2.36.

## FUTURE CONDITIONS

### 3.1 FUTURE NO BUILD CONDITIONS

The future No Build (Without Project) condition establishes the basis for evaluating the transportation impacts associated with the proposed project. The No Build condition includes the effects of general area growth, other planned development projects and planned transportation improvements expected to be completed by the Design Year of 2028.

To establish the future 2028 No Build traffic volumes, the 2021 Existing condition traffic volumes were projected to the 2028 design year, by which time the project is expected to be built and occupied. Traffic growth is primarily a function of changes in motor vehicle use and expected land development in the region. To predict a rate at which traffic on the roadways in the vicinity of the site can be expected to grow during the seven-year forecast period (2021 to 2028), both historic traffic growth and planned area developments were examined. A discussion of the development of the future No Build (Without Project) condition is provided below.

#### 3.1.1 General Background Traffic Growth

A general background growth rate was applied to the 2021 Existing condition traffic volumes based on a review of MassDOT traffic volume data. MassDOT count station data for station numbers 310 (Route 146 south of Purgatory Road) and 3199 (Route 146 south of Route 16) indicate an average annual growth rate of approximately 2 percent per year from 2012 to 2019. Similarly, MassDOT annual growth rate data for urban local roadways indicates an average yearly growth rate of approximately 2 percent per year from 2014 to 2019. Therefore, a 2 percent per year growth rate was assumed for this traffic study. Annual growth rate calculations are provided in Appendix F.

#### 3.1.2 Background Development

Other planned area developments could also result in increased traffic on the surrounding area roadways. Based on discussions with Town of Sutton and Town of Douglas Planning Staff, there is only one planned or approved project in the area that may impact the study area intersections. The Blackstone Logistics Center is a proposed 650,000 square-foot (sf) warehouse-distribution facility to be located on Lackey Dam Road on approximately 70 acres in Sutton, Douglas and Uxbridge. Tetra Tech reviewed the traffic analysis presented in the March 31, 2021 memorandum prepared by Vanasse Hangen Brustlin titled *Response to GPI Traffic Comments dated February 11, 2021*. Based on the March 2021 analysis, traffic from the Blackstone Logistics Center is anticipated to generate a negligible amount of traffic through the study intersections during the weekday morning and weekday evening peak hours. Therefore, traffic from this project is assumed to be included in the 2 percent per year background growth rate.

#### 3.1.3 Planned Roadway Improvements

The only known planned roadway improvement in the study area is the Town of Sutton's planned repaving of Duval Road. No other major planned roadway improvements within the study area were identified for the 2028 No Build conditions.

### 3.1.4 Future 2028 No Build Traffic Volumes

The 2021 Existing condition peak hour traffic volumes were grown by 2 percent per year over the seven-year study horizon to establish the 2028 No Build (Without Project) traffic volumes. The 2028 No Build weekday morning and weekday evening peak hour traffic volume networks are presented in Figure 3.

## 3.2 FUTURE BUILD CONDITIONS

To assess the project's transportation-related impacts, the overall travel demands were determined based on proposed site access as well as the anticipated trip generation, travel mode split, trip distribution and trip assignment. The project's travel demand was then added to the future 2028 No Build traffic volumes (without the proposed project) to develop the future 2028 Build condition traffic volumes (with the proposed project). A discussion of the development of the future Build condition is provided below.

### 3.2.1 Project-Generated Trips

To assess the project's transportation impacts, the project's overall travel demand was determined in a four-step process including trip generation, travel mode share, trip distribution and trip assignment. The following sections describe the process of translating the proposed development program into the resulting trips.

**Trip Generation.** Vehicle trip generation estimates for the project's 31 single-family homes were developed based on trip rates presented in The Institute of Transportation Engineers' (ITE) publication *Trip Generation Manual, 10th Edition* for Land Use 210 (Single-Family Detached Housing). The vehicle trip generation calculations are provided in Appendix G. A summary of the vehicle trip generation estimates for the proposed residential project is presented in Table 4.

**Table 4      Trip Generation Summary**

Time Period/ Direction	Site Trips <sup>1</sup>
<b>Weekday Daily</b>	
Enter	147
Exit	147
<b>Total</b>	<b>294</b>
<b>Weekday AM Peak Hour</b>	
Enter	6
Exit	17
<b>Total</b>	<b>23</b>
<b>Weekday PM Peak Hour</b>	
Enter	20
Exit	11
<b>Total</b>	<b>31</b>

1) Based on trip rates presented in the Institute of Transportation Engineers' publication *Trip Generation Manual, 10th Edition* for ITE Land Use 210 (Single-Family Detached Housing) applied to 31 homes.

As shown in Table 4, the proposed residential development is estimated to generate 294 vehicle trips (147 entering and 147 exiting) on a typical weekday, with approximately 23 vehicle trips (6 entering trips and 17 exiting trips) during the morning peak hour and 31 vehicle trips (20 entering trips and 11 exiting trips) during the evening peak hour. The existing single-family home at the site is included in the project's 31 single-family home unit count and currently generates a nominal amount of traffic. As a conservative measure, no credit was taken for the existing use at the site. These traffic volumes equate to one vehicle trip or less every two minutes during the critical weekday morning and weekday evening peak hours and are not anticipated to have a material impact on future traffic operations on the surrounding area roadways.

**Travel Mode Share.** As previously discussed under *Public Transportation*, the site is located more than 8 miles from the nearest WRTA bus service and there are no sidewalks along the study area roadways. Consequently, it is assumed that all project trips will be made by automobile.

### 3.2.2 Trip Distribution

The project-related traffic was distributed to the study roadway system based on a review of existing travel patterns and US Census Journey-to-Work data. The resulting trip distribution patterns for the proposed project trips are presented in Figure 4. The project trips associated with the proposed residential use at the site were then assigned to the surrounding roadway network based on the project distribution patterns. The resulting project-related traffic volumes are presented in Figures 5 for the weekday morning and weekday evening peak hours, respectively. The project trip distribution calculations are included in Appendix H.

### 3.2.3 Build (With Project) Peak Hour Traffic Volumes

The new trips associated with the proposed project were then added to the 2028 No Build (Without Project) traffic volumes. The resulting 2028 Build (With Project) weekday morning and weekday evening peak hour traffic volumes are presented in Figure 6. The project Traffic Projection Model detailing the traffic volumes adjustments from the unadjusted count data through the 2028 Build condition is provided in Appendix I.

## OPERATIONS ANALYSIS

In previous sections of this report, the quantity (volume) of traffic on the study area roadways was described. The following section describes the quality of traffic flow at the study area intersections for the given traffic demands. As a basis for this assessment, intersection capacity analyses were conducted at each study area intersection for the 2021 Existing, 2028 No Build (Without Project) and 2028 Build (With Project) weekday morning and weekday evening peak hour traffic conditions using Synchro 10 Intersection Capacity and Traffic Simulation Software. A discussion of the evaluation criteria and a summary of the results of the intersection capacity analyses are presented below. The detailed capacity analysis worksheets are provided in Appendix J.

## 4.1 METHODOLOGY

Level-of-service (LOS) is a term used to describe the quality of traffic flow on roadways or at intersections. It is an aggregate measure of travel delay, driver convenience and safety based on a comparison of a roadway facility's capacity relative to the traffic demands. Operating levels of service are reported on a scale of A to F, with A representing the best operating conditions (with little or no vehicle delay) and F representing the worst operating conditions (with long delays). The capacity analyses for the



unsignalized study intersections were based on the *Highway Capacity Manual (HCM) 6<sup>th</sup> Edition*. The level-of-service criteria for signalized and unsignalized intersections are presented in Table 5.

**Table 5                      Unsignalized Intersection Level of Service Criteria**

Level of Service <sup>1</sup>	Average Delay per Vehicle (seconds)
A	≤10.0
B	10.1 to 15.0
C	15.1 to 25.0
D	25.1 to 35.0
E	35.1 to 50.0
F	>50.0

Source: Transportation Research Board Highway Capacity Manual (HCM) 6<sup>th</sup> Edition

<sup>1</sup>If the v/c is greater than 1.0, then the level-of-service designation is LOS F, regardless of delays

The results of the intersection capacity analyses for the weekday morning and weekday evening peak hours are summarized in Tables 6 and 7 for the unsignalized study intersections for the weekday morning and evening peak hours, respectively. Detailed summary tables and intersection capacity analysis worksheets are provided in Appendix J of this report. A brief discussion of the results of the intersection capacity analyses is presented in the following sections of this report.

#### 4.1.1 Unsignalized Intersection Capacity Analysis Results

As shown in Tables 6 and 7, the capacity analyses for the weekday morning and weekday evening peak hours indicate that the unsignalized study intersections currently operate well below capacity with minimal delay at level of service (LOS) A operations. The intersections are expected to continue operating at LOS A operations under future year (2028) conditions with or without the project. The proposed project is expected to have no material impact on intersection operations in the study area. The proposed subdivision roadway intersections with Duval Road and Forest Street are also expected to operate well below capacity with minimal delay at LOS A operations under future 2028 Build conditions.

**Table 6      Unsignalized Intersection Capacity Analysis Summary – Weekday AM Peak Hour**

Intersection	Movement	2021 Existing			2021 Build (without project)			2028 Build (with project)		
		v/c <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	v/c	Delay	LOS	v/c	Delay	LOS
Torrey Road at Duval Road	WBLR	0.012	8	A	0.014	8.6	A	0.022	8.7	A
	NBTR	0	0	A	0	0	A	0	0	A
	SBLT	0.009	7.4	A	0.011	7.4	A	0.012	7.4	A
Mumford Road at Duval Road	EBLR	0.016	8.7	A	0.019	8.8	A	0.029	8.8	A
	NBLT	0.001	7.2	A	0.001	7.2	A	0.001	7.2	A
	SBTR	0	0	A	0	0	A	0	0	A
Birch Street at Fairfax Way	WBLR	0.004	8.5	A	0.004	8.5	A	0.004	8.5	A
	NBTR	0	0	A	0	0	A	0	0	A
	SBLT	0.003	7.2	A	0.003	7.3	A	0.003	7.3	A
Birch Street at Belvoir Avenue	WBLR	0.004	8.4	A	0.004	8.5	A	0.008	8.5	A
	NBTR	0	0	A	0	0	A	0	0	A
	SBLT	0	0	A	0	0	A	0.001	7.2	A
Duval Road at Subdivision Road	EBTR	n/a <sup>4</sup>	n/a	n/a	n/a	n/a	n/a	0	0	A
	WBLT	n/a	n/a	n/a	n/a	n/a	n/a	0.005	7.3	A
	NBLR	n/a	n/a	n/a	n/a	n/a	n/a	0.014	8.6	A
Forest Street at Subdivision Road	WBLR	n/a	n/a	n/a	n/a	n/a	n/a	0.004	8.3	A
	NBTR	n/a	n/a	n/a	n/a	n/a	n/a	0	0	A
	SBLT	n/a	n/a	n/a	n/a	n/a	n/a	0.005	7.2	A

- 1) v/c = Volume to capacity ratio  
2) Delay = Average delay per vehicle (seconds)  
3) LOS = Level of Service  
4) n/a = not applicable

**Table 7      Unsignalized Intersection Capacity Analysis Summary – Weekday AM Peak Hour**

Intersection	Movement	2021 Existing			2021 Build (without project)			2028 Build (with project)		
		v/c <sup>1</sup>	Delay <sup>2</sup>	LOS <sup>3</sup>	v/c	Delay	LOS	v/c	Delay	LOS
Torrey Road at Duval Road	WBLR	0.03	8.9	A	0.033	9	A	0.038	9	A
	NBTR	0	0	A	0	0	A	0	0	A
	SBLT	0.007	7.3	A	0.008	7.3	A	0.011	7.3	A
Mumford Road at Duval Road	EBLR	0.021	8.8	A	0.024	8.9	A	0.034	9	A
	NBLT	0.004	7.3	A	0.004	7.3	A	0.004	7.3	A
	SBTR	0	0	A	0	0	A	0	0	A
Birch Street at Fairfax Way	WBLR	0.007	8.4	A	0.009	8.4	A	0.009	8.4	A
	NBTR	0	0	A	0	0	A	0	0	A
	SBLT	0.005	7.2	A	0.006	7.2	A	0.006	7.3	A
Birch Street at Belvoir Avenue	WBLR	0.012	8.5	A	0.012	8.6	A	0.018	8.7	A
	NBTR	0	0	A	0	0	A	0	0	A
	SBLT	0.005	7.2	A	0.006	7.3	A	0.008	7.3	A
Duval Road at Subdivision Road	EBTR	n/a	n/a	n/a	n/a	n/a	n/a	0	0	A
	WBLT	n/a	n/a	n/a	n/a	n/a	n/a	0.011	7.3	A
	NBLR	n/a	n/a	n/a	n/a	n/a	n/a	0.01	8.7	A
Forest Street at Subdivision Road	WBLR	n/a	n/a	n/a	n/a	n/a	n/a	0.002	8.4	A
	NBTR	n/a	n/a	n/a	n/a	n/a	n/a	0	0	A
	SBLT	n/a	n/a	n/a	n/a	n/a	n/a	0.01	7.3	A

- 1) v/c = Volume to capacity ratio
- 2) Delay = Average delay per vehicle (seconds)
- 3) LOS = Level of Service
- 4) n/a = not applicable

## SIGHT DISTANCE ANALYSIS

Tetra Tech reviewed the available sight distance at the proposed residential subdivision roadways on Duval Road and Forest Street to ensure that safe and efficient access would be provided to the project site. The available sight distance was determined in the field based on procedures outlined in *A Policy on Geometric Design of Highways and Streets*, published by the American Association of State Highway and Transportation Officials (AASHTO). Tetra Tech then compared the available sight distance at the proposed driveway to the required Stopping Sight Distance (SSD) and minimum-required Intersection Sight Distances (ISD) for the anticipated travel speeds for vehicles traveling past the site.

Tetra Tech collected travel speed data on Duval Road in the vicinity of the project site on Wednesday, July 21, 2021. The travel speed data indicates that that motorists on Duval Road are currently traveling at an 85<sup>th</sup> percentile travel speed of approximately 40 mph in both travel directions. On Forest Street, motorists were observed traveling at an 85<sup>th</sup> percentile travel speed of 17 mph in the northbound direction and 18 mph in the southbound direction. The speed data and sight distance calculations for the observed 85<sup>th</sup> percentile travel speeds are provided in Appendix K.

Table 8 summarizes the available and required SSD and ISD at the proposed subdivision roadway intersections along Duval Road and Forest Street based on observed 85<sup>th</sup> percentile travel speeds. It is recommended that the available SSD and ISD at the proposed subdivision roadway intersections with Duval Road and Forest Street be confirmed with sight distance plans and profiles.

**Table 8      Sight Distance Summary – Observed 85<sup>th</sup> Percentile Travel Speed**

Intersection	Design Speed <sup>1</sup> (mph)	Available Sight Distance <sup>2</sup> (feet)	AASHTO Required <sup>3</sup> (feet)
<b>Duval Road/Proposed Subdivision Roadway</b>			
Stopping Sight Distance – From the West	40	230	305
Stopping Sight Distance – From the East	40	230	290
Intersection Sight Distance – To the West	40	220	305
Intersection Sight Distance – To the East	40	335	290
<b>Forest Street/Proposed Subdivision Roadway</b>			
Stopping Sight Distance – From the South	17	>200	95
Stopping Sight Distance – From the North	18	>200	100
Intersection Sight Distance – To the South	17	>200	95
Intersection Sight Distance – To the North	18	>200	100

<sup>1</sup>Based on the observed 85<sup>th</sup> percentile travel speeds on Duval Road and Forest Street.

<sup>2</sup>Assumes selective removal of roadside vegetation, on-site grading and limiting on-site objects (i.e., fencing, signage, etc.) to 2 feet or less. It is recommended that available sight distance be confirmed with sight distance plans and profiles.

<sup>3</sup>Obtained from *A Policy On Geometric Design of Highways and Streets*, 2011 Edition, published by the American Association of State Highway and Transportation Officials (Exhibit 3-1) for the observed 85<sup>th</sup> percentile travel speeds for required stopping sight distance and minimum-required intersection sight distance based on roadway grades.

As shown in Table 8, the available sight distance at the proposed subdivision roadway on Forest Street is in excess of AASHTO-required stopping sight distance and minimum and desirable AASHTO-required intersection sight distance for the observed 85<sup>th</sup> percentile travel speeds assuming selective clearing of vegetation along Duval Road, appropriate on-site grading and restricting on-site objects (i.e., fencing, signage, etc.) to 2 feet or less. This indicates that motorists traveling at the observed 85<sup>th</sup> percentile travel speeds along Forest Street would have sufficient view of the proposed subdivision roadway to either stop or adjust their speed, as appropriate, to react to turning movements to and from the proposed development and avoid potential collisions. This would also provide motorists waiting to exit the subdivision roadway with sufficient view of the intersecting roadway to decide when they can safely enter onto Forest Street.

At the proposed subdivision roadway intersection on Duval Road, ISD to/from the east exceeds the minimum AASHTO ISD criteria for the observed 85<sup>th</sup> percentile travel speeds. Along Duval Road, horizontal and vertical curvatures restrict the available SSD and ISD to below AASHTO criteria for the observed 85<sup>th</sup> percentile travel speeds.

There were no observed posted speed limit signs on Duval Road in the vicinity of the proposed new subdivision roadway. The regulatory (prima facie) speed limit is assumed to be 30 mph based on home density along Duval Road as a thickly settled area. Therefore, available SSD and ISD at the proposed subdivision roadway intersection on Duval Road were also compared to AASHTO requirements for the assumed regulatory speed limit of 30 mph which is summarized in Table 9. As shown in Table 9, the available sight distance is in excess of AASHTO-required SSD and minimum AASHTO-required ISD for the regulatory speed limit of 30 mph assuming selective clearing of vegetation along Duval Road, appropriate on-site grading and restricting on-site objects (i.e., fencing, signage, etc.) to 2 feet or less.

Although the proposed subdivision roadway on Duval Road satisfies minimum AASHTO sight distance criteria for the regulatory speed limit, some motorists are traveling well over the speed limit at 40 mph. Since sight lines at this location are expected to be restricted for motorists traveling at the observed 85<sup>th</sup> percentile travel speed of 40 mph, it is recommended that advance intersection warning signage for Manual on Uniform Traffic Control Devices (MUTCD) W2-2 be installed in both travel directions on Duval Road in accordance with MUTCD standards to alert motorists of potential turning movements to and from the proposed residential subdivision roadway.

**Table 9            Sight Distance Summary – Regulatory Speed Limit**

<b>Intersection</b>	<b>Design Speed<sup>1</sup> (mph)</b>	<b>Available Sight Distance<sup>2</sup> (feet)</b>	<b>AASHTO Required<sup>3</sup> (feet)</b>
<b>Duval Road/Proposed Subdivision Roadway</b>			
Stopping Sight Distance – From the West	30	230	200
Stopping Sight Distance – From the East	30	230	190
Intersection Sight Distance – To the West	30	220	200
Intersection Sight Distance – To the East	30	335	190

<sup>1</sup>Based on the assumed regulatory speed limit on Duval Road.

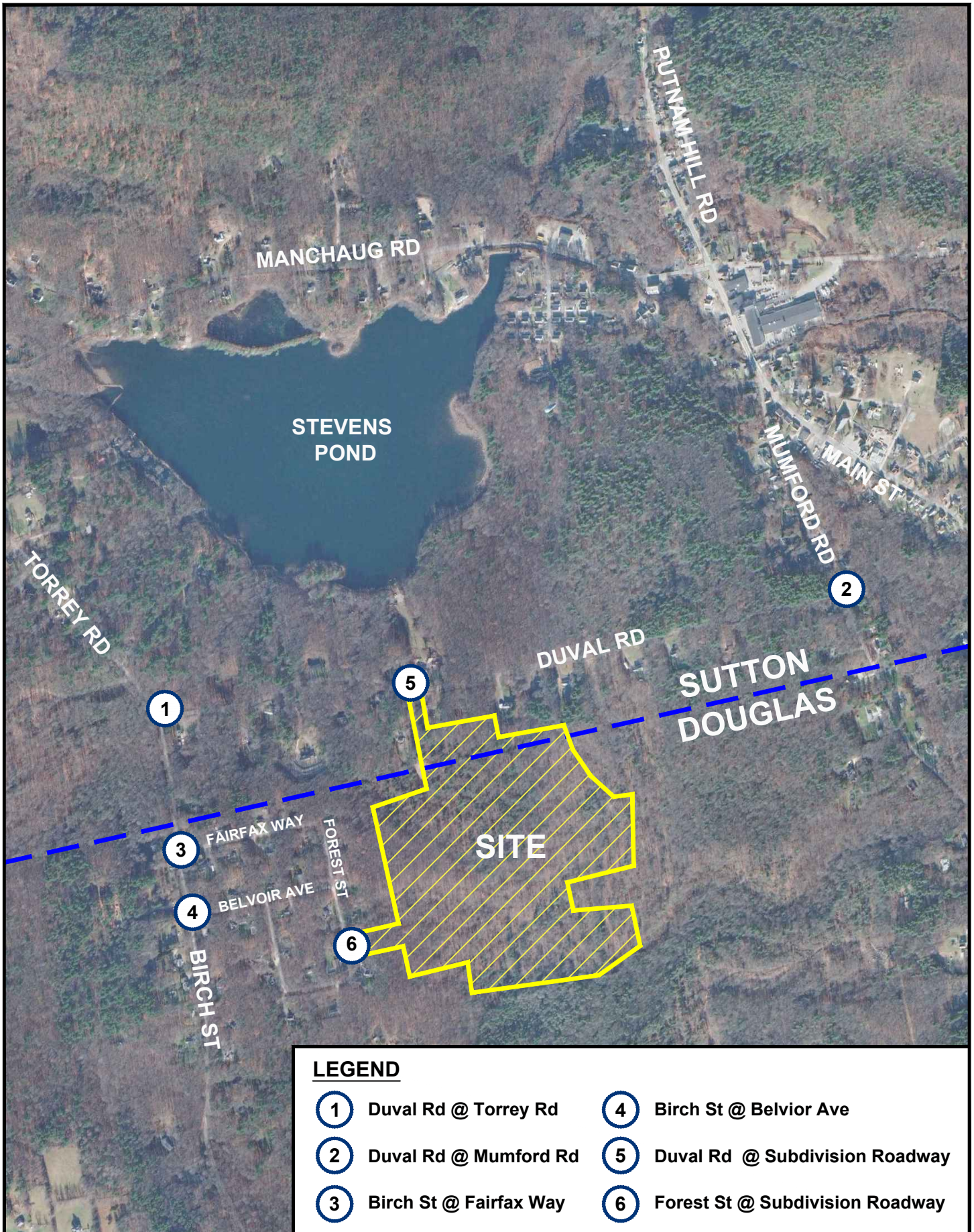
<sup>2</sup>Assumes selective removal of roadside vegetation, on-site grading and limiting on-site objects (i.e., fencing, signage, etc.) to 2 feet or less. It is recommended that available sight distance be confirmed with sight distance plans and profiles.

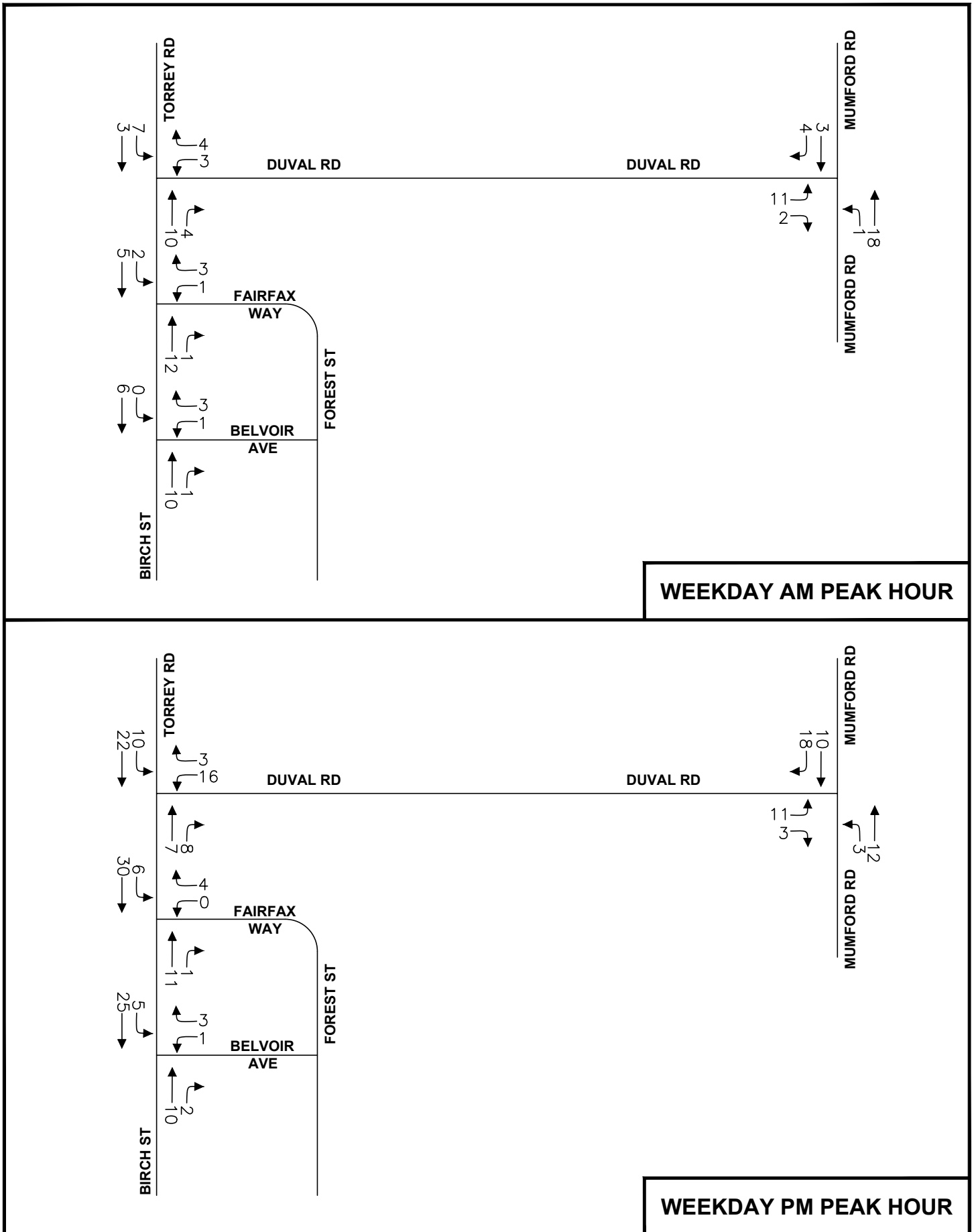
<sup>3</sup>Obtained from A Policy On Geometric Design of Highways and Streets, 2011 Edition, published by the American Association of State Highway and Transportation Officials (Exhibit 3-1) for the observed 85<sup>th</sup> percentile travel speeds for required stopping sight distance and minimum-required intersection sight distance based on roadway grades.

## **CONCLUSION**

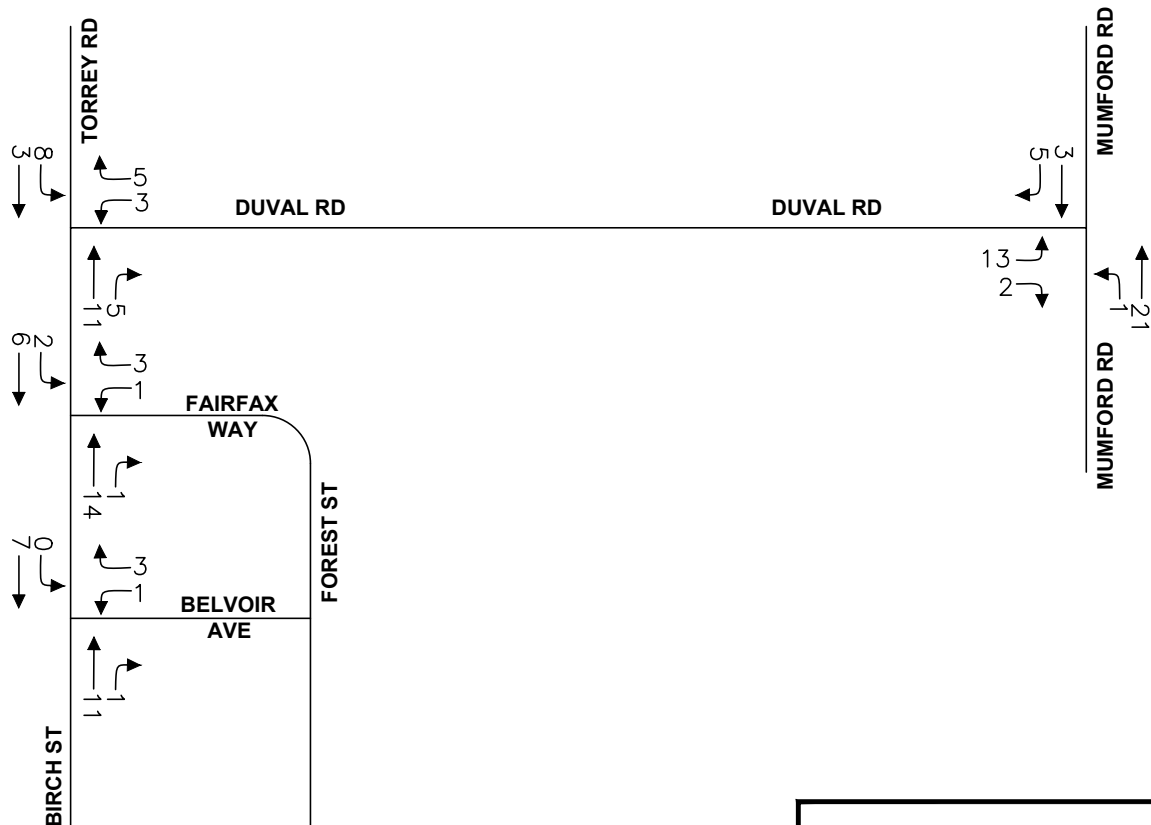
The proposed 31-unit single-family home subdivision at 61 Duval Road is expected to generate approximately 23 trips during the weekday morning peak hour and 31 trips during the weekday evening peak hour (average of less than 1 additional trip every 2 to minutes). The proposed project is not expected to materially impact operations along the study area roadways and intersections with LOS A operations anticipated. Additionally, no discernable crash patterns were identified within the study area. Review of available sight distances at the proposed subdivision roadway intersections with Forest Street indicate that SSD and ISD criteria are satisfied for the observed 85<sup>th</sup> percentile travel speeds. Sight lines at the proposed subdivision roadway on Duval Road satisfy minimum AASHTO criteria for the regulatory speed limit of 30 mph. However, sight lines are restricted based on the observed 85<sup>th</sup> percentile travel speed of 40 mph. To enhance driveway awareness of the proposed subdivision roadway intersection with Duval Road, it is recommended that advance intersection warning signage for Manual on Uniform Traffic Control Devices (MUTCD) W2-2 be installed in both travel directions on Duval Road in accordance with MUTCD standards.



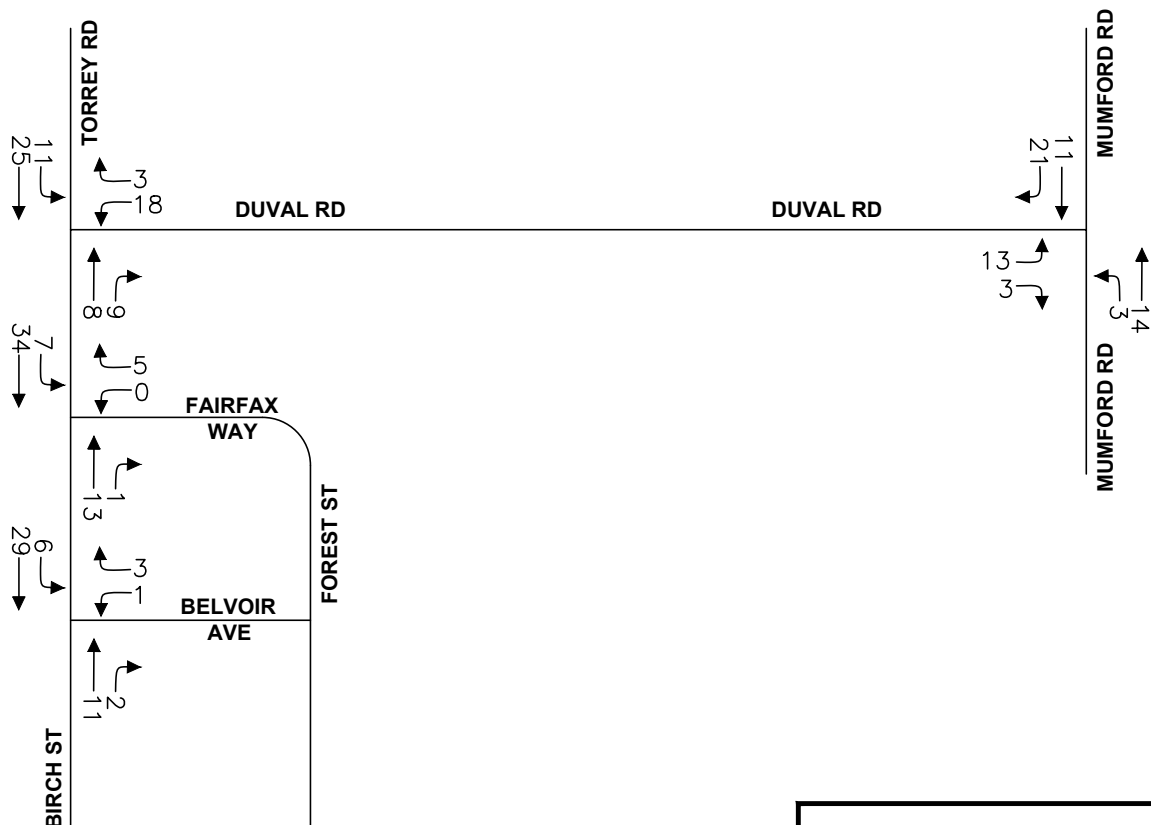




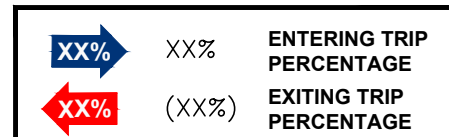
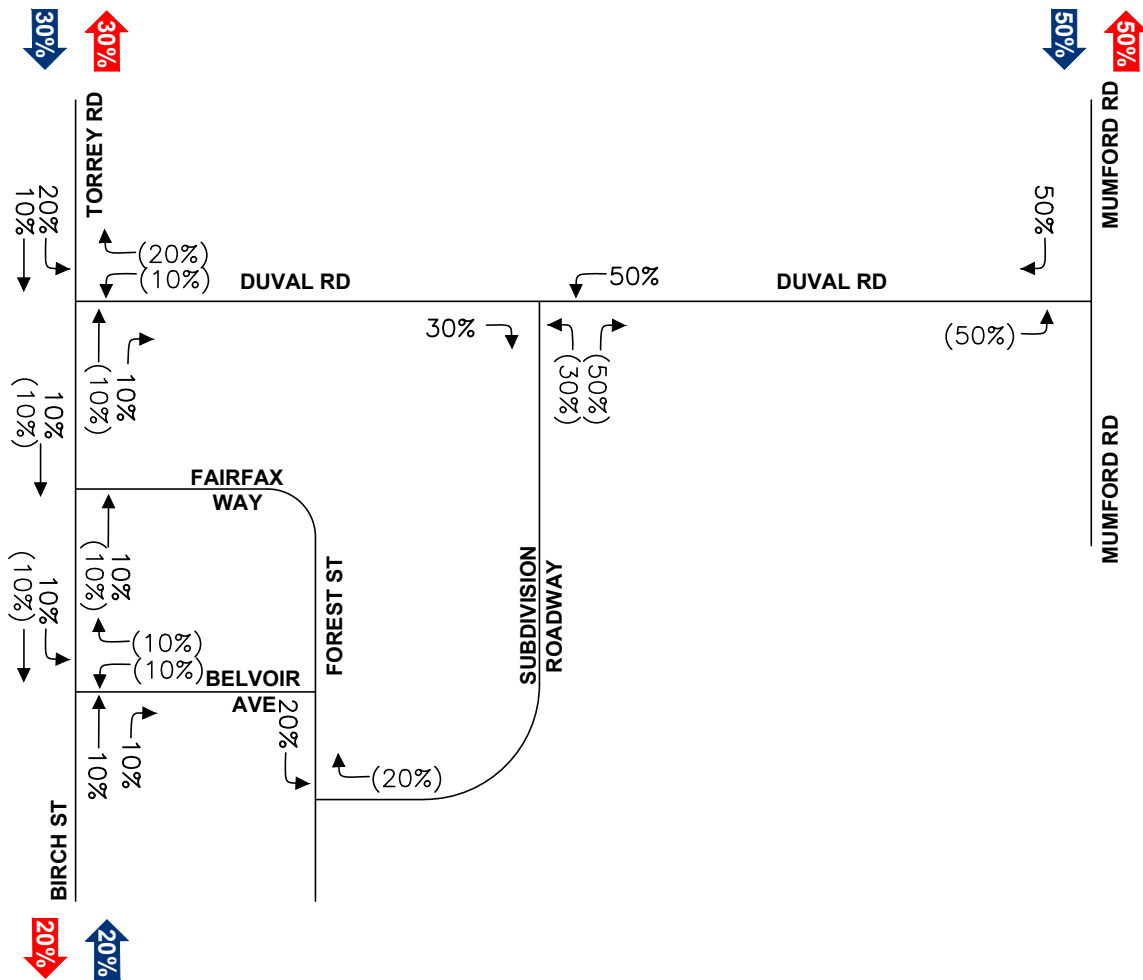


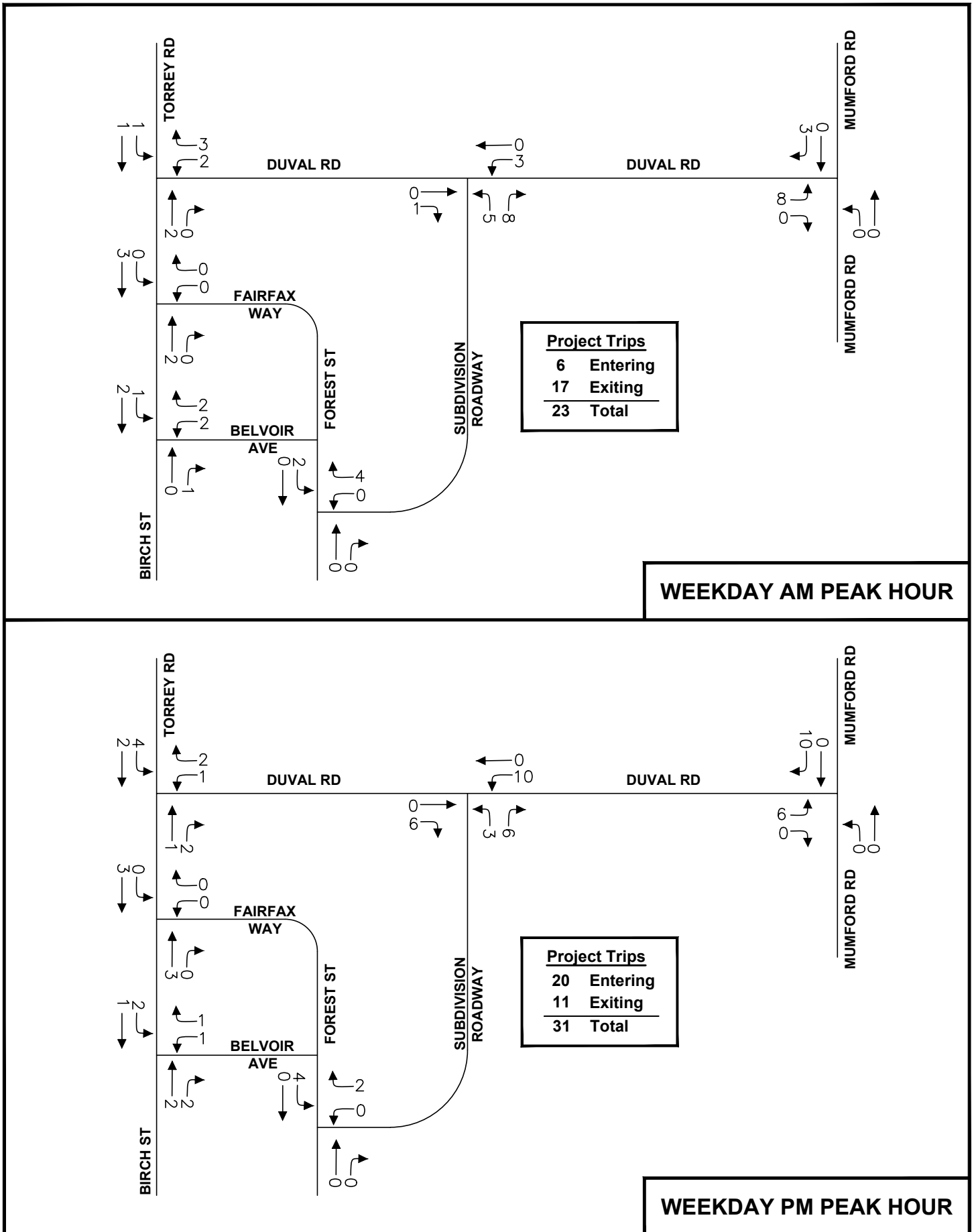


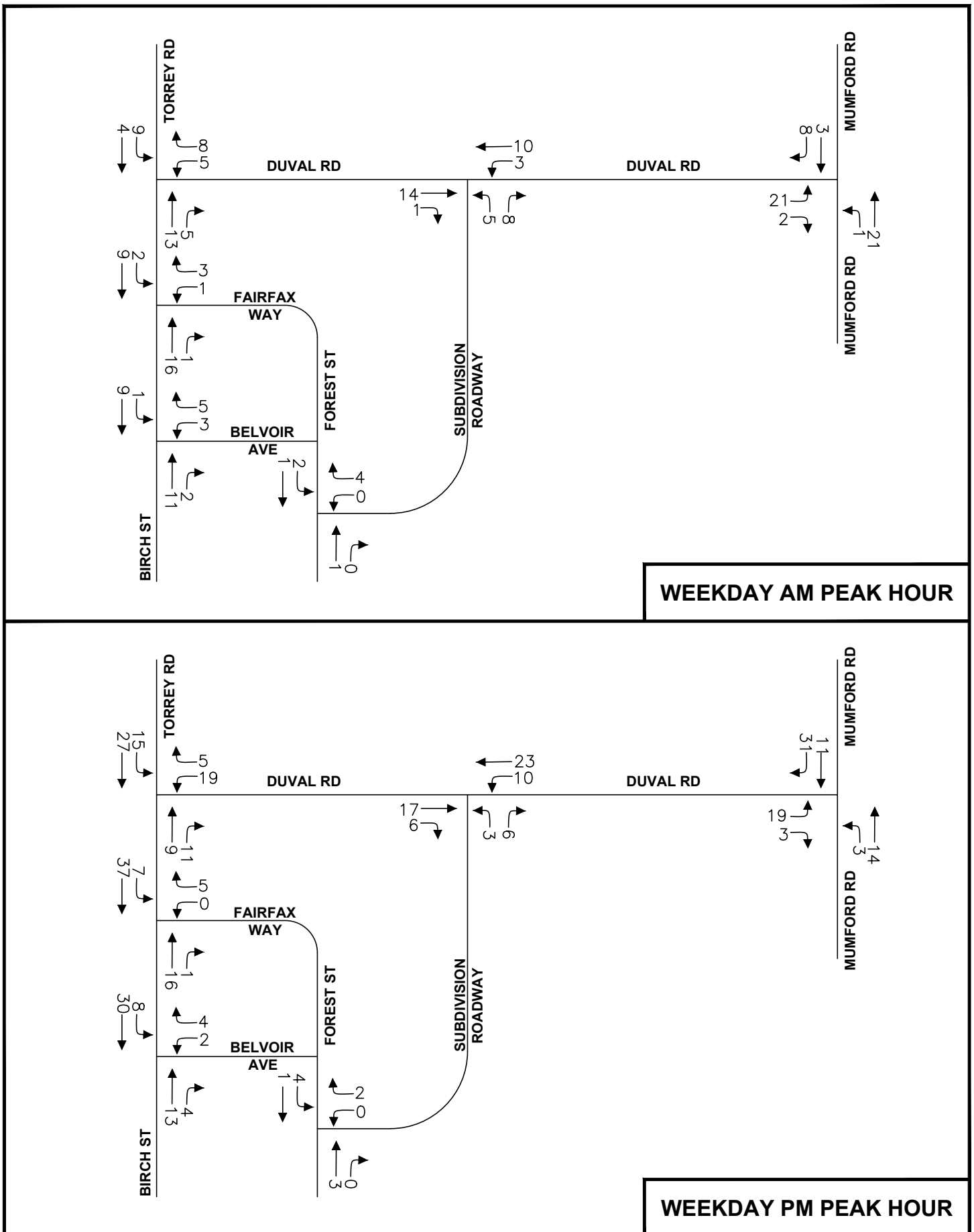
**WEEKDAY AM PEAK HOUR**



**WEEKDAY PM PEAK HOUR**







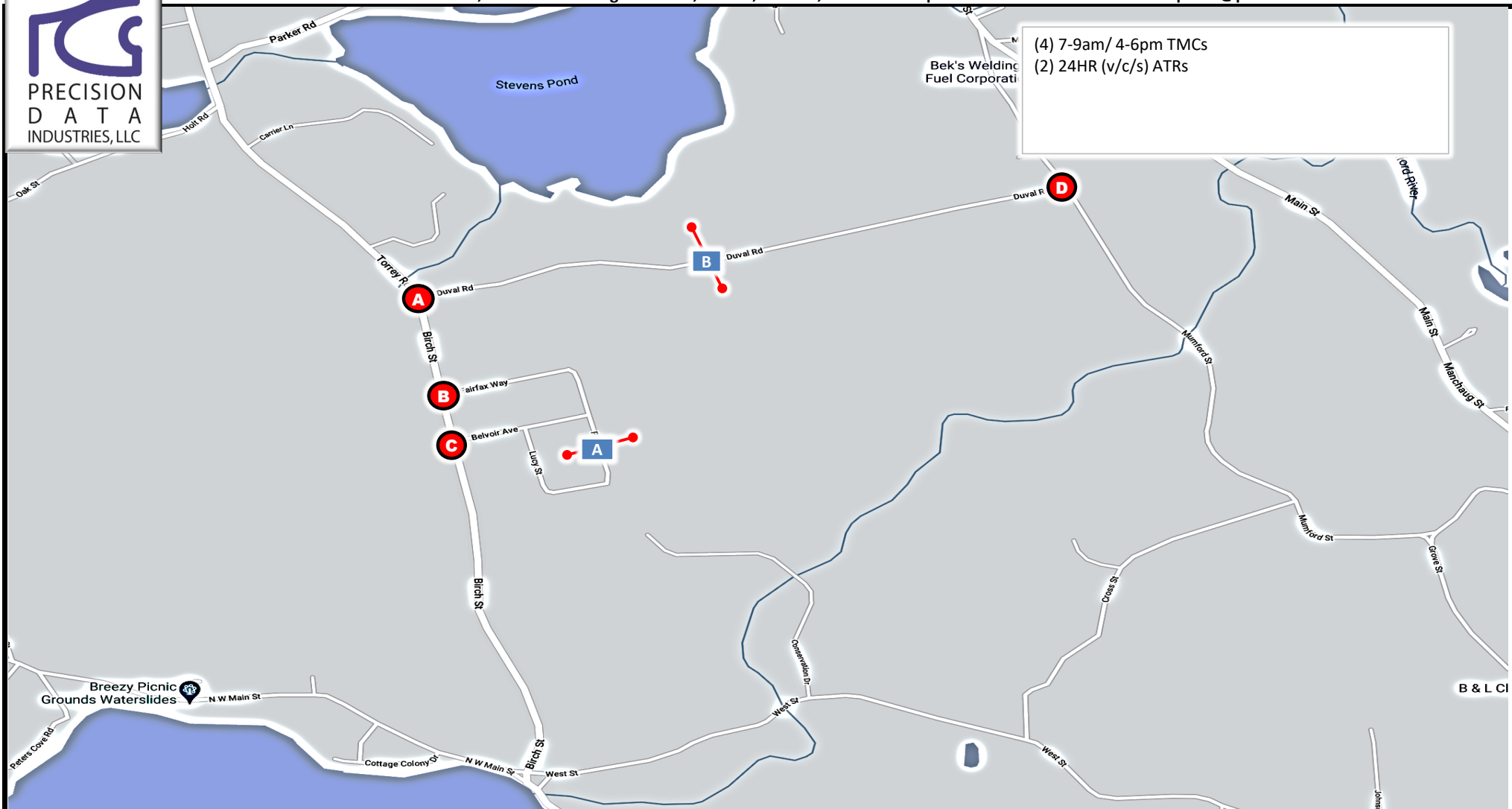
**Appendix A**  
**Traffic Count Data**



PRECISION  
DATA  
INDUSTRIES, LLC

## Location Map: 218069 Sutton-Douglas, MA

Precision Data Industries, LLC 157 Washington Street, Suite 2, Hudson, MA 01749 ph: 508-875-0100 email: [datarequests@pdillc.com](mailto:datarequests@pdillc.com)



Client:  
TetraTech

Engineer:  
C. Sudak

Site Code:  
143-312497-21001

Date:  
Tues 7/20/2021

PDI Job #  
218069

City, State:  
Sutton-Douglas, MA

Forrest Street  
south of Belvoir Avenue  
City, State: Douglas, MA  
Client: TetraTech/ C. Sudak  
Site Code: 143-312497-21001



PDI File #: 218069 ATR-A

Count Date:  
Wednesday, July, 21, 2021

Volume															
NB					SB					Combined					
Start Time:	15 min	60 min	15 min	60 min	Start Time:	15 min	60 min	15 min	60 min	Start Time:	15 min	60 min	15 min	60 min	
12:00 AM	0		12:00 PM	0	12:00 AM	0		12:00 PM	0	12:00 AM	0		12:00 PM	0	
12:15 AM	0		12:15 PM	0	12:15 AM	0		12:15 PM	1	12:15 AM	0		12:15 PM	1	
12:30 AM	0		12:30 PM	1	12:30 AM	0		12:30 PM	0	12:30 AM	0		12:30 PM	1	
12:45 AM	0	0	12:45 PM	0	1	12:45 AM	0	0	12:45 PM	0	0	1	12:45 PM	0	2
1:00 AM	0		1:00 PM	0		1:00 AM	0		1:00 PM	0			1:00 PM	0	
1:15 AM	0		1:15 PM	0		1:15 AM	0		1:15 PM	0			1:15 PM	0	
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5:30 AM	0		5:30 PM	0		5:30 AM	0		5:30 PM	0			5:30 PM	0	
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9:30 AM	0		9:30 PM	0		9:30 AM	1		9:30 PM	0			9:30 PM	0	
9:45 AM	0	0	9:45 PM	0	0	9:45 AM	0	1	9:45 PM	0	0		9:45 PM	0	0
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10:30 AM	1		10:30 PM	0		10:30 AM	1		10:30 PM	0			10:30 PM	0	
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11:15 AM	1		11:15 PM	0		11:15 AM	0		11:15 PM	0			11:15 PM	0	
11:30 AM	1		11:30 PM	0		11:30 AM	0		11:30 PM	0			11:30 PM	0	
11:45 AM	0	2	11:45 PM	0	0	11:45 AM	0	0	11:45 PM	0	0		11:45 PM	0	0
Total	7		8		Total	3		9		Total	10		17		
Percent	46.67%		53.33%		Percent	25.00%		75.00%		Percent	37.04%		62.96%		
Day Total			15		Day Total			12		Day Total			27		
Peak Hour	6:30 AM		4:00 PM		Peak Hour	7:45 AM		3:00 PM		Peak Hour	9:45 AM		3:15 PM		
Volume	2		3		Volume	1		3		Volume	3		5		
P.H.F.	0.500		0.375		P.H.F.	0.250		0.375		P.H.F.	0.375		0.625		

Forrest Street  
south of Belvoir Avenue  
City, State: Douglas, MA  
Client: TetraTech/ C. Sudak  
Site Code: 143-312497-21001



PDI File #: 218069 ATR-A

Count Date  
Wednesday, July, 21, 2021

### Classification (60-minute)

NB														
Start Time:	Cycles	Cars and Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	2
11:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	2
12:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1
1:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	1
2:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:00 PM	0	0	1	0	2	0	0	0	0	0	0	0	0	3
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	4	6	0	5	0	0	0	0	0	0	0	0	15
Percent	0.00%	26.67%	40.00%	0.00%	33.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	

AM Peak 8:00 AM 6:00 AM 7:00 AM 10:00 AM  
Volume 0 1 1 0 1 0 0 0 0 0 0 0 0 0 2

PM Peak 5:00 PM 2:00 PM 4:00 PM 4:00 PM  
Volume 0 1 1 0 2 0 0 0 0 0 0 0 0 0 3

Cycles:	0	0.0%
Cars and Light Trucks:	10	66.7%
Heavy Vehicles:	5	33.3%



Forrest Street  
south of Belvoir Avenue  
City, State: Douglas, MA  
Client: TetraTech/ C. Sudak  
Site Code: 143-312497-21001



PDI File #: 218069 ATR-A

Count Date  
Wednesday, July, 21, 2021

### Classification (60-minute)

SB														
Start Time:	Cycles	Cars and Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
9:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
10:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
2:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
3:00 PM	0	0	2	0	1	0	0	0	0	0	0	0	0	3
4:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	2
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Total	0	0	10	0	2	0	0	0	0	0	0	0	0	12
Percent	0.00%	0.00%	83.33%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	
AM Peak			8:00 AM											8:00 AM
Volume	0	0	1	0	0	0	0	0	0	0	0	0	0	1
PM Peak			3:00 PM		3:00 PM									3:00 PM
Volume	0	0	2	0	1	0	0	0	0	0	0	0	0	3

Cycles:	0	0.0%
Cars and Light Trucks:	10	83.3%
Heavy Vehicles:	2	16.7%

Forrest Street  
south of Belvoir Avenue  
City, State: Douglas, MA  
Client: TetraTech/ C. Sudak  
Site Code: 143-312497-21001



PDI File #: 218069 ATR-A

Count Date  
Wednesday, July, 21, 2021

### Classification (60-minute)

Combined														
Start Time:	Cycles	Cars and Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1
8:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	2
9:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	1
10:00 AM	0	1	2	0	0	0	0	0	0	0	0	0	0	3
11:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	2
12:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	2
1:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	2
2:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	2
3:00 PM	0	0	3	0	1	0	0	0	0	0	0	0	0	4
4:00 PM	0	0	2	0	2	0	0	0	0	0	0	0	0	4
5:00 PM	0	1	1	0	1	0	0	0	0	0	0	0	0	3
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM Total	0	4	16	0	7	0	0	0	0	0	0	0	0	27
Percent	0.00%	14.81%	59.26%	0.00%	25.93%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	

AM Peak	8:00 AM	10:00 AM	7:00 AM	10:00 AM
Volume	0	1	2	3

PM Peak	5:00 PM	3:00 PM	4:00 PM	3:00 PM
Volume	0	1	3	4

Cycles:	0	0.0%
Cars and Light Trucks:	20	74.1%
Heavy Vehicles:	7	25.9%

Duval Road  
east of Torrey Road  
City, State: Sutton, MA  
Client: TetraTech/ C. Sudak  
Site Code: 143-312497-21001



PDI File #: 218069 ATR-B

Count Date:  
Wednesday, July, 21, 2021

Volume											
EB						WB					
Start Time:	15 min	60 min	15 min	60 min		Start Time:	15 min	60 min	15 min	60 min	
12:00 AM	0		12:00 PM	2		12:00 AM	0		12:00 PM	2	
12:15 AM	0		12:15 PM	1		12:15 AM	0		12:15 PM	3	
12:30 AM	0		12:30 PM	4		12:30 AM	0		12:30 PM	0	
12:45 AM	0	0	12:45 PM	1	8	12:45 AM	0	0	12:45 PM	2	7
1:00 AM	0		1:00 PM	0		1:00 AM	0		1:00 PM	3	
1:15 AM	0		1:15 PM	2		1:15 AM	0		1:15 PM	1	
1:30 AM	0		1:30 PM	0		1:30 AM	1		1:30 PM	1	
1:45 AM	0	0	1:45 PM	0	2	1:45 AM	0	1	1:45 PM	0	5
2:00 AM	0		2:00 PM	2		2:00 AM	0		2:00 PM	1	
2:15 AM	0		2:15 PM	3		2:15 AM	0		2:15 PM	1	
2:30 AM	0		2:30 PM	2		2:30 AM	0		2:30 PM	1	
2:45 AM	0	0	2:45 PM	0	7	2:45 AM	0	0	2:45 PM	0	3
3:00 AM	0		3:00 PM	2		3:00 AM	0		3:00 PM	5	
3:15 AM	0		3:15 PM	6		3:15 AM	0		3:15 PM	7	
3:30 AM	0		3:30 PM	1		3:30 AM	0		3:30 PM	0	
3:45 AM	0	0	3:45 PM	1	10	3:45 AM	0	0	3:45 PM	2	14
4:00 AM	0		4:00 PM	5		4:00 AM	0		4:00 PM	5	
4:15 AM	0		4:15 PM	4		4:15 AM	0		4:15 PM	9	
4:30 AM	0		4:30 PM	1		4:30 AM	0		4:30 PM	4	
4:45 AM	0	0	4:45 PM	5	15	4:45 AM	0	0	4:45 PM	2	20
5:00 AM	0		5:00 PM	3		5:00 AM	0		5:00 PM	4	
5:15 AM	0		5:15 PM	4		5:15 AM	0		5:15 PM	3	
5:30 AM	0		5:30 PM	5		5:30 AM	0		5:30 PM	3	
5:45 AM	2	2	5:45 PM	3	15	5:45 AM	0	0	5:45 PM	4	14
6:00 AM	2		6:00 PM	5		6:00 AM	1		6:00 PM	1	
6:15 AM	1		6:15 PM	2		6:15 AM	1		6:15 PM	3	
6:30 AM	3		6:30 PM	0		6:30 AM	0		6:30 PM	1	
6:45 AM	7	13	6:45 PM	2	9	6:45 AM	3	5	6:45 PM	8	13
7:00 AM	1		7:00 PM	4		7:00 AM	1		7:00 PM	2	
7:15 AM	3		7:15 PM	0		7:15 AM	0		7:15 PM	5	
7:30 AM	1		7:30 PM	1		7:30 AM	1		7:30 PM	1	
7:45 AM	5	10	7:45 PM	0	5	7:45 AM	2	4	7:45 PM	1	9
8:00 AM	1		8:00 PM	0		8:00 AM	0		8:00 PM	1	
8:15 AM	5		8:15 PM	1		8:15 AM	6		8:15 PM	1	
8:30 AM	2		8:30 PM	0		8:30 AM	0		8:30 PM	2	
8:45 AM	1	9	8:45 PM	2	3	8:45 AM	2	8	8:45 PM	2	6
9:00 AM	5		9:00 PM	0		9:00 AM	0		9:00 PM	0	
9:15 AM	6		9:15 PM	0		9:15 AM	1		9:15 PM	1	
9:30 AM	1		9:30 PM	0		9:30 AM	1		9:30 PM	0	
9:45 AM	2	14	9:45 PM	0	0	9:45 AM	1	3	9:45 PM	2	3
10:00 AM	4		10:00 PM	0		10:00 AM	0		10:00 PM	1	
10:15 AM	1		10:15 PM	0		10:15 AM	3		10:15 PM	3	
10:30 AM	3		10:30 PM	2		10:30 AM	5		10:30 PM	0	
10:45 AM	3	11	10:45 PM	0	2	10:45 AM	2	10	10:45 PM	2	6
11:00 AM	0		11:00 PM	0		11:00 AM	0		11:00 PM	0	
11:15 AM	0		11:15 PM	0		11:15 AM	2		11:15 PM	1	
11:30 AM	1		11:30 PM	0		11:30 AM	3		11:30 PM	1	
11:45 AM	4	5	11:45 PM	0	0	11:45 AM	2	7	11:45 PM	0	2
Total	64		76			Total	38		102		
Percent	45.71%		54.29%			Percent	27.14%		72.86%		
Day Total			140			Day Total			140		
Peak Hour	6:30 AM		4:45 PM			Peak Hour	10:00 AM		3:45 PM		
Volume	14		17			Volume	10		20		
P.H.F.	0.500		0.850			P.H.F.	0.500		0.556		

Combined					
Start Time:	15 min	60 min	15 min	60 min	
12:00 AM	0		12:00 PM	4	
12:15 AM	0		12:15 PM	4	
12:30 AM	0		12:30 PM	4	
12:45 AM	0	0	12:45 PM	3	15
1:00 AM	0		1:00 PM	3	
1:15 AM	0		1:15 PM	3	
1:30 AM	1		1:30 PM	1	
1:45 AM	0	1	1:45 PM	0	7
2:00 AM	0		2:00 PM	3	
2:15 AM	0		2:15 PM	4	
2:30 AM	0		2:30 PM	3	
2:45 AM	0	0	2:45 PM	0	10
3:00 AM	0		3:00 PM	7	
3:15 AM	0		3:15 PM	13	
3:30 AM	0		3:30 PM	1	
3:45 AM	0	0	3:45 PM	3	24
4:00 AM	0		4:00 PM	10	
4:15 AM	0		4:15 PM	13	
4:30 AM	0		4:30 PM	5	
4:45 AM	0	0	4:45 PM	7	35
5:00 AM	0		5:00 PM	7	
5:15 AM	0		5:15 PM	7	
5:30 AM	0		5:30 PM	8	
5:45 AM	2	2	5:45 PM	7	29
6:00 AM	3		6:00 PM	6	
6:15 AM	2		6:15 PM	5	
6:30 AM	3		6:30 PM	1	
6:45 AM	10	18	6:45 PM	10	22
7:00 AM	2		7:00 PM	6	
7:15 AM	3		7:15 PM	5	
7:30 AM	2		7:30 PM	2	
7:45 AM	7	14	7:45 PM	1	14
8:00 AM	1		8:00 PM	1	
8:15 AM	11		8:15 PM	2	
8:30 AM	2		8:30 PM	2	
8:45 AM	3	17	8:45 PM	4	9
9:00 AM	5		9:00 PM	0	
9:15 AM	7		9:15 PM	1	
9:30 AM	2		9:30 PM	0	
9:45 AM	3	17	9:45 PM	2	3
10:00 AM	4		10:00 PM	1	
10:15 AM	4		10:15 PM	3	
10:30 AM	8		10:30 PM	2	
10:45 AM	5	21	10:45 PM	2	8
11:00 AM	0		11:00 PM	0	
11:15 AM	2		11:15 PM	1	
11:30 AM	4		11:30 PM	1	
11:45 AM	6	12	11:45 PM	0	2
Total	102		178		
Percent	36.43%		63.57%		
Day Total			280		
Peak Hour	7:30 AM		4:00 PM		
Volume	21		35		
P.H.F.	0.477		0.673		

Duval Road  
east of Torrey Road  
City, State: Sutton, MA  
Client: TetraTech/ C. Sudak  
Site Code: 143-312497-21001



PDI File #: 218069 ATR-B

Count Date  
Wednesday, July, 21, 2021

### Classification (60-minute)

EB														
Start Time:	Cycles	Cars and Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	2
6:00 AM	0	7	4	0	2	0	0	0	0	0	0	0	0	13
7:00 AM	0	7	3	0	0	0	0	0	0	0	0	0	0	10
8:00 AM	0	5	1	0	2	1	0	0	0	0	0	0	0	9
9:00 AM	0	8	3	0	2	1	0	0	0	0	0	0	0	14
10:00 AM	0	9	2	0	0	0	0	0	0	0	0	0	0	11
11:00 AM	0	4	1	0	0	0	0	0	0	0	0	0	0	5
12:00 PM	0	3	4	1	0	0	0	0	0	0	0	0	0	8
1:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	2
2:00 PM	0	7	0	0	0	0	0	0	0	0	0	0	0	7
3:00 PM	0	5	5	0	0	0	0	0	0	0	0	0	0	10
4:00 PM	0	10	4	0	1	0	0	0	0	0	0	0	0	15
5:00 PM	0	9	5	0	1	0	0	0	0	0	0	0	0	15
6:00 PM	0	5	2	0	2	0	0	0	0	0	0	0	0	9
7:00 PM	0	2	3	0	0	0	0	0	0	0	0	0	0	5
8:00 PM	0	0	3	0	0	0	0	0	0	0	0	0	0	3
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	2
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	86	41	1	10	2	0	0	0	0	0	0	0	140
Percent	0.00%	61.43%	29.29%	0.71%	7.14%	1.43%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	

AM Peak Volume 10:00 AM 6:00 AM 6:00 AM 8:00 AM 9:00 AM  
0 9 4 0 2 1 0 0 0 0 0 0 0 14

PM Peak Volume 4:00 PM 3:00 PM 12:00 PM 6:00 PM 4:00 PM  
0 10 5 1 2 0 0 0 0 0 0 0 15

Cycles:	0	0.0%
Cars and Light Trucks:	127	90.7%
Heavy Vehicles:	13	9.3%

Duval Road  
east of Torrey Road  
City, State: Sutton, MA  
Client: TetraTech/ C. Sudak  
Site Code: 143-312497-21001



PDI File #: 218069 ATR-B

Count Date  
Wednesday, July, 21, 2021

### Classification (60-minute)

WB														
Start Time:	Cycles	Cars and Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6:00 AM	0	3	1	0	1	0	0	0	0	0	0	0	0	5
7:00 AM	0	2	1	0	0	1	0	0	0	0	0	0	0	4
8:00 AM	0	8	0	0	0	0	0	0	0	0	0	0	0	8
9:00 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	3
10:00 AM	0	6	4	0	0	0	0	0	0	0	0	0	0	10
11:00 AM	0	4	2	0	1	0	0	0	0	0	0	0	0	7
12:00 PM	0	5	0	0	2	0	0	0	0	0	0	0	0	7
1:00 PM	0	3	2	0	0	0	0	0	0	0	0	0	0	5
2:00 PM	0	3	0	0	0	0	0	0	0	0	0	0	0	3
3:00 PM	0	9	4	0	1	0	0	0	0	0	0	0	0	14
4:00 PM	0	12	3	0	5	0	0	0	0	0	0	0	0	20
5:00 PM	0	10	4	0	0	0	0	0	0	0	0	0	0	14
6:00 PM	0	6	6	0	1	0	0	0	0	0	0	0	0	13
7:00 PM	1	7	0	0	1	0	0	0	0	0	0	0	0	9
8:00 PM	0	2	3	0	1	0	0	0	0	0	0	0	0	6
9:00 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	3
10:00 PM	0	3	3	0	0	0	0	0	0	0	0	0	0	6
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	2
PM Total	1	89	35	0	13	2	0	0	0	0	0	0	0	140
Percent	0.71%	63.57%	25.00%	0.00%	9.29%	1.43%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	

AM Peak		8:00 AM	10:00 AM		6:00 AM	7:00 AM								10:00 AM
Volume	0	8	4	0	1	1	0	0	0	0	0	0	0	10

PM Peak	7:00 PM	4:00 PM	6:00 PM		4:00 PM									4:00 PM
Volume	1	12	6	0	5	0	0	0	0	0	0	0	0	20

Cycles:	1	0.7%
Cars and Light Trucks:	124	88.6%
Heavy Vehicles:	15	10.7%

Duval Road  
east of Torrey Road  
City, State: Sutton, MA  
Client: TetraTech/ C. Sudak  
Site Code: 143-312497-21001



PDI File #: 218069 ATR-B

Count Date  
Wednesday, July, 21, 2021

### Classification (60-minute)

Combined														
Start Time:	Cycles	Cars and Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axle Double	5 Axle Double	>6 Axle Double	<6 Axle Multi	6 Axle Multi	>6 Axle Multi	Total
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 AM	0	1	1	0	0	0	0	0	0	0	0	0	0	2
6:00 AM	0	10	5	0	3	0	0	0	0	0	0	0	0	18
7:00 AM	0	9	4	0	0	1	0	0	0	0	0	0	0	14
8:00 AM	0	13	1	0	2	1	0	0	0	0	0	0	0	17
9:00 AM	0	10	3	0	2	2	0	0	0	0	0	0	0	17
10:00 AM	0	15	6	0	0	0	0	0	0	0	0	0	0	21
11:00 AM	0	8	3	0	1	0	0	0	0	0	0	0	0	12
12:00 PM	0	8	4	1	2	0	0	0	0	0	0	0	0	15
1:00 PM	0	5	2	0	0	0	0	0	0	0	0	0	0	7
2:00 PM	0	10	0	0	0	0	0	0	0	0	0	0	0	10
3:00 PM	0	14	9	0	1	0	0	0	0	0	0	0	0	24
4:00 PM	0	22	7	0	6	0	0	0	0	0	0	0	0	35
5:00 PM	0	19	9	0	1	0	0	0	0	0	0	0	0	29
6:00 PM	0	11	8	0	3	0	0	0	0	0	0	0	0	22
7:00 PM	1	9	3	0	1	0	0	0	0	0	0	0	0	14
8:00 PM	0	2	6	0	1	0	0	0	0	0	0	0	0	9
9:00 PM	0	2	1	0	0	0	0	0	0	0	0	0	0	3
10:00 PM	0	5	3	0	0	0	0	0	0	0	0	0	0	8
11:00 PM	0	1	1	0	0	0	0	0	0	0	0	0	0	2
PM Total	1	175	76	1	23	4	0	0	0	0	0	0	0	280
Percent	0.36%	62.50%	27.14%	0.36%	8.21%	1.43%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	

AM Peak	10:00 AM	10:00 AM		6:00 AM	9:00 AM									10:00 AM
Volume	0	15	6	0	3	2	0	0	0	0	0	0	0	21

PM Peak	7:00 PM	4:00 PM	3:00 PM	12:00 PM	4:00 PM									4:00 PM
Volume	1	22	9	1	6	0	0	0	0	0	0	0	0	35

Cycles:	1	0.4%
Cars and Light Trucks:	251	89.6%
Heavy Vehicles:	28	10.0%

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Cars and Heavy Vehicles (Combined)

	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	1	0	1	0	4	0	4	5
7:15 AM	1	0	0	1	2	0	0	2	1	2	0	3	6
7:30 AM	1	0	0	1	1	0	0	1	1	1	0	2	4
7:45 AM	0	5	0	5	1	0	0	1	2	0	0	2	8
Total	2	5	0	7	4	1	0	5	4	7	0	11	23
8:00 AM	0	0	0	0	2	0	0	2	0	4	0	4	6
8:15 AM	2	1	0	3	1	2	0	3	2	4	0	6	12
8:30 AM	1	1	0	2	0	1	0	1	0	2	0	2	5
8:45 AM	1	0	0	1	0	0	0	0	2	2	0	4	5
Total	4	2	0	6	3	3	0	6	4	12	0	16	28
Grand Total	6	7	0	13	7	4	0	11	8	19	0	27	51
Approach %	46.2	53.8	0.0		63.6	36.4	0.0		29.6	70.4	0.0		
Total %	11.8	13.7	0.0	25.5	13.7	7.8	0.0	21.6	15.7	37.3	0.0	52.9	
Exiting Leg Total	26				15				10				51
Cars	6	6	0	12	7	4	0	11	7	19	0	26	49
% Cars	100.0	85.7	0.0	92.3	100.0	100.0	0.0	100.0	87.5	100.0	0.0	96.3	96.1
Exiting Leg Total	26				13				10				49
Heavy Vehicles	0	1	0	1	0	0	0	0	1	0	0	1	2
% Heavy Vehicles	0.0	14.3	0.0	7.7	0.0	0.0	0.0	0.0	12.5	0.0	0.0	3.7	3.9
Exiting Leg Total	0				2				0				2

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

7:45 AM	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:45 AM	0	5	0	5	1	0	0	1	2	0	0	2	8
8:00 AM	0	0	0	0	2	0	0	2	0	4	0	4	6
8:15 AM	2	1	0	3	1	2	0	3	2	4	0	6	12
8:30 AM	1	1	0	2	0	1	0	1	0	2	0	2	5
Total Volume	3	7	0	10	4	3	0	7	4	10	0	14	31
% Approach Total	30.0	70.0	0.0		57.1	42.9	0.0		28.6	71.4	0.0		
PHF	0.375	0.350	0.000	0.500	0.500	0.375	0.000	0.583	0.500	0.625	0.000	0.583	0.646
Cars	3	6	0	9	4	3	0	7	3	10	0	13	29
Cars %	100.0	85.7	0.0	90.0	100.0	100.0	0.0	100.0	75.0	100.0	0.0	92.9	93.5
Heavy Vehicles	0	1	0	1	0	0	0	0	1	0	0	1	2
Heavy Vehicles %	0.0	14.3	0.0	10.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	7.1	6.5
Cars Enter Leg	3	6	0	9	4	3	0	7	3	10	0	13	29
Heavy Enter Leg	0	1	0	1	0	0	0	0	1	0	0	1	2
Total Entering Leg	3	7	0	10	4	3	0	7	4	10	0	14	31
Cars Exiting Leg				14				9				6	29
Heavy Exiting Leg				0				2				0	2
Total Exiting Leg				14				11				6	31

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class:

**Cars**

	Torrey Road					Duval Road					Torrey Road					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
7:00 AM	0	0	0	0	0	0	1	0	0	1	0	4	0	0	4	5
7:15 AM	1	0	0	1		2	0	0	2		1	2	0	3		6
7:30 AM	1	0	0	1		1	0	0	1		1	1	0	2		4
7:45 AM	0	4	0	4		1	0	0	1		1	0	0	1		6
Total	2	4	0	6		4	1	0	5		3	7	0	10		21
8:00 AM	0	0	0	0		2	0	0	2		0	4	0	4		6
8:15 AM	2	1	0	3		1	2	0	3		2	4	0	6		12
8:30 AM	1	1	0	2		0	1	0	1		0	2	0	2		5
8:45 AM	1	0	0	1		0	0	0	0		2	2	0	4		5
Total	4	2	0	6		3	3	0	6		4	12	0	16		28
Grand Total	6	6	0	12		7	4	0	11		7	19	0	26		49
Approach %	50.0	50.0	0.0			63.6	36.4	0.0			26.9	73.1	0.0			
Total %	12.2	12.2	0.0	24.5		14.3	8.2	0.0	22.4		14.3	38.8	0.0	53.1		
Exiting Leg Total	26					13					10					49

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

7:45 AM	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:45 AM	0	4	0	4	1	0	0	1	1	0	0	1	6
8:00 AM	0	0	0	0	2	0	0	2	0	4	0	4	6
8:15 AM	2	1	0	3	1	2	0	3	2	4	0	6	12
8:30 AM	1	1	0	2	0	1	0	1	0	2	0	2	5
Total Volume	3	6	0	9	4	3	0	7	3	10	0	13	29
% Approach Total	33.3	66.7	0.0		57.1	42.9	0.0		23.1	76.9	0.0		
PHF	0.375	0.375	0.000	0.563	0.500	0.375	0.000	0.583	0.375	0.625	0.000	0.542	0.604
Entering Leg	3	6	0	9	4	3	0	7	3	10	0	13	29
Exiting Leg				14				9				6	29
Total				23				16				19	58



PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	1	0	0	0	0	0	1	0	0	1
Total	0	1	0	1	0	0	0	0	0	1	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	1	0	0	0	0	0	1	0	0	1
Approach %	0.0	100.0	0.0		0.0	0.0	0.0			100.0	0.0	0.0	
Total %	0.0	50.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0
Exiting Leg Total	0				2				0				2
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0
Single-Unit Trucks	0	1	0	1	0	0	0	0	0	1	0	0	1
% Single-Unit	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100.0
Exiting Leg Total	0				2				0				2
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0

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

7:00 AM	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	1	0	0	0	0	0	1	0	0	1
Total Volume	0	1	0	1	0	0	0	0	0	1	0	0	1
% Approach Total	0.0	100.0	0.0		0.0	0.0	0.0			100.0	0.0	0.0	
PHF	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000		0.250	0.000	0.000	0.250
Buses	0	0	0	0	0	0	0	0		0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Single-Unit Trucks	0	1	0	1	0	0	0	0		1	0	0	1
Single-Unit %	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0		100.0	0.0	0.0	100.0
Articulated Trucks	0	0	0	0	0	0	0	0		0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0
Buses	0	0	0	0	0	0	0	0		0	0	0	0
Single-Unit Trucks	0	1	0	1	0	0	0	0		1	0	0	1
Articulated Trucks	0	0	0	0	0	0	0	0		0	0	0	0
Total Entering Leg	0	1	0	1	0	0	0	0		1	0	0	1
Buses				0				0					0
Single-Unit Trucks				0				2					0
Articulated Trucks				0				0					0
Total Exiting Leg				0				2					0

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class:

### Buses

	Torrey Road					Duval Road					Torrey Road					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Approach %	0.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Exiting Leg Total	0					0					0					0

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

7:00 AM	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Single-Unit Trucks

	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	1	0	0	0	0	1	0	0	1	2
Total	0	1	0	1	0	0	0	0	1	0	0	1	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1	0	1	0	0	0	0	1	0	0	1	2
Approach %	0.0	100.0	0.0		0.0	0.0	0.0		100.0	0.0	0.0		
Total %	0.0	50.0	0.0	50.0	0.0	0.0	0.0	0.0	50.0	0.0	0.0	50.0	
Exiting Leg Total	0				2				0				2

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

7:00 AM	Torrey Road				Duval Road				Torrey Road				Total	
	from North				from East				from South					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	1	0	1	0	0	0	0	0	1	0	0	1	2
Total Volume	0	1	0	1	0	0	0	0	0	1	0	0	1	2
% Approach Total	0.0	100.0	0.0		0.0	0.0	0.0			100.0	0.0	0.0		
PHF	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000		0.250	0.000	0.000	0.250	0.250
Entering Leg	0	1	0	1	0	0	0	0		1	0	0	1	2
Exiting Leg				0				2					0	2
Total				1				2					1	4

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Articulated Trucks

	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0

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

7:00 AM	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	0

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Bicycles (on Roadway and Crosswalks)**

	Torrey Road						Duval Road						Torrey Road						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0						0						0						0

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

7:00 AM	Torrey Road						Duval Road						Torrey Road						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class:

### Pedestrians

	Torrey Road						Duval Road						Torrey Road						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	0	0	3	1	4	0	0	0	0	0	0	4
Approach %	0	0	0	0	0	0	0	0	0	75	25		0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	75	25	100	0	0	0	0	0	0	
Exiting Leg Total	0						4						0						4

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

7:45 AM	Torrey Road						Duval Road						Torrey Road						Total	
	from North						from East						from South							
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total		
7:45 AM	0	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	0	3	1	4	0	0	0	0	0	0	4
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	75.0	25.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.250	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.500
Entering Leg	0	0	0	0	0	0	0	0	0	0	3	1	4	0	0	0	0	0	0	4
Exiting Leg	0						4						0						4	
Total	0						8						0						8	

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Cars and Heavy Vehicles (Combined)

	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	6	2	0	8	0	3	0	3	3	1	0	4	15
4:15 PM	7	2	0	9	2	5	0	7	3	2	0	5	21
4:30 PM	6	3	0	9	1	6	0	7	1	2	0	3	19
4:45 PM	3	3	0	6	0	2	0	2	1	2	0	3	11
Total	22	10	0	32	3	16	0	19	8	7	0	15	66
5:00 PM	4	1	0	5	0	3	0	3	2	1	0	3	11
5:15 PM	1	2	0	3	0	1	0	1	1	3	0	4	8
5:30 PM	7	2	0	9	0	1	0	1	2	3	0	5	15
5:45 PM	7	0	0	7	0	3	0	3	1	1	0	2	12
Total	19	5	0	24	0	8	0	8	6	8	0	14	46
Grand Total	41	15	0	56	3	24	0	27	14	15	0	29	112
Approach %	73.2	26.8	0.0		11.1	88.9	0.0		48.3	51.7	0.0		
Total %	36.6	13.4	0.0	50.0	2.7	21.4	0.0	24.1	12.5	13.4	0.0	25.9	
Exiting Leg Total	18				29				65				112
Cars	41	15	0	56	3	23	0	26	14	15	0	29	111
% Cars	100.0	100.0	0.0	100.0	100.0	95.8	0.0	96.3	100.0	100.0	0.0	100.0	99.1
Exiting Leg Total	18				29				64				111
Heavy Vehicles	0	0	0	0	0	1	0	1	0	0	0	0	1
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	4.2	0.0	3.7	0.0	0.0	0.0	0.0	0.9
Exiting Leg Total	0				0				1				1

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	6	2	0	8	0	3	0	3	3	1	0	4	15
4:15 PM	7	2	0	9	2	5	0	7	3	2	0	5	21
4:30 PM	6	3	0	9	1	6	0	7	1	2	0	3	19
4:45 PM	3	3	0	6	0	2	0	2	1	2	0	3	11
Total Volume	22	10	0	32	3	16	0	19	8	7	0	15	66
% Approach Total	68.8	31.3	0.0		15.8	84.2	0.0		53.3	46.7	0.0		
PHF	0.786	0.833	0.000	0.889	0.375	0.667	0.000	0.679	0.667	0.875	0.000	0.750	0.786
Cars	22	10	0	32	3	15	0	18	8	7	0	15	65
Cars %	100.0	100.0	0.0	100.0	100.0	93.8	0.0	94.7	100.0	100.0	0.0	100.0	98.5
Heavy Vehicles	0	0	0	0	0	1	0	1	0	0	0	0	1
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	6.3	0.0	5.3	0.0	0.0	0.0	0.0	1.5
Cars Enter Leg	22	10	0	32	3	15	0	18	8	7	0	15	65
Heavy Enter Leg	0	0	0	0	0	1	0	1	0	0	0	0	1
Total Entering Leg	22	10	0	32	3	16	0	19	8	7	0	15	66
Cars Exiting Leg				10				18				37	65
Heavy Exiting Leg				0				0				1	1
Total Exiting Leg				10				18				38	66

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Cars**

	Torrey Road					Duval Road					Torrey Road					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
4:00 PM	6	2	0	8		0	3	0	3		3	1	0	4		15
4:15 PM	7	2	0	9		2	5	0	7		3	2	0	5		21
4:30 PM	6	3	0	9		1	5	0	6		1	2	0	3		18
4:45 PM	3	3	0	6		0	2	0	2		1	2	0	3		11
Total	22	10	0	32		3	15	0	18		8	7	0	15		65
5:00 PM	4	1	0	5		0	3	0	3		2	1	0	3		11
5:15 PM	1	2	0	3		0	1	0	1		1	3	0	4		8
5:30 PM	7	2	0	9		0	1	0	1		2	3	0	5		15
5:45 PM	7	0	0	7		0	3	0	3		1	1	0	2		12
Total	19	5	0	24		0	8	0	8		6	8	0	14		46
Grand Total	41	15	0	56		3	23	0	26		14	15	0	29		111
Approach %	73.2	26.8	0.0			11.5	88.5	0.0			48.3	51.7	0.0			
Total %	36.9	13.5	0.0	50.5		2.7	20.7	0.0	23.4		12.6	13.5	0.0	26.1		
Exiting Leg Total	18					29					64					111

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	6	2	0	8	0	3	0	3	3	1	0	4	15
4:15 PM	7	2	0	9	2	5	0	7	3	2	0	5	21
4:30 PM	6	3	0	9	1	5	0	6	1	2	0	3	18
4:45 PM	3	3	0	6	0	2	0	2	1	2	0	3	11
Total Volume	22	10	0	32	3	15	0	18	8	7	0	15	65
% Approach Total	68.8	31.3	0.0		16.7	83.3	0.0		53.3	46.7	0.0		
PHF	0.786	0.833	0.000	0.889	0.375	0.750	0.000	0.643	0.667	0.875	0.000	0.750	0.774
Entering Leg	22	10	0	32	3	15	0	18	8	7	0	15	65
Exiting Leg	10				18				37				65
Total	42				36				52				130



PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	1	0	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	1	0	1	0	0	0	0	1
Approach %	0.0	0.0	0.0		0.0	100.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				1				1
Buses	0	0	0	0	0	1	0	1	0	0	0	0	1
% Buses	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Exiting Leg Total	0				0				1				1
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	1
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.250
Buses	0	0	0	0	0	1	0	1	0	0	0	0	1
Buses %	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	0	0	0	0	1	0	1	0	0	0	0	1
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	0	0	0	0	1	0	1	0	0	0	0	1
Buses				0				0				1	1
Single-Unit Trucks				0				0				0	0
Articulated Trucks				0				0				0	0
Total Exiting Leg				0				0				1	1

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class:

### Buses

	Torrey Road					Duval Road					Torrey Road					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	
Approach %	0.0	0.0	0.0			0.0	100.0	0.0			0.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0		0.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0			
Exiting Leg Total	0					0					1					1

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	1	0	1	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	1	0	1	0	0	0	0	1
% Approach Total	0.0	0.0	0.0		0.0	100.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	1	0	1	0	0	0	0	1
Exiting Leg				0				0				1	1
Total				0				1				1	2

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Single-Unit Trucks

	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	0

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Articulated Trucks

	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Torrey Road				Duval Road				Torrey Road				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	0

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Bicycles (on Roadway and Crosswalks)**

	Torrey Road						Duval Road						Torrey Road						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Torrey Road						Duval Road						Torrey Road						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: **218069 A**  
 Location: **N: Torrey Road S: Torrey Road**  
 Location: **E: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class:

### Pedestrians

	Torrey Road						Duval Road						Torrey Road						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	3
Approach %	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0
Total %	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	0	0
Exiting Leg Total	0						3						0						3

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Torrey Road						Duval Road						Torrey Road						
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	Total
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	3
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.375
Entering Leg	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	3
Exiting Leg	0						3						0						3
Total	0						6						0						6

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Cars and Heavy Vehicles (Combined)

	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	1	0	1	1	0	0	1	0	2	0	2	4
7:15 AM	1	0	0	1	2	1	0	3	0	2	0	2	6
7:30 AM	1	0	0	1	1	0	0	1	0	0	0	0	2
7:45 AM	0	0	0	0	0	1	0	1	0	1	0	1	2
Total	2	1	0	3	4	2	0	6	0	5	0	5	14
8:00 AM	0	0	0	0	1	0	0	1	0	3	0	3	4
8:15 AM	3	1	0	4	1	0	0	1	0	5	0	5	10
8:30 AM	2	0	0	2	0	1	0	1	0	2	0	2	5
8:45 AM	0	1	0	1	1	0	0	1	1	2	0	3	5
Total	5	2	0	7	3	1	0	4	1	12	0	13	24
Grand Total	7	3	0	10	7	3	0	10	1	17	0	18	38
Approach %	70.0	30.0	0.0		70.0	30.0	0.0		5.6	94.4	0.0		
Total %	18.4	7.9	0.0	26.3	18.4	7.9	0.0	26.3	2.6	44.7	0.0	47.4	
Exiting Leg Total	24				4				10				38
Cars	7	3	0	10	7	3	0	10	1	17	0	18	38
% Cars	100.0	100.0	0.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	0.0	100.0	100.0
Exiting Leg Total	24				4				10				38
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0

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

8:00 AM	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
8:00 AM	0	0	0	0	1	0	0	1	0	3	0	3	4
8:15 AM	3	1	0	4	1	0	0	1	0	5	0	5	10
8:30 AM	2	0	0	2	0	1	0	1	0	2	0	2	5
8:45 AM	0	1	0	1	1	0	0	1	1	2	0	3	5
Total Volume	5	2	0	7	3	1	0	4	1	12	0	13	24
% Approach Total	71.4	28.6	0.0		75.0	25.0	0.0		7.7	92.3	0.0		
PHF	0.417	0.500	0.000	0.438	0.750	0.250	0.000	1.000	0.250	0.600	0.000	0.650	0.600
Cars	5	2	0	7	3	1	0	4	1	12	0	13	24
Cars %	100.0	100.0	0.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	0.0	100.0	100.0
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cars Enter Leg	5	2	0	7	3	1	0	4	1	12	0	13	24
Heavy Enter Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	5	2	0	7	3	1	0	4	1	12	0	13	24
Cars Exiting Leg				15				3				6	24
Heavy Exiting Leg				0				0				0	0
Total Exiting Leg				15				3				6	24

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Cars**

	Birch Street					Fairfax Way					Birch Street					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
7:00 AM	0	1	0	1		1	0	0	1		0	2	0	2		4
7:15 AM	1	0	0	1		2	1	0	3		0	2	0	2		6
7:30 AM	1	0	0	1		1	0	0	1		0	0	0	0		2
7:45 AM	0	0	0	0		0	1	0	1		0	1	0	1		2
Total	2	1	0	3		4	2	0	6		0	5	0	5		14
8:00 AM	0	0	0	0		1	0	0	1		0	3	0	3		4
8:15 AM	3	1	0	4		1	0	0	1		0	5	0	5		10
8:30 AM	2	0	0	2		0	1	0	1		0	2	0	2		5
8:45 AM	0	1	0	1		1	0	0	1		1	2	0	3		5
Total	5	2	0	7		3	1	0	4		1	12	0	13		24
Grand Total	7	3	0	10		7	3	0	10		1	17	0	18		38
Approach %	70.0	30.0	0.0			70.0	30.0	0.0			5.6	94.4	0.0			
Total %	18.4	7.9	0.0	26.3		18.4	7.9	0.0	26.3		2.6	44.7	0.0	47.4		
Exiting Leg Total	24					4					10					38

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

8:00 AM	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
8:00 AM	0	0	0	0	1	0	0	1	0	3	0	3	4
8:15 AM	3	1	0	4	1	0	0	1	0	5	0	5	10
8:30 AM	2	0	0	2	0	1	0	1	0	2	0	2	5
8:45 AM	0	1	0	1	1	0	0	1	1	2	0	3	5
Total Volume	5	2	0	7	3	1	0	4	1	12	0	13	24
% Approach Total	71.4	28.6	0.0		75.0	25.0	0.0		7.7	92.3	0.0		
PHF	0.417	0.500	0.000	0.438	0.750	0.250	0.000	1.000	0.250	0.600	0.000	0.650	0.600
Entering Leg	5	2	0	7	3	1	0	4	1	12	0	13	24
Exiting Leg	15				3				6				24
Total	22				7				19				48



PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0

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

7:00 AM	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses				0				0				0	0
Single-Unit Trucks				0				0				0	0
Articulated Trucks				0				0				0	0
Total Exiting Leg				0				0				0	0

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class:

### Buses

	Birch Street					Fairfax Way					Birch Street					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Approach %	0.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Exiting Leg Total	0					0					0					0

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

7:00 AM	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Single-Unit Trucks

	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0

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

7:00 AM	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	0

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Articulated Trucks

	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0

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

7:00 AM	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	0

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Bicycles (on Roadway and Crosswalks)**

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

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

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

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Pedestrians**

	Birch Street							Fairfax Way							Birch Street							Total
	from North							from East							from South							
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total				
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2		
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2		
Grand Total	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2		
Approach %	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	0	0		
Exiting Leg Total	0							2							0							2

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

7:45 AM	Birch Street						Fairfax Way						Birch Street						Total	
	from North						from East						from South							
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total		
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	0	2
Exiting Leg	0						2						0						2	
Total	0						4						0						4	

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Cars and Heavy Vehicles (Combined)**

	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	6	2	0	8	1	0	0	1	0	4	0	4	13
4:15 PM	7	4	0	11	1	0	0	1	1	2	0	3	15
4:30 PM	12	0	0	12	2	0	0	2	0	2	0	2	16
4:45 PM	5	0	0	5	0	0	0	0	0	3	0	3	8
Total	30	6	0	36	4	0	0	4	1	11	0	12	52
5:00 PM	5	0	0	5	1	0	0	1	1	2	0	3	9
5:15 PM	3	0	0	3	0	1	0	1	0	4	0	4	8
5:30 PM	6	1	0	7	1	0	0	1	0	3	0	3	11
5:45 PM	7	3	0	10	0	0	0	0	1	2	0	3	13
Total	21	4	0	25	2	1	0	3	2	11	0	13	41
Grand Total	51	10	0	61	6	1	0	7	3	22	0	25	93
Approach %	83.6	16.4	0.0		85.7	14.3	0.0		12.0	88.0	0.0		
Total %	54.8	10.8	0.0	65.6	6.5	1.1	0.0	7.5	3.2	23.7	0.0	26.9	
Exiting Leg Total	28				13				52				93
Cars	50	10	0	60	6	1	0	7	3	22	0	25	92
% Cars	98.0	100.0	0.0	98.4	100.0	100.0	0.0	100.0	100.0	100.0	0.0	100.0	98.9
Exiting Leg Total	28				13				51				92
Heavy Vehicles	1	0	0	1	0	0	0	0	0	0	0	0	1
% Heavy Vehicles	2.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
Exiting Leg Total	0				0				1				1

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street					Fairfax Way					Birch Street					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
4:00 PM	6	2	0	8		1	0	0	1		0	4	0	4		13
4:15 PM	7	4	0	11		1	0	0	1		1	2	0	3		15
4:30 PM	12	0	0	12		2	0	0	2		0	2	0	2		16
4:45 PM	5	0	0	5		0	0	0	0		0	3	0	3		8
Total Volume	30	6	0	36		4	0	0	4		1	11	0	12		52
% Approach Total	83.3	16.7	0.0			100.0	0.0	0.0			8.3	91.7	0.0			
PHF	0.625	0.375	0.000	0.750		0.500	0.000	0.000	0.500		0.250	0.688	0.000	0.750		0.813
Cars	29	6	0	35		4	0	0	4		1	11	0	12		51
Cars %	96.7	100.0	0.0	97.2		100.0	0.0	0.0	100.0		100.0	100.0	0.0	100.0		98.1
Heavy Vehicles	1	0	0	1		0	0	0	0		0	0	0	0		1
Heavy Vehicles %	3.3	0.0	0.0	2.8		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		1.9
Cars Enter Leg	29	6	0	35		4	0	0	4		1	11	0	12		51
Heavy Enter Leg	1	0	0	1		0	0	0	0		0	0	0	0		1
Total Entering Leg	30	6	0	36		4	0	0	4		1	11	0	12		52
Cars Exiting Leg				15					7					29		51
Heavy Exiting Leg				0					0					1		1
Total Exiting Leg				15					7					30		52

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Cars**

	Birch Street					Fairfax Way					Birch Street					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
4:00 PM	6	2	0	8		1	0	0	1		0	4	0	4		13
4:15 PM	7	4	0	11		1	0	0	1		1	2	0	3		15
4:30 PM	11	0	0	11		2	0	0	2		0	2	0	2		15
4:45 PM	5	0	0	5		0	0	0	0		0	3	0	3		8
Total	29	6	0	35		4	0	0	4		1	11	0	12		51
5:00 PM	5	0	0	5		1	0	0	1		1	2	0	3		9
5:15 PM	3	0	0	3		0	1	0	1		0	4	0	4		8
5:30 PM	6	1	0	7		1	0	0	1		0	3	0	3		11
5:45 PM	7	3	0	10		0	0	0	0		1	2	0	3		13
Total	21	4	0	25		2	1	0	3		2	11	0	13		41
Grand Total	50	10	0	60		6	1	0	7		3	22	0	25		92
Approach %	83.3	16.7	0.0			85.7	14.3	0.0			12.0	88.0	0.0			
Total %	54.3	10.9	0.0	65.2		6.5	1.1	0.0	7.6		3.3	23.9	0.0	27.2		
Exiting Leg Total	28					13					51					92

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	6	2	0	8	1	0	0	1	0	4	0	4	13
4:15 PM	7	4	0	11	1	0	0	1	1	2	0	3	15
4:30 PM	11	0	0	11	2	0	0	2	0	2	0	2	15
4:45 PM	5	0	0	5	0	0	0	0	0	3	0	3	8
Total Volume	29	6	0	35	4	0	0	4	1	11	0	12	51
% Approach Total	82.9	17.1	0.0		100.0	0.0	0.0		8.3	91.7	0.0		
PHF	0.659	0.375	0.000	0.795	0.500	0.000	0.000	0.500	0.250	0.688	0.000	0.750	0.850
Entering Leg	29	6	0	35	4	0	0	4	1	11	0	12	51
Exiting Leg	15				7				29				51
Total	50				11				41				102



PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	0	1	0	0	0	0	0	0	0	0	1
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				1				1
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0
Single-Unit Trucks	1	0	0	1	0	0	0	0	0	0	0	0	1
% Single-Unit	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Exiting Leg Total	0				0				1				1
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	0	0	0	0	0	0	0	0	1
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	1	0	0	1	0	0	0	0	0	0	0	0	1
Single-Unit %	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	1	0	0	1	0	0	0	0	0	0	0	0	1
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	1	0	0	1	0	0	0	0	0	0	0	0	1
Buses				0				0				0	0
Single-Unit Trucks				0				0				1	1
Articulated Trucks				0				0				0	0
Total Exiting Leg				0				0				1	1

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class:

### Buses

	Birch Street					Fairfax Way					Birch Street					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Approach %	0.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Exiting Leg Total	0					0					0					0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class:

### Single-Unit Trucks

	Birch Street					Fairfax Way					Birch Street					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
4:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		
4:15 PM	0	0	0	0		0	0	0	0		0	0	0	0		
4:30 PM	1	0	0	1		0	0	0	0		0	0	0	0		
4:45 PM	0	0	0	0		0	0	0	0		0	0	0	0		
Total	1	0	0	1		0	0	0	0		0	0	0	0		
5:00 PM	0	0	0	0		0	0	0	0		0	0	0	0		
5:15 PM	0	0	0	0		0	0	0	0		0	0	0	0		
5:30 PM	0	0	0	0		0	0	0	0		0	0	0	0		
5:45 PM	0	0	0	0		0	0	0	0		0	0	0	0		
Total	0	0	0	0		0	0	0	0		0	0	0	0		
Grand Total	1	0	0	1		0	0	0	0		0	0	0	0		
Approach %	100.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0			
Total %	100.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Exiting Leg Total	0					0					1					1

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	0	0	0	0	0	0	0	0	1
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	1	0	0	1	0	0	0	0	0	0	0	0	1
Exiting Leg				0				0				1	1
Total				1				0				1	2

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class:

### Articulated Trucks

	Birch Street					Fairfax Way					Birch Street					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Approach %	0.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Exiting Leg Total	0					0					0					0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street				Fairfax Way				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Bicycles (on Roadway and Crosswalks)**

	Birch Street						Fairfax Way						Birch Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street						Fairfax Way						Birch Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: **218069 B**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Fairfax Way**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Pedestrians**

	Birch Street						Fairfax Way						Birch Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	2
Grand Total	0	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	3
Approach %	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0
Total %	0	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	0
Exiting Leg Total	0						3						0						3

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Birch Street						Fairfax Way						Birch Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	3
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.375	0.000	0.375	0.000	0.000	0.000	0.000	0.000	0.000	0.375
Entering Leg	0	0	0	0	0	0	0	0	0	3	0	3	0	0	0	0	0	0	3
Exiting Leg	0						3						0						3
Total	0						6						0						6

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Cars and Heavy Vehicles (Combined)**

	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	1	0	1	0	2	0	2	3
7:15 AM	2	0	0	2	1	1	0	2	0	1	0	1	5
7:30 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
7:45 AM	1	0	0	1	0	0	0	0	0	1	0	1	2
Total	4	0	0	4	1	2	0	3	0	4	0	4	11
8:00 AM	0	0	0	0	1	0	0	1	0	2	0	2	3
8:15 AM	3	0	0	3	1	0	0	1	0	4	0	4	8
8:30 AM	3	0	0	3	0	1	0	1	1	2	0	3	7
8:45 AM	0	0	0	0	1	0	0	1	0	2	0	2	3
Total	6	0	0	6	3	1	0	4	1	10	0	11	21
Grand Total	10	0	0	10	4	3	0	7	1	14	0	15	32
Approach %	100.0	0.0	0.0		57.1	42.9	0.0		6.7	93.3	0.0		
Total %	31.3	0.0	0.0	31.3	12.5	9.4	0.0	21.9	3.1	43.8	0.0	46.9	
Exiting Leg Total	18				1				13				32
Cars	10	0	0	10	4	3	0	7	1	14	0	15	32
% Cars	100.0	0.0	0.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	0.0	100.0	100.0
Exiting Leg Total	18				1				13				32
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Vehicles	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0

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

8:00 AM	Birch Street				Belvoir Avenue				Birch Street				Total	
	from North				from East				from South					
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total		
8:00 AM	0	0	0	0	1	0	0	1	0	2	0	2	3	
8:15 AM	3	0	0	3	1	0	0	1	0	4	0	4	8	
8:30 AM	3	0	0	3	0	1	0	1	1	2	0	3	7	
8:45 AM	0	0	0	0	1	0	0	1	0	2	0	2	3	
Total Volume	6	0	0	6	3	1	0	4	1	10	0	11	21	
% Approach Total	100.0	0.0	0.0		75.0	25.0	0.0		9.1	90.9	0.0			
PHF	0.500	0.000	0.000	0.500	0.750	0.250	0.000	1.000	0.250	0.625	0.000	0.688	0.656	
Cars	6	0	0	6	3	1	0	4	1	10	0	11	21	
Cars %	100.0	0.0	0.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	0.0	100.0	100.0	
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	0	
Heavy Vehicles %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Cars Enter Leg	6	0	0	6	3	1	0	4	1	10	0	11	21	
Heavy Enter Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total Entering Leg	6	0	0	6	3	1	0	4	1	10	0	11	21	
Cars Exiting Leg													7	21
Heavy Exiting Leg													0	0
Total Exiting Leg													7	21

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class:

### Cars

	Birch Street					Belvoir Avenue					Birch Street					Total
	from North					from East					from South					
	Thru	Left	U-Turn		Total	Right	Left	U-Turn		Total	Right	Thru	U-Turn		Total	
7:00 AM	0	0	0	0	0	0	1	0	0	1	0	2	0	0	2	3
7:15 AM	2	0	0		2	1	1	0		2	0	1	0		1	5
7:30 AM	1	0	0		1	0	0	0		0	0	0	0		0	1
7:45 AM	1	0	0		1	0	0	0		0	0	1	0		1	2
Total	4	0	0		4	1	2	0		3	0	4	0		4	11
8:00 AM	0	0	0		0	1	0	0		1	0	2	0		2	3
8:15 AM	3	0	0		3	1	0	0		1	0	4	0		4	8
8:30 AM	3	0	0		3	0	1	0		1	1	2	0		3	7
8:45 AM	0	0	0		0	1	0	0		1	0	2	0		2	3
Total	6	0	0		6	3	1	0		4	1	10	0		11	21
Grand Total	10	0	0		10	4	3	0		7	1	14	0		15	32
Approach %	100.0	0.0	0.0			57.1	42.9	0.0			6.7	93.3	0.0			
Total %	31.3	0.0	0.0		31.3	12.5	9.4	0.0		21.9	3.1	43.8	0.0		46.9	
Exiting Leg Total	18					1					13					32

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

8:00 AM	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
8:00 AM	0	0	0	0	1	0	0	1	0	2	0	2	3
8:15 AM	3	0	0	3	1	0	0	1	0	4	0	4	8
8:30 AM	3	0	0	3	0	1	0	1	1	2	0	3	7
8:45 AM	0	0	0	0	1	0	0	1	0	2	0	2	3
Total Volume	6	0	0	6	3	1	0	4	1	10	0	11	21
% Approach Total	100.0	0.0	0.0		75.0	25.0	0.0		9.1	90.9	0.0		
PHF	0.500	0.000	0.000	0.500	0.750	0.250	0.000	1.000	0.250	0.625	0.000	0.688	0.656
Entering Leg	6	0	0	6	3	1	0	4	1	10	0	11	21
Exiting Leg	13				1				7				21
Total	19				5				18				42



PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0

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

7:00 AM	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses				0				0				0	0
Single-Unit Trucks				0				0				0	0
Articulated Trucks				0				0				0	0
Total Exiting Leg				0				0				0	0

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class:

### Buses

	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0

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

7:00 AM	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



### Single-Unit Trucks

	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0

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

7:00 AM	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



### Articulated Trucks

	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0

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

7:00 AM	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	0

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Bicycles (on Roadway and Crosswalks)**

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

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

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

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Pedestrians**

	Birch Street						Belvoir Avenue						Birch Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg Total	0						0						0						0

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

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

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Cars and Heavy Vehicles (Combined)

	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	5	1	0	6	2	1	0	3	0	2	0	2	11
4:15 PM	5	2	0	7	0	0	0	0	1	3	1	5	12
4:30 PM	10	2	0	12	0	0	0	0	0	3	0	3	15
4:45 PM	5	0	0	5	1	0	0	1	1	2	0	3	9
Total	25	5	0	30	3	1	0	4	2	10	1	13	47
5:00 PM	4	1	0	5	1	0	0	1	0	2	0	2	8
5:15 PM	3	1	0	4	0	0	0	0	0	4	0	4	8
5:30 PM	6	0	0	6	2	1	0	3	0	1	0	1	10
5:45 PM	5	2	0	7	1	1	0	2	1	3	0	4	13
Total	18	4	0	22	4	2	0	6	1	10	0	11	39
Grand Total	43	9	0	52	7	3	0	10	3	20	1	24	86
Approach %	82.7	17.3	0.0		70.0	30.0	0.0		12.5	83.3	4.2		
Total %	50.0	10.5	0.0	60.5	8.1	3.5	0.0	11.6	3.5	23.3	1.2	27.9	
Exiting Leg Total	27				12				47				86
Cars	42	9	0	51	7	3	0	10	3	20	1	24	85
% Cars	97.7	100.0	0.0	98.1	100.0	100.0	0.0	100.0	100.0	100.0	100.0	100.0	98.8
Exiting Leg Total	27				12				46				85
Heavy Vehicles	1	0	0	1	0	0	0	0	0	0	0	0	1
% Heavy Vehicles	2.3	0.0	0.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2
Exiting Leg Total	0				0				1				1

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	5	1	0	6	2	1	0	3	0	2	0	2	11
4:15 PM	5	2	0	7	0	0	0	0	1	3	1	5	12
4:30 PM	10	2	0	12	0	0	0	0	0	3	0	3	15
4:45 PM	5	0	0	5	1	0	0	1	1	2	0	3	9
Total Volume	25	5	0	30	3	1	0	4	2	10	1	13	47
% Approach Total	83.3	16.7	0.0		75.0	25.0	0.0		15.4	76.9	7.7		
PHF	0.625	0.625	0.000	0.625	0.375	0.250	0.000	0.333	0.500	0.833	0.250	0.650	0.783
Cars	24	5	0	29	3	1	0	4	2	10	1	13	46
Cars %	96.0	100.0	0.0	96.7	100.0	100.0	0.0	100.0	100.0	100.0	100.0	100.0	97.9
Heavy Vehicles	1	0	0	1	0	0	0	0	0	0	0	0	1
Heavy Vehicles %	4.0	0.0	0.0	3.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1
Cars Enter Leg	24	5	0	29	3	1	0	4	2	10	1	13	46
Heavy Enter Leg	1	0	0	1	0	0	0	0	0	0	0	0	1
Total Entering Leg	25	5	0	30	3	1	0	4	2	10	1	13	47
Cars Exiting Leg				13				7				26	46
Heavy Exiting Leg				0				0				1	1
Total Exiting Leg				13				7				27	47

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Cars**

	Birch Street					Belvoir Avenue					Birch Street					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
4:00 PM	5	1	0	6		2	1	0	3		0	2	0	2		11
4:15 PM	5	2	0	7		0	0	0	0		1	3	1	5		12
4:30 PM	9	2	0	11		0	0	0	0		0	3	0	3		14
4:45 PM	5	0	0	5		1	0	0	1		1	2	0	3		9
Total	24	5	0	29		3	1	0	4		2	10	1	13		46
5:00 PM	4	1	0	5		1	0	0	1		0	2	0	2		8
5:15 PM	3	1	0	4		0	0	0	0		0	4	0	4		8
5:30 PM	6	0	0	6		2	1	0	3		0	1	0	1		10
5:45 PM	5	2	0	7		1	1	0	2		1	3	0	4		13
Total	18	4	0	22		4	2	0	6		1	10	0	11		39
Grand Total	42	9	0	51		7	3	0	10		3	20	1	24		85
Approach %	82.4	17.6	0.0			70.0	30.0	0.0			12.5	83.3	4.2			
Total %	49.4	10.6	0.0	60.0		8.2	3.5	0.0	11.8		3.5	23.5	1.2	28.2		
Exiting Leg Total	27					12					46					85

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	5	1	0	6	2	1	0	3	0	2	0	2	11
4:15 PM	5	2	0	7	0	0	0	0	1	3	1	5	12
4:30 PM	9	2	0	11	0	0	0	0	0	3	0	3	14
4:45 PM	5	0	0	5	1	0	0	1	1	2	0	3	9
Total Volume	24	5	0	29	3	1	0	4	2	10	1	13	46
% Approach Total	82.8	17.2	0.0		75.0	25.0	0.0		15.4	76.9	7.7		
PHF	0.667	0.625	0.000	0.659	0.375	0.250	0.000	0.333	0.500	0.833	0.250	0.650	0.821
Entering Leg	24	5	0	29	3	1	0	4	2	10	1	13	46
Exiting Leg				13				7				26	46
Total				42				11				39	92



PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	0	1	0	0	0	0	0	0	0	0	1
Approach %	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				1				1
Buses	1	0	0	1	0	0	0	0	0	0	0	0	1
% Buses	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Exiting Leg Total	0				0				1				1
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Single-Unit	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	0	0	0	0	0	0	0	0	1
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Buses	1	0	0	1	0	0	0	0	0	0	0	0	1
Buses %	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	1	0	0	1	0	0	0	0	0	0	0	0	1
Single-Unit Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	1	0	0	1	0	0	0	0	0	0	0	0	1
Buses				0				0				1	1
Single-Unit Trucks				0				0				0	0
Articulated Trucks				0				0				0	0
Total Exiting Leg				0				0				1	1

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class:

### Buses

	Birch Street					Belvoir Avenue					Birch Street					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	1	0	0	1		0	0	0	0		0	0	0	0	1	
4:45 PM	0	0	0	0		0	0	0	0		0	0	0	0	0	
Total	1	0	0	1		0	0	0	0		0	0	0	0	1	
5:00 PM	0	0	0	0		0	0	0	0		0	0	0	0	0	
5:15 PM	0	0	0	0		0	0	0	0		0	0	0	0	0	
5:30 PM	0	0	0	0		0	0	0	0		0	0	0	0	0	
5:45 PM	0	0	0	0		0	0	0	0		0	0	0	0	0	
Total	0	0	0	0		0	0	0	0		0	0	0	0	0	
Grand Total	1	0	0	1		0	0	0	0		0	0	0	0	1	
Approach %	100.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0			
Total %	100.0	0.0	0.0	100.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Exiting Leg Total	0					0					1					1

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	1	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	0	0	0	0	0	0	0	0	1
% Approach Total	100.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	1	0	0	1	0	0	0	0	0	0	0	0	1
Exiting Leg				0				0				1	1
Total				1				0				1	2

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class:

### Single-Unit Trucks

	Birch Street					Belvoir Avenue					Birch Street					Total
	from North					from East					from South					
	Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		Right	Thru	U-Turn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Approach %	0.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Exiting Leg Total	0					0					0					0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Articulated Trucks

	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street				Belvoir Avenue				Birch Street				Total
	from North				from East				from South				
	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	Right	Thru	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	0

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Bicycles (on Roadway and Crosswalks)**

	Birch Street						Belvoir Avenue						Birch Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Birch Street						Belvoir Avenue						Birch Street						Total
	from North						from East						from South						
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

PDI File #: **218069 C**  
 Location: **N: Birch Street S: Birch Street**  
 Location: **E: Belvoir Avenue**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Pedestrians**

	Birch Street							Belvoir Avenue							Birch Street							Total
	from North							from East							from South							
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total				
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2		
Grand Total	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2		
Approach %	0	0	0	0	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	100	0	100	0	0	0	0	0	0	0		
Exiting Leg Total	0							2							0							2

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:15 PM	Birch Street						Belvoir Avenue						Birch Street						Total	
	from North						from East						from South							
	Thru	Left	U-Turn	CW-EB	CW-WB	Total	Right	Left	U-Turn	CW-SB	CW-NB	Total	Right	Thru	U-Turn	CW-WB	CW-EB	Total		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
Total Volume	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250
Entering Leg	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	0	2
Exiting Leg	0						2						0						2	
Total	0						4						0						4	

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**  
 Class:



**Cars and Heavy Vehicles (Combined)**

	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	1	1	0	2	4	0	0	4	0	3	0	3	9
7:15 AM	1	1	0	2	6	0	0	6	0	4	0	4	12
7:30 AM	0	0	0	0	7	1	0	8	1	1	0	2	10
7:45 AM	2	1	0	3	1	0	0	1	1	3	0	4	8
Total	4	3	0	7	18	1	0	19	2	11	0	13	39
8:00 AM	0	1	0	1	3	1	0	4	0	1	0	1	6
8:15 AM	4	0	0	4	2	1	0	3	2	4	0	6	13
8:30 AM	0	1	0	1	3	0	0	3	0	2	0	2	6
8:45 AM	2	0	0	2	5	0	0	5	0	1	0	1	8
Total	6	2	0	8	13	2	0	15	2	8	0	10	33
Grand Total	10	5	0	15	31	3	0	34	4	19	0	23	72
Approach %	66.7	33.3	0.0		91.2	8.8	0.0		17.4	82.6	0.0		
Total %	13.9	6.9	0.0	20.8	43.1	4.2	0.0	47.2	5.6	26.4	0.0	31.9	
Exiting Leg Total	50				9				13				72
Cars	9	5	0	14	30	3	0	33	4	17	0	21	68
% Cars	90.0	100.0	0.0	93.3	96.8	100.0	0.0	97.1	100.0	89.5	0.0	91.3	94.4
Exiting Leg Total	47				9				12				68
Heavy Vehicles	1	0	0	1	1	0	0	1	0	2	0	2	4
% Heavy Vehicles	10.0	0.0	0.0	6.7	3.2	0.0	0.0	2.9	0.0	10.5	0.0	8.7	5.6
Exiting Leg Total	3				0				1				4

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

7:00 AM	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	1	1	0	2	4	0	0	4	0	3	0	3	9
7:15 AM	1	1	0	2	6	0	0	6	0	4	0	4	12
7:30 AM	0	0	0	0	7	1	0	8	1	1	0	2	10
7:45 AM	2	1	0	3	1	0	0	1	1	3	0	4	8
Total Volume	4	3	0	7	18	1	0	19	2	11	0	13	39
% Approach Total	57.1	42.9	0.0		94.7	5.3	0.0		15.4	84.6	0.0		
PHF	0.500	0.750	0.000	0.583	0.643	0.250	0.000	0.594	0.500	0.688	0.000	0.813	0.813
Cars	3	3	0	6	17	1	0	18	2	11	0	13	37
Cars %	75.0	100.0	0.0	85.7	94.4	100.0	0.0	94.7	100.0	100.0	0.0	100.0	94.9
Heavy Vehicles	1	0	0	1	1	0	0	1	0	0	0	0	2
Heavy Vehicles %	25.0	0.0	0.0	14.3	5.6	0.0	0.0	5.3	0.0	0.0	0.0	0.0	5.1
Cars Enter Leg	3	3	0	6	17	1	0	18	2	11	0	13	37
Heavy Enter Leg	1	0	0	1	1	0	0	1	0	0	0	0	2
Total Entering Leg	4	3	0	7	18	1	0	19	2	11	0	13	39
Cars Exiting Leg				28				5				4	37
Heavy Exiting Leg				1				0				1	2
Total Exiting Leg				29				5				5	39

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class:

**Cars**

	Mumford Road					Mumford Road					Duval Road					Total
	from North					from South					from West					
	Right	Thru	U-Turn	Total		Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total			
7:00 AM	1	1	0	2		4	0	0	4	0	3	0	3			
7:15 AM	1	1	0	2		5	0	0	5	0	4	0	4			
7:30 AM	0	0	0	0		7	1	0	8	1	1	0	2			
7:45 AM	1	1	0	2		1	0	0	1	1	3	0	4			
Total	3	3	0	6		17	1	0	18	2	11	0	13			
8:00 AM	0	1	0	1		3	1	0	4	0	0	0	0			
8:15 AM	4	0	0	4		2	1	0	3	2	3	0	5			
8:30 AM	0	1	0	1		3	0	0	3	0	2	0	2			
8:45 AM	2	0	0	2		5	0	0	5	0	1	0	1			
Total	6	2	0	8		13	2	0	15	2	6	0	8			
Grand Total	9	5	0	14		30	3	0	33	4	17	0	21			
Approach %	64.3	35.7	0.0			90.9	9.1	0.0		19.0	81.0	0.0				
Total %	13.2	7.4	0.0	20.6		44.1	4.4	0.0	48.5	5.9	25.0	0.0	30.9			
Exiting Leg Total	47					9					12					68

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

7:00 AM	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	1	1	0	2	4	0	0	4	0	3	0	3	9
7:15 AM	1	1	0	2	5	0	0	5	0	4	0	4	11
7:30 AM	0	0	0	0	7	1	0	8	1	1	0	2	10
7:45 AM	1	1	0	2	1	0	0	1	1	3	0	4	7
Total Volume	3	3	0	6	17	1	0	18	2	11	0	13	37
% Approach Total	50.0	50.0	0.0		94.4	5.6	0.0		15.4	84.6	0.0		
PHF	0.750	0.750	0.000	0.750	0.607	0.250	0.000	0.563	0.500	0.688	0.000	0.813	0.841
Entering Leg	3	3	0	6	17	1	0	18	2	11	0	13	37
Exiting Leg				28				5				4	37
Total				34				23				17	74



PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	1	0	0	1	1	0	0	1	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
8:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	2	0	2	2
Grand Total	1	0	0	1	1	0	0	1	0	2	0	2	4
Approach %	100.0	0.0	0.0		100.0	0.0	0.0		0.0	100.0	0.0		
Total %	25.0	0.0	0.0	25.0	25.0	0.0	0.0	25.0	0.0	50.0	0.0	50.0	
Exiting Leg Total	3				0				1				4
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0
Single-Unit Trucks	1	0	0	1	1	0	0	1	0	2	0	2	4
% Single-Unit	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	100.0
Exiting Leg Total	3				0				1				4
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0

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

7:15 AM	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:15 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	1	0	0	1	1	0	0	1	0	1	0	1	3
% Approach Total	100.0	0.0	0.0		100.0	0.0	0.0		0.0	100.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.750
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	1	0	0	1	1	0	0	1	0	1	0	1	3
Single-Unit %	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	100.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	1	0	0	1	1	0	0	1	0	1	0	1	3
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	1	0	0	1	1	0	0	1	0	1	0	1	3
Buses				0				0				0	0
Single-Unit Trucks				2				0				1	3
Articulated Trucks				0				0				0	0
Total Exiting Leg				2				0				1	3

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class:

**Buses**

	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0

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

7:00 AM	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	0

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class:

### Single-Unit Trucks

	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
Total	1	0	0	1	1	0	0	1	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
8:15 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	2	0	2	2
Grand Total	1	0	0	1	1	0	0	1	0	2	0	2	4
Approach %	100.0	0.0	0.0		100.0	0.0	0.0		0.0	100.0	0.0		
Total %	25.0	0.0	0.0	25.0	25.0	0.0	0.0	25.0	0.0	50.0	0.0	50.0	
Exiting Leg Total	3				0				1				4

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

7:15 AM	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:15 AM	0	0	0	0	1	0	0	1	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	1	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	1	1
Total Volume	1	0	0	1	1	0	0	1	0	1	0	1	3
% Approach Total	100.0	0.0	0.0		100.0	0.0	0.0		0.0	100.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.000	0.250	0.000	0.250	0.750
Entering Leg	1	0	0	1	1	0	0	1	0	1	0	1	3
Exiting Leg				2				0				1	3
Total				3				1				2	6

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class:

### Articulated Trucks

	Mumford Road				Mumford Road				Duval Road				Total	
	from North				from South				from West					
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total		
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
Exiting Leg Total	0				0				0				0	

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

7:00 AM	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	0

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class: **Bicycles (on Roadway and Crosswalks)**

	Mumford Road						Mumford Road						Duval Road						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0						0						0						0

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

7:00 AM	Mumford Road							Mumford Road							Duval Road							Total
	from North							from South							from West							
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total				
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
PHF	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Exiting Leg	0							0							0							0
Total	0							0							0							0

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **7:00 AM**  
 End Time: **9:00 AM**



Class:

### Pedestrians

	Mumford Road							Mumford Road							Duval Road							Total
	from North							from South							from West							
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total				
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1		
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1		
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2		
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2		
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0				
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0	100			
Exiting Leg Total	0							0							2							2

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

8:00 AM	Mumford Road						Mumford Road						Duval Road						Total	
	from North						from South						from West							
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total		
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	2
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	100.0	0.0			
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.500		0.500
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	2
Exiting Leg	0						0						2						2	
Total	0						0						4						4	

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**  
 Class:



### Cars and Heavy Vehicles (Combined)

	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	5	3	0	8	1	0	0	1	1	4	0	5	14
4:15 PM	9	1	0	10	2	1	0	3	0	3	0	3	16
4:30 PM	3	2	0	5	3	0	0	3	0	1	0	1	9
4:45 PM	1	4	0	5	6	2	0	8	2	3	0	5	18
Total	18	10	0	28	12	3	0	15	3	11	0	14	57
5:00 PM	4	3	0	7	2	0	0	2	1	3	0	4	13
5:15 PM	5	3	0	8	0	0	0	0	1	3	0	4	12
5:30 PM	3	3	0	6	2	0	0	2	1	4	0	5	13
5:45 PM	4	7	0	11	1	2	0	3	1	2	0	3	17
Total	16	16	0	32	5	2	0	7	4	12	0	16	55
Grand Total	34	26	0	60	17	5	0	22	7	23	0	30	112
Approach %	56.7	43.3	0.0		77.3	22.7	0.0		23.3	76.7	0.0		
Total %	30.4	23.2	0.0	53.6	15.2	4.5	0.0	19.6	6.3	20.5	0.0	26.8	
Exiting Leg Total				40				33				39	112
Cars	33	26	0	59	16	5	0	21	7	23	0	30	110
% Cars	97.1	100.0	0.0	98.3	94.1	100.0	0.0	95.5	100.0	100.0	0.0	100.0	98.2
Exiting Leg Total				39				33				38	110
Heavy Vehicles	1	0	0	1	1	0	0	1	0	0	0	0	2
% Heavy Vehicles	2.9	0.0	0.0	1.7	5.9	0.0	0.0	4.5	0.0	0.0	0.0	0.0	1.8
Exiting Leg Total				1				0				1	2

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	5	3	0	8	1	0	0	1	1	4	0	5	14
4:15 PM	9	1	0	10	2	1	0	3	0	3	0	3	16
4:30 PM	3	2	0	5	3	0	0	3	0	1	0	1	9
4:45 PM	1	4	0	5	6	2	0	8	2	3	0	5	18
Total Volume	18	10	0	28	12	3	0	15	3	11	0	14	57
% Approach Total	64.3	35.7	0.0		80.0	20.0	0.0		21.4	78.6	0.0		
PHF	0.500	0.625	0.000	0.700	0.500	0.375	0.000	0.469	0.375	0.688	0.000	0.700	0.792
Cars	17	10	0	27	11	3	0	14	3	11	0	14	55
Cars %	94.4	100.0	0.0	96.4	91.7	100.0	0.0	93.3	100.0	100.0	0.0	100.0	96.5
Heavy Vehicles	1	0	0	1	1	0	0	1	0	0	0	0	2
Heavy Vehicles %	5.6	0.0	0.0	3.6	8.3	0.0	0.0	6.7	0.0	0.0	0.0	0.0	3.5
Cars Enter Leg	17	10	0	27	11	3	0	14	3	11	0	14	55
Heavy Enter Leg	1	0	0	1	1	0	0	1	0	0	0	0	2
Total Entering Leg	18	10	0	28	12	3	0	15	3	11	0	14	57
Cars Exiting Leg				22				13				20	55
Heavy Exiting Leg				1				0				1	2
Total Exiting Leg				23				13				21	57

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Cars**

	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	5	3	0	8	1	0	0	1	1	4	0	5	14
4:15 PM	9	1	0	10	2	1	0	3	0	3	0	3	16
4:30 PM	2	2	0	4	2	0	0	2	0	1	0	1	7
4:45 PM	1	4	0	5	6	2	0	8	2	3	0	5	18
Total	17	10	0	27	11	3	0	14	3	11	0	14	55
5:00 PM	4	3	0	7	2	0	0	2	1	3	0	4	13
5:15 PM	5	3	0	8	0	0	0	0	1	3	0	4	12
5:30 PM	3	3	0	6	2	0	0	2	1	4	0	5	13
5:45 PM	4	7	0	11	1	2	0	3	1	2	0	3	17
Total	16	16	0	32	5	2	0	7	4	12	0	16	55
Grand Total	33	26	0	59	16	5	0	21	7	23	0	30	110
Approach %	55.9	44.1	0.0		76.2	23.8	0.0		23.3	76.7	0.0		
Total %	30.0	23.6	0.0	53.6	14.5	4.5	0.0	19.1	6.4	20.9	0.0	27.3	
Exiting Leg Total	39				33				38				110

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:45 PM	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:45 PM	1	4	0	5	6	2	0	8	2	3	0	5	18
5:00 PM	4	3	0	7	2	0	0	2	1	3	0	4	13
5:15 PM	5	3	0	8	0	0	0	0	1	3	0	4	12
5:30 PM	3	3	0	6	2	0	0	2	1	4	0	5	13
Total Volume	13	13	0	26	10	2	0	12	5	13	0	18	56
% Approach Total	50.0	50.0	0.0		83.3	16.7	0.0		27.8	72.2	0.0		
PHF	0.650	0.813	0.000	0.813	0.417	0.250	0.000	0.375	0.625	0.813	0.000	0.900	0.778
Entering Leg	13	13	0	26	10	2	0	12	5	13	0	18	56
Exiting Leg				23				18				15	56
Total				49				30				33	112



PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Heavy Vehicles-Combined (Buses, Single-Unit Trucks, Articulated Trucks)**

	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	1	1	0	0	1	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	1	0	0	1	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	0	1	1	0	0	1	0	0	0	0	2
Approach %	100.0	0.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
Total %	50.0	0.0	0.0	50.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	1				0				1				2
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0
Single-Unit Trucks	1	0	0	1	1	0	0	1	0	0	0	0	2
% Single-Unit	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Exiting Leg Total	1				0				1				2
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Exiting Leg Total	0				0				0				0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	1	1	0	0	1	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	1	0	0	1	0	0	0	0	2
% Approach Total	100.0	0.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Buses %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Single-Unit Trucks	1	0	0	1	1	0	0	1	0	0	0	0	2
Single-Unit %	100.0	0.0	0.0	100.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Articulated %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	1	0	0	1	1	0	0	1	0	0	0	0	2
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Entering Leg	1	0	0	1	1	0	0	1	0	0	0	0	2
Buses				0				0				0	0
Single-Unit Trucks				1				0				1	2
Articulated Trucks				0				0				0	0
Total Exiting Leg				1				0				1	2

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class:

**Buses**

	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0				0				0				0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	0

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class:

### Single-Unit Trucks

	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	1	1	0	0	1	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1	0	0	1	1	0	0	1	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1	0	0	1	1	0	0	1	0	0	0	0	2
Approach %	100.0	0.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
Total %	50.0	0.0	0.0	50.0	50.0	0.0	0.0	50.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	1				0				1				2

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	1	1	0	0	1	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	1	0	0	1	1	0	0	1	0	0	0	0	2
% Approach Total	100.0	0.0	0.0		100.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.250	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250
Entering Leg	1	0	0	1	1	0	0	1	0	0	0	0	2
Exiting Leg				1				0				1	2
Total				2				1				1	4

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class:

### Articulated Trucks

	Mumford Road					Mumford Road					Duval Road					Total
	from North					from South					from West					
	Right	Thru	U-Turn	Total		Thru	Left	U-Turn	Total		Right	Left	U-Turn	Total		
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Approach %	0.0	0.0	0.0			0.0	0.0	0.0			0.0	0.0	0.0			
Total %	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0		
Exiting Leg Total	0					0					0					0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Mumford Road				Mumford Road				Duval Road				Total
	from North				from South				from West				
	Right	Thru	U-Turn	Total	Thru	Left	U-Turn	Total	Right	Left	U-Turn	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0		0.0	0.0	0.0		0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg				0				0				0	0
Total				0				0				0	

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class: **Bicycles (on Roadway and Crosswalks)**

	Mumford Road						Mumford Road						Duval Road						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Approach %	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
Total %	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Exiting Leg Total	0						0						0						0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Mumford Road							Mumford Road							Duval Road							Total
	from North							from South							from West							
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total				
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
% Approach Total	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0				
PHF	0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		0.000	0.000	0.000	0.000	0.000	0.000		
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Exiting Leg	0							0							0							0
Total	0							0							0							0

PDI File #: **218069 D**  
 Location: **N: Mumford Road S: Mumford Road**  
 Location: **W: Duval Road**  
 City, State: **Sutton-Douglas, MA**  
 Client: **Tetra Tech/C. Sudak**  
 Site Code: **143-312497-21001**  
 Count Date: **Wednesday, July 21, 2021**  
 Start Time: **4:00 PM**  
 End Time: **6:00 PM**



Class:

### Pedestrians

	Mumford Road							Mumford Road							Duval Road							Total
	from North							from South							from West							
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total				
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Approach %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Total %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
Exiting Leg Total	0							0							0							0

Peak Hour Analysis from 04:00 PM to 06:00 PM begins at:

4:00 PM	Mumford Road						Mumford Road						Duval Road						Total
	from North						from South						from West						
	Right	Thru	U-Turn	CW-EB	CW-WB	Total	Thru	Left	U-Turn	CW-WB	CW-EB	Total	Right	Left	U-Turn	CW-NB	CW-SB	Total	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Approach Total	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0		
PHF	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Entering Leg	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Exiting Leg	0						0						0						0
Total	0						0						0						0

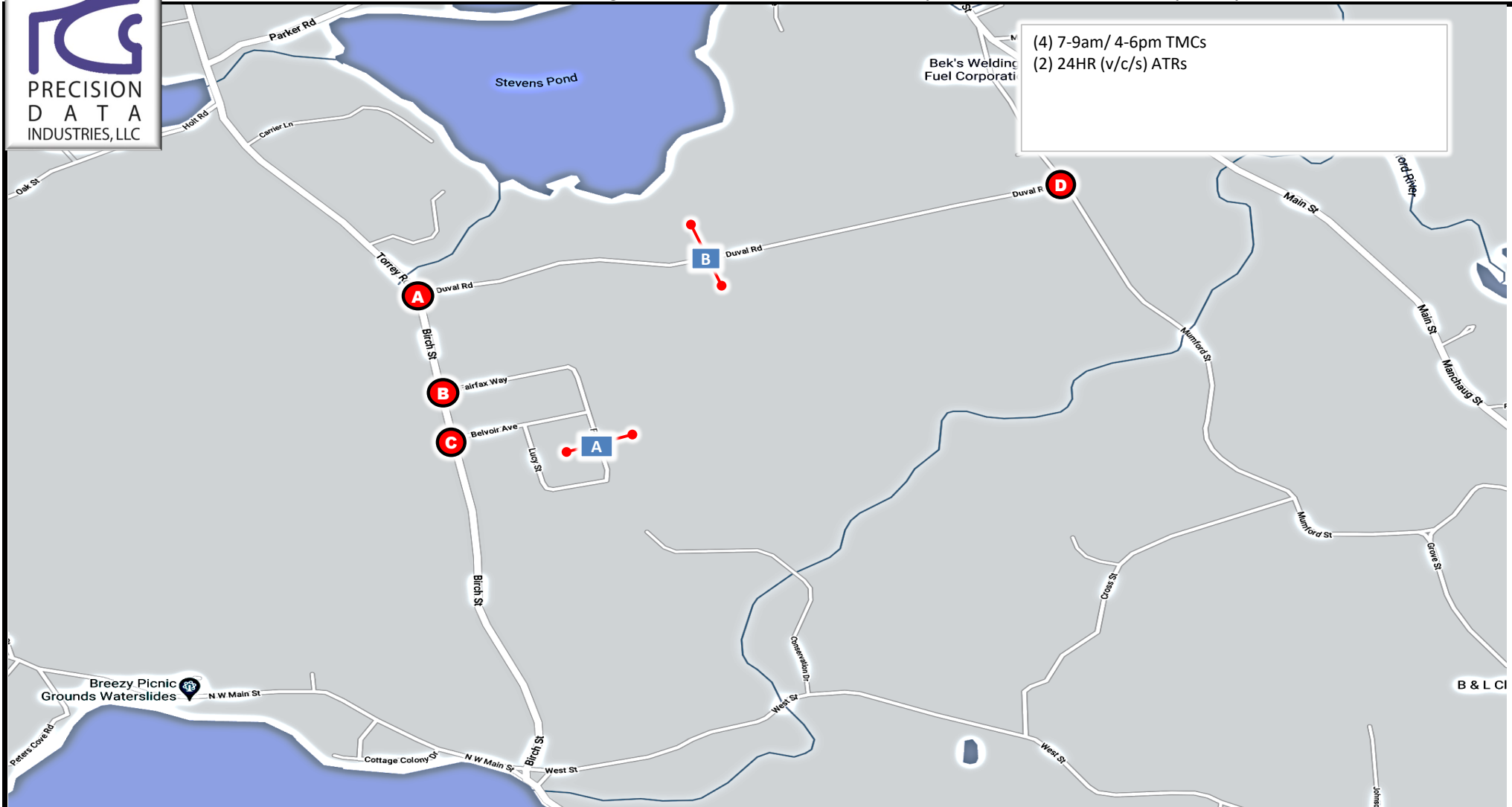
**Appendix B**  
**Travel Speed Data**



PRECISION  
DATA  
INDUSTRIES, LLC

## Location Map: 218069 Sutton-Douglas, MA

Precision Data Industries, LLC 157 Washington Street, Suite 2, Hudson, MA 01749 ph: 508-875-0100 email: [datarequests@pdillc.com](mailto:datarequests@pdillc.com)



Client:  
TetraTech

Engineer:  
C. Sudak

Site Code:  
143-312497-21001

Date:  
Tues 7/20/2021

PDI Job #  
218069

City, State:  
Sutton-Douglas, MA



Forrest Street  
south of Belvoir Avenue  
City, State: Douglas, MA  
Client: TetraTech/ C. Sudak  
Site Code: 143-312497-21001



PDI File #: 218069 ATR-A

Count Date  
Wednesday, July, 21, 2021

### Speed (60-minute)

NB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
6:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	12.0	12.0
7:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	6.0	6.0
8:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	13.0	13.0
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
10:00 AM	1	1	0	0	0	0	0	0	0	0	0	0	0	2	16.4	15.0
11:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	2	17.9	17.5
12:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	12.0	12.0
1:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	11.0	11.0
2:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	17.0	17.0
3:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	19.0	19.0
4:00 PM	3	0	0	0	0	0	0	0	0	0	0	0	0	3	11.1	8.7
5:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	17.0	17.0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Total	9	6	0	0	0	0	0	0	0	0	0	0	0	15	17.0	13.2
Percent	60.00%	40.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			

AM Peak 6:00 AM 11:00 AM 10:00 AM  
Volume 1 2 0 0 0 0 0 0 0 0 0 0 0 0 2

PM Peak 4:00 PM 2:00 PM 4:00 PM  
Volume 3 1 0 0 0 0 0 0 0 0 0 0 0 0 3

15th Percentile:	9.2 MPH	Average Speed:	13.2 MPH	Posted Speed Limit:	20 MPH
50th Percentile:	13.0 MPH	10 MPH Pace:	9 to 18 MPH	Number of Vehicles > 20 MPH:	0
85th Percentile:	17.0 MPH	Number in Pace:	12	Percent of Vehicles > 20 MPH:	0.0%
95th Percentile:	18.3 MPH	Percent in Pace:	80.0%		

Forrest Street  
south of Belvoir Avenue  
City, State: Douglas, MA  
Client: TetraTech/ C. Sudak  
Site Code: 143-312497-21001



PDI File #: 218069 ATR-A

Count Date  
Wednesday, July, 21, 2021

### Speed (60-minute)

SB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
6:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
8:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	10.0	10.0
9:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	12.0	12.0
10:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	18.0	18.0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
12:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	1	20.0	20.0
1:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	14.0	14.0
2:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	17.0	17.0
3:00 PM	1	2	0	0	0	0	0	0	0	0	0	0	0	3	18.1	16.0
4:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	14.0	14.0
5:00 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	2	12.0	9.5
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Total	7	4	1	0	0	0	0	0	0	0	0	0	0	12	18.4	14.3
Percent	58.33%	33.33%	8.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			

AM Peak	8:00 AM	10:00 AM													8:00 AM	
Volume	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	
PM Peak	5:00 PM	3:00 PM	12:00 PM												3:00 PM	
Volume	2	2	1	0	0	0	0	0	0	0	0	0	0	0	3	

15th Percentile:	11.3 MPH	Average Speed:	14.3 MPH	Posted Speed Limit:	20 MPH
50th Percentile:	14.0 MPH	10 MPH Pace:	10 to 19 MPH	Number of Vehicles > 20 MPH:	0
85th Percentile:	18.4 MPH	Number in Pace:	10	Percent of Vehicles > 20 MPH:	0.0%
95th Percentile:	19.5 MPH	Percent in Pace:	83.3%		

Forrest Street  
south of Belvoir Avenue  
City, State: Douglas, MA  
Client: TetraTech/ C. Sudak  
Site Code: 143-312497-21001



PDI File #: 218069 ATR-A

Count Date  
Wednesday, July, 21, 2021

### Speed (60-minute)

#### Combined NB and SB

Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
6:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	12.0	12.0
7:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	6.0	6.0
8:00 AM	2	0	0	0	0	0	0	0	0	0	0	0	0	2	12.6	11.5
9:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	1	12.0	12.0
10:00 AM	1	2	0	0	0	0	0	0	0	0	0	0	0	3	17.7	16.0
11:00 AM	0	2	0	0	0	0	0	0	0	0	0	0	0	2	17.9	17.5
12:00 PM	1	0	1	0	0	0	0	0	0	0	0	0	0	2	18.8	16.0
1:00 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	2	13.6	12.5
2:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	0	2	17.0	17.0
3:00 PM	1	3	0	0	0	0	0	0	0	0	0	0	0	4	19.0	16.8
4:00 PM	4	0	0	0	0	0	0	0	0	0	0	0	0	4	13.1	10.0
5:00 PM	2	1	0	0	0	0	0	0	0	0	0	0	0	3	15.8	12.0
6:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
7:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
8:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
10:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Total	16	10	1	0	0	0	0	0	0	0	0	0	0	27	18.0	13.7
Percent	59.26%	37.04%	3.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%			

AM Peak	8:00 AM	10:00 AM												10:00 AM		
Volume	2	2	0	0	0	0	0	0	0	0	0	0	0	3		
PM Peak	4:00 PM	3:00 PM	12:00 PM											3:00 PM		
Volume	4	3	1	0	0	0	0	0	0	0	0	0	0	4		

15th Percentile:	9.9 MPH	Average Speed:	13.7 MPH	Posted Speed Limit:	20 MPH
50th Percentile:	13.0 MPH	10 MPH Pace:	10 to 19 MPH	Number of Vehicles > 20 MPH:	0
85th Percentile:	18.0 MPH	Number in Pace:	22	Percent of Vehicles > 20 MPH:	0.0%
95th Percentile:	19.0 MPH	Percent in Pace:	81.5%		

Duval Road  
 east of Torrey Road  
 City, State: Sutton, MA  
 Client: TetraTech/ C. Sudak  
 Site Code: 143-312497-21001



PDI File #: 218069 ATR-B

Count Date  
 Wednesday, July, 21, 2021

### Speed (60-minute)

EB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
1:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
5:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	31.6	30.5
6:00 AM	0	0	0	0	1	6	5	1	0	0	0	0	0	13	42.0	38.9
7:00 AM	0	0	1	1	3	4	0	1	0	0	0	0	0	10	38.7	34.6
8:00 AM	0	1	0	3	1	3	1	0	0	0	0	0	0	9	37.8	30.9
9:00 AM	0	0	1	2	4	4	1	2	0	0	0	0	0	14	43.2	35.1
10:00 AM	1	0	0	1	4	4	1	0	0	0	0	0	0	11	36.5	33.1
11:00 AM	0	0	1	0	2	2	0	0	0	0	0	0	0	5	38.0	32.2
12:00 PM	0	0	0	2	3	1	2	0	0	0	0	0	0	8	40.0	34.1
1:00 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	2	40.8	38.0
2:00 PM	0	0	2	0	2	2	1	0	0	0	0	0	0	7	37.3	32.1
3:00 PM	0	1	0	1	4	4	0	0	0	0	0	0	0	10	38.0	32.6
4:00 PM	0	0	0	2	4	7	1	0	0	1	0	0	0	15	38.8	35.4
5:00 PM	0	0	0	3	5	4	2	1	0	0	0	0	0	15	39.8	35.3
6:00 PM	0	0	0	1	2	3	3	0	0	0	0	0	0	9	40.0	35.9
7:00 PM	0	0	0	1	2	1	0	1	0	0	0	0	0	5	41.8	35.4
8:00 PM	0	0	1	0	0	1	1	0	0	0	0	0	0	3	39.8	33.7
9:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
10:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	2	32.9	32.5
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
Total	1	2	6	18	41	46	19	6	0	1	0	0	0	140	40.0	34.5
Percent	0.71%	1.43%	4.29%	12.86%	29.29%	32.86%	13.57%	4.29%	0.00%	0.71%	0.00%	0.00%	0.00%			

AM Peak	10:00 AM	8:00 AM	7:00 AM	8:00 AM	9:00 AM	6:00 AM	6:00 AM	9:00 AM						9:00 AM
Volume	1	1	1	3	4	6	5	2	0	0	0	0	0	14

PM Peak		3:00 PM	2:00 PM	5:00 PM	5:00 PM	4:00 PM	6:00 PM	5:00 PM		4:00 PM				4:00 PM
Volume	0	1	2	3	5	7	3	1	0	1	0	0	0	15

15th Percentile:	29.0 MPH	Average Speed:	34.5 MPH	Posted Speed Limit:	30 MPH
50th Percentile:	35.0 MPH	10 MPH Pace:	31 to 40 MPH	Number of Vehicles > 30 MPH:	113
85th Percentile:	40.0 MPH	Number in Pace:	93	Percent of Vehicles > 30 MPH:	80.7%
95th Percentile:	44.1 MPH	Percent in Pace:	66.4%		

Duval Road  
east of Torrey Road  
City, State: Sutton, MA  
Client: TetraTech/ C. Sudak  
Site Code: 143-312497-21001



PDI File #: 218069 ATR-B

Count Date  
Wednesday, July, 21, 2021

### Speed (60-minute)

WB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
1:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31.0	31.0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
5:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
6:00 AM	0	0	0	0	0	2	0	3	0	0	0	0	0	5	46.8	43.6
7:00 AM	0	0	1	1	0	1	1	0	0	0	0	0	0	4	39.4	32.3
8:00 AM	0	0	0	2	1	5	0	0	0	0	0	0	0	8	37.9	33.9
9:00 AM	0	0	1	0	1	1	0	0	0	0	0	0	0	3	36.1	30.7
10:00 AM	0	1	0	0	1	7	0	1	0	0	0	0	0	10	38.7	35.0
11:00 AM	0	0	0	1	2	3	1	0	0	0	0	0	0	7	38.6	35.7
12:00 PM	0	0	1	2	2	2	0	0	0	0	0	0	0	7	35.1	30.1
1:00 PM	0	0	0	1	2	2	0	0	0	0	0	0	0	5	36.8	33.8
2:00 PM	0	0	1	0	1	1	0	0	0	0	0	0	0	3	36.6	31.0
3:00 PM	1	0	0	2	4	6	1	0	0	0	0	0	0	14	38.1	33.1
4:00 PM	0	0	2	1	10	5	1	0	0	0	1	0	0	20	36.2	33.8
5:00 PM	0	0	0	0	4	8	1	1	0	0	0	0	0	14	38.3	36.8
6:00 PM	0	0	1	3	2	2	3	1	1	0	0	0	0	13	41.8	35.5
7:00 PM	0	0	0	1	4	2	2	0	0	0	0	0	0	9	39.6	35.3
8:00 PM	0	0	0	0	3	1	2	0	0	0	0	0	0	6	40.8	35.7
9:00 PM	0	0	0	1	0	1	0	1	0	0	0	0	0	3	43.2	37.7
10:00 PM	0	0	0	0	2	1	1	2	0	0	0	0	0	6	45.3	39.3
11:00 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	2	39.5	36.0
Total	1	1	7	15	41	50	14	9	1	0	1	0	0	140	40.2	34.9
Percent	0.71%	0.71%	5.00%	10.71%	29.29%	35.71%	10.00%	6.43%	0.71%	0.00%	0.71%	0.00%	0.00%			

AM Peak	10:00 AM	7:00 AM	8:00 AM	11:00 AM	10:00 AM	7:00 AM	6:00 AM							10:00 AM
Volume	0	1	1	2	2	7	1	3	0	0	0	0	0	10
PM Peak	3:00 PM	4:00 PM	6:00 PM	4:00 PM	5:00 PM	6:00 PM	10:00 PM	6:00 PM			4:00 PM			4:00 PM
Volume	1	0	2	3	10	8	3	2	1	0	1	0	0	20

15th Percentile:	28.0 MPH	Average Speed:	34.9 MPH	Posted Speed Limit:	30 MPH
50th Percentile:	35.0 MPH	10 MPH Pace:	30 to 39 MPH	Number of Vehicles > 30 MPH:	112
85th Percentile:	40.2 MPH	Number in Pace:	91	Percent of Vehicles > 30 MPH:	80.0%
95th Percentile:	45.0 MPH	Percent in Pace:	65.0%		

Duval Road  
east of Torrey Road  
City, State: Sutton, MA  
Client: TetraTech/ C. Sudak  
Site Code: 143-312497-21001



PDI File #: 218069 ATR-B

Count Date  
Wednesday, July, 21, 2021

### Speed (60-minute)

Combined EB and WB																
Start Time:	1 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70+	Total	85th %ile	Ave Speed
12:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
1:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	31.0	31.0
2:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
3:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
4:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	0.0
5:00 AM	0	0	0	1	1	0	0	0	0	0	0	0	0	2	31.6	30.5
6:00 AM	0	0	0	0	1	8	5	4	0	0	0	0	0	18	46.0	40.2
7:00 AM	0	0	2	2	3	5	1	1	0	0	0	0	0	14	39.2	33.9
8:00 AM	0	1	0	5	2	8	1	0	0	0	0	0	0	17	38.0	32.3
9:00 AM	0	0	2	2	5	5	1	2	0	0	0	0	0	17	40.6	34.3
10:00 AM	1	1	0	1	5	11	1	1	0	0	0	0	0	21	38.0	34.0
11:00 AM	0	0	1	1	4	5	1	0	0	0	0	0	0	12	38.0	34.3
12:00 PM	0	0	1	4	5	3	2	0	0	0	0	0	0	15	38.7	32.3
1:00 PM	0	0	0	1	3	2	1	0	0	0	0	0	0	7	38.4	35.0
2:00 PM	0	0	3	0	3	3	1	0	0	0	0	0	0	10	38.3	31.8
3:00 PM	1	1	0	3	8	10	1	0	0	0	0	0	0	24	38.0	32.9
4:00 PM	0	0	2	3	14	12	2	0	0	1	1	0	0	35	37.0	34.5
5:00 PM	0	0	0	3	9	12	3	2	0	0	0	0	0	29	39.6	36.0
6:00 PM	0	0	1	4	4	5	6	1	1	0	0	0	0	22	40.9	35.7
7:00 PM	0	0	0	2	6	3	2	1	0	0	0	0	0	14	40.2	35.4
8:00 PM	0	0	1	0	3	2	3	0	0	0	0	0	0	9	40.8	35.0
9:00 PM	0	0	0	1	0	1	0	1	0	0	0	0	0	3	43.2	37.7
10:00 PM	0	0	0	0	4	1	1	2	0	0	0	0	0	8	44.9	37.6
11:00 PM	0	0	0	0	1	0	1	0	0	0	0	0	0	2	39.5	36.0
Total	2	3	13	33	82	96	33	15	1	1	1	0	0	280	40.0	34.7
Percent	0.71%	1.07%	4.64%	11.79%	29.29%	34.29%	11.79%	5.36%	0.36%	0.36%	0.36%	0.00%	0.00%			

AM Peak	10:00 AM	8:00 AM	7:00 AM	8:00 AM	9:00 AM	10:00 AM	6:00 AM	6:00 AM						10:00 AM
Volume	1	1	2	5	5	11	5	4	0	0	0	0	0	21
PM Peak	3:00 PM	3:00 PM	2:00 PM	12:00 PM	4:00 PM	4:00 PM	6:00 PM	5:00 PM	6:00 PM	4:00 PM	4:00 PM			4:00 PM
Volume	1	1	3	4	14	12	6	2	1	1	1	0	0	35

15th Percentile:	29.0 MPH	Average Speed:	34.7 MPH	Posted Speed Limit:	30 MPH
50th Percentile:	35.0 MPH	10 MPH Pace:	31 to 40 MPH	Number of Vehicles > 30 MPH:	225
85th Percentile:	40.0 MPH	Number in Pace:	184	Percent of Vehicles > 30 MPH:	80.4%
95th Percentile:	45.0 MPH	Percent in Pace:	65.7%		

**Appendix C**  
**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.



## **Appendix D**

### **Public Transportation Information**

**Effective  
August 2017**



Produced by the Central Massachusetts Regional Planning Commission  
2 Washington Square, Union Station, Worcester, MA 01654



Source: Data provided by the Worcester Regional Transit Authority (WRTA), the Central Massachusetts Regional Planning Commission (CMRPC), Massachusetts Office of Transportation Planning (Geospatial Analysis Section) and the Office of Geographic Information (MassGIS), Commonwealth of Massachusetts, Information Technology Division.

Information depicted on this map is for planning purposes only. This information is not adequate for legal boundary definition, regulatory interpretation, or parcel-level analysis. Use caution interpreting positional accuracy.

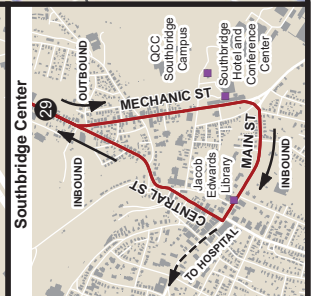
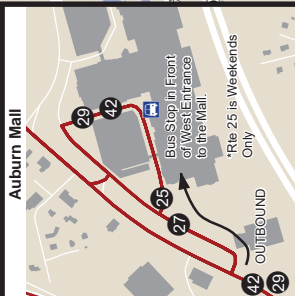
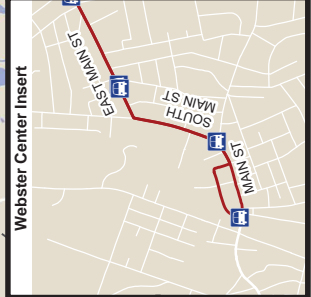
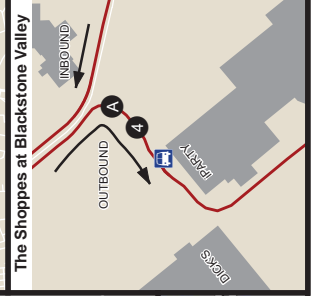
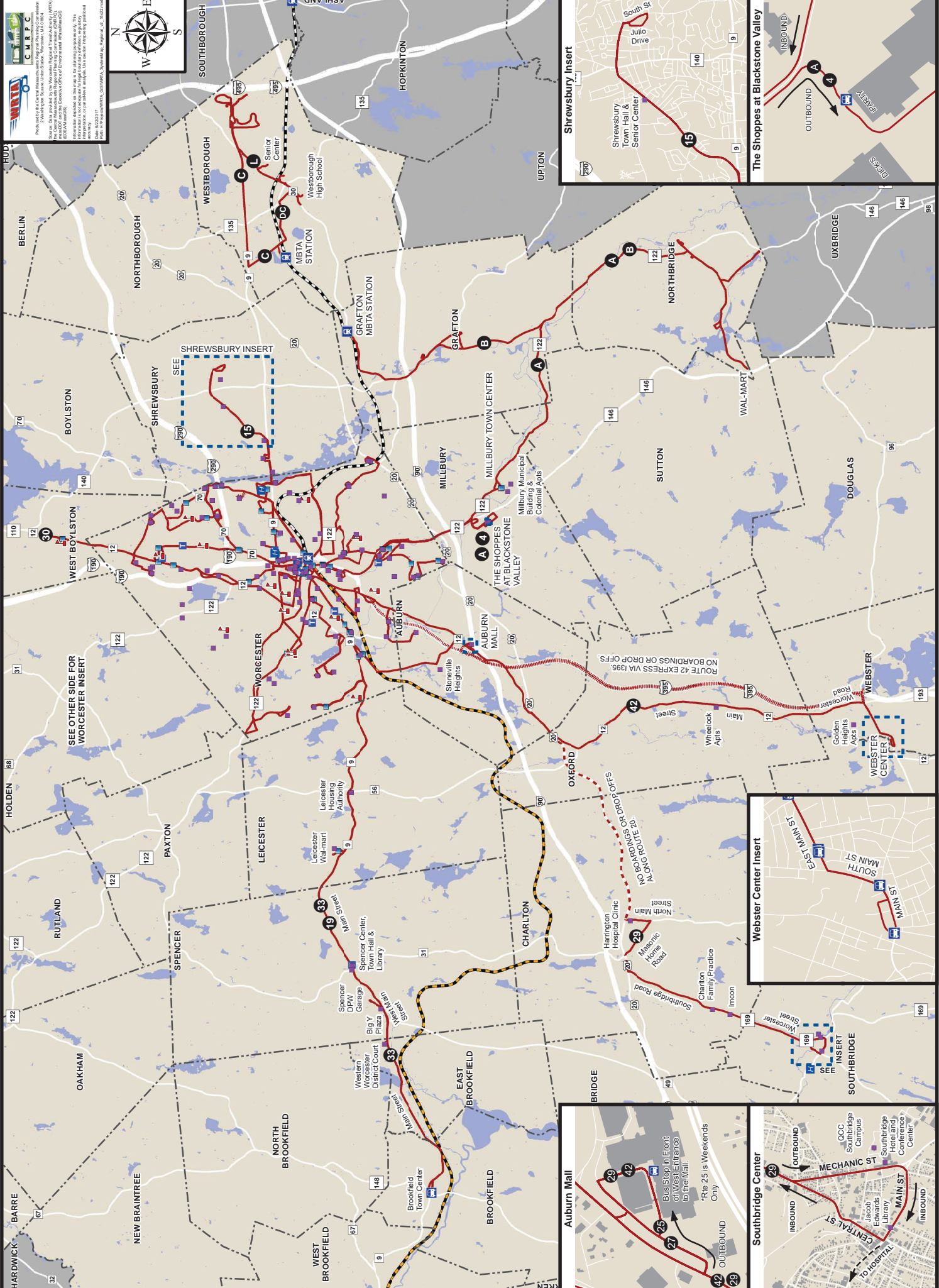
Map Edited: 8/24/2017  
Path: H:\Projects\WRTA GIS\WRTA - by planmap - v1 - v12a.mxd



# WORCESTER REGIONAL TRANSIT AUTHORITY SYSTEM MAP



Produced by the Central Massachusetts Regional Planning Commission  
2 Washington Square, Suite 200, Worcester, MA 01608  
Phone: 508/853-2222  
Fax: 508/853-2223  
www.cmrpc.org  
www.worcestertransit.com  
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## **Appendix E**

### **Crash Data**

## Crash Data (2015 - 2020)

Crash Number	City/Town Name	Crash Date	Crash Severity	Crash Time	Crash Year	Max Injury Severity Reported	Number of Vehicles	Crash Hour	Driver Contributing Circumstances (All Drivers)	Driver Distracted By (All Vehicles)	First Harmful Event	Light Conditions	Manner of Collision	Road Surface Condition	Roadway Junction Type	Total Fatalities	Total Non-Fatal Injuries	Traffic Control Device Type	Vehicle Actions Prior to Crash (All Vehicles)	Vehicle Configuration (All Vehicles)	Weather Conditions	First Harmful Event Location	Most Harmful Event (All Vehicles)	Speed Limit	Vehicle Sequence of Events (All Vehicles)	Latitude	Longitude	Street Number	Roadway	Near Intersection Roadway	Distance and Direction From Intersection
4388182	DOUGLAS	06/14/2017	Property Damage only (none injured)	3:28 PM	2017	No injury	2	03:00PM to 03:59PM	D2: (Inattention)		Collision with parked motor vehicle	Daylight	Sideswipe, same direction	Dry	Not at junction	0	0	No controls	V1: Parked / V2: Travelling straight ahead	V1:(Truck/trailer / V2:(Passenger car)	Clear	Roadway	V2:(Collision with parked motor vehicle)		V2:(Collision with parked motor vehicle)	42.08185344	-71.75769378	16	BELVOR AVENUE		
4704081	SUTTON	04/16/2019	Unknown	1:52 PM	2019	Unknown	1	01:00PM to 01:59PM	D1: (Distracted)	D1: Other activity, electronic device	Collision with tree	Daylight	Single vehicle crash	Dry	T-intersection	0	0	No controls	V1: Travelling straight ahead	V1:(Light truck/van, mini-van, pickup, sport utility)	Clear	Roadside	V1:(Collision with tree)	30	V1:(Collision with tree)	42.08523503	-71.76021421	96	DUVAL ROAD		
4858967	SUTTON	05/24/2020	Non-fatal injury	11:26 PM	2020	Suspected Minor Injury (B)	1	11:00PM to 11:59PM	D1: (Unknown)		Collision with other	Dark - roadway not lighted	Single vehicle crash	Dry	T-intersection	0	0	No controls	V1: Travelling straight ahead	V1:(Passenger car)	Clear	Roadway	V1:(Collision with other fixed object (wall, building, tunnel, etc.))	30	V1:(Collision with other fixed object(wall, building, tunnel, etc.))	42.08507709	-71.76071393		DUVAL ROAD / TORREY ROAD		
4923892	SUTTON	10/21/2020	Non-fatal injury	1:40 AM	2020	Possible Injury (C)	1	01:00AM to 01:59AM	D1: (Unknown)		Collision with tree	Dark - roadway not lighted	Single vehicle crash	Dry	Not at junction	0	0	No controls	V1: Travelling straight ahead	V1:(Single-unit truck (2-axle, 6- tires))	Clear/Fog, smog, smoke	Roadside	V1:(Collision with tree)	30	V1:(Ran off road left)(Collision with tree)(Separation of units)	42.08658297	-71.75017057	39	DUVAL ROAD		

Source: MassDOT Crash Portal



## INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Sutton, MA

COUNT DATE : 7/21/2021

DISTRICT : 3

UNSIGNALIZED : ☒

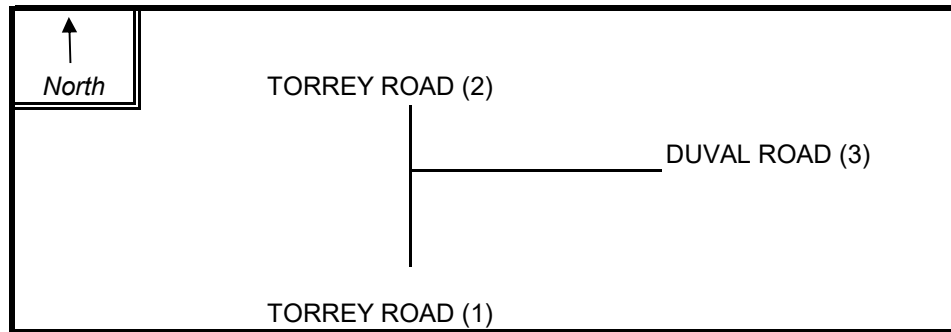
SIGNALIZED : ☐

### ~ INTERSECTION DATA ~

MAJOR STREET : TORREY ROAD

MINOR STREET(S) : DUVAL ROAD

**INTERSECTION  
DIAGRAM**  
(Label Approaches)



### PEAK HOUR VOLUMES

APPROACH :	1	2	3			Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	WB			
PEAK HOURLY VOLUMES (PM) :	15	32	19			66

" K " FACTOR :

**0.09**

INTERSECTION ADT ( **V** ) = TOTAL DAILY  
APPROACH VOLUME :

**733**

TOTAL # OF CRASHES :

1

# OF  
YEARS :

6

AVERAGE # OF  
CRASHES PER  
YEAR ( **A** ) :

**0.17**

**CRASH RATE CALCULATION :**

**0.62**

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

Comments : District 3 Average = 0.61, Statewide Average = 0.57

Project Title & Date: 61 Duval Road (August 2021)



## SEGMENT CRASH RATE WORKSHEET

CITY/TOWN : Sutton, MA COUNT DATE : 7/21/21

DISTRICT : 3

### ~ SEGMENT DATA ~

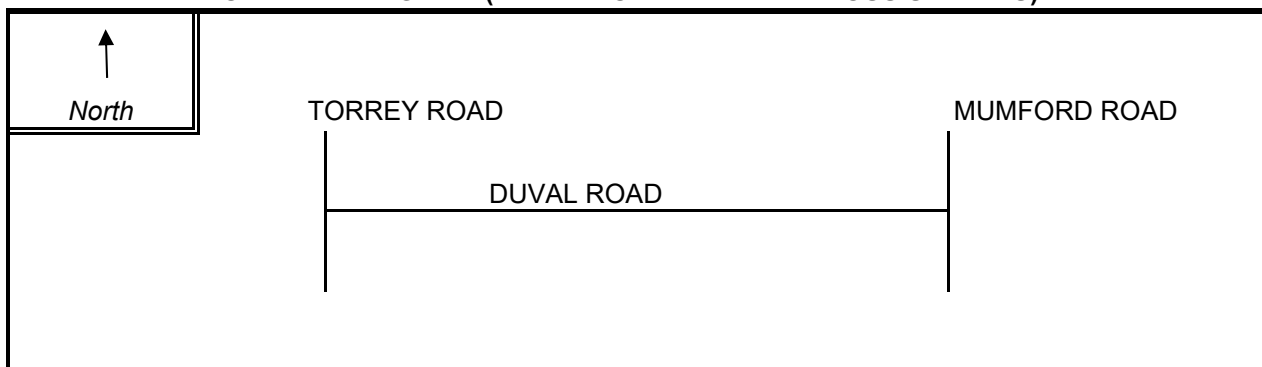
ROADWAY NAME: DUVAL ROAD

START POINT: TORREY ROAD

END POINT: MUMFORD ROAD

FUNCTIONAL CLASSIFICATION OF ROADWAY: LOCAL ROADWAY

### ROADWAY DIAGRAM (LABEL ROADWAY AND CROSS STREETS)



### AVERAGE DAILY TRAFFIC

SEGMENT LENGTH IN MILES ( L ): **0.9**

AVERAGE DAILY TRAFFIC VOLUME ( V ): **280**

TOTAL # OF CRASHES:

**1**

# OF  
YEARS :

**6**

AVERAGE # OF  
CRASHES PER YEAR ( **A** ) :

**0.17**

**CRASH RATE  
CALCULATION :**

**1.81**

RATE =  $(A * 1,000,000) / (L * V * 365)$  (

Comments : Statewide urban average crash rate = 2.36

Project Title & Date: 61 Duval Road (August 2021)

## **Appendix F**

### **Background Growth Rate Calculations**



## MassDOT Yearly Growth Rates

for data from 2014 to 2018

Growth					
Group	Grow 2014 to 2015	Grow 2015 to 2016	Grow 2016 to 2017	Grow 2017 to 2018	Grow 2018 to 2019
R1	0	0.023	0.004	0.018	0.016
R2	0.05	0.068	0.004	0.014	0.014
R3	-0.038	0.002	0.008	0.011	0.06
R4-7	-0.01	0.003	0.001	0.011	0.012
Rec - East		0.032	0.02	0.041	0.025
Rec - West		0.051	-0.008	0.029	0
U1-Boston	0.061	0.07	-0.003	0.012	0.006
U1-Essex	0.024	0.025	0.007	0.014	0.011
U1-Southeast	0.05	0.062	0.021	0.014	0
U1-West	0.03	-0.027	0.02	0.028	0.013
U1-Worcester	0.042	0.005	0.018	0.01	0.01
U2	0.04	0.048	0.008	0.01	0.02
U3	0.011	0.013	0.011	0.014	0.004
U4-7	0.023	0.062	0.017	0.003	-0.004
Avg					0.0202

updated 5/1/2020

**Route 146 Growth Rate  
(2012-2019)**

<b>Average Daily Traffic Volumes</b>				
<u>Year</u>	<u>Location 310 (south of Purgatory Rd)</u>	<u>Annual % Growth</u>	<u>Location 3199 (south of Rte 16)</u>	<u>Annual % Growth</u>
2012	34,210	-	29,561	-
2013	33,660	-1.6%	30,046	1.6%
2014	34,900	3.7%	31,790	5.8%
2015*	35,737	2.4%	34,815	-
2016	37,951	6.2%	36,486	4.8%
2017	38,255	0.8%	35,603	-2.4%
2018	40,357	5.5%	37,625	5.7%
2019	40,789	1.1%	35,477	-5.7%
<b>Average of Annual Growth Rates</b>		2.6%		1.6%
				<b>Use</b>
				<b>2.0%</b>
				<b>Combined</b>

AADT Source: MassDOT permanent count station data (<https://mhd.public.ms2soft.com/tcds/tsearch.asp?loc=Mhd&mod=>)

\* 2015 for Location 3199 data excluded due to abnormally high AADT

**Appendix G**  
**Trip Generation Calculations**

**Trip Generation Calculation**  
**Proposed Residential Development**  
**61 Duval Road - Sutton, MA**

Land Use Code 210 - Single-Family Detached Housing						Size:	31	DWELLINGS
Time Period	R <sup>2</sup> Value	Use Equation or Rate?	Equation	Rate	Percent Enter	In	Out	Total
Weekday Daily				9.44	50%	147	147	294
AM Street Peak Hour				0.74	25%	6	17	23
PM Street Peak Hour				0.99	63%	20	11	31
Saturday Daily				9.54	50%	148	148	296
Saturday Peak Hour				0.93	54%	16	13	29

Source: *Trip Generation , Tenth Edition* , (Institute of Transportation Engineers, 2017).

## **Appendix H**

### **Trip Distribution Calculations**

### Trip Distribution Summary

Route	Journey to Work	Existing Travel	Average	Use in Report
	Data	Patterns		
Torrey Road to/from North	19%	45%	32%	30%
Mumford Road to/from North	72%	27%	49%	50%
Birch Street to/from South	7%	28%	18%	20%
Mumford Street to/from South	2%	0	1%	0%
Total	100%	100%	100%	100%

### Journey to Work

						TRAVEL ROUTES					
						To/From North		To/From South			
						Torrey Road	Mumford Road	Birch Street	Mumford Street	Total	
Residence	Workplace	# Workers	% Vehicles	In Vehicles	%						
Douglas town	Worcester city	Massachusetts	1,693	100.0%	1,693	18.01%	25%	75%		18.0%	
Douglas town	Sutton town	Massachusetts	917	100.0%	917	9.8%	25%	75%		9.8%	
Douglas town	Douglas town	Massachusetts	495	100.0%	495	5.3%			75%	25%	5.3%
Douglas town	Northbridge town	Massachusetts	450	100.0%	450	4.8%	25%	75%		4.8%	
Douglas town	Framingham town	Massachusetts	369	100.0%	369	3.9%		100%		3.9%	
Douglas town	Hopkinton town	Massachusetts	364	100.0%	364	3.9%		100%		3.9%	
Douglas town	Westborough town	Massachusetts	363	100.0%	363	3.9%		100%		3.9%	
Douglas town	Millbury town	Massachusetts	350	100.0%	350	3.7%	25%	75%		3.7%	
Douglas town	Shrewsbury town	Massachusetts	282	100.0%	282	3.0%	25%	75%		3.0%	
Douglas town	Millford town	Massachusetts	263	100.0%	263	2.8%		50%	50%	2.8%	
Douglas town	Boston city	Massachusetts	253	100.0%	253	2.7%		100%		2.7%	
Douglas town	Oxford town	Massachusetts	230	100.0%	230	2.4%	100%			2.4%	
Douglas town	Auburn town	Massachusetts	208	100.0%	208	2.2%	75%	25%		2.2%	
Douglas town	Uxbridge town	Massachusetts	194	100.0%	194	2.1%		50%		2.1%	
Douglas town	Webster town	Massachusetts	164	100.0%	164	1.7%	50%		50%	1.7%	
Douglas town	Franklin Town city	Massachusetts	155	100.0%	155	1.6%		100%		1.6%	
Douglas town	Grafton town	Massachusetts	154	100.0%	154	1.6%		100%		1.6%	
Douglas town	Marlborough city	Massachusetts	124	100.0%	124	1.3%		100%		1.3%	
Douglas town	Lincoln town	Rhode Island	83	100.0%	83	0.9%		100%		0.9%	
Douglas town	Bellingham town	Massachusetts	81	100.0%	81	0.9%		100%		0.9%	
Douglas town	Leominster city	Massachusetts	81	100.0%	81	0.9%	25%	75%		0.9%	
Douglas town	Sturbridge town	Massachusetts	80	100.0%	80	0.9%	100%			0.9%	
Douglas town	Providence city	Rhode Island	80	100.0%	80	0.9%		100%		0.9%	
Douglas town	Cambridge city	Massachusetts	79	100.0%	79	0.8%		100%		0.8%	
Douglas town	Northborough town	Massachusetts	75	100.0%	75	0.8%		100%		0.8%	
Sutton town	Boylston town	Massachusetts	68	100.0%	68	0.7%		100%		0.7%	
Douglas town	Mendon town	Massachusetts	66	100.0%	66	0.7%		100%		0.7%	
Douglas town	Charlton town	Massachusetts	56	100.0%	56	0.6%	100%			0.6%	
Douglas town	Billerica town	Massachusetts	55	100.0%	55	0.6%		100%		0.6%	
Douglas town	Fitchburg city	Massachusetts	55	100.0%	55	0.6%	25%	75%		0.6%	
Douglas town	East Providence city	Rhode Island	51	100.0%	51	0.5%		100%		0.5%	
Douglas town	Wellesley town	Massachusetts	50	100.0%	50	0.5%		100%		0.5%	
Sutton town	Ludlow town	Massachusetts	48	100.0%	48	0.5%	100%			0.5%	
Douglas town	Smithfield town	Rhode Island	47	100.0%	47	0.5%		100%		0.5%	
Douglas town	Warwick city	Rhode Island	44	100.0%	44	0.5%		100%		0.5%	
Sutton town	Ashland town	Massachusetts	43	100.0%	43	0.5%		100%		0.5%	
Douglas town	Blackstone town	Massachusetts	38	100.0%	38	0.4%		100%		0.4%	
Sutton town	Westford town	Massachusetts	38	100.0%	38	0.4%		100%		0.4%	
Douglas town	Littleton town	Massachusetts	35	100.0%	35	0.4%		100%		0.4%	
Douglas town	Watertown Town city	Massachusetts	35	100.0%	35	0.4%		100%		0.4%	
Douglas town	Hudson town	Massachusetts	34	100.0%	34	0.4%		100%		0.4%	
Douglas town	Southbridge Town city	Massachusetts	34	100.0%	34	0.4%	100%			0.4%	
Sutton town	Waltham city	Massachusetts	34	100.0%	34	0.4%		100%		0.4%	
Douglas town	West Boylston town	Massachusetts	34	100.0%	34	0.4%	25%	75%		0.4%	
Sutton town	Newton city	Massachusetts	33	100.0%	33	0.4%		100%		0.4%	
Sutton town	South Windsor town	Connecticut	32	100.0%	32	0.3%	100%			0.3%	
Sutton town	Paxton town	Massachusetts	32	100.0%	32	0.3%	25%	75%		0.3%	
Douglas town	Dedham town	Massachusetts	30	100.0%	30	0.3%		100%		0.3%	
Douglas town	Leicester town	Massachusetts	30	100.0%	30	0.3%	100%			0.3%	
Douglas town	Southborough town	Massachusetts	29	100.0%	29	0.3%		100%		0.3%	
Douglas town	Lowell city	Massachusetts	26	100.0%	26	0.3%		100%		0.3%	
Douglas town	Gardner city	Massachusetts	24	100.0%	24	0.3%	25%	75%		0.3%	
Douglas town	Burlington town	Massachusetts	22	100.0%	22	0.2%		100%		0.2%	
Sutton town	Acton town	Massachusetts	21	100.0%	21	0.2%		100%		0.2%	
Douglas town	Woonsocket city	Rhode Island	21	100.0%	21	0.2%		100%		0.2%	
Douglas town	Upton town	Massachusetts	20	100.0%	20	0.2%		100%		0.2%	
Douglas town	Foster town	Rhode Island	20	100.0%	20	0.2%			100%	0.2%	
Douglas town	Canton town	Massachusetts	19	100.0%	19	0.2%		100%		0.2%	
Sutton town	Natick town	Massachusetts	19	100.0%	19	0.2%		100%		0.2%	
Sutton town	Stow town	Massachusetts	19	100.0%	19	0.2%		100%		0.2%	
Sutton town	Wilmingtton town	Massachusetts	19	100.0%	19	0.2%		100%		0.2%	
Douglas town	Pawtucket city	Rhode Island	19	100.0%	19	0.2%		100%		0.2%	
Sutton town	Norton town	Massachusetts	18	100.0%	18	0.2%		100%		0.2%	
Douglas town	Wrentham town	Massachusetts	18	100.0%	18	0.2%		100%		0.2%	
Douglas town	West Greenwich town	Rhode Island	18	100.0%	18	0.2%		100%		0.2%	
Douglas town	Brocton city	Massachusetts	17	100.0%	17	0.2%		100%		0.2%	
Douglas town	Randolph town	Massachusetts	17	100.0%	17	0.2%		100%		0.2%	
Douglas town	Central Falls city	Rhode Island	17	100.0%	17	0.2%		100%		0.2%	
Douglas town	Hopedale town	Massachusetts	16	100.0%	16	0.2%		100%		0.2%	
Douglas town	Mansfield town	Massachusetts	16	100.0%	16	0.2%		100%		0.2%	
Douglas town	Plainville town	Massachusetts	16	100.0%	16	0.2%		100%		0.2%	
Douglas town	East Greenwich town	Rhode Island	16	100.0%	16	0.2%		100%		0.2%	
Douglas town	Portsmouth town	Rhode Island	16	100.0%	16	0.2%		100%		0.2%	
Douglas town	Bridgewater town	Massachusetts	15	100.0%	15	0.2%		100%		0.2%	
Douglas town	Raynham town	Massachusetts	15	100.0%	15	0.2%		100%		0.2%	
Sutton town	Woburn city	Massachusetts	15	100.0%	15	0.2%		100%		0.2%	
Douglas town	Enfield town	Connecticut	14	100.0%	14	0.1%	100%			0.1%	
Sutton town	Wethersfield town	Connecticut	14	100.0%	14	0.1%	75%		25%	0.1%	
Sutton town	Medfield town	Massachusetts	14	100.0%	14	0.1%		100%		0.1%	
Sutton town	Medford city	Massachusetts	14	100.0%	14	0.1%		100%		0.1%	
Douglas town	Marshfield town	Massachusetts	13	100.0%	13	0.1%		100%		0.1%	
Douglas town	Spencer town	Massachusetts	13	100.0%	13	0.1%	75%	25%		0.1%	
Douglas town	Coventry town	Rhode Island	13	100.0%	13	0.1%		100%		0.1%	
Douglas town	Glocester town	Rhode Island	13	100.0%	13	0.1%			100%	0.1%	
Sutton town	Clinton town	Massachusetts	12	100.0%	12	0.1%		100%		0.1%	
Douglas town	Medway town	Massachusetts	12	100.0%	12	0.1%		100%		0.1%	
Sutton town	Westwood town	Massachusetts	12	100.0%	12	0.1%		100%		0.1%	
Sutton town	Ayer town	Massachusetts	11	100.0%	11	0.1%		100%		0.1%	
Sutton town	Monroe town	Massachusetts	11	100.0%	11	0.1%	100%			0.1%	
Sutton town	Sudbury town	Massachusetts	11	100.0%	11	0.1%		100%		0.1%	
Sutton town	Weymouth Town city	Massachusetts	11	100.0%	11	0.1%		100%		0.1%	
Sutton town	New Haven town	Connecticut	10	100.0%	10	0.1%	50%		50%	0.1%	
Sutton town	Agawam Town city	Massachusetts	10	100.0%	10	0.1%	100%			0.1%	
Douglas town	Stoughton town	Massachusetts	10	100.0%	10	0.1%		100%		0.1%	
Sutton town	Taunton city	Massachusetts	10	100.0%	10	0.1%		100%		0.1%	
Sutton town	Amherst town	New Hampshire	10	100.0%	10	0.1%		100%		0.1%	
Sutton town	Brookline town	Massachusetts	9	100.0%	9	0.1%		100%		0.1%	
Sutton town	Norfolk town	Massachusetts	9	100.0%	9	0.1%		100%		0.1%	
Sutton town	Boxborough town	Massachusetts	8	100.0%	8	0.1%		100%		0.1%	
Sutton town	Chelmsford town	Massachusetts	8	100.0%	8	0.1%		100%		0.1%	
Sutton town	South Hadley town	Massachusetts	7	100.0%	7	0.1%	100%			0.1%	
Sutton town	Cranston city	Rhode Island	4	100.0%	4	0.0%		100%		0.0%	
Total			9,400		9,400	100.00%	19.09%	71.90%	6.66%	2.35%	100.00%
						Use	19%	72%	7%	2%	100%

**EXISTING TRAVEL PATTERNS**  
**Fairfax Way/Belvoir Avenue Neighborhood - Douglas, MA**

Traffic Volumes Entering/Exiting Fairfax/Belvoir						
	AM Peak Period (7AM-9AM)		PM Peak Period (4PM-6PM)		Combined	
	#	%	#	%	#	%
Entering from North	3	-	19	-	22	-
Exiting to North	11	-	13	-	24	-
Subtotal	14	64%	32	76%	46	72%
Entering from South	2	-	6	-	8	-
Exiting to South	6	-	4	-	10	-
Subtotal	8	36%	10	24%	18	28%
TOTAL	22	100%	42	100%	64	100%

Based on turning movement count data collected on Wednesday, July 21, 2021.

Traffic Volumes at Torrey Road/Duval Road						
	AM Peak Period (7AM-9AM)		PM Peak Period (4PM-6PM)		Combined	
	#	%	#	%	#	%
Torrey Road SBT	6	60%	41	63%	47	63%
Duval Road WBL	4	40%	24	37%	28	37%
Subtotal	10	100%	65	100%	75	100%
Torrey Road NBT	19	70%	15	52%	34	61%
Torrey Road NBR	8	30%	14	48%	22	39%
Subtotal	27	100%	29	100%	56	100%
TOTAL	37	200%	94	200%	131	200%
Torrey Road to/from North						62%
Duval Road to/from East						38%
Applied to Fairfax/Belvoir						45%
						27%



## **Appendix I**

### **Traffic Projection Model**




TRAFFIC PROJECTION MODEL

		July 2021 AM Peak Hour As- Counted Volumes (Unadjusted)	Seasonal ly Adjusted AM Peak Hour Traffic Volumes	Existing AM Peak Hour Balancing	2021 Existing AM Peak Hour Traffic Volumes (Adjusted)	2028 Grown AM Peak Hour Traffic Volumes (Unadjusted)	2028 Grown AM Peak Hour Balancing	2028 No Build AM Peak Hour Traffic Volumes	Entering Distribution	Exiting Distribution	Site Trips AM Peak Hour (Adjusted)	2028 Build AM Peak Hour Traffic Volumes	July 2021 PM Peak Hour As Counted Volumes (Unadjusted)	Seasonal ly Adjusted PM Peak Hour Traffic Volumes	Existing PM Peak Hour Balancing	2021 Existing PM Peak Hour Traffic Volumes (Adjusted)	2028 Grown PM Peak Hour Traffic Volumes (Unadjusted)	2028 Grown PM Peak Hour Balancing	2028 No Build PM Peak Hour Traffic Volumes	Entering Distribution	Exiting Distribution	Site Trips AM Peak Hour (Adjusted)	2028 Build PM Peak Hour Traffic Volumes
Torrey Road & Duval Road																							
7:45 AM - 8:00 AM	NBT	10	10		10	11		11		10%	2	13	7	7		7	8		8		10%	1	9
4:00 PM - 5:00 PM	NBR	4	4		4	5		5	10%		0	5	8	8		8	9		9	10%		2	11
Seasonal Adjustment Factor	SBL	7	7		7	8		8	20%		1	9	10	10		10	11		11	20%		4	15
1.00	SBT	3	3		3	3		3	10%		1	4	22	22		22	25		25	10%		2	27
	WBL	3	3		3	3		3		10%	2	5	16	16		16	18		18		10%	1	19
Annual Growth Rate	WBR	4	4		4	5		5		20%	3	8	3	3		3	3		3		20%	2	5
2.0%																							
Mumford Road & Duval Road																							
7:00 AM - 8:00 AM	NBL	1	1		1	1		1			0	1	3	3		3	3		3			0	3
4:00 PM - 5:00 PM	NBT	18	18		18	21		21			0	21	12	12		12	14		14			0	14
Design Horizon (Years)	SBT	3	3		3	3		3			0	3	10	10		10	11		11			0	11
7.00	SBR	4	4		4	5		5	50%		3	8	18	18		18	21		21	50%		10	31
	EBL	11	11		11	13		13		50%	8	21	11	11		11	13		13		50%	6	19
Growth Factor	EBR	2	2		2	2		2			0	2	3	3		3	3		3			0	3
1.149																							
Birch Street & Fairfax Way																							
8:00 AM - 9:00 AM	NBT	12	12		12	14		14	10%	10%	2	16	11	11		11	13		13	10%	10%	3	16
4:00 PM - 5:00 PM	NBR	1	1		1	1		1			0	1	1	1		1	1		1			0	1
	SBL	2	2		2	2		2			0	2	6	6		6	7		7			0	7
	SBT	5	5		5	6		6	10%	10%	3	9	30	30		30	34		34	10%	10%	3	37
	WBL	1	1		1	1		1			0	1	0	0		0	0		0			0	0
	WBR	3	3		3	3		3			0	3	4	4		4	5		5			0	5
Birch Street & Belvoir Avenue																							
8:00 AM - 9:00 AM	NBT	10	10		10	11		11	10%		0	11	10	10		10	11		11	10%		2	13
4:00 PM - 5:00 PM	NBR	1	1		1	1		1	10%		1	2	2	2		2	2		2	10%		2	4
	SBL	0	0		0	0		0	10%		1	1	5	5		5	6		6	10%		2	8
	SBT	6	6		6	7		7		10%	2	9	25	25		25	29		29		10%	1	30
	WBL	1	1		1	1		1		10%	2	3	1	1		1	1		1		10%	1	2
	WBR	3	3		3	3		3		10%	2	5	3	3		3	3		3		10%	1	4
Proposed Subdivision Roadway & Duval Road																							
7:30 AM - 8:30 AM	NBL	0	0		0	0		0		30%	5	5	0	0		0	0		0		30%	3	3
4:00 PM - 5:00 PM	NBR	0	0		0	0		0		50%	8	8	0	0		0	0		0		50%	6	6
	EBT	12	12		12	14		14			0	14	15	15		15	17		17			0	17
	EBR	0	0		0	0		0	30%		1	1	0	0		0	0		0	30%		6	6
	WBL	0	0		0	0		0	50%		3	3	0	0		0	0		0	50%		10	10
	WBT	9	9		9	10		10			0	10	20	20		20	23		23			0	23
Forest Street & Proposed Subdivision Roadway																							
8:00 AM - 9:00 AM	NBT	1	1		1	1		1			0	1	3	3		3	3		3			0	3
4:00 PM - 5:00 PM	NBR	0	0		0	0		0			0	0	0	0		0	0		0			0	0
	SBL	0	0		0	0		0	20%		2	2	0	0		0	0		0	20%		4	4
	SBT	1	1		1	1		1			0	1	1	1		1	1		1			0	1
	WBL	0	0		0	0		0			0	0	0	0		0	0		0			0	0
	WBR	0	0		0	0		0		20%	4	4	0	0		0	0		0		20%	2	2

**Appendix J**  
**Capacity Analysis Worksheets**

HCM 6th TWSC  
1: Torrey Road & Duval Road

2021 Existing Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	4	10	4	7	3
Future Vol, veh/h	3	4	10	4	7	3
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	58	58	58	58	50	50
Heavy Vehicles, %	0	0	0	25	14	0
Mvmt Flow	5	7	17	7	14	6




Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	55	21	0	0	24
Stage 1	21	-	-	-	-
Stage 2	34	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.24
Critical Hdwy Stg 1	5.4	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.326
Pot Cap-1 Maneuver	958	1062	-	-	1516
Stage 1	1007	-	-	-	-
Stage 2	994	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	949	1062	-	-	1516
Mov Cap-2 Maneuver	949	-	-	-	-
Stage 1	1007	-	-	-	-
Stage 2	985	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	5.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1010	1516
HCM Lane V/C Ratio	-	-	0.012	0.009
HCM Control Delay (s)	-	-	8.6	7.4
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0




HCM 6th TWSC  
2: Mumford Road & Duval Road

2021 Existing Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	2	1	18	3	4
Future Vol, veh/h	11	2	1	18	3	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	59	59	58	58
Heavy Vehicles, %	0	0	0	8	0	6
Mvmt Flow	14	2	2	31	5	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	44	9	12	0	-	0
Stage 1	9	-	-	-	-	-
Stage 2	35	-	-	-	-	-
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	972	1079	1620	-	-	-
Stage 1	1019	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	971	1079	1620	-	-	-
Mov Cap-2 Maneuver	971	-	-	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	993	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.7	0.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1620	-	986	-	-	
HCM Lane V/C Ratio	0.001	-	0.016	-	-	
HCM Control Delay (s)	7.2	0	8.7	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	




HCM 6th TWSC  
3: Birch Street & Fairfax Way

2021 Existing Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	12	1	2	5
Future Vol, veh/h	1	3	12	1	2	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	100	100	65	65	44	44
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	3	18	2	5	11
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	40	19	0	0	20	0
Stage 1	19	-	-	-	-	-
Stage 2	21	-	-	-	-	-
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	977	1065	-	-	1609	-
Stage 1	1009	-	-	-	-	-
Stage 2	1007	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	974	1065	-	-	1609	-
Mov Cap-2 Maneuver	974	-	-	-	-	-
Stage 1	1009	-	-	-	-	-
Stage 2	1004	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.5	0		2.1		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1041		1609	-	
HCM Lane V/C Ratio	-	- 0.004		0.003	-	
HCM Control Delay (s)	-	- 8.5		7.2	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0		0	-	

HCM 6th TWSC  
4: Birch Street & Belvoir Avenue

2021 Existing Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	1.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	10	1	0	6
Future Vol, veh/h	1	3	10	1	0	6
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	100	100	69	69	50	50
Heavy Vehicles, %	0	0	0	0	0	4
Mvmt Flow	1	3	14	1	0	12




Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	27	15	0
Stage 1	15	-	-
Stage 2	12	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	993	1070	-
Stage 1	1013	-	-
Stage 2	1016	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	993	1070	-
Mov Cap-2 Maneuver	993	-	-
Stage 1	1013	-	-
Stage 2	1016	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.4	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1050	1616
HCM Lane V/C Ratio	-	-	0.004	-
HCM Control Delay (s)	-	-	8.4	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
1: Torrey Road & Duval Road

2021 Existing Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	3.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	3	7	8	10	22
Future Vol, veh/h	16	3	7	8	10	22
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	68	68	75	75	89	89
Heavy Vehicles, %	6	0	0	0	0	0
Mvmt Flow	24	4	9	11	11	25

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	62	15	0
Stage 1	15	-	-
Stage 2	47	-	-
Critical Hdwy	6.46	6.2	-
Critical Hdwy Stg 1	5.46	-	-
Critical Hdwy Stg 2	5.46	-	-
Follow-up Hdwy	3.554	3.3	-
Pot Cap-1 Maneuver	934	1070	-
Stage 1	998	-	-
Stage 2	965	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	927	1070	-
Mov Cap-2 Maneuver	927	-	-
Stage 1	998	-	-
Stage 2	958	-	-




Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	2.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	947	1609
HCM Lane V/C Ratio	-	-	0.03	0.007
HCM Control Delay (s)	-	-	8.9	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0






HCM 6th TWSC  
2: Mumford Road & Duval Road

2021 Existing Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	11	3	3	12	10	18
Future Vol, veh/h	11	3	3	12	10	18
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	70	70	47	47	70	70
Heavy Vehicles, %	0	0	0	8	0	6
Mvmt Flow	16	4	6	26	14	26
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	65	27	40	0	-	0
Stage 1	27	-	-	-	-	-
Stage 2	38	-	-	-	-	-
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	946	1054	1583	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	990	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	942	1054	1583	-	-	-
Mov Cap-2 Maneuver	942	-	-	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	990	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	1.5		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1583	-	964	-	-	
HCM Lane V/C Ratio	0.004	-	0.021	-	-	
HCM Control Delay (s)	7.3	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	




HCM 6th TWSC  
3: Birch Street & Fairfax Way

2021 Existing Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	4	11	1	6	30
Future Vol, veh/h	0	4	11	1	6	30
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	50	50	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	3
Mvmt Flow	0	8	15	1	8	40
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	72	16	0	0	16	0
Stage 1	16	-	-	-	-	-
Stage 2	56	-	-	-	-	-
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	937	1069	-	-	1615	-
Stage 1	1012	-	-	-	-	-
Stage 2	972	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	932	1069	-	-	1615	-
Mov Cap-2 Maneuver	932	-	-	-	-	-
Stage 1	1012	-	-	-	-	-
Stage 2	967	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.4	0		1.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1069		1615	-	
HCM Lane V/C Ratio	-	- 0.007		0.005	-	
HCM Control Delay (s)	-	- 8.4		7.2	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0		0	-	

HCM 6th TWSC  
4: Birch Street & Belvoir Avenue

2021 Existing Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	10	2	5	25
Future Vol, veh/h	1	3	10	2	5	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	33	33	65	65	63	63
Heavy Vehicles, %	0	0	0	0	0	4
Mvmt Flow	3	9	15	3	8	40




Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	73	17	0
Stage 1	17	-	-
Stage 2	56	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	936	1068	-
Stage 1	1011	-	-
Stage 2	972	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	931	1068	-
Mov Cap-2 Maneuver	931	-	-
Stage 1	1011	-	-
Stage 2	967	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1030	1612
HCM Lane V/C Ratio	-	-	0.012	0.005
HCM Control Delay (s)	-	-	8.5	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0




HCM 6th TWSC  
1: Torrey Road & Duval Road

2028 No Build Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	3.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	5	11	5	8	3
Future Vol, veh/h	3	5	11	5	8	3
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	58	58	58	58	50	50
Heavy Vehicles, %	0	0	0	25	14	0
Mvmt Flow	5	9	19	9	16	6
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	62	24	0	0	28	0
Stage 1	24	-	-	-	-	-
Stage 2	38	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.24	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.326	-
Pot Cap-1 Maneuver	949	1058	-	-	1511	-
Stage 1	1004	-	-	-	-	-
Stage 2	990	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	939	1058	-	-	1511	-
Mov Cap-2 Maneuver	939	-	-	-	-	-
Stage 1	1004	-	-	-	-	-
Stage 2	979	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.6	0		5.4		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1010		1511	-	
HCM Lane V/C Ratio	-	- 0.014		0.011	-	
HCM Control Delay (s)	-	- 8.6		7.4	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0		0	-	




HCM 6th TWSC  
2: Mumford Road & Duval Road

2028 No Build Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	2.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	2	1	21	3	5
Future Vol, veh/h	13	2	1	21	3	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	81	81	59	59	58	58
Heavy Vehicles, %	0	0	0	8	0	6
Mvmt Flow	16	2	2	36	5	9
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	50	10	14	0	-	0
Stage 1	10	-	-	-	-	-
Stage 2	40	-	-	-	-	-
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	964	1077	1617	-	-	-
Stage 1	1018	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	963	1077	1617	-	-	-
Mov Cap-2 Maneuver	963	-	-	-	-	-
Stage 1	1017	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	0.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1617	-	977	-	-	
HCM Lane V/C Ratio	0.001	-	0.019	-	-	
HCM Control Delay (s)	7.2	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	




HCM 6th TWSC  
3: Birch Street & Fairfax Way

2028 No Build Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	1.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	14	1	2	6
Future Vol, veh/h	1	3	14	1	2	6
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	100	100	65	65	44	44
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	3	22	2	5	14
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	47	23	0	0	24	0
Stage 1	23	-	-	-	-	-
Stage 2	24	-	-	-	-	-
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	968	1060	-	-	1604	-
Stage 1	1005	-	-	-	-	-
Stage 2	1004	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	965	1060	-	-	1604	-
Mov Cap-2 Maneuver	965	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	1001	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.5	0		1.8		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1035		1604	-	
HCM Lane V/C Ratio	-	- 0.004		0.003	-	
HCM Control Delay (s)	-	- 8.5		7.3	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0		0	-	




HCM 6th TWSC  
4: Birch Street & Belvoir Avenue

2028 No Build Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	11	1	0	7
Future Vol, veh/h	1	3	11	1	0	7
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	100	100	69	69	50	50
Heavy Vehicles, %	0	0	0	0	0	4
Mvmt Flow	1	3	16	1	0	14
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	31	17	0	0	17	0
Stage 1	17	-	-	-	-	-
Stage 2	14	-	-	-	-	-
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	988	1068	-	-	1613	-
Stage 1	1011	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	988	1068	-	-	1613	-
Mov Cap-2 Maneuver	988	-	-	-	-	-
Stage 1	1011	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	8.5	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 1047	1613	-		
HCM Lane V/C Ratio	-	- 0.004	-	-		
HCM Control Delay (s)	-	- 8.5	0	-		
HCM Lane LOS	-	- A	A	-		
HCM 95th %tile Q(veh)	-	- 0	0	-		

HCM 6th TWSC  
1: Torrey Road & Duval Road




2028 No Build Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	3.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	18	3	8	9	11	25
Future Vol, veh/h	18	3	8	9	11	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	75	75	89	89
Heavy Vehicles, %	6	0	0	0	0	0
Mvmt Flow	26	4	11	12	12	28
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	69	17	0	0	23	0
Stage 1	17	-	-	-	-	-
Stage 2	52	-	-	-	-	-
Critical Hdwy	6.46	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	926	1068	-	-	1605	-
Stage 1	995	-	-	-	-	-
Stage 2	960	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	919	1068	-	-	1605	-
Mov Cap-2 Maneuver	919	-	-	-	-	-
Stage 1	995	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9	0		2.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	938	1605	-	
HCM Lane V/C Ratio	-	-	0.033	0.008	-	
HCM Control Delay (s)	-	-	9	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	






HCM 6th TWSC  
2: Mumford Road & Duval Road

2028 No Build Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	2.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	3	3	14	11	21
Future Vol, veh/h	13	3	3	14	11	21
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	70	70	47	47	70	70
Heavy Vehicles, %	0	0	0	8	0	6
Mvmt Flow	19	4	6	30	16	30
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	73	31	46	0	-	0
Stage 1	31	-	-	-	-	-
Stage 2	42	-	-	-	-	-
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	936	1049	1575	-	-	-
Stage 1	997	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	932	1049	1575	-	-	-
Mov Cap-2 Maneuver	932	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.9	1.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1575	-	952	-	-	
HCM Lane V/C Ratio	0.004	-	0.024	-	-	
HCM Control Delay (s)	7.3	0	8.9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	




HCM 6th TWSC  
3: Birch Street & Fairfax Way

2028 No Build Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	13	1	7	34
Future Vol, veh/h	0	5	13	1	7	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	50	50	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	3
Mvmt Flow	0	10	17	1	9	45
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	81	18	0	0	18	0
Stage 1	18	-	-	-	-	-
Stage 2	63	-	-	-	-	-
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	926	1066	-	-	1612	-
Stage 1	1010	-	-	-	-	-
Stage 2	965	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	920	1066	-	-	1612	-
Mov Cap-2 Maneuver	920	-	-	-	-	-
Stage 1	1010	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.4	0		1.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1066		1612	-	
HCM Lane V/C Ratio	-	- 0.009		0.006	-	
HCM Control Delay (s)	-	- 8.4		7.2	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0		0	-	

HCM 6th TWSC  
4: Birch Street & Belvoir Avenue

2028 No Build Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	11	2	6	29
Future Vol, veh/h	1	3	11	2	6	29
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	33	33	65	65	63	63
Heavy Vehicles, %	0	0	0	0	0	4
Mvmt Flow	3	9	17	3	10	46




Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	85	19	0
Stage 1	19	-	-
Stage 2	66	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	921	1065	-
Stage 1	1009	-	-
Stage 2	962	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	915	1065	-
Mov Cap-2 Maneuver	915	-	-
Stage 1	1009	-	-
Stage 2	956	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.6	0	1.2
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1023	1609
HCM Lane V/C Ratio	-	-	0.012	0.006
HCM Control Delay (s)	-	-	8.6	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0




HCM 6th TWSC  
1: Torrey Road & Duval Road

2028 Build Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	4.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	8	13	5	9	4
Future Vol, veh/h	5	8	13	5	9	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	58	58	58	58	50	50
Heavy Vehicles, %	0	0	0	25	14	0
Mvmt Flow	9	14	22	9	18	8
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	71	27	0	0	31	0
Stage 1	27	-	-	-	-	-
Stage 2	44	-	-	-	-	-
Critical Hdwy	6.4	6.2	-	-	4.24	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	-	-	2.326	-
Pot Cap-1 Maneuver	938	1054	-	-	1507	-
Stage 1	1001	-	-	-	-	-
Stage 2	984	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	927	1054	-	-	1507	-
Mov Cap-2 Maneuver	927	-	-	-	-	-
Stage 1	1001	-	-	-	-	-
Stage 2	972	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	8.7	0	5.1			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	1001	1507	-	
HCM Lane V/C Ratio	-	-	0.022	0.012	-	
HCM Control Delay (s)	-	-	8.7	7.4	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	




HCM 6th TWSC  
2: Mumford Road & Duval Road

2028 Build Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	21	2	1	21	3	8
Future Vol, veh/h	21	2	1	21	3	8
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	81	81	59	59	58	58
Heavy Vehicles, %	0	0	0	8	0	6
Mvmt Flow	26	2	2	36	5	14
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	52	12	19	0	-	0
Stage 1	12	-	-	-	-	-
Stage 2	40	-	-	-	-	-
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	962	1074	1611	-	-	-
Stage 1	1016	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	961	1074	1611	-	-	-
Mov Cap-2 Maneuver	961	-	-	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	988	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	8.8	0.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1611	-	970	-	-	
HCM Lane V/C Ratio	0.001	-	0.029	-	-	
HCM Control Delay (s)	7.2	0	8.8	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	




HCM 6th TWSC  
3: Birch Street & Fairfax Way

2028 Build Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	1.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	3	16	1	2	9
Future Vol, veh/h	1	3	16	1	2	9
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	100	100	65	65	44	44
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	1	3	25	2	5	20
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	56	26	0	0	27	0
Stage 1	26	-	-	-	-	-
Stage 2	30	-	-	-	-	-
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	957	1056	-	-	1600	-
Stage 1	1002	-	-	-	-	-
Stage 2	998	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	954	1056	-	-	1600	-
Mov Cap-2 Maneuver	954	-	-	-	-	-
Stage 1	1002	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.5	0		1.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1029		1600	-	
HCM Lane V/C Ratio	-	- 0.004		0.003	-	
HCM Control Delay (s)	-	- 8.5		7.3	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0		0	-	

HCM 6th TWSC  
4: Birch Street & Belvoir Avenue

2028 Build Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	1.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	5	11	2	1	9
Future Vol, veh/h	3	5	11	2	1	9
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	100	100	69	69	50	50
Heavy Vehicles, %	0	0	0	0	0	4
Mvmt Flow	3	5	16	3	2	18




Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	40	18	0
Stage 1	18	-	-
Stage 2	22	-	-
Critical Hdwy	6.4	6.2	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.3	-
Pot Cap-1 Maneuver	977	1066	-
Stage 1	1010	-	-
Stage 2	1006	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	976	1066	-
Mov Cap-2 Maneuver	976	-	-
Stage 1	1010	-	-
Stage 2	1005	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	0.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1030	1611
HCM Lane V/C Ratio	-	-	0.008	0.001
HCM Control Delay (s)	-	-	8.5	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0	0

HCM 6th TWSC  
5: Proposed Subdivision Roadway & Duval Road




2028 Build Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	14	1	3	10	5	8
Future Vol, veh/h	14	1	3	10	5	8
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	38	38	92	92
Heavy Vehicles, %	8	2	2	0	2	2
Mvmt Flow	23	2	8	26	5	9
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	25	0	66	24
Stage 1	-	-	-	-	24	-
Stage 2	-	-	-	-	42	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1589	-	939	1052
Stage 1	-	-	-	-	999	-
Stage 2	-	-	-	-	980	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1589	-	934	1052
Mov Cap-2 Maneuver	-	-	-	-	934	-
Stage 1	-	-	-	-	999	-
Stage 2	-	-	-	-	975	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.7		8.6	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	1003	-	-	1589	-	
HCM Lane V/C Ratio	0.014	-	-	0.005	-	
HCM Control Delay (s)	8.6	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	






HCM 6th TWSC  
6: Forest Street & Proposed Subdivision Roadway

2028 Build Condition  
Weekday Morning Peak Hour

Intersection						
Int Delay, s/veh	4.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	4	1	0	2	1
Future Vol, veh/h	0	4	1	0	2	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	92	92	25	25	25	25
Heavy Vehicles, %	2	2	0	2	2	0
Mvmt Flow	0	4	4	0	8	4
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	24	4	0	0	4	0
Stage 1	4	-	-	-	-	-
Stage 2	20	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	992	1080	-	-	1618	-
Stage 1	1019	-	-	-	-	-
Stage 2	1003	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	987	1080	-	-	1618	-
Mov Cap-2 Maneuver	987	-	-	-	-	-
Stage 1	1019	-	-	-	-	-
Stage 2	998	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	8.3	0	4.8			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 1080	1618	-		
HCM Lane V/C Ratio	-	- 0.004	0.005	-		
HCM Control Delay (s)	-	- 8.3	7.2	0		
HCM Lane LOS	-	- A	A	A		
HCM 95th %tile Q(veh)	-	- 0	0	-		




HCM 6th TWSC  
1: Torrey Road & Duval Road

2028 Build Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	5	9	11	15	27
Future Vol, veh/h	19	5	9	11	15	27
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	68	68	75	75	89	89
Heavy Vehicles, %	6	0	0	0	0	0
Mvmt Flow	28	7	12	15	17	30
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	84	20	0	0	27	0
Stage 1	20	-	-	-	-	-
Stage 2	64	-	-	-	-	-
Critical Hdwy	6.46	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	908	1064	-	-	1600	-
Stage 1	992	-	-	-	-	-
Stage 2	949	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	898	1064	-	-	1600	-
Mov Cap-2 Maneuver	898	-	-	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	939	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9	0		2.6		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 928		1600	-	
HCM Lane V/C Ratio	-	- 0.038		0.011	-	
HCM Control Delay (s)	-	- 9		7.3	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0.1		0	-	




HCM 6th TWSC  
2: Mumford Road & Duval Road

2028 Build Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	2.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	3	3	14	11	31
Future Vol, veh/h	19	3	3	14	11	31
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	70	70	47	47	70	70
Heavy Vehicles, %	0	0	0	8	0	6
Mvmt Flow	27	4	6	30	16	44
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	80	38	60	0	-	0
Stage 1	38	-	-	-	-	-
Stage 2	42	-	-	-	-	-
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	927	1040	1556	-	-	-
Stage 1	990	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	923	1040	1556	-	-	-
Mov Cap-2 Maneuver	923	-	-	-	-	-
Stage 1	986	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9	1.3		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1556	-	937	-	-	
HCM Lane V/C Ratio	0.004	-	0.034	-	-	
HCM Control Delay (s)	7.3	0	9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	




HCM 6th TWSC  
3: Birch Street & Fairfax Way

2028 Build Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	5	16	1	7	37
Future Vol, veh/h	0	5	16	1	7	37
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	50	50	75	75	75	75
Heavy Vehicles, %	0	0	0	0	0	3
Mvmt Flow	0	10	21	1	9	49
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	89	22	0	0	22	0
Stage 1	22	-	-	-	-	-
Stage 2	67	-	-	-	-	-
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	917	1061	-	-	1607	-
Stage 1	1006	-	-	-	-	-
Stage 2	961	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	911	1061	-	-	1607	-
Mov Cap-2 Maneuver	911	-	-	-	-	-
Stage 1	1006	-	-	-	-	-
Stage 2	955	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.4	0		1.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1061		1607	-	
HCM Lane V/C Ratio	-	- 0.009		0.006	-	
HCM Control Delay (s)	-	- 8.4		7.3	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0		0	-	




HCM 6th TWSC  
4: Birch Street & Belvoir Avenue

2028 Build Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	2	4	13	4	8	30
Future Vol, veh/h	2	4	13	4	8	30
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	33	33	65	65	63	63
Heavy Vehicles, %	0	0	0	0	0	4
Mvmt Flow	6	12	20	6	13	48
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	97	23	0	0	26	0
Stage 1	23	-	-	-	-	-
Stage 2	74	-	-	-	-	-
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	907	1060	-	-	1601	-
Stage 1	1005	-	-	-	-	-
Stage 2	954	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	900	1060	-	-	1601	-
Mov Cap-2 Maneuver	900	-	-	-	-	-
Stage 1	1005	-	-	-	-	-
Stage 2	946	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.7	0		1.5		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 1001		1601	-	
HCM Lane V/C Ratio	-	- 0.018		0.008	-	
HCM Control Delay (s)	-	- 8.7		7.3	0	
HCM Lane LOS	-	- A		A	A	
HCM 95th %tile Q(veh)	-	- 0.1		0	-	




HCM 6th TWSC  
5: Proposed Subdivision Roadway & Duval Road

2028 Build Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	2.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	17	6	10	23	3	6
Future Vol, veh/h	17	6	10	23	3	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	56	56	92	92
Heavy Vehicles, %	8	2	2	0	2	2
Mvmt Flow	23	8	18	41	3	7
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	31	0	104	27
Stage 1	-	-	-	-	27	-
Stage 2	-	-	-	-	77	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1582	-	894	1048
Stage 1	-	-	-	-	996	-
Stage 2	-	-	-	-	946	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1582	-	883	1048
Mov Cap-2 Maneuver	-	-	-	-	883	-
Stage 1	-	-	-	-	996	-
Stage 2	-	-	-	-	935	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.2		8.7	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	987	-	-	1582	-	
HCM Lane V/C Ratio	0.01	-	-	0.011	-	
HCM Control Delay (s)	8.7	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC  
6: Forest Street & Proposed Subdivision Roadway

2028 Build Condition  
Weekday Evening Peak Hour

Intersection						
Int Delay, s/veh	4.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	2	3	0	4	1
Future Vol, veh/h	0	2	3	0	4	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	92	92	38	38	25	25
Heavy Vehicles, %	2	2	0	2	2	0
Mvmt Flow	0	2	8	0	16	4
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	44	8	0	0	8	0
Stage 1	8	-	-	-	-	-
Stage 2	36	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	967	1074	-	-	1612	-
Stage 1	1015	-	-	-	-	-
Stage 2	986	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	957	1074	-	-	1612	-
Mov Cap-2 Maneuver	957	-	-	-	-	-
Stage 1	1015	-	-	-	-	-
Stage 2	976	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.4	0		5.8		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	1074	1612	-	
HCM Lane V/C Ratio	-	-	0.002	0.01	-	
HCM Control Delay (s)	-	-	8.4	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

## **Appendix K**

### **Sight Distance Calculations**



## Location: Duval Road at Proposed Subdivision Roadway

### STOPPING SIGHT DISTANCE:

#### STOPPING SIGHT DISTANCE FROM **WEST**

Inputs

V= speed, mph	V= 40	(85th percentile speed)
G= percent of grade	G= -1	(%)
t= brake reaction time	t= 2.5	
a= deceleration rate, ft/sec <sup>2</sup>	a= 11.2	

Calculations

Brake Reaction Distance	$1.47Vt$	147 feet
Braking Distance	$\frac{V^2}{30((a/32.2)+G)}$	157.9 feet
Stopping Sight Distance =	$1.47Vt + \frac{V^2}{30((a/32.2)+G)}$	305 feet

#### STOPPING SIGHT DISTANCE FROM **EAST**

Inputs

V= speed, mph	V= 40	(85th percentile speed)
G= percent of grade	G= 3	(%)
t= brake reaction time	t= 2.5	
a= deceleration rate, ft/sec <sup>2</sup>	a= 11.2	

Calculations

Brake Reaction Distance	$1.47Vt$	147 feet
Braking Distance	$\frac{V^2}{30((a/32.2)+G)}$	141.2 feet
Stopping Sight Distance =	$1.47Vt + \frac{V^2}{30((a/32.2)+G)}$	290 feet

Source: A Policy on Geometric Design of Highways and Streets, 2018, Seventh Edition, prepared by AASHTO, p. 3-4 to 3-5.

### INTERSECTION SIGHT DISTANCE:

#### INTERSECTION SIGHT DISTANCE - LEFT FROM MINOR APPROACH - TO THE WEST

Inputs

V= design speed, mph	V= 40	(85th percentile speed)
t= time gap for minor road vehicle to enter the major road	t= 7.50	(choose value based on Table 1)

Calculations

Int. Sight Distance =	$1.47Vt$	445 feet
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Table 1 - Time Gap Factors				
Design Vehicle	Time Gap <sup>1</sup> , t (sec) for Grades <=3%	Grade of Minor Approach	Number of Additional Lanes to Cross	Adjusted Time Gap, t (sec)
passenger car	7.5	0%	0	7.50
single-unit truck	9.5	0%	0	9.50
combination truck	11.5	0%	0	11.50

#### INTERSECTION SIGHT DISTANCE - LEFT FROM MINOR APPROACH - TO THE EAST

Inputs

V= design speed, mph	V= 40	(85th percentile speed)
t= time gap for minor road vehicle to enter the major road	t= 7.50	(choose value based on Table 1)

Calculations

Int. Sight Distance =	$1.47Vt$	445 feet
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Design Vehicle	Time Gap <sup>1</sup> , t (sec) for Grades <=3%	Grade of Minor Approach	Number of Additional Lanes to Cross	Adjusted Time Gap, t (sec)
passenger car	7.5	0%	0	7.50
single-unit truck	9.5	0%	0	9.50
combination truck	11.5	0%	0	11.50

#### Notes:

1. Time Gap values are applicable for major roads with grades 3 percent or less and no median and a minor street approach with a grade of 3 percent or less. Otherwise, the table values should be adjusted.

\*\*If the minor street has an upward grade of more than 3 percent then add 0.2 sec. to t for each percent grade (including the first 3 percent).

\*\*\*Increase t by 0.5 seconds (for passenger cars) or 0.7 seconds (for trucks) for every additional lane from the left, in excess of one, to be crossed by the turning vehicle.

\*\*\*If the major approach is a divided highway with a median not wide enough to store the design vehicle, then the median width should be converted to equivalent lanes.

Source: A Policy on Geometric Design of Highways and Streets, 2018, Seventh Edition, prepared by AASHTO, p. 9-42 to 9-47.

## Location: Forest Street at Proposed Subdivision Roadway

### STOPPING SIGHT DISTANCE:

#### STOPPING SIGHT DISTANCE FROM SOUTH

Inputs

V= speed, mph	V= 17 (85th percentile speed)
G= percent of grade	G= 0 (%)
t= brake reaction time	t= 2.5
a= deceleration rate, ft/sec <sup>2</sup>	a= 11.2

Calculations

Brake Reaction Distance	$1.47Vt$	62 feet
Braking Distance	$\frac{V^2}{30(a/32.2)+G}$	27.7 feet
Stopping Sight Distance =	$1.47Vt + \frac{V^2}{30(a/32.2)+G}$	95 feet

#### STOPPING SIGHT DISTANCE FROM NORTH

Inputs

V= speed, mph	V= 18 (85th percentile speed)
G= percent of grade	G= -1 (%)
t= brake reaction time	t= 2.5
a= deceleration rate, ft/sec <sup>2</sup>	a= 11.2

Calculations

Brake Reaction Distance	$1.47Vt$	66 feet
Braking Distance	$\frac{V^2}{30(a/32.2)+G}$	32.0 feet
Stopping Sight Distance =	$1.47Vt + \frac{V^2}{30(a/32.2)+G}$	100 feet

Source: A Policy on Geometric Design of Highways and Streets, 2018, Seventh Edition, prepared by AASHTO, p. 3-4 to 3-5.

### INTERSECTION SIGHT DISTANCE:

#### INTERSECTION SIGHT DISTANCE - LEFT FROM MINOR APPROACH - TO THE SOUTH-

Inputs

V= design speed, mph	V= 17 (85th percentile speed)
t= time gap for minor road vehicle to enter the major road	t= 7.50 (choose value based on Table 1)

Calculations

Int. Sight Distance =	$1.47Vt$	190 feet
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Table 1 - Time Gap Factors				
Design Vehicle	Time Gap <sup>1</sup> , t (sec) for Grades <=3%	Grade of Minor Approach	Number of Additional Lanes to Cross	Adjusted Time Gap, t (sec)
passenger car	7.5	0%	0	7.50
single-unit truck	9.5	0%	0	9.50
combination truck	11.5	0%	0	11.50

#### INTERSECTION SIGHT DISTANCE - LEFT FROM MINOR APPROACH - TO THE NORTH-

Inputs

V= design speed, mph	V= 18 (85th percentile speed)
t= time gap for minor road vehicle to enter the major road	t= 7.50 (choose value based on Table 1)

Calculations

Int. Sight Distance =	$1.47Vt$	200 feet
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Design Vehicle	Time Gap <sup>1</sup> , t (sec) for Grades <=3%	Grade of Minor Approach	Number of Additional Lanes to Cross	Adjusted Time Gap, t (sec)
passenger car	7.5	0%	0	7.50
single-unit truck	9.5	0%	0	9.50
combination truck	11.5	0%	0	11.50

#### Notes:

1. Time Gap values are applicable for major roads with grades 3 percent or less and no median and a minor street approach with a grade of 3 percent or less. Otherwise, the table values should be adjusted.

\*\*If the minor street has an upward grade of more than 3 percent then add 0.2 sec. to t for each percent grade (including the first 3 percent).

\*\*\*Increase t by 0.5 seconds (for passenger cars) or 0.7 seconds (for trucks) for every additional lane from the left, in excess of one, to be crossed by the turning vehicle.

\*\*\*If the major approach is a divided highway with a median not wide enough to store the design vehicle, then the median width should be converted to equivalent lanes.

Source: A Policy on Geometric Design of Highways and Streets, 2018, Seventh Edition, prepared by AASHTO, p. 9-42 to 9-47.

## Location: Duval Road at Proposed Subdivision Roadway

### STOPPING SIGHT DISTANCE:

#### STOPPING SIGHT DISTANCE FROM WEST

Inputs

V= speed, mph  
G= percent of grade  
t= brake reaction time  
a= deceleration rate, ft/sec<sup>2</sup>

V= 30 (Assumed Regulatory Speed Limit based on home density)  
G= -1 (%)  
t= 2.5  
a= 11.2

Calculations

Brake Reaction Distance  $1.47Vt$  110 feet  
Braking Distance  $\frac{V^2}{30(a/32.2)+G}$  88.8 feet

Stopping Sight Distance =  $1.47Vt + \frac{V^2}{30(a/32.2)+G}$  200 feet

#### STOPPING SIGHT DISTANCE FROM EAST

Inputs

V= speed, mph  
G= percent of grade  
t= brake reaction time  
a= deceleration rate, ft/sec<sup>2</sup>

V= 30 (Assumed Regulatory Speed Limit based on home density)  
G= 3 (%)  
t= 2.5  
a= 11.2

Calculations

Brake Reaction Distance  $1.47Vt$  110 feet  
Braking Distance  $\frac{V^2}{30(a/32.2)+G}$  79.4 feet

Stopping Sight Distance =  $1.47Vt + \frac{V^2}{30(a/32.2)+G}$  190 feet

Source: A Policy on Geometric Design of Highways and Streets, 2018, Seventh Edition prepared by AASHTO, p. 3-4 to 3-5.

### INTERSECTION SIGHT DISTANCE:

#### INTERSECTION SIGHT DISTANCE - LEFT FROM MINOR APPROACH - TO THE WEST

Inputs

V= design speed, mph  
t= time gap for minor road vehicle to enter the major road

V= 30 (Assumed Regulatory Speed Limit based on home density)  
t= 7.50 (choose value based on Table 1)

Calculations

Int. Sight Distance =  $1.47Vt$  335 feet

Table 1 - Time Gap Factors

Design Vehicle	Time Gap <sup>1</sup> , t (sec) for Grades <=3%	Grade of Minor Approach	Number of Additional Lanes to Cross	Adjusted Time Gap, t (sec)
passenger car	7.5	0%	0	7.50
single-unit truck	9.5	0%	0	9.50
combination truck	11.5	0%	0	11.50

#### INTERSECTION SIGHT DISTANCE - LEFT FROM MINOR APPROACH - TO THE EAST

Inputs

V= design speed, mph  
t= time gap for minor road vehicle to enter the major road

V= 30 (Assumed Regulatory Speed Limit based on home density)  
t= 7.50 (choose value based on Table 1)

Calculations

Int. Sight Distance =  $1.47Vt$  335 feet

Design Vehicle	Time Gap <sup>1</sup> , t (sec) for Grades <=3%	Grade of Minor Approach	Number of Additional Lanes to Cross	Adjusted Time Gap, t (sec)
passenger car	7.5	0%	0	7.50
single-unit truck	9.5	0%	0	9.50
combination truck	11.5	0%	0	11.50

#### Notes:

1. Time Gap values are applicable for major roads with grades 3 percent or less and no median and a minor street approach with a grade of 3 percent or less. Otherwise, the table values should be adjusted as follows:

\*If the minor street has an upward grade of more than 3 percent then add 0.2 sec. to t for each percent grade (including the first 3 percent).

\*\*Increase t by 0.5 seconds (for passenger cars) or 0.7 seconds (for trucks) for every additional lane from the left, in excess of one, to be crossed by the turning vehicle

\*\*\*If the major approach is a divided highway with a median not wide enough to store the design vehicle, then the median width should be converted to equivalent lanes.

Source: A Policy on Geometric Design of Highways and Streets, 2018, Seventh Edition prepared by AASHTO, p. 9-42 to 9-47.