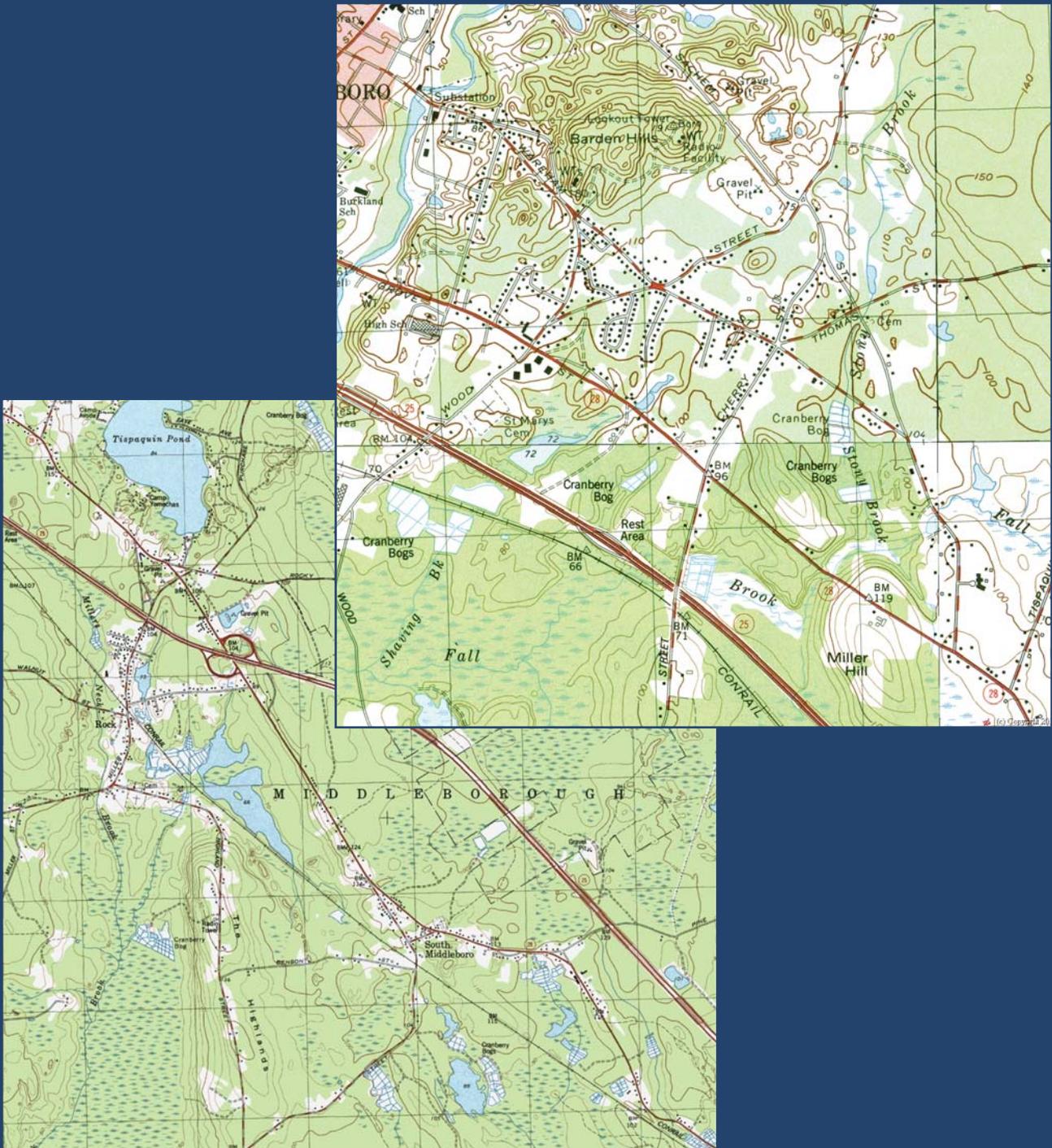


# Lane Departure Road Safety Audit Wareham Street, Middleborough, MA



March 2012



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# Road Safety Audit - Lane Departure Wareham Street, Middleborough

## Introduction

The Federal Highway Administration defines a Road Safety Audit (RSA) as the formal safety examination of a road or intersection by an independent, multidisciplinary team. The purpose of an RSA is to determine specific safety issues and ultimately identify measures to address them, with the primary objective being to save lives and reduce injuries.

The RSA program in Massachusetts is implemented in accordance with the Commonwealth's Strategic Highway Safety Plan (SHSP). The Plan provides a framework for reducing roadway fatalities and serious injuries on all public roads. It identifies the State's principal roadway safety needs and focuses on investments that reduce roadway fatalities and serious injuries. One of the areas that the SHSP targets is lane departure crashes. A lane departure crash is a single vehicle 'run-off-the-road' type collision or multi-vehicle 'head-on' crashes. These types of crashes, where a motorist leaves the travel lane, frequently have tragic results. Between 2002 and 2004 lane departure crashes in Massachusetts were responsible for 25% of the incapacitating injury crashes and almost half of all fatal crashes. Massachusetts has targeted lane departure crashes to reduce the seriousness of these collisions. The goal of the SHSP is to reduce the number of fatalities and injuries requiring hospitalization by 20%.

The Southeastern Regional Planning and Economic Development District (SRPEDD) is an active participant in this effort. In Fiscal 2009 SRPEDD committed to conducting road safety audits on 11 corridors throughout the region. These roads were selected based on the number of lane departure crashes resulting in injury or death. The Wareham Street corridor in Middleborough was selected based on a total of 29 lane departure crashes during the 2004 through 2006 period. The goal of this RSA is to determine specific issues contributing to lane departure collisions along the corridor and identify corrective measures, both short and long term, to address the problems.

*Between 2002 and 2004 lane departure crashes in Massachusetts were responsible for 25% of the incapacitating injury crashes and almost half of all fatal crashes. Massachusetts has targeted lane departure crashes to reduce the seriousness of these collisions.*

## Audit Process

The audit process is guided by the procedures defined by the Federal Highway Administration (FHWA). A multidisciplinary team was identified to participate in the audit process with SRPEDD staff. Those invited included representatives from Middleborough's public works, police, emergency management and planning staff, and the MassDOT Highway Division District 5 office.

SRPEDD staff collected 29 crash reports (all characterized as lane departure collisions) from the Middleborough Police Department for the most recent 3 year period available at the time of the audit. Reports were reviewed to identify and compile important characteristics of all the crashes. SRPEDD filmed the corridor in both directions, and edited the video to highlight site specific issues such as:

- locations of frequent crashes
- roadside obstructions
- pavement edge drop-off, etc.

Crash summaries and road characteristics were provided to the Audit Team prior to the formal audit meeting. The team was encouraged to visit Wareham Street prior to the audit meeting to observe characteristics of the corridor. A prompt list of various road characteristics was also provided to help identify potential safety issues.

*Residents and business owners were requested to offer their input and opinions on safety issues based on their observations and experiences living on and driving this road.*

An extensive public outreach was made to residents along the Wareham Street Corridor. Letters were sent to residents and businesses on Wareham Street. A sample letter and notice posted by the town is provided in Appendix A. Residents and business owners were requested to offer their input and opinions on safety issues based on their observations and experiences living on and driving this road. Residents were encouraged to contact SRPEDD via email, letter, or phone call. To date, SRPEDD has received 3 responses. A summary of resident comments is provided in Figure 10 on page 10.

The formal audit meeting was conducted on Thursday March 24, 2011 at the Middleborough Town Hall. Participants are listed in Table 1.

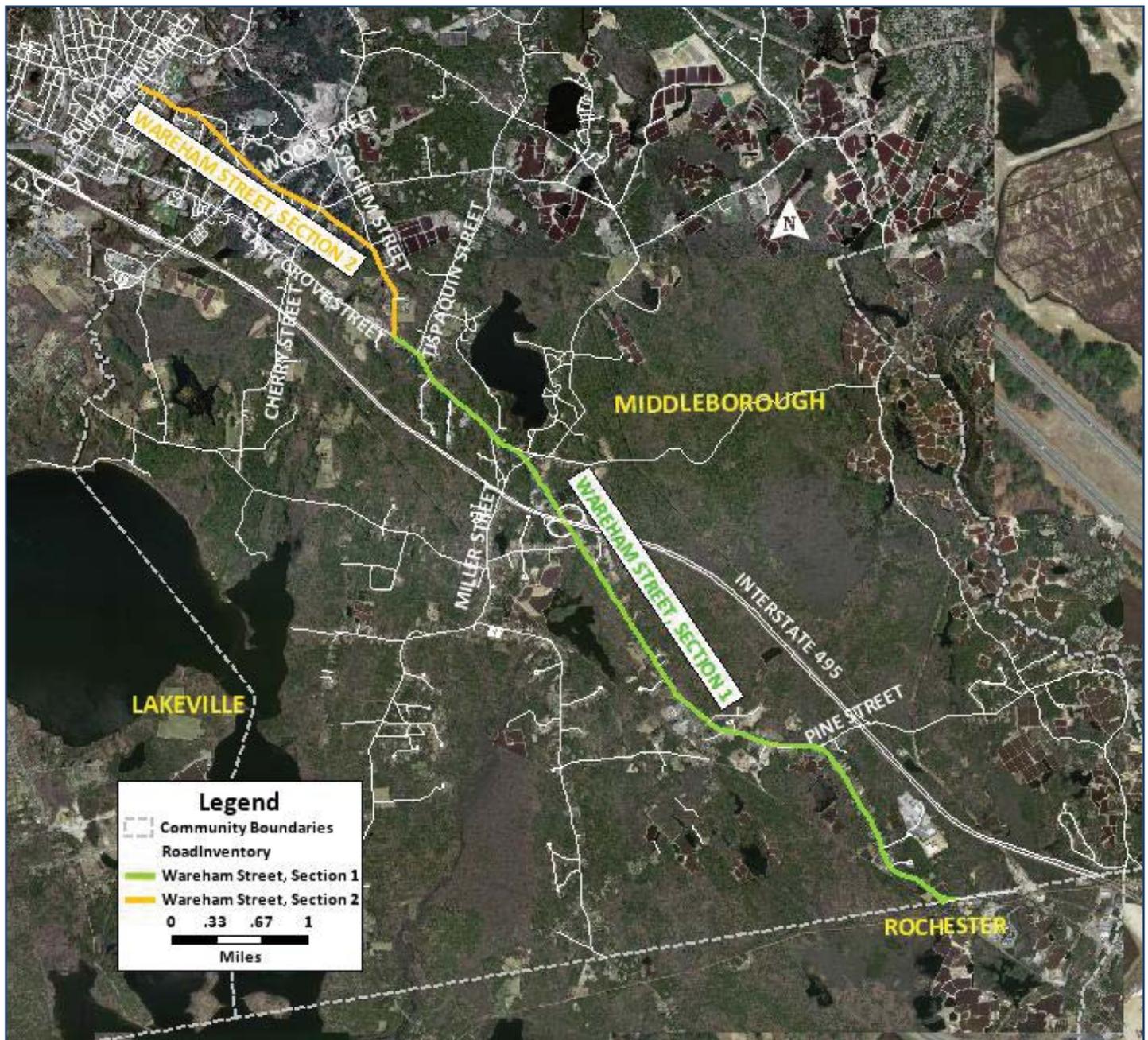
Table 1: Audit Team

Name	Affiliation
Lance Benjamino	Fire Department
Andrew Bagas	Department of Public Works
Lt. Peter Andrade	Police Department
Ruth Geoffrey	Town Planner
Charlie Cristello	Town Manager
Lucero Cano	Federal Highway Administration Rhode Island Division
Jim Hadfield	SRPEDD
Paul Mission	SRPEDD
Lisa Estrela-Pedro	SRPEDD
Jacqueline Schmidt	SRPEDD

## Characteristics of Wareham Street

Wareham Street provides an important connection between Middleborough and the towns of Rochester, Carver and Wareham, as well as being an alternative route to Cape Cod. There are two distinct sections of Wareham Street, which are shown in Figure 1 on page 3. The first, Section 1, is under the jurisdiction

Figure 1: An Aerial of Wareham Street showing Sections 1 and 2

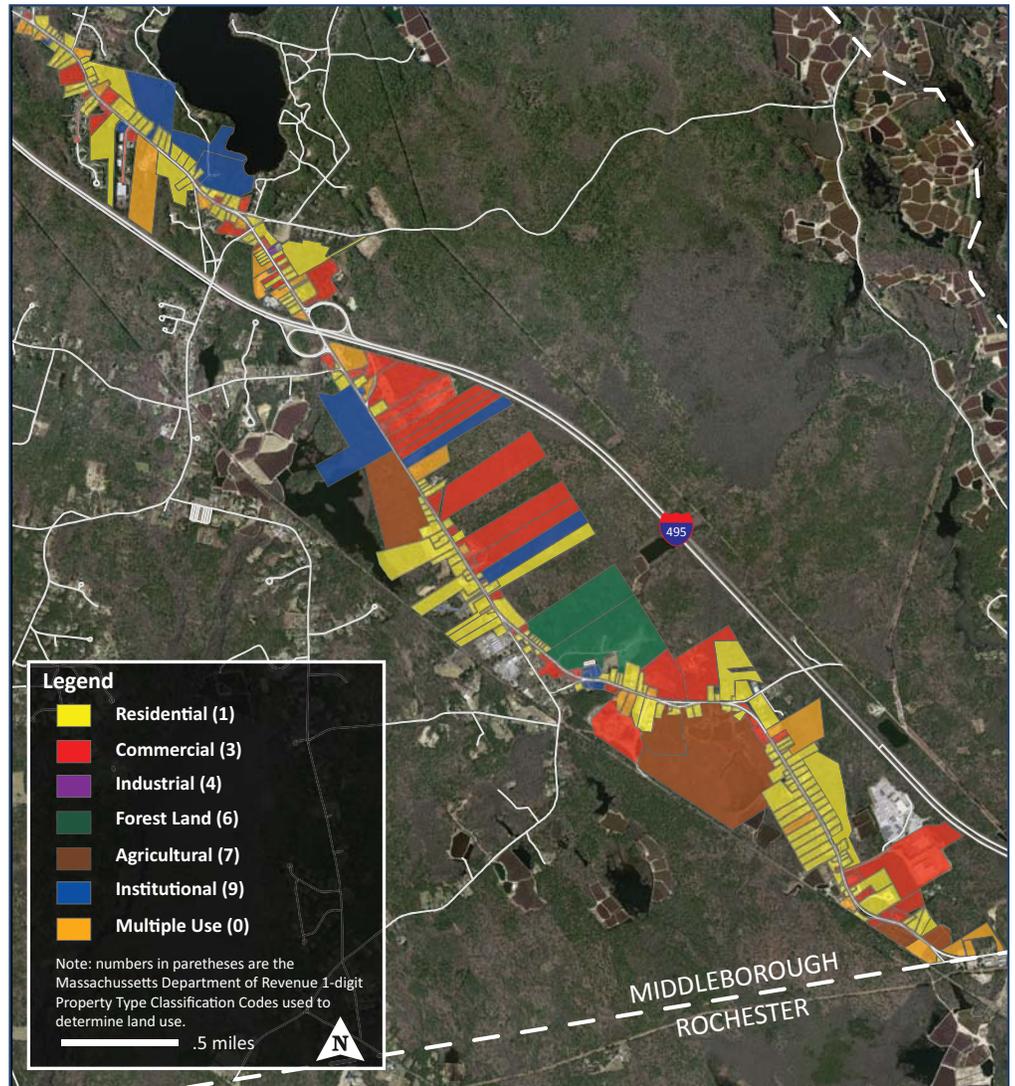


of the Massachusetts Department of Transportation Highway Division District 5 (MassDOT District 5) and extends 6 miles from the Rochester Town Line northerly to East Grove Street. This section is designated as Route 28 and has land uses including forest land, agricultural including cranberry bogs and nurseries, commercial, industrial, public service including a fire station and a church, and residential. Section 1 provides an access point to Interstate 495 via exit 3, which serves as an important connection to the greater Boston area and the Cape Cod region. A small portion from Spruce Street to approximately 581 Wareham Street is part of the South Middleborough National Historic District. A map showing current land usage is shown in Figure 2 on page 4.

Section 1 has a right-of-way of 40 feet, with varying lane widths of 11 to 20 feet. Surface widths also vary from 26 to 44 feet as shown in Figure 10 on page 10. There is a shoulder along both sides of the roadway, measuring 4 feet or smaller.

Figure 2: Current Land Usage for Section 1

This section is designated as Route 28 and has land uses including forest land, agricultural including cranberry bogs and nurseries, commercial, industrial, public service including a fire station and a church, and residential.



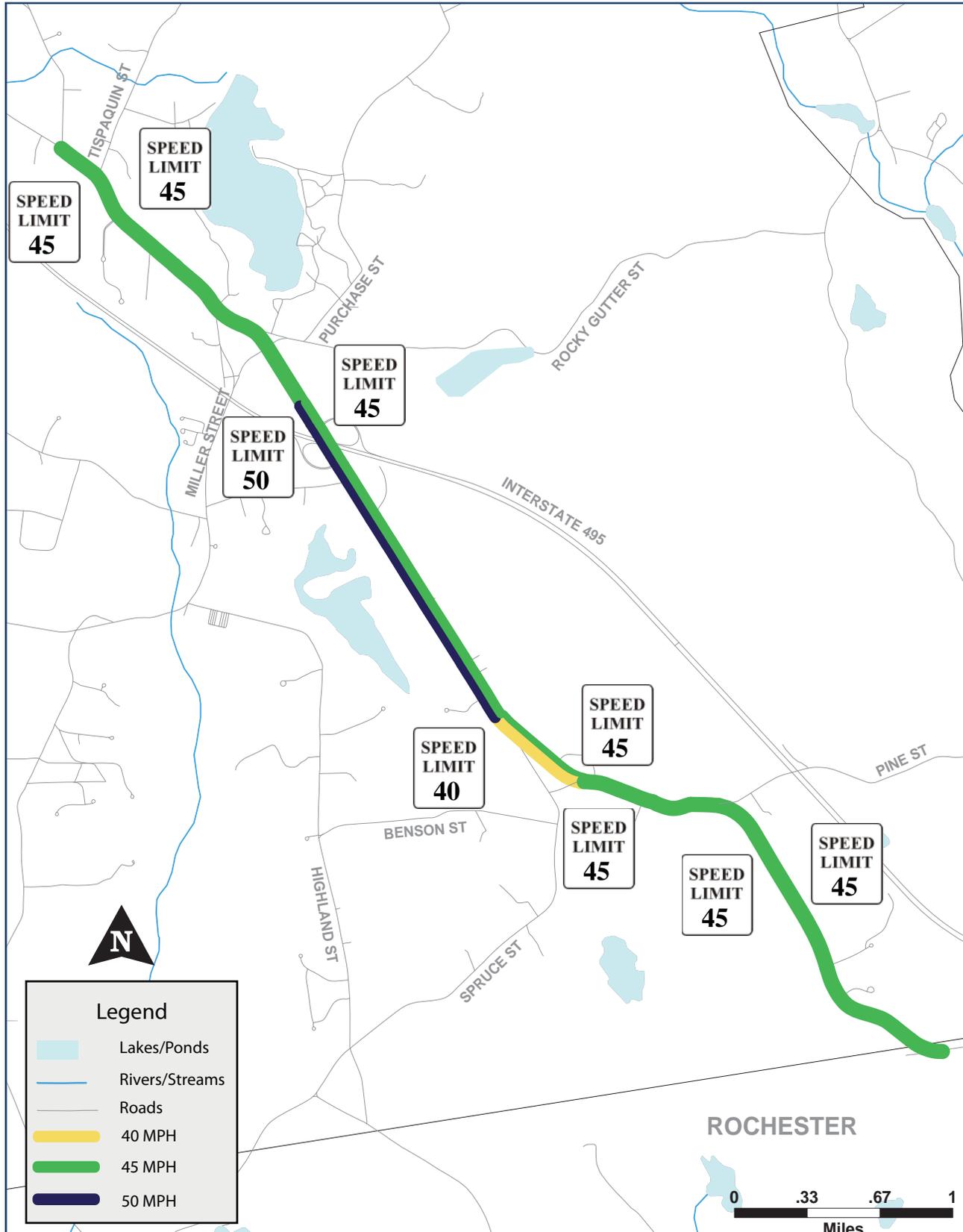
Currently there are no pedestrian or bicycle accommodations for Section 1; however pedestrians and bicyclists have been observed using the shoulder. A double yellow centerline identifies no passing zones for the majority of the section. There are a few segments striped for passing. This section is relatively straight with a few large curves. A typical cross section of Section 1 is shown in Figure 3.

Figure 3: Typical Cross Section for Section 1



Speed limit signs are posted along both sides of Section 1 consistent with the MassDOT Special Speed Regulation #469 (see Appendix B). In the northbound direction, the speed limit is posted at 4 locations while in the southbound direction the speed limit is posted at 5 locations. Figure 4 displays a map of the posted speed limits and approximate locations of all speed limit signs for Section 1.

Figure 4: Wareham Street Section 1 Speed Limits



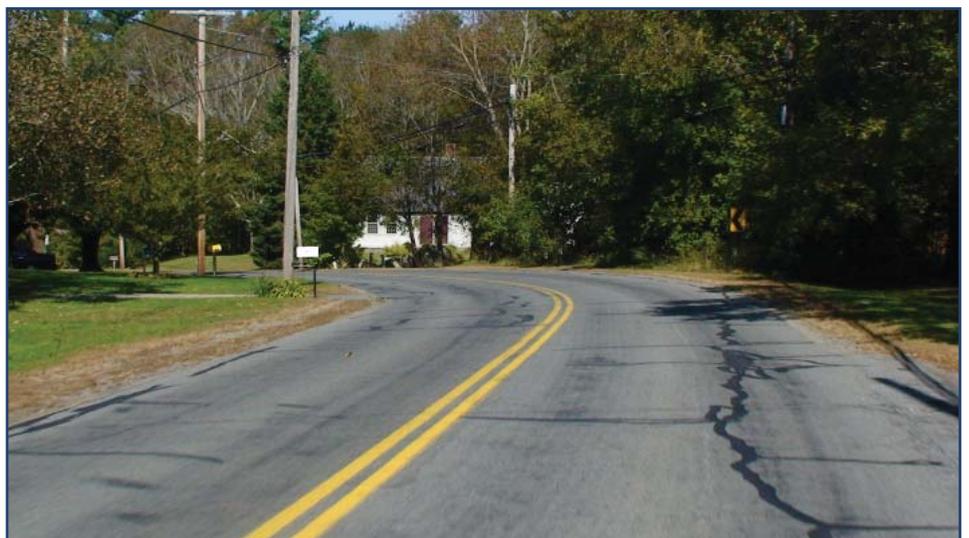
A 2008 SRPEDD Pavement condition survey for Section 1 indicates that the pavement is in fair condition, but also notes an extensive utility patch resulting from a water main replacement project from Locust Street to East Grove Street that is in poor condition. Due to its size, location, and condition, this utility patch contributes to an uncomfortable ride for motorists traveling northbound as shown in Figure 5. Due to this uneven patch, drivers have been observed traveling very close to the edge or center of the road or even leaving the travel lane to avoid the patch. This can have serious consequences such as head on collisions or striking objects close to the road. As this section is under the jurisdiction of MassDOT, any future paving projects would be their responsibility.

*Figure 5: Large Utility Patch on Section 1*



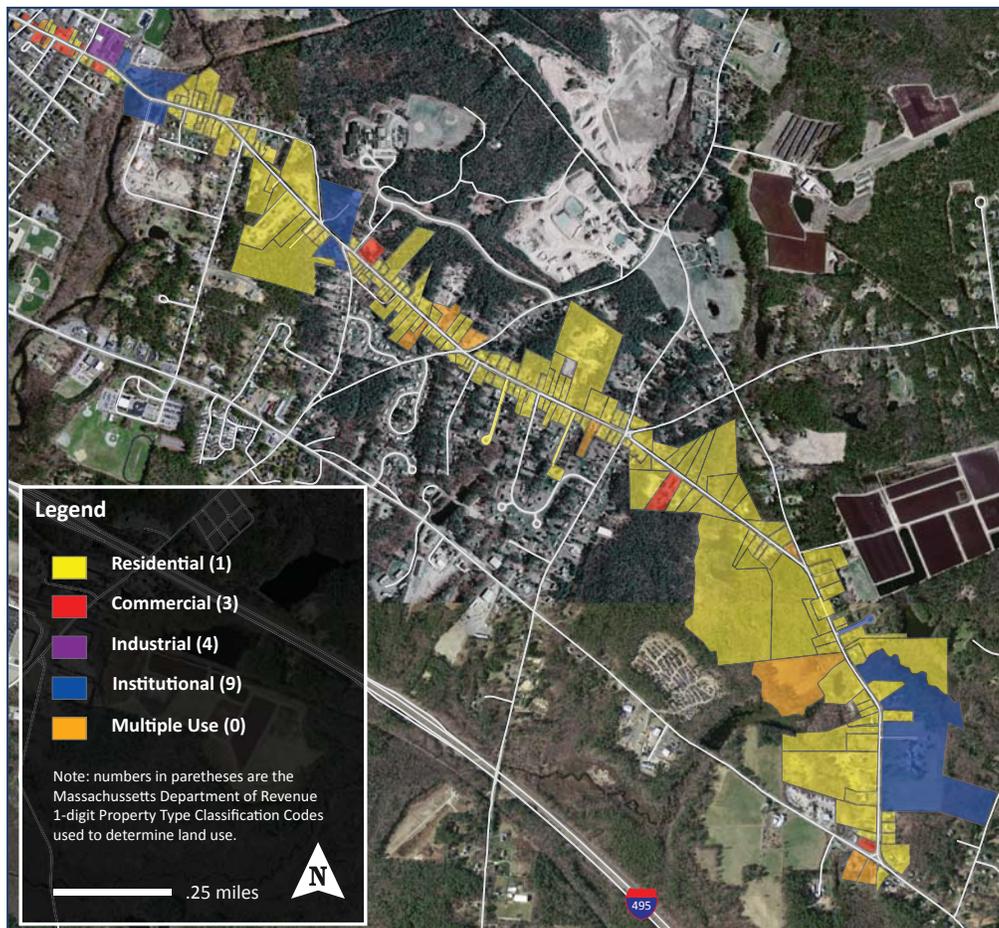
The second section (Section 2) is under the jurisdiction of the Town of Middleborough and extends 2.74 miles from the intersection with East Grove Street northerly to South Main Street (Route 105). A typical cross section of Section 2 is shown in Figure 6.

*Figure 6: Cross Section for Section 2*



Land use along Section 2 is mainly residential with some commercial, industrial and public uses, including the department of public works, the Hannah B. Shaw Home for the Aged and the Thomas Memorial Park. Section 2 also provides access to the John T. Nichols, Jr. Middle School for both motorists and pedestrians. Many students from surrounding neighborhoods use Section 2 to walk to school. A map showing current land use is shown in Figure 7.

Figure 7: Current Land Usage for Section 2



Land use along section 2 is mainly residential with some commercial, industrial and public uses, which includes the department of public works, the Hannah B. Shaw Home for the Aged and the Thomas Memorial Park.

Section 2 has a right-of-way of 50 feet from the intersection with East Grove Street to Heidi Lane, a 60 foot right of way from Heidi Lane to Fairview Street and a 40 foot right of way from Fairview Street to South Main Street. Lane widths for this section vary from 11 to 20 feet. Surface widths vary from 22 to 40 feet and are shown in Figure 10 on page 10. There are 6 foot wide sidewalks in the vicinity of Wood Street and from Fairview Street north to South Main Street (Route 105). There is also a small paved shoulder that has been added along the southbound side extending from approximately Cherry Street to Wood Street that is used as a sidewalk, but is not delineated from travel lane by a curb or a landscaped buffer (see Figure 8). A double yellow centerline signifying no passing exists for the entire length of the section. This section is characterized by numerous sharp curves and inconsistent pavement width.

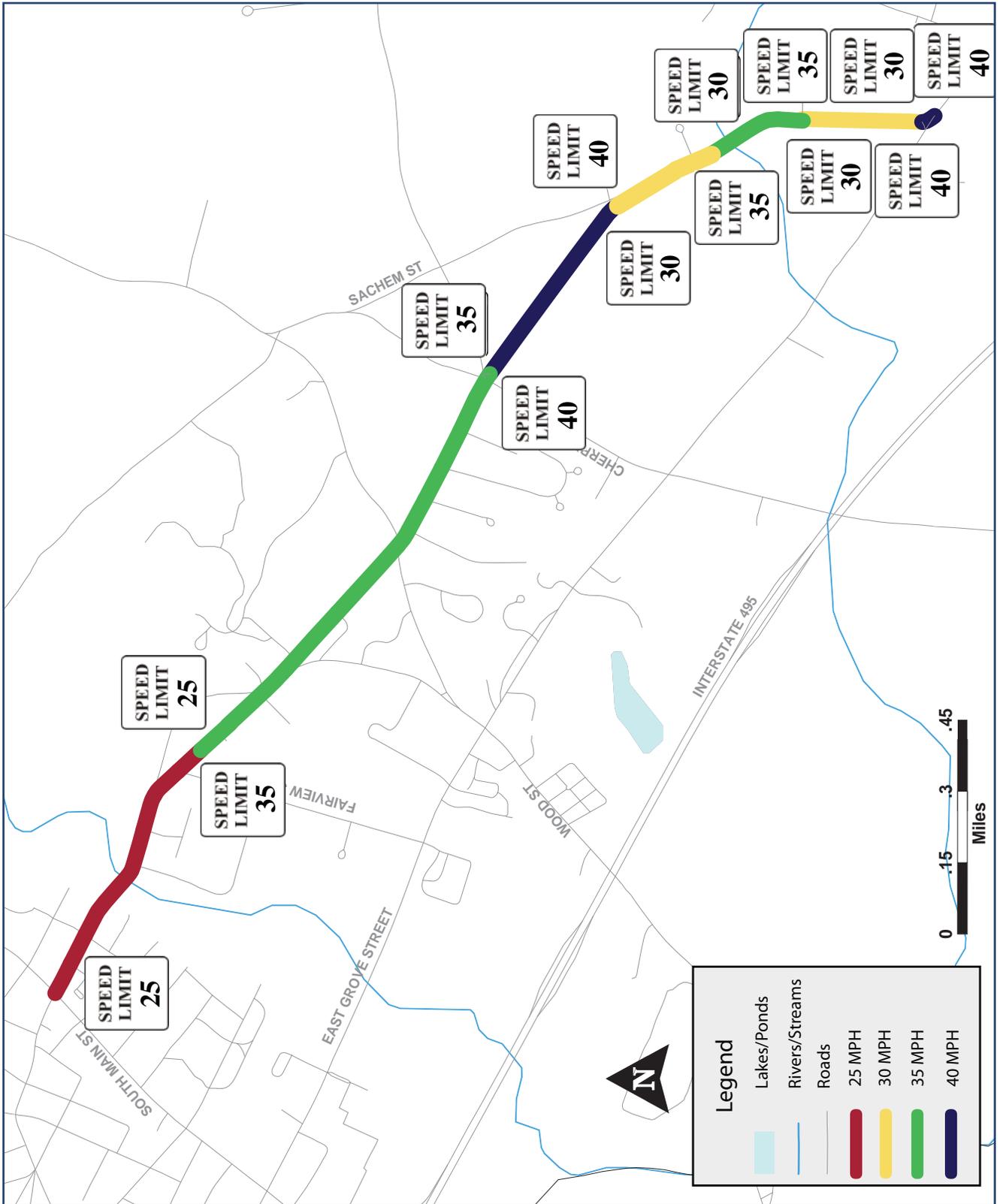
A 2008 SRPEDD pavement condition survey data rated section 2 in poor condition. Since then the town has performed maintenance on the road by applying a chip seal coat, which prevents further deterioration and improves overall rideability.

Figure 8: Pedestrian Shoulder Section 2



Speed limit signs are posted along both sides of Section 2 consistent with the MassDOT Special Speed Regulation #469 dated July 2, 1969 (see Appendix B). Northbound and Southbound the speed limit is posted at 7 locations. Figure 9 displays a map of the posted speed limits and approximate locations of all speed signs for section 2. The speed limit changes 7 times in a very short distance, which can be confusing and frustrating for the motorists traveling on Section 2.

Figure 9: Wareham Street Section 2, Speed Limits (Special Speed Regulation #469)



Traffic and speed data was collected in 2010 using automatic traffic counters (ATRs) at 2 locations; south of Cherry Street (Section 2) and north of Katie Drive (Section 1). After applying seasonal correction factors, the average daily traffic volume is 5,700 vehicles per day south on Section 2, and 7,100 vehicles per day on Section 1. Volume and speed reports from the ATR counts are compiled in Appendix C.

## Crash Data

Crash reports were obtained from the Middleborough Police Department. A detailed review of each report was conducted by SRPEDD staff to identify issues that may have contributed to each collision. There were a total of 29 crashes characterized as lane departure during the study period, 10 of which resulted in injury. Appendix D displays a summary of crash statistics including time of day, day of week, weather conditions, light conditions, etc.

The following crash data will be presented in two separate sections Section 1 (MassDOT jurisdiction) and Section 2 (town jurisdiction):

- Section 1 (MassDOT jurisdiction) from the Rochester town line to East Grove Street: There were 16 crashes along this section of the corridor. Figure 10 on page 10 displays the approximate location of the crashes. Ten of those crashes occurred on either a snowy, icy or wet road surface. Additional crash details identified that one vehicle had hydroplaned, two had slid off the road in snowy conditions and one motorist was driving too fast for the condition of the road. There are numerous street lights along this section, and visibility is good in the evening. Half (8) of the crashes occurred between 8 PM and 2 AM. Of these crashes three involved motorists falling asleep and two involved motorists under the influence of alcohol. The principal issues are excessive speed, snow and ice conditions, and motorists actions (falling asleep and operating under the influence of alcohol).
- Section 2 (town jurisdiction) from East Grove Street to South Main Street: There were 13 crashes in this section during the study period. Figure 11 on page 11 displays the approximate location of the crashes along this section of the corridor. Seven of the crashes occurred on a snowy or wet surface. Three crashes involved motorists operating under the influence of alcohol (OUI). Data from two of the crash reports indicated that the driver was speeding. The principle issues along this segment include the curvature of the roadway combined with snow and ice conditions, speed, and motorist actions (OUI).

Figure 10: Wareham Street Section 1 - 2004-2006 Lane Departure Crashes Including Resident Comments

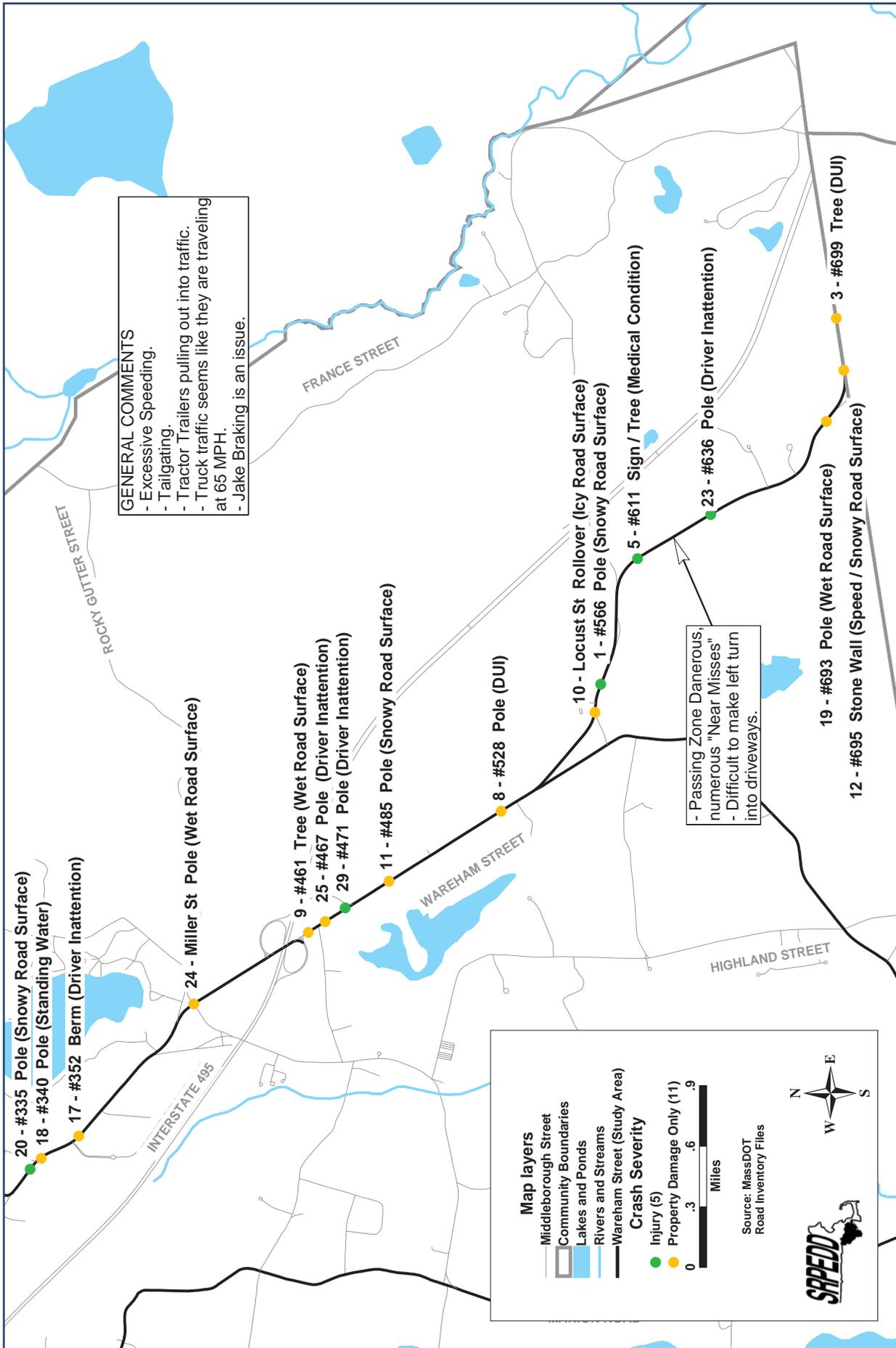
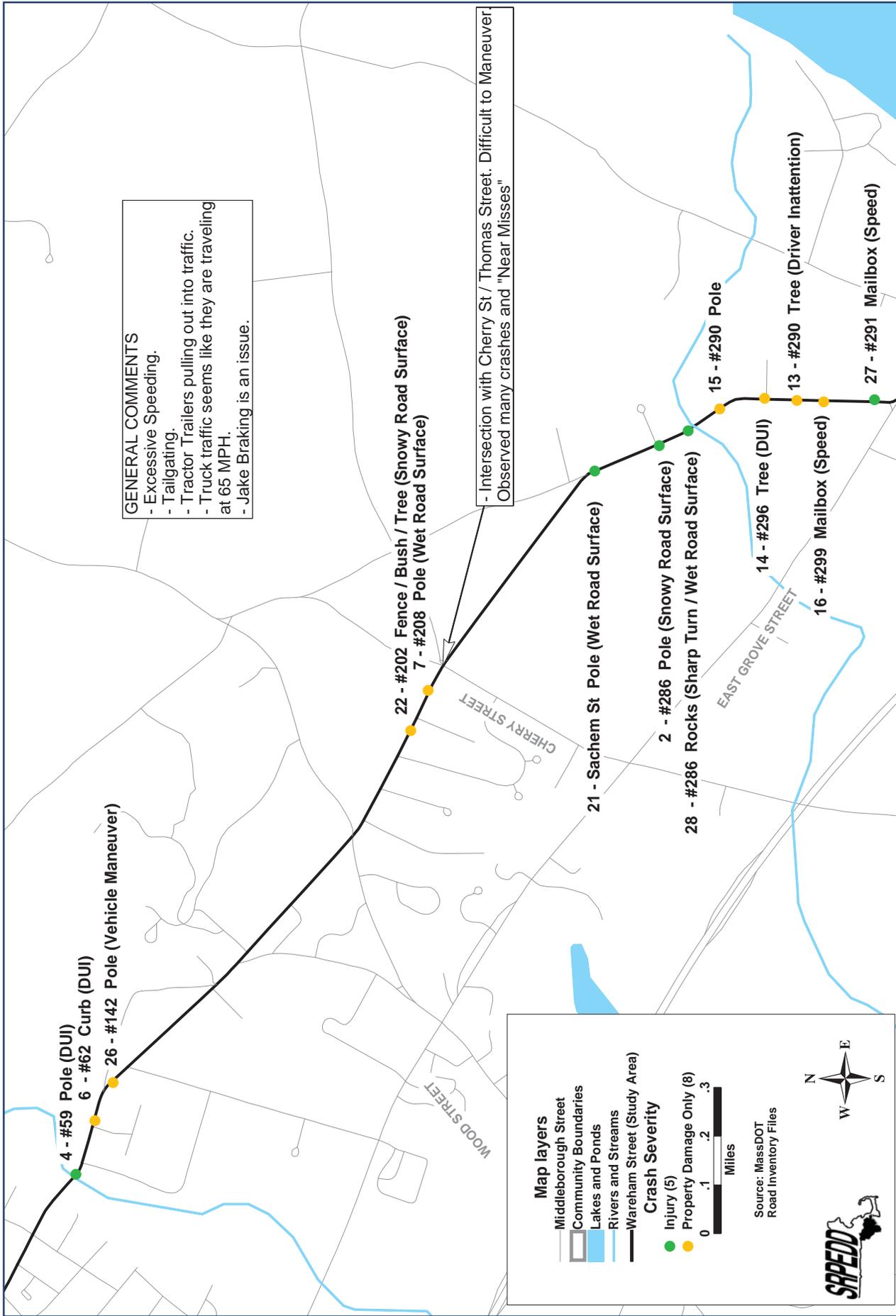


Figure 11: Wareham Street Section 2 - 2004-2006 Lane Departure Crashes Including Resident Comments



SRPEDD provided the Audit Team with specific crash data and a detailed crash location map prior to the meeting. Staff suggested that the audit team visit the corridor prior to the meeting to observe specific crash locations as well as characteristics including curvature, signs, pavement markings, roadside visibility, and any other issues they may consider important. The Audit Team met on March 24, 2011 to review the data and discuss the issues. A video of the corridor was utilized as a visualization of the conditions along Wareham Street, including specific points of interest, frequent crash locations, curves, regulatory and warning signs, pavement markings, etc. The video provided the opportunity for the audit team to pause or replay specific segments of the corridor to point out issues, roadway features, observations and ideas. The following issues were identified through this effort.

Table 2:  
Collisions with Roadside  
Obstructions

Roadside Obstruction	Number of Crashes
Utility Pole	15
Tree	4
Mailbox	2
Fence	1
Rocks	1
Sign	1
Stone Wall	1
Berm	1
Curb	1

**Roadside Obstructions and Horizontal Curves** - Single vehicle collisions with roadside obstructions accounted for 97% (28 crashes) of the lane departure crashes. A significant portion of these crashes, 52% (15 crashes), involved a motorist colliding with a utility pole. A breakdown of these collisions is displayed in Table 2.

There are several curves along the length of Wareham Street, and numerous sharp curves on Section 2. Collisions on these curves totaled 68% (19 crashes) of the lane departure crashes along the corridor. The critical concern is with roadside obstructions located along the edge of curves, particularly with approach speeds too fast to safely negotiate the curves.

The audit team discussed the need to improve the visibility of roadside obstructions due to the high incidence of crashes at night. There were a total of 16 (55%) crashes that occurred at night. Even in locations with adequate lighting, the curvature of the road combined with oncoming headlights can cause motorists to temporarily lose sight of the edge of the road. The lack of adequate reflectors on utility poles and obstructions that are located too close to the edge of the road was discussed at the audit meeting. The utility poles along the corridor are the responsibility of the Middleborough Gas and Electric Department. There was discussion on the need for enhanced delineation of the roadway with the use of signs and pavement markings, especially on the curves. Also discussed was the need for enhanced reflectivity for warning signs, additional chevron signs on the curves and adding edge lines along the length of the corridor. The audit team also discussed the location of passing zones along Section 1 in relation to the curvature of the roadway.

Figure 12:  
Wooden Guardrails



There are two wooden guardrails located over Fall Brook on both sides of the road in Section 2 as shown in Figure 12. These guardrails are outdated in terms of safety and should be replaced in order to meet current standards.

**Excessive Speed** – The Audit Team agreed that speed was an issue along the entire corridor. The average and 85th percentile speed data was collected in 2010 using automatic traffic counters (ATRs) at 2 locations; North of Katie Drive and South of Wood Street. Count locations, the recorded 85th percentile speed and posted speed limits at the count locations are shown in Table 3 on page 13.

The 85th percentile speed is the speed at which 85 percent of the vehicles are traveling at or below. It is also the speed that is typically used to establish

Table 3: Average and 85th Percentile Speeds on Wareham Street

Location	Northbound		Southbound	
	Posted Speed	85 <sup>th</sup> Percentile	Posted Speed	85 <sup>th</sup> Percentile
North of Katie Drive (Section 1)	45 mph	50 mph	50 mph	50 mph
South of Wood Street (Section 2)	35 mph	41 mph	35 mph	44 mph

speed limits, since experience has shown that a speed limit near this value is the maximum safe and reasonable speed for a roadway. The 85th percentile speed on Section 1 shows that motorists are traveling at or near the posted speed limit of 50 mph in the Southbound direction and 45 mph in the Northbound direction at the locations where the count data was collected. 85 percent of motorists on Section 2 are traveling well above the posted 35 mph speed limit in the Northbound and especially the Southbound direction where the count data was collected. It is evident that motorists are ignoring the posted speed limits, possibly due to inconsistent speed zoning. Residents also commented on truck traffic traveling at high speeds.

Massachusetts General Law, Chapter 90 Section 17 states that “No person operating a motor vehicle in any way shall run it at a rate of speed greater than is reasonable and proper”. This is the “basic rule” and applies to all public roads in Massachusetts. Section 17 continues to state that “Exceeding 30 MPH for 1/8 mile in a “thickly settled” area (where houses average less than 200 feet apart for 1/4 mile) is prima facie evidence of unreasonable speed. Analysis of Section 2 shows that it qualifies as a “thickly settled” area, therefore 30 MPH would be an enforceable speed limit for the entire section. The law however, states that radar can not be used to enforce speeding in a “thickly settled” area, which would make it more difficult to enforce speeding.

There are no edge lines along Section 2. Edge lines currently exist along Section 1, and the audit team discussed relocating them to narrow the travel lanes and to decrease the driver’s comfort level, thereby potentially reducing motorists’ travel speeds. Adding or improving edge markings would also help increase the visibility of the roadside, during darkness and adverse weather conditions, particularly along horizontal curves.

Although there are ‘curve ahead,’ ‘chevron’ and ‘arrow’ signs alerting motorists of curves in some locations, there are many locations that do not have any advance warning. In the locations where there is signage, information on a safe travel speed to approach the curves is not provided.

**Inclement Weather** - There were seventeen (61%) lane departure crashes reported on wet, snow and ice covered road surfaces. Section 2 has tree canopy that hinders ice and snow from melting off the roadway according to resident comments. The Middleborough representative revealed that the response time to roadway treatment in Middleborough has been improved recently and that the Highway Department has determined their new strategies are effective.

**Limited Bicycle and Pedestrian Accommodations** – Wareham Street has many pedestrians and bicyclists. Discussion focused on accommodating these users, as well as the potential for adding bike lanes along Section 1.

**Driver Contributing Factors** – Driver inattention, operating under the influence and falling asleep at the wheel were issues discussed by the Audit Team and mentioned by many of the residents along the corridor. Driver inattention is a common problem throughout America, and is becoming more a function of motorists performing additional tasks while operating a vehicle (cell phone use, texting, etc.). In September 2010, Massachusetts passed a law banning texting while driving and restricting cell phone use. The law also prohibits accessing the Internet on a phone or mobile device while driving and bans anyone under the age of 18 from talking on a cell phone while driving. Violators will face fines ranging from \$100 for a first offense and up to \$500 for repeat offenses. Strict enforcement of this law should reduce crashes caused by driver inattention.

There was a high incidence of crashes attributed to operating under the influence (OUI). Three crashes occurred in Section 2 and two crashes occurred in Section 1. The audit team discussed possible causes for this high rate of OUIs and potential solutions, including increased enforcement along the corridor.

There were 3 crashes along Section 1 involving a motorist that fell asleep while driving. All three crashes occurred between 1 and 2 AM. The installation of rumble strips along the edge line would help to keep motorists alert and in the roadway. Care is needed in the placement of rumble strips in proximity to residential properties as they can be quite loud when driven over.

**Intersection Geometry** – There were two intersections in Section 2 with confusing geometry; Wareham Street at Sachem Street and the Thomas, Cherry, and Wareham Street intersection.

Wareham Street at Sachem Street Intersection – As shown in Figure 13, this intersection is formed with Sachem Street meeting Wareham Street at the top point of a sharp curve. There is no indication that Wareham Street is the main road except for the double yellow centerline. Although Sachem Street has a stop

Figure 13: Wareham Street and Sachem Street



Northbound Approach on Wareham Street



Southbound approach on Sachem Street



Large dirt mound

sign, it lacks a stop line. There is also a mound of dirt on the corner of Sachem Street and Wareham Street that is in violation of the town's zoning bylaws and may impede sight distance for vehicles turning onto Wareham Street from Sachem Street.

Wareham Street at Thomas Street and Cherry Street – This is a 5 leg intersection with an island as shown in Figure 14. There is confusion as to which approach has the right-of-way between Thomas and Cherry Street on the westbound approaches to the intersection and there are no stop lines to indicate where approaching motorists should stop. There is a utility pole in a precarious location on the island that separates Thomas Street and Wareham Street. There are also some sight distance issues due to foliage on the eastbound approach on Cherry Street towards Wareham Street.

Figure 14: Wareham Street and Cherry Street/Thomas Street



Southbound Approach



Thomas Street Approach

**Crosswalk Sign** – It was observed by the audit team that there is a crosswalk sign with no pavement markings in the vicinity of the Middleborough Department of Public Works on Wareham Street (see Figure 15). Across the street from the DPW is the Thomas Memorial Park and herring run with a parking lot that is a

Figure 15: Herring Run Crosswalk



popular destination for recreational activities. On the same side as the DPW, there is a boat launch for the Nemasket River. Pedestrians often use this location to access the boat launch from the parking lot across the street. The sign is located immediately north of a curve in the road. It should be noted that this location does not have curb ramps to facilitate a crosswalk.

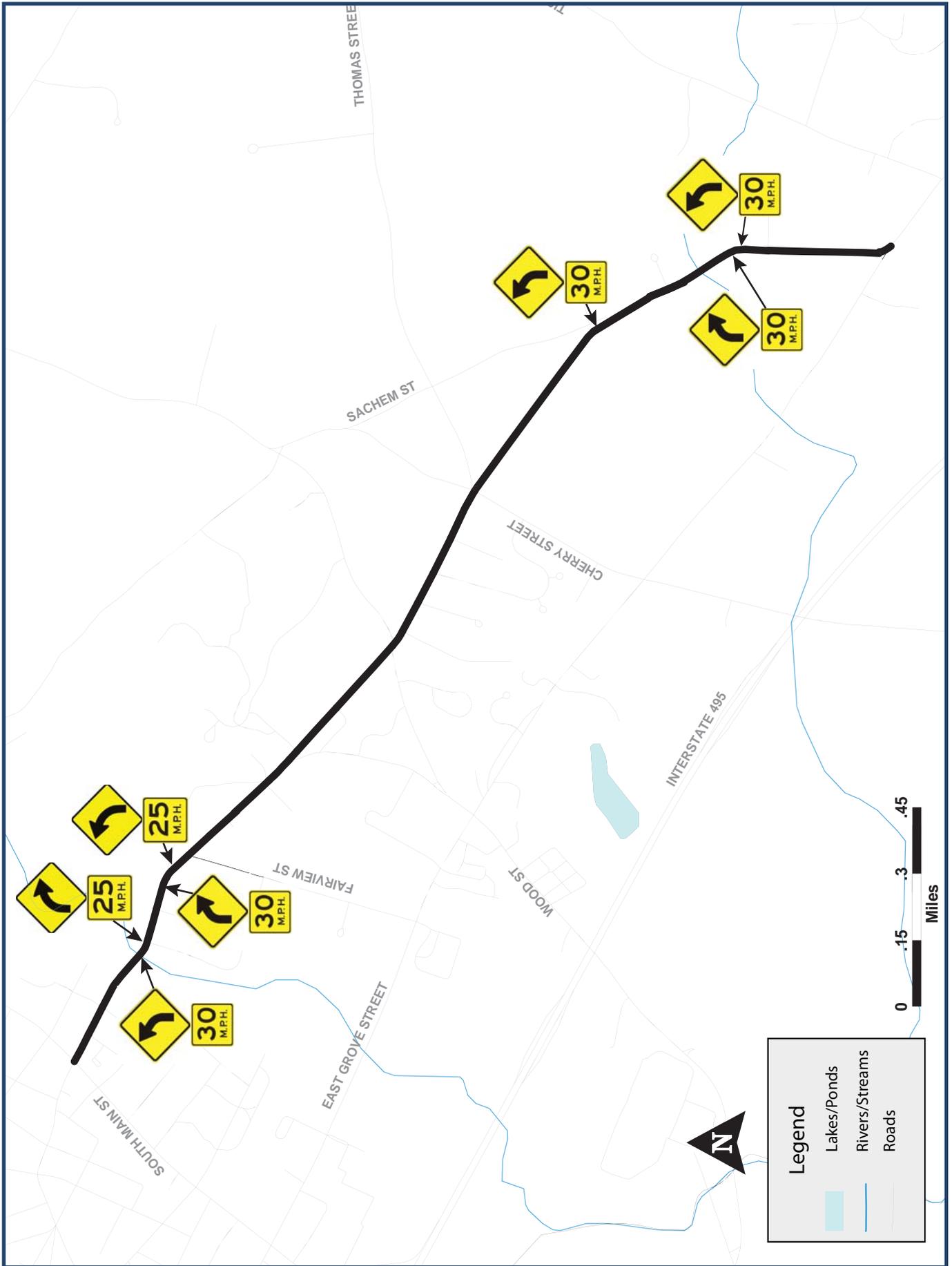
## Road Safety Audit - Improvement Measures for Consideration

The Audit Team discussed various measures to address safety issues identified along the corridor.

**Measures to Improve Delineation of Horizontal Curves** - These measures are intended to reduce the frequency and severity of crashes on the curves along Wareham Street by minimizing the likelihood of vehicles crossing the center line or leaving the roadway. Measures appropriate for Wareham Street include improved advance warning signs, adding edge lines and adding or upgrading pavement markings. Due to the various land uses, the scenic character of the road, and potentially high costs, measures such as straightening the curves are unlikely.

- **Advance Warning Signs** - To improve travel lane and curve delineation as well as to reduce speed, improvements to signs and pavement markings are recommended. Standardized, consistent signage can improve safety on these curves—by improving driver expectation of what is ahead. If similar curves are signed consistently, and if the advisory speeds are set in a consistent manner, then drivers know what lies ahead when they encounter those signs. The safe advisory speed for a curve is the maximum speed which will permit the vehicle to travel the curve in its own lane without causing an uncomfortable side force. Recommended locations and advisory speed limits are shown in Figure 16 on page 17 speeds were determined using a ball bank indicator. A Ball Bank Indicator is an inclinometer that measures the overturning force (side friction, measured in degrees) on a vehicle negotiating a horizontal curve. The signs must also provide appropriate retroreflectivity as defined by the Manual on Uniform Traffic Control Devices (MUTCD) section 2A.09 to enhance visibility.
- Existing chevron/arrow warning signs on the curves should be replaced with signs with proper placement and acceptable retroreflectivity as defined in the MUTCD.
- **Edge Markings (Fog Lines)** – There is a need for edge-of-road delineation to improve roadside visibility and potentially reduce speed along Section 2. Installing edge lines in both directions would improve motorists’ recognition of the roadside at night and during adverse weather conditions, particularly along horizontal curves. These lines also provide the effect of narrowing the travel lane and may result in a decrease in travel speed along the road, especially in the vicinity of curves.
- **Embedded Pavement Markings** - Installation of reflective raised markings embedded in the centerline of the road for the approach and through the length of the curve is recommended. This will enhance the delineation and reduce the potential for crossover incidents. This measure should be considered for Section 1 in conjunction with any upcoming paving projects.

Figure 16: Wareham Street Recommended Advisory Speed Limits and Locations



**Measures to Address Roadside Obstructions** - There are several strategies for minimizing crashes with fixed objects along the roadside. These strategies include removing or relocating the objects to improving the visibility of the objects.

- **Installation of Reflectors** - This measure involves installation of reflectors on roadside obstructions such as utility poles or any obstruction that is located too close to the edge of the road. Most utility poles along Wareham Street do not have reflectors or have inadequate reflectors. The Middleborough Gas and Electric Department should be contacted to determine if reflectors can be upgraded or installed on all utility poles. This is especially important due to the high number of collisions with utility poles along the corridor.
- **Obstruction Removal/Relocation** - MassDOT and the town of Middleborough should consider the removal of a limited number of trees along the corridor. The selection of these trees should be made based on precarious locations along curves and/or their likelihood of being struck. This includes trees that have visible damage from previous collisions. The town should also work with utility companies to arrange for the relocation of a limited number of utility poles along the corridor. Arrangements should also be made to insure that when poles are replaced, they are placed as far away as possible from the edge of the roadway pavement.
- **Wooden Guardrails** - The wooden guardrails over Fall Brook on Section 2 should be upgraded to meet current safety standards. To retain the scenic character of the area, they could be replaced with steel backed timber rail consistent with the 2008 Edition of the MassHighway Design Guide Chapter 5 Section 5.6.2.2. An example is shown in Figure 17. The cost premium may be an important consideration as this could be more costly than a traditional guardrail.

Figure 17:  
Steel Backed Timber Rail



**Speed Reduction Measures** - To reduce vehicle speed along the corridor, the town should consider implementation of the following measures.

- **Enforcement** - Strict enforcement of excessive speeding by the Middleborough Police should continue along the corridor. A repeated police presence on Wareham Street would identify it as an area heavily patrolled by the local police. Enforcement is difficult in some locations, especially Section 2, because of the curvature of the road and lack of an adequate clear zone along the roadside, therefore traditional enforcement could be focused to straight-aways. Speed trailers could also be used to make motorists more aware of the speed they are traveling in relation to the posted speed limit. Camera enforcement to allow remote ticketing of violators would be effective along this segment; however this measure is not currently available in Massachusetts.
- **Speed Zoning** – The town could consider rescinding the current speed zone regulation for Section 2 by requesting a new regulation identifying this section as “thickly settled.” This would first require approval through the Board of Selectmen and then approval from the MassDOT Highway Division District 5 and Boston. It is important to remember that radar can not be used. A motorist must be observed exceeding a speed greater than 30 mph for a minimum of 1/8 of a mile before they can receive a violation.

- **Advisory Speeds** – The use of advisory curve and speed signs would be beneficial to inform motorists to the travel speed on the curves throughout this corridor. Posting of these signs, as shown in Figure 16, would require input from MassDOT as to the appropriate advisory speeds and locations. Also, signs should provide appropriate retroreflectivity as defined by the Manual on Uniform Traffic Control Devices (MUTCD) section 2A.09.
- **Edge Lines** – The addition of edge lines in section 2 should be considered to help decrease speeds by reducing the travel lane width and therefore decreasing the drivers comfort level along the road. Consideration should also be given to moving edge lines closer to the center of the road in Section 1 to reduce the travel lane as well as accommodate a bicycle lane.
- **Optical Speed Bars** - The Audit Team expressed interest in the possible use of optical speed bars, especially on the approaches to the many dangerous curves. Optical speed bars are a passive speed control measure intended to influence motorists' driving behavior. They are designed to give motorists the illusion that they are driving faster than they actually are. This is done by installing pavement markings perpendicular to the travel lane. As the vehicle passes over them, the lines get closer together, giving the illusion that the vehicle is accelerating. Optical speed bars are currently considered experimental, but have shown some success in reducing average travel speeds in limited instances. Implementation of this measure should follow guidance from the Manual on Uniform Traffic Control Devices (MUTCD) 2009 edition section 3B.22, pages 393-394 and the National Cooperative Highway Research Program (NCHRP) Report 613 section 4.3, page 33. Both the MUTCD and NCHRP Report 613 sections referenced are provided in Appendix D. Before, during, and after installation speed analyses would be necessary to determine the short and long term effectiveness of this measure.

Figure 18:  
Optical Speed Bars



**Measures to Improve Conditions in Inclement Weather**- These measures are intended to reduce the frequency and severity of crashes by minimizing the likelihood of vehicles crossing the center line or leaving the roadway. Measures include providing improved drainage structures and ice prevention/melting measures. Middleborough has already taken steps to improve ice prevention and snow melting measures throughout the town which should also improve conditions along Wareham Street.

The Town should also review the condition of surrounding trees along the corridor to consider removal of overhanging branches that block sunlight. This may help to reduce icing conditions due to the canopy of branches that prevent sunlight from melting surface ice. Sanding should be done as needed to mitigate icing along the corridor.

**Measures to Improve Bicycle and Pedestrian Accommodations** - A formal sidewalk should be provided on Section 2 in the vicinity of the John T. Nichols Middle School to allow students to safely walk to school. Consideration should be given to partnering with the Massachusetts Safe Routes to School Program, which provides technical assistance and infrastructure funding to schools to enhance safety along school routes.

Ideally, sidewalks as well as a bike path or lane should be located along all of Wareham Street. Surface widths on Section 1 are more than adequate to

provide sidewalks and bike lanes along both sides of the roadway. The addition of bike lanes and/or sidewalks along Section 1 should be considered with any future paving project. Due to narrowness of the lanes and curvature of some portions in Section 2, ample space may not be available to accommodate these activities, however effort should be made to accommodate bicycle and pedestrian users where space is available.

**Driver Contributing Factors** – These measures are intended to decrease the frequency and severity of crashes along Wareham Street due to driver distraction/inattention, operating under the influence and falling asleep while driving. Measures include increased enforcement and the addition of rumble strips along Section 1.

- **Enforcement of Driver Distraction:** Strict enforcement of Massachusetts cell phone usage and OUI laws by the Middleborough Police should occur along the corridor. A repeated police presence on Wareham Street would identify it as an area heavily patrolled by the local police.
- **Rumble Strips:** Consideration should be given to adding rumble strips along the edge lines of Section 1 to alert vehicles that they are leaving the travel lane by creating a loud noise and strong vibration in the vehicle.

**Intersection Geometry** – The intersections of Wareham Street at Sachem Street and Wareham Street with Thomas Street and Cherry Street were highlighted as having confusing geometry as well as other issues. The following measures are intended to improve driver understanding of the intersection and to reduce the frequency and severity of crashes at these locations.

- Wareham Street at Sachem Street – Measures for this intersection include removing the pile of dirt from the corner of Wareham Street and Sachem Street to increase sight distance, the addition of a stop line at the Sachem Street approach where the stop sign is currently located, and the addition of a sign to clarify the continuance of Wareham Street such as MUTCD

Figure 19: Recommended Sign Locations for Wareham and Sachem Street Intersection



sign W1-10 for the northbound direction and W1-10c for the southbound direction, these signs and recommended placement are shown in Figure 19.

- Wareham Street and Cherry Street/Thomas Street – Measures for this intersection include the removal/relocation of the pole from the island and signage to clarify right-of-way.

**Crosswalk Sign** – The crosswalk sign in the vicinity of the Middleborough Department of Public Works on Wareham Street should have corresponding pavement markings. Due to the lack of adequate curb ramps and the expense associated with construction, the crosswalk sign could be replaced with a “Pedestrian Crossing” sign (MUTCD W11-2) as shown in Figure 20. This would alert motorists to the presence of pedestrians in the area without alluding to the presence of a crosswalk.

Figure 20:  
Recommended Crosswalk Type



Due to the high volume of pedestrians in the area consideration should be given to adding a crosswalk in this location in the future if funds become available. If implemented, the town could consider using a more visible configuration such as shown in Figure 21. This type of crosswalk is considered to be the most visible, and is less likely to fade due to the placement of the lines with respect to the wheel path.

Figure 21:  
Recommended Crosswalk Type



Table 4 summarizes each measure’s potential safety improvement (low, medium, high), time frame to implementation (short, mid-term, long) and relative cost of implementation (low to high).

Table 4: Potential Corrective Measures

Measure	Safety Issue Addressed	Potential Safety Results	Time Frame	Cost
Advisory Speed Signs / Advance Warning Signs	Excessive Speed on Approach to Curves	Low	Short	Low
Add/Improve Sign Retroreflectivity	Roadside / Curve Visibility	Mid	Short	Low
Install Embedded Raised Center Line Markings	Curve Visibility	Mid	Mid	Mid
Move Edge Lines on Section 1	Speed/Bicycle & Pedestrian Accommodations	High	Short	Low
Install Edge Lines on Section 2	Lane Visibility / Reduce Speed Excessive Speed	Mid	Short	Low
Add Reflectors on Trees & Utility Poles	Roadside Visibility	High	Short	Low
Remove Trees / Relocate Utility Poles	Roadside Obstructions	High	Long	Mid
Increase Police Enforcement	Excessive Speed / OUI / Distraction	High	Short	Mid
Speed Trailer	Excessive Speed	Low	Short	Mid
Optical Speed Bars	Excessive Speed	Mid	Mid	Low
Trim Trees	Canopy related icing	Low	Short	Low
Bicycle Lane / Sidewalk	Multimodal Conflicts	Mid	Long	Mid
Rumble Strips	Drivers Falling Asleep	Mid	Short	Mid
Replace missing crosswalk	Pedestrian	Mid	Short	Low
Replace Wooden Guardrail	Roadside Obstruction	Low	Short	Mid

## Recommendations

Numerous issues identified in this report contribute to a high number of crashes and make Wareham Street one of the most dangerous lane departure corridors in southeastern Massachusetts.

Several issues require immediate attention:

- Reflectors should be placed or replaced on immovable roadside obstructions to improve visibility during darkness and inclement weather conditions. Placement on utility poles should be a priority.
- Strict enforcement of excessive speeding and operating under the influence (OUIs) by the Middleborough Police should continue along the corridor. A repeated police presence would identify Wareham Street as an area heavily patrolled by the local police. Enforcement is difficult in some locations along the corridor because of the curvature of the road and lack of an adequate clear zone along the roadside, therefore traditional enforcement should be confined to straight-aways. Portable speed trailers visually display drivers' real-time speeds compared to the speed limit. These devices may be effective in reducing speeds and increasing awareness of local speed limits.
- The crosswalk sign in the vicinity of the Thomas Memorial Park across from the Middleborough DPW should be replaced with a Pedestrian Crossing (MUTCD W11-2) sign. Consideration could be given in the future to adding a crosswalk in this location with pavement markings, signage and curb ramps.
- A formal sidewalk should be installed along Section 2 where necessary to provide a safe walking route to school for students in the area. The School Department should work with MassRIDES to become a partner of the Massachusetts Safe Routes to School Program for the John T. Nichols Middle School as well as all the schools in Middleborough.
- Consideration should be given to rescinding the current speed zone regulation for Section 2 and requesting a new regulation identifying this section as "thickly settled." This would first require approval through the Board of Selectmen and then approval from the MassDOT Highway Division District 5 and Boston. It is important to remember that radar can not be used. A motorist must be observed exceeding a speed greater than 30 mph for a minimum of 1/8 of a mile before they can receive a violation. This measure should be done in addition to posting advisory speed signs.
- Appropriate advisory signs defined in the Manual on Uniform Traffic Control Devices (MUTCD) should be installed on Section 2 as suggested in Figure 16. Once installed, SRPEDD is available to study the effectiveness of the advisory speed signs in lowering average travel speed. This measure should only be considered if the current speed zoning is rescinded.
- Edge lines could be added in Section 2 to help decrease speeds by reducing the travel lane width and therefore decreasing the drivers comfort level along the road. This would also improve roadside visibility, especially at night and during adverse weather conditions.
- Edge lines in Section 1 should be moved closer to the center of the road

to reduce the travel lane as well as accommodate bicycle lanes and/or sidewalks. This should be considered with any future paving project along this section.

- Reflective raised markings embedded in the centerline of Section 1 should be considered to enhance the delineation of the lanes and reduce the potential for crossover incidents. This measure should be considered for Section 1 in conjunction with any upcoming paving projects.
- Improvements to the Wareham Street at Sachem Street intersection include the addition of a stop line at the Sachem Street approach, the addition of signs to clarify the continuance of Wareham Street as suggested in Figure 20, and the removal of the pile of dirt from the corner of Wareham Street and Sachem Street.
- Improvements to the Wareham Street at Thomas Street and Cherry Street intersection should include the removal or relocation of the pole in the center of the island, the addition of stop lines on the Thomas Street and Cherry Street approaches to clarify stop locations and right-of-way and trimming of foliage blocking sight distance on the Cherry Street eastbound approach.
- MassDOT and the town of Middleborough should consider the removal of a limited number of trees along the corridor. The selection of these trees should be made based on their precarious location to curves or likelihood of being struck. This includes trees that have visible damage from previous collisions. The town should also work with utility companies to arrange for the relocation of a limited number of utility poles along the corridor. Arrangements should also be made to insure that when poles are replaced, they are placed as far away as possible from the edge of the roadway pavement.
- Trees with a thick canopy hanging over the roadway should be trimmed or removed to assist in melting snow and ice on the roadway. Frequent sanding of the roadway should be performed, especially along Section 2 of the corridor to decrease the number of crashes occurring in snow/ice conditions.
- Consideration should be given to installing optical speed bars along segments of the corridor. This measure is currently considered experimental, but has shown to have success in reducing average travel speed in other jurisdictions both nationally and worldwide. Implementation of this measure should follow guidance from the Manual on Uniform Traffic Control Devices (MUTCD) 2009 edition section 3B.22, pg 393-394 and the National Cooperative Highway Research Program (NCHRP) Report 613. Once installed, SRPEDD is available to study the effectiveness of the optical speed bars in lowering average travel speed
- Consideration should be given to installing rumble strips along the edge of Section 1 to alert motorists if they leave the travel lane.
- The Town should consider requiring future developers' participation in constructing improvements such as bicycle and pedestrian accommodations along Wareham Street.

## Follow-up Meeting

Table 5: Audit Team

Name	Affiliation
Andrew Bagas	DPW Director
Charlie Cristello	Town Manager
Ruth Geoffrey	Town Planner
Lance Benjamino	Fire Chief
Paul Mission	SRPEDD
Lisa Estrela-Pedro	SRPEDD
Lilia Cabral	SRPEDD
Jacqueline Schmidt	SRPEDD

A follow-up meeting was held with the audit team on March 20, 2012 at the Middleborough Town Hall. Participants are listed in Table 4. The audit team discussed the draft version of the Middleborough Road Safety Audits with an emphasis on the recommendations presented in the reports. Recommendations discussed and agreed upon by the audit team for Section 1 (town owned section) are shown in Figure 23 and Figure 24 shows recommendations for Section 2. Since a portion of Wareham Street falls under the jurisdiction of MassDOT Highway Division, a consensus was reached that SRPEDD should facilitate a meeting with MassDOT to discuss improvements recommended for this section of roadway. It was agreed that following the receipt of the final draft, the town will develop a project based on the recommendations for approval by the Board of Selectmen. SRPEDD will assist this effort with a presentation of the recommendations at a Board of Selectman’s meeting.

Figure 23: Map of Recommendations for Section 1 of Wareham Street

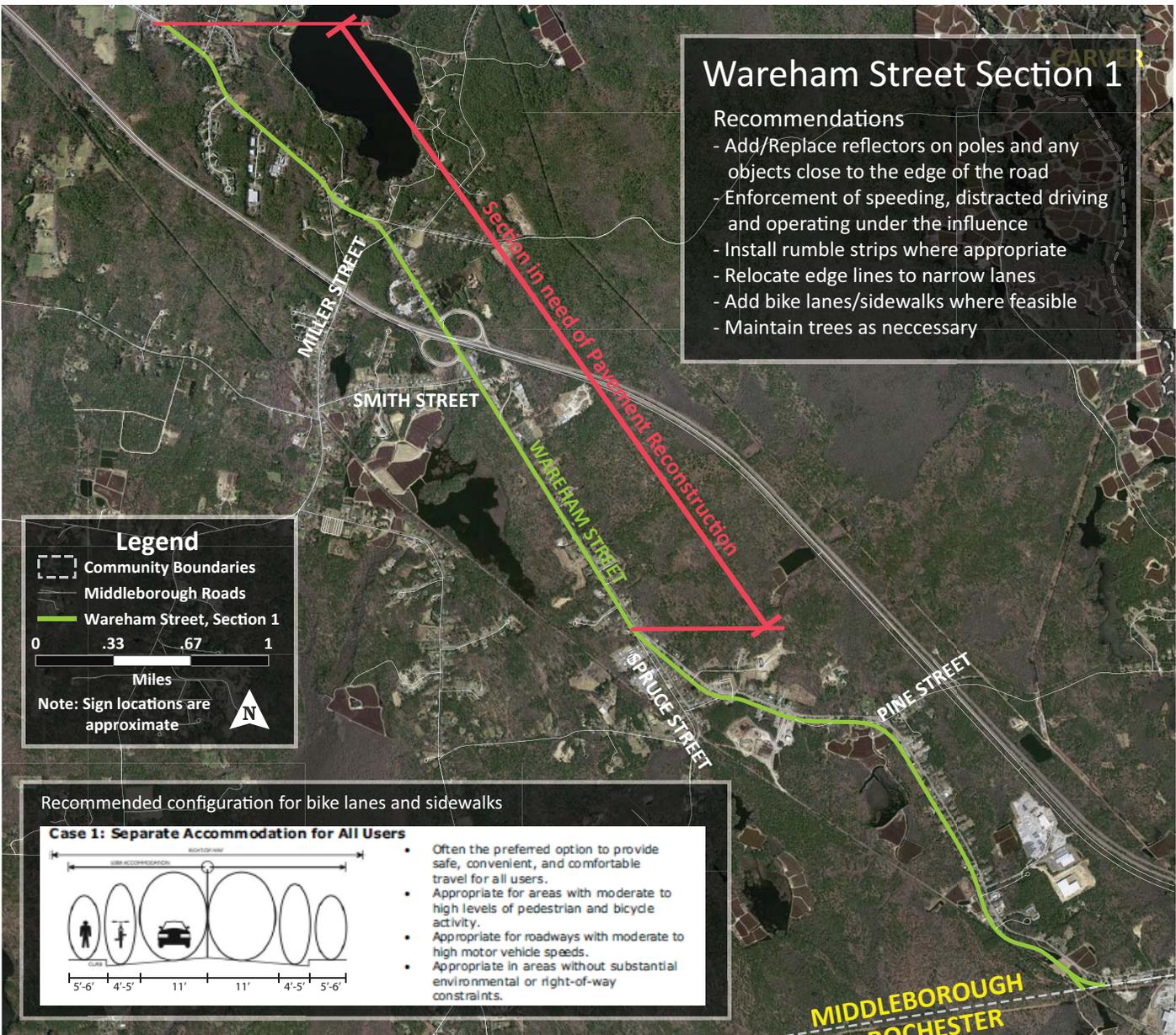
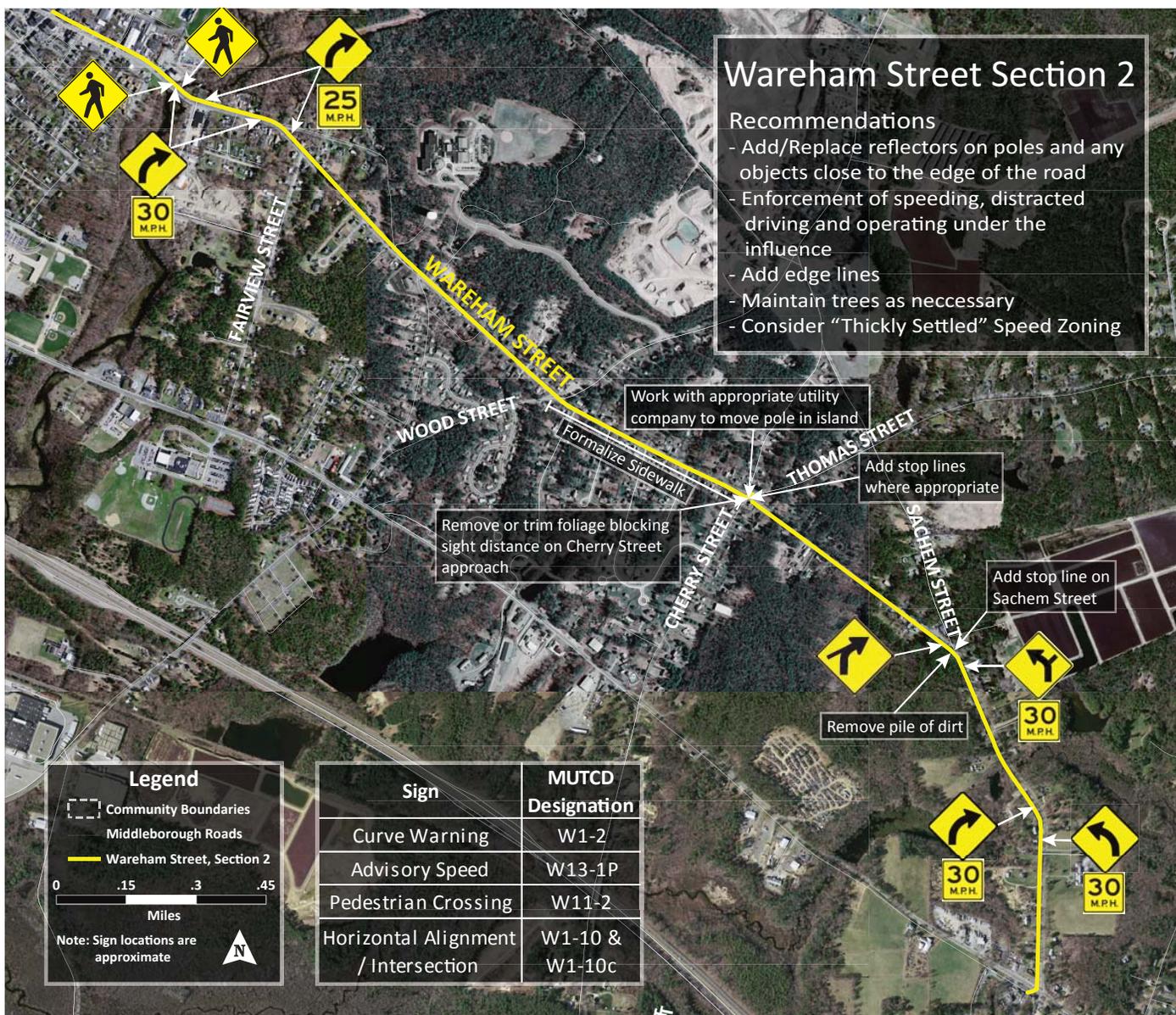


Figure 24: Map of Recommendations for Section 2 of Wareham Street







## Appendix A - Public Outreach

Letter to Wareham Street Residents

Public Notice on the town of Middleborough's Website

Brockton Enterprise Article





SOUTHEASTERN REGIONAL PLANNING & ECONOMIC DEVELOPMENT DISTRICT  
88 BROADWAY ♦ TAUNTON, MA 02780-2557

Acushnet  
Attleboro  
Berkley  
Carver  
Dartmouth  
Dighton  
Fairhaven  
Fall River  
Freetown  
Lakeville  
Mansfield  
Marion  
Mattapoisett  
Middleborough  
New Bedford  
N. Attleborough  
Norton  
Plainville  
Raynham  
Rehoboth  
Rochester  
Seekonk  
Somerset  
Swansea  
Taunton  
Wareham  
Westport

SRPEDD to Conduct Road Safety Audits throughout Southeastern Massachusetts  
Seeking Assistance from Wareham Street, Marion Road and Spruce Street  
Neighborhood Residents

A Road Safety Audit (RSA) is a formal safety performance examination of roads and intersections, conducted by a multi-disciplinary team of professionals with expertise in areas such as engineering, roadway maintenance, law enforcement, land-use and emergency response. The purpose of an RSA is to identify potential safety issues and possible opportunities for safety improvements, with the ultimate goal of saving lives and reducing injuries on our roads.

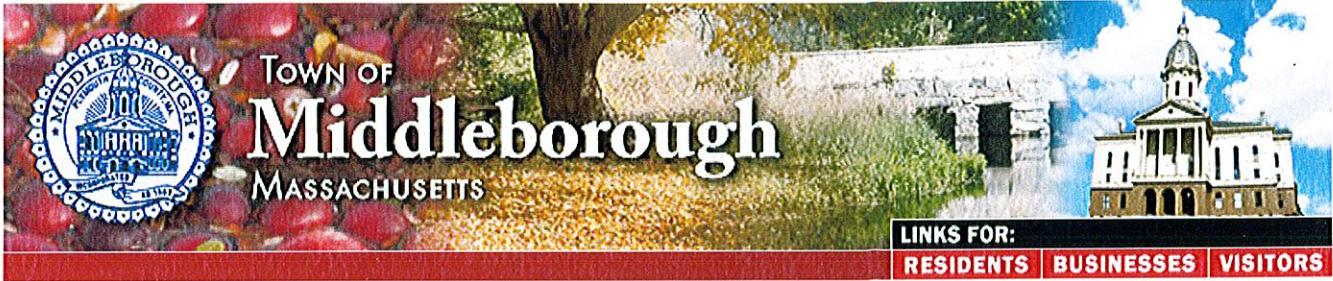
The focus of this effort is to address lane departure crashes. Lane departure crashes are generally single vehicle collisions where the motor vehicle leaves the travel lane and collides with a fixed roadside object (such as a tree or utility pole), overturns along a roadside embankment, or crosses the center line striking an oncoming vehicle traveling in the opposite direction. According to the University of Massachusetts' MassSafe program, lane departure crashes account for 19% of all crashes, but 25% of all incapacitating injury crashes and nearly half of all fatal crashes.

The alarming number of deaths and serious injuries resulting from these single vehicle 'run-off-the-road' type crashes has placed a focus on identifying and ultimately addressing the nature of these tragic crashes. Massachusetts' Strategic Highway Safety Plan (SHSP) has a goal to achieve a 20% reduction in deaths and serious injuries on our state and local roadways. One of the principal strategies of the SHSP is to identify roadways with the highest frequency of lane departure crashes resulting in injuries and deaths, review specific circumstances contributing to those crashes, and develop and implement strategies to mitigate the safety problems.

The Massachusetts Department of Transportation (MassDOT) has taken a lead role in this effort along with the Southeastern Regional Planning and Economic Development District (SRPEDD). SRPEDD has identified corridors throughout the region with a high occurrence of these crashes and is working with those communities to identify ways to enhance safety. Three of the locations identified are in Middleborough; Wareham Street, Marion Road and Spruce Street. There were 23 crashes between 2004 and 2006 along Wareham Street, 14 along Marion Road where one resulted in a fatality, and 12 along Spruce Street where there was also one resulting in a fatality.

The cooperation and involvement of the community in this endeavor is imperative, including each city/town's police, fire/emergency, highway/DPW and leadership. Assistance from residents and motorists who live along these roads or regularly drive along them is also necessary to gain perspective into the many issues contributing to the danger. To this end **SRPEDD is requesting feedback from the public**, especially those who frequently travel and are familiar with these roads. Please contact SRPEDD if you have ever been involved in a crash or a "near-miss", or have an opinion on a possible flaw along any of these roads. We want your perspective regarding anything about these roads that makes you feel unsafe or may be contributing to crashes. Please contact SRPEDD if you have any comments or suggestions. To contact SRPEDD, please e-mail [lestrela@srpedd.org](mailto:lestrela@srpedd.org) or call Lisa Estrela-Pedro at 508 824-1367 or fax 508 823-1803.

Thank You.



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News & Announcements

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SRPEDD to Conduct Road Safety Audit at the Request of the Town of Middleborough

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### SRPEDD to Conduct Road Safety Audits at the Request of the Town of Middleborough

The Town of Middleborough and SRPEDD (Southeastern Regional Planning and Economic Development District) are seeking assistance from Wareham Street, Marion Road and Spruce Street neighborhood residents. These corridors have been identified as having a high occurrence of lane departure crashes. Assistance from residents and motorists who live along these roads or regularly drive them is necessary to gain perspective into issues contributing to the danger. We want your opinion regarding anything about these roads that makes you feel unsafe or may be contributing to crashes. For more information please visit:

<http://www.srpedd.org/transportation/Middleborough%20Locations%20Resident%20Letter.pdf>

Please contact SRPEDD directly if you have any comments or suggestions. To contact SRPEDD, please e-mail [lestrela@srpedd.org](mailto:lestrela@srpedd.org) or call Lisa Estrela-Pedro at 508 824-1367 or fax 508 823-1803.

Town of Middleborough MA - Town Hall, 10 Nickerson Avenue, Middleborough MA 02346 | [Terms of Use](#)

## Enterprise, The (Brockton, MA)

Estimated printed pages: 2

March 1, 2011

**Section:** News

**Page:** 2

### Life's little moments served up in short order

Chatter

#### SPEAK OUT ABOUT MIDDLEBORO's RISKY ROADS

If you drive around Middleboro, the Southeastern Regional Planning & Economic Development District wants to hear from you. Specifically, the agency is looking for motorists and residents who drive or live along Wareham Street, Marion Road and Spruce Street to tell them about anything they feel is unsafe or contributes to crashes on those roads. The Massachusetts Department of Transportation has identified the roadways in question as having a high frequency of crashes-nearly 50 between 2004 and 2006-with one fatality. The agency will conduct a safety audit on March 24. Those who would like to voice their opinions should e-mail [zlestrela@srpedd.org](mailto:zlestrela@srpedd.org) or call Lisa Estrela-Pedro at 508-824-1367.

#### THRIFTY, BRAVE, CLEAN AND REVERENT

Daniel Noyes, left in photo above, of Stoughton, celebrated earning the rank of Eagle Scout on Saturday. For his service project, he led volunteers in installing 70 garden boxes at Stoughton's veterans memorial squares. In the process, he came across some interesting stories of local military men and women, according to his father. More on those in the coming days.

#### ACTUALLY, WE DIDN't THINK SHE'D BE TALLER IN PERSON

Christophanie Julien of Brockton sidled up to tennis star Venus Williams (official height: 6 feet, 1 inch) for this photo, taken over the weekend at Miami's Sun Life Stadium. Julien, pictured here with Williams and Rueben Bailey of Dorchester, was chosen to attend the Sun Life Rising Star Awards National Summit, a special conference where students from across the country to discuss education problems.

Got an item or photo for us?

· We'd love to feature them in The Enterprise. E-mail is best at [page2@enterprisenews.com](mailto:page2@enterprisenews.com), but you can also send items to Page Two, The Enterprise, 1324 Belmont St., Unit 102, Brockton, MA 02301, or fax them to 508-427-4027.

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# Appendix B - Special Speed Regulation

Special Speed Regulation #469



TOWN OF MIDDLEBOROUGH  
SPECIAL SPEED REGULATION NO. 469

Way Location: MIDDLEBOROUGH  
 Authority in Control: TOWN OF MIDDLEBOROUGH  
 Name of Highway: Wareham, Taunton and Centre Streets

In accordance with the provisions of Chapter 90, Section 18, of the General Laws (Ter. Ed.) as amended, the following Special Speed Regulation is

hereby Adopted  
 by the Board of Selectmen  
 of the Town of Middleborough

That the following speed limits are established at which motor vehicles may be operated in the areas described:

WAREHAM STREET - EASTBOUND

Beginning at North Main Street,  
 thence easterly on Wareham Street,

0.51 miles	at	25 miles per hour			
1.15	"	"	35	"	"
0.37	"	"	40	"	"
0.11	"	"	30	"	"
0.23	"	"	35	"	"
0.12	"	"	30	"	"
0.27	"	"	40	"	"

ending at Route 28,

the total distance being 2.76 miles.

WAREHAM STREET - WESTBOUND

Beginning at Route 28,  
 Thence westerly on Wareham Street,

0.27 miles	at	40 miles per hour			
0.12	"	"	30	"	"
0.23	"	"	35	"	"
0.11	"	"	30	"	"
0.37	"	"	40	"	"
1.15	"	"	35	"	"
0.51	"	"	25	"	"

ending at North

in Street, the total distance being 2.76 miles.

TAUNTON STREET - EASTBOUND

Beginning at Route 28,  
Thence easterly on Taunton Street,  
0.71 miles at 40 miles per hour ending at Centre  
Street, the total distance being 0.71 miles.

TAUNTON STREET - WESTBOUND

Beginning at Centre Street,  
Thence westerly on Taunton Street  
0.65 miles at 40 miles per hour  
0.06 " " 25 " " " ending at Route 28,  
the total distance being 0.71 miles.

CENTRE STREET - EASTBOUND

Beginning at Route 28,  
Thence easterly on Centre Street,  
0.43 miles at 40 miles per hour  
1.13 " " 45 " " "  
0.56 " " 35 " " "  
0.12 " " 25 " " "  
0.68 " " 35 " " "  
0.63 " " 25 " " " ending at North  
Main Street, the total distance being 3.55 miles.

CENTRE STREET - WESTBOUND

Beginning at North Main Street,  
Thence westerly on Centre Street,  
0.63 miles at 25 miles per hour  
0.68 " " 35 " " "  
0.12 " " 25 " " "  
0.56 " " 35 " " "  
1.13 " " 45 " " "  
0.43 " " 40 " " " ending at Route 28,  
the total distance being 3.55 miles.

Operation of a motor vehicle at a rate of speed in excess of these limits shall be prima facie evidence that such speed is greater than is reasonable and proper.

The provisions of this regulation shall not, however, abrogate in any sense Chapter 90, Section 14 of the General Laws (Ter. Ed.).

Date of Session

*Frank W. Stetson*  
*Edward J. Ribbes*  
*George M. Rydler*  
*Robert C. Anderson*  
Board of Selectmen

Attest

*Ruth E. Caswell*  
*John Clark*

COMMONWEALTH OF MASSACHUSETTS  
DEPARTMENT OF PUBLIC WORKS

SPECIAL SPEED REGULATION NO. 469

The Department of Public Works and the Registrar of Motor Vehicles, acting jointly, do hereby certify that this regulation is consistent with public interest.

Standard signs must be erected at the beginning of each zone.

Date: July 2, 1969

By: *Edward J. Ribbes*  
EDWARD J. RIBBES  
Commissioner

*Richard E. McLaughlin*  
Registrar of Motor Vehicles

for Highway Engineering





# Appendix C - Automated Traffic Recorder Data

ATR Volume Data for Wareham Street

ATR Speed Data for Wareham Street



# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/AR/JS  
 F.C./Counter#: R-5/12679  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 South of Wood Street  
 Latitude: 0' 0.000 Undefined

NB	Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
	11/1/10	15	20	25	30	35	40	45	50	55	60	65	70	75	999	*	*	*
	01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 PM	3	3	5	10	38	55	22	1	0	0	0	0	0	0	137	31-40	93
	13:00	8	3	7	10	34	65	20	3	0	0	1	0	0	0	151	31-40	99
	14:00	6	0	9	13	49	80	25	1	0	0	0	0	0	0	183	31-40	129
	15:00	9	9	9	17	54	53	26	1	1	0	0	0	0	0	179	31-40	107
	16:00	6	2	6	18	54	69	32	3	0	0	0	0	0	0	190	31-40	123
	17:00	14	1	7	8	51	105	33	3	1	0	0	0	0	0	223	31-40	156
	18:00	10	5	6	12	67	70	10	1	0	0	0	0	0	0	181	31-40	137
	19:00	5	1	1	5	32	51	9	3	0	0	0	0	0	0	107	31-40	83
	20:00	2	0	3	5	23	24	5	1	0	0	0	0	0	0	63	31-40	47
	21:00	1	0	2	4	10	18	3	1	0	0	0	0	0	0	39	31-40	28
	22:00	0	0	2	3	18	14	4	0	0	0	0	0	0	0	41	31-40	32
	23:00	0	0	1	2	3	3	6	1	0	0	0	0	0	0	16	37-46	10
	Total	64	24	58	107	433	607	195	19	2	0	1	0	0	0	1510		
	Percent AM Peak Vol.	4.2%	1.6%	3.8%	7.1%	28.7%	40.2%	12.9%	1.3%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%			
	PM Peak Vol.	17:00	15:00	14:00	16:00	18:00	17:00	17:00	13:00	15:00	13:00	13:00	17:00	17:00	17:00			
		14	9	9	18	67	105	33	3	1	1	1	223	223				

# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/ARJS  
 F.C./Counter#: R-5/12679  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 South of Wood Street  
 Latitude: 0' 0.000 Undefined

NB	Start Time	15	16	20	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace Speed	Number in Pace
	11/2/10	0	0	0	0	1	1	3	4	0	0	0	0	0	0	0	9	35-44	8
	01:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	2	22-31	1
	02:00	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	22-31	1
	03:00	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	32-41	2
	04:00	1	0	0	1	1	4	8	3	2	1	0	0	0	0	0	21	32-41	13
	05:00	1	1	2	2	2	33	25	9	4	0	0	0	0	0	0	77	31-40	58
	06:00	5	5	3	3	13	50	51	21	2	0	1	0	0	0	0	151	31-40	101
	07:00	5	5	9	9	22	67	100	27	4	0	0	0	0	0	0	239	31-40	167
	08:00	5	3	8	8	13	62	79	30	5	0	0	0	0	0	0	205	31-40	141
	09:00	3	1	5	5	5	27	73	26	2	1	0	0	0	0	0	139	32-41	101
	10:00	0	3	7	7	5	41	71	26	0	1	0	0	0	0	0	154	31-40	112
	11:00	2	0	7	7	12	34	45	17	1	0	0	0	0	0	0	118	31-40	79
	12 PM	2	5	8	8	14	40	58	27	2	0	0	0	0	0	0	156	31-40	98
	13:00	6	1	3	3	10	40	64	26	7	0	0	0	0	0	0	157	31-40	104
	14:00	5	2	6	6	12	45	73	31	2	0	0	0	0	0	0	176	31-40	118
	15:00	13	0	12	12	16	52	74	37	4	2	0	0	0	0	0	210	31-40	126
	16:00	8	2	5	5	4	47	98	45	4	0	0	0	0	0	0	213	31-40	145
	17:00	15	2	7	7	10	80	102	33	3	0	0	0	0	0	0	252	31-40	182
	18:00	6	5	4	4	16	57	52	21	2	0	0	0	0	0	0	163	31-40	109
	19:00	9	0	2	2	13	22	39	17	3	0	0	0	0	0	0	105	31-40	61
	20:00	2	1	1	1	7	12	42	12	2	1	0	0	0	0	0	80	33-42	56
	21:00	2	0	1	1	6	16	17	12	0	1	0	0	0	0	0	55	31-40	33
	22:00	1	1	2	2	2	11	12	4	2	1	0	0	0	0	0	36	31-40	23
	23:00	0	0	0	0	1	3	4	3	1	0	0	0	0	0	0	13	33-42	9
	Total	91	37	89	89	185	746	1091	433	53	8	1	1	0	0	0	2735		
	Percent	3.3%	1.4%	3.3%	3.3%	6.8%	27.3%	39.9%	15.8%	1.9%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%			
	AM Peak	06:00	06:00	07:00	07:00	07:00	08:00	07:00	08:00	08:00	04:00	06:00							
	Vol.	5	5	9	9	22	67	100	30	5	1	1					239		
	PM Peak	17:00	12:00	15:00	15:00	15:00	17:00	17:00	16:00	13:00	15:00	23:00							
	Vol.	15	5	12	12	16	80	102	45	7	2	1					252		

# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/ARJS  
 F.C./Counter#: R-5/12679  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 South of Wood Street  
 Latitude: 0' 0.000 Undefined

NB	Start Time	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	66	70	71	75	76	999	Total	Pace Speed	Number in Pace
	11/3/10	0	0	0	0	0	0	0	0	0	3	4	1	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	6	36-45	4
	01:00	1	0	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	32-41	2
	02:00	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	27-36	3
	03:00	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	28-37	4	
	04:00	0	0	0	0	0	0	0	0	0	12	4	4	0	0	0	0	0	1	0	0	0	0	0	0	0	0	23	31-40	17	
	05:00	2	1	1	1	1	3	24	24	24	28	18	18	20	2	2	0	0	0	0	0	0	0	0	0	0	0	79	31-40	52	
	06:00	8	5	5	5	5	12	34	34	55	55	20	20	20	4	4	0	0	1	0	0	0	0	0	0	0	0	144	31-40	89	
	07:00	13	2	2	12	12	17	82	82	113	113	31	31	31	1	1	0	0	0	0	0	0	0	0	0	0	0	271	31-40	195	
	08:00	18	7	7	9	9	22	62	62	73	73	38	38	38	5	5	0	0	0	0	0	0	0	0	0	0	0	234	31-40	135	
	09:00	4	4	4	4	4	8	22	22	65	65	26	26	26	8	8	0	0	1	0	0	0	0	0	0	0	0	142	34-43	91	
	10:00	3	5	5	6	6	7	31	31	44	44	23	23	23	6	6	0	0	0	0	0	0	0	0	0	0	0	125	31-40	75	
	11:00	1	3	3	0	0	8	39	39	62	62	28	28	28	3	3	0	0	0	0	0	0	0	0	0	0	0	144	31-40	101	
	12 PM	4	4	4	1	1	8	26	26	50	50	33	33	33	6	6	0	0	0	0	1	0	0	0	0	0	0	133	35-44	83	
	13:00	4	0	0	5	5	8	43	43	52	52	29	29	29	4	4	0	0	1	0	0	0	0	0	0	0	0	146	31-40	95	
	14:00	5	1	1	2	2	17	48	48	72	72	29	29	29	2	2	0	0	0	0	0	0	0	0	0	0	0	176	31-40	120	
	15:00	15	2	2	7	7	22	69	69	99	99	64	64	64	6	6	1	1	0	0	0	0	0	0	0	0	0	225	31-40	133	
	16:00	10	0	0	7	7	4	47	47	99	99	41	41	41	3	3	0	0	0	0	0	0	0	0	0	0	0	211	31-40	146	
	17:00	19	4	4	3	3	11	76	76	74	74	30	30	30	3	3	0	0	0	0	0	0	0	0	0	0	0	220	31-40	150	
	18:00	16	8	8	6	6	15	57	57	98	98	19	19	19	1	1	0	0	0	0	0	0	0	0	0	0	0	220	31-40	155	
	19:00	7	1	1	4	4	8	23	23	41	41	25	25	25	2	2	1	1	0	0	0	0	0	0	0	0	0	112	33-42	66	
	20:00	2	1	1	2	2	1	17	17	32	32	7	7	7	2	2	0	0	0	0	0	0	0	0	0	0	0	64	31-40	49	
	21:00	3	0	0	2	2	6	12	12	16	16	11	11	11	3	3	0	0	0	0	0	0	0	0	0	0	0	53	32-41	29	
	22:00	2	3	3	3	3	1	7	7	8	8	6	6	6	1	1	1	1	0	0	0	0	0	0	0	0	0	32	32-41	16	
	23:00	1	2	2	2	2	1	6	6	8	8	3	3	3	3	3	1	1	0	0	0	0	0	0	0	0	0	27	30-39	14	
	Total	138	53	82	179	734	1073	462	462	67	67	4	4	4	1	1	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2797			
	Percent	4.9%	1.9%	2.9%	6.4%	26.2%	38.4%	16.5%	16.5%	2.4%	2.4%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
	AM Peak	08:00	08:00	07:00	08:00	07:00	07:00	08:00	08:00	09:00	07:00	07:00	08:00	08:00	09:00	04:00	0.1%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	07:00		
	Vol.	18	7	12	22	82	113	38	38	8	8	1	1	1	1	1	15:00	15:00	13:00	13:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	271			
	PM Peak	17:00	18:00	15:00	15:00	17:00	16:00	16:00	16:00	12:00	12:00	6	6	6	6	6	15:00	15:00	13:00	13:00	13:00	12:00	12:00	12:00	12:00	12:00	12:00	15:00	15:00		
	Vol.	19	8	7	22	76	99	41	41	6	6	1	1	1	1	1	15:00	15:00	13:00	13:00	12:00	12:00	12:00	12:00	12:00	12:00	12:00	225			



# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/ARJS  
 F.C./Counter#: R-5/12679  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 South of Wood Street  
 Latitude: 0' 0.000 Undefined

SB	Start Time	15	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number in Pace
	11/1/10	15	16	21	26	31	36	41	46	51	56	61	66	71	76			
	01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 PM	4	1	6	9	20	53	50	16	3	0	0	0	0	0	162	36-45	103
	13:00	8	5	4	9	23	57	52	9	1	0	0	0	0	0	168	36-45	109
	14:00	3	1	11	12	37	77	61	10	4	0	0	0	0	0	216	36-45	138
	15:00	8	10	25	26	47	102	53	8	2	0	0	0	0	0	281	34-43	155
	16:00	12	2	5	16	51	142	71	11	1	0	0	0	0	0	311	36-45	213
	17:00	10	8	16	20	66	147	51	8	1	0	0	0	0	0	327	31-40	213
	18:00	8	3	6	12	62	103	47	5	0	0	0	0	0	0	246	31-40	165
	19:00	8	1	5	7	36	65	19	6	0	0	0	0	0	0	147	31-40	101
	20:00	2	4	5	7	19	50	31	3	0	0	0	0	0	0	121	36-45	81
	21:00	1	1	0	6	5	34	18	6	0	0	0	0	0	0	71	36-45	52
	22:00	1	0	3	2	12	24	18	5	1	0	0	0	0	0	66	34-43	42
	23:00	0	1	0	0	6	6	14	2	1	0	0	0	0	0	30	35-44	20
	Total	65	37	86	126	384	860	485	89	14	0	0	0	0	0	2146		
	Percent	3.0%	1.7%	4.0%	5.9%	17.9%	40.1%	22.6%	4.1%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%			
	AM Peak Vol.																	
	PM Peak Vol.	16:00	15:00	15:00	15:00	17:00	17:00	16:00	12:00	14:00						17:00		
		12	10	25	26	66	147	71	16	4						327		

# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/AR/JS  
 F.C./Counter#: R-5/12679  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 South of Wood Street  
 Latitude: 0' 0.000 Undefined

SB	Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Pace	Number	
		15	20	25	30	35	40	45	50	55	60	65	70	75	999	Speed	in Pace	
	11/2/10	0	0	1	0	2	5	3	1	1	0	0	0	0	0	13	34-43	10
	01:00	0	0	2	0	0	3	1	1	0	0	0	0	0	0	7	36-45	4
	02:00	0	0	0	0	0	1	2	1	0	0	0	0	0	0	4	37-46	4
	03:00	0	0	0	1	0	3	3	0	1	0	0	0	0	0	8	34-43	6
	04:00	0	1	0	0	1	3	2	0	0	0	0	0	0	0	7	33-42	6
	05:00	0	0	0	1	2	6	3	2	0	0	0	0	0	0	14	34-43	11
	06:00	3	0	1	6	16	16	17	2	1	0	1	0	0	0	63	33-42	34
	07:00	4	0	2	6	17	30	23	3	0	0	0	0	0	0	85	34-43	53
	08:00	6	2	4	6	23	39	19	8	1	0	0	0	0	0	108	31-40	62
	09:00	5	0	4	4	15	52	25	4	0	0	0	0	0	0	109	36-45	77
	10:00	2	0	4	8	25	50	33	5	0	0	0	0	0	0	127	36-45	83
	11:00	2	2	3	10	28	61	31	8	0	0	0	0	0	0	145	33-42	92
	12 PM	2	2	7	9	39	66	44	8	3	0	0	0	0	0	180	35-44	110
	13:00	2	1	3	7	34	58	43	12	0	1	0	0	0	0	161	36-45	101
	14:00	3	2	5	8	35	64	48	15	1	0	0	0	0	0	181	36-45	112
	15:00	13	0	19	12	34	111	57	13	0	0	0	0	0	0	259	36-45	168
	16:00	5	2	8	12	45	138	83	17	1	1	0	0	0	0	312	36-45	221
	17:00	14	4	7	11	55	141	74	8	1	0	0	0	0	0	315	36-45	215
	18:00	9	2	13	17	54	95	23	6	0	0	0	0	0	0	219	31-40	149
	19:00	10	1	4	4	34	73	44	5	0	1	0	0	0	0	176	36-45	117
	20:00	2	0	6	5	19	61	32	3	1	1	0	0	0	0	130	36-45	93
	21:00	1	4	3	3	26	46	15	3	0	0	0	0	0	0	101	31-40	72
	22:00	0	1	0	3	9	23	14	4	1	0	0	0	0	0	55	35-44	37
	23:00	0	0	1	1	7	9	11	5	1	0	1	0	0	0	36	34-43	20
	Total	83	24	97	134	520	1154	650	134	13	4	2	0	0	0	2815		
	Percent	2.9%	0.9%	3.4%	4.8%	18.5%	41.0%	23.1%	4.8%	0.5%	0.1%	0.1%	0.0%	0.0%	0.0%			
	AM Peak	08:00	08:00	08:00	11:00	11:00	11:00	10:00	08:00	00:00		06:00				11:00		
	Vol.	6	2	4	10	28	61	33	8	1	1	1				145		
	PM Peak	17:00	17:00	15:00	18:00	17:00	17:00	16:00	16:00	12:00	13:00	23:00				17:00		
	Vol.	14	4	19	17	55	141	83	17	3	1	1				315		

# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/ARJS  
 F.C./Counter#: R-5/12679  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 South of Wood Street  
 Latitude: 0' 0.000 Undefined

SB	Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number in Pace	
11/3/10	15:00	15	20	25	30	35	40	45	50	55	60	65	70	75	999	14	35-44	10	
	01:00	0	0	0	1	1	5	5	0	2	0	0	0	0	0	0	9	29-38	5
	02:00	0	0	0	0	0	2	1	0	0	0	0	1	0	0	4	32-41	3	
	03:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	27-36	1	
	04:00	1	0	0	0	0	1	1	2	0	0	0	0	0	0	5	38-47	4	
	05:00	2	1	0	0	3	7	5	6	0	0	0	0	0	0	24	33-42	12	
	06:00	4	0	0	4	11	21	16	4	0	1	0	0	0	0	61	35-44	37	
	07:00	9	0	2	13	22	36	30	5	0	0	0	0	0	0	117	36-45	66	
	08:00	11	2	1	8	20	49	21	7	1	0	0	0	0	0	120	32-41	70	
	09:00	1	1	3	6	9	36	34	9	1	0	0	0	0	0	100	36-45	70	
	10:00	5	2	5	5	16	45	29	10	1	0	0	0	0	0	118	36-45	74	
	11:00	4	0	2	6	14	58	40	11	5	0	0	0	0	0	140	36-45	98	
	12 PM	7	0	2	2	21	58	55	18	2	0	0	0	0	0	165	36-45	113	
	13:00	2	0	9	5	24	55	42	21	1	0	0	0	0	0	159	36-45	97	
	14:00	5	0	3	7	27	78	58	17	1	0	0	0	0	0	196	36-45	136	
	15:00	17	1	11	20	59	78	59	10	1	0	0	0	0	0	256	32-41	138	
	16:00	9	0	5	20	46	124	67	17	2	0	0	0	0	0	290	36-45	191	
	17:00	12	2	10	15	62	143	74	12	0	0	0	0	0	0	330	36-45	217	
	18:00	14	6	13	20	54	123	44	7	0	0	0	0	0	0	281	31-40	177	
	19:00	7	1	9	14	26	62	45	5	0	0	0	0	0	0	169	36-45	107	
	20:00	2	3	4	8	15	52	33	5	2	0	0	0	0	0	124	36-45	85	
	21:00	3	0	3	2	11	32	28	9	1	0	0	0	0	0	89	36-45	60	
	22:00	0	1	4	3	6	12	14	4	1	0	0	0	0	0	45	35-44	26	
	23:00	1	1	2	2	0	13	8	3	1	0	0	0	0	0	31	36-45	21	
	Total	116	21	88	161	449	1094	711	184	22	1	0	1	0	0	2848			
	Percent	4.1%	0.7%	3.1%	5.7%	15.8%	38.4%	25.0%	6.5%	0.8%	0.0%	0.0%	0.0%	0.0%	0.0%				
	AM Peak	08:00	08:00	10:00	07:00	07:00	11:00	11:00	11:00	11:00	06:00	0.0%	02:00	0.0%		11:00			
	Vol.	11	2	5	13	22	58	40	11	5	1		1		140				
	PM Peak	15:00	18:00	18:00	15:00	17:00	17:00	17:00	13:00	12:00					17:00				
	Vol.	17	6	13	20	62	143	74	21	2					330				



# SRPEDD

88 Broadway  
Taunton, MA 02780

Weather: FAIR  
Counted by: CC/ARJS  
F.C./Counter#: R-5/12679  
Town: MIDDLEBORO

Site Code:  
Station ID:  
WAREHAM STREET  
South of Wood Street  
Latitude: 0' 0.000 Undefined

NB, SB	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number	
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	80		Speed	in Pace	
11/1/10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	7	4	11	19	58	108	72	17	3	0	0	0	0	0	299	36-45	180	
13:00	16	8	11	19	57	122	72	12	1	0	1	0	0	0	319	36-45	194	
14:00	9	1	20	25	86	157	86	11	4	0	0	0	0	0	399	32-41	244	
15:00	17	19	34	43	101	155	79	9	3	0	0	0	0	0	460	31-40	256	
16:00	18	4	11	34	105	211	103	14	1	0	0	0	0	0	501	31-40	316	
17:00	24	9	23	28	117	252	84	11	2	0	0	0	0	0	550	31-40	369	
18:00	18	8	12	24	129	173	57	6	0	0	0	0	0	0	427	31-40	302	
19:00	13	2	6	12	68	116	28	9	0	0	0	0	0	0	254	31-40	184	
20:00	4	4	8	12	42	74	36	4	0	0	0	0	0	0	184	31-40	116	
21:00	2	1	2	10	15	52	21	7	0	0	0	0	0	0	110	36-45	73	
22:00	1	0	5	5	30	38	22	5	1	0	0	0	0	0	107	31-40	68	
23:00	0	1	1	2	9	9	20	3	1	0	0	0	0	0	46	36-45	29	
Total	129	61	144	233	817	1467	680	108	16	0	1	0	0	0	3656			
Percent AM Peak	3.5%	1.7%	3.9%	6.4%	22.3%	40.1%	18.6%	3.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%				
Vol.	24	19	34	43	129	252	103	17	4		13:00							
PM Peak	17:00	15:00	15:00	15:00	18:00	17:00	16:00	12:00	14:00		17:00							
Vol.	24	19	34	43	129	252	103	17	4		1							

# SRPEDD

88 Broadway  
Taunton, MA 02780

Weather: FAIR  
Counted by: CC/AR/JJS  
F.C./Counter#: R-5/12679  
Town: MIDDLEBORO

Site Code:  
Station ID:  
WAREHAM STREET  
South of Wood Street  
Latitude: 0' 0.000 Undefined

NB, SB	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Pace	Number	
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Speed	in Pace	
11/2/10	0	0	1	1	3	8	7	1	1	0	0	0	0	0	22	33-42	15
01:00	0	0	2	0	1	3	1	2	0	0	0	0	0	0	9	29-38	4
02:00	0	0	0	0	1	1	3	1	0	0	0	0	0	0	6	34-43	5
03:00	0	0	0	1	0	4	4	0	1	0	0	0	0	0	10	35-44	8
04:00	1	1	1	1	5	11	5	2	1	0	0	0	0	0	28	31-40	16
05:00	1	1	2	3	35	31	12	6	0	0	0	0	0	0	91	31-40	66
06:00	8	5	4	19	66	67	38	4	1	1	1	0	0	0	214	31-40	133
07:00	9	5	11	28	84	130	50	7	0	0	0	0	0	0	324	31-40	214
08:00	11	5	12	19	85	118	49	13	1	0	0	0	0	0	313	31-40	203
09:00	8	1	5	9	42	125	51	6	1	0	0	0	0	0	248	36-45	176
10:00	2	3	11	13	66	121	59	5	1	0	0	0	0	0	281	31-40	187
11:00	4	2	10	22	62	106	48	9	0	0	0	0	0	0	263	31-40	168
12 PM	4	7	15	23	79	124	71	10	3	0	0	0	0	0	336	31-40	203
13:00	8	2	6	17	74	122	69	19	0	1	0	0	0	0	318	31-40	196
14:00	8	4	11	20	80	137	79	17	1	0	0	0	0	0	357	31-40	217
15:00	26	0	31	28	86	185	94	17	2	0	0	0	0	0	469	35-44	279
16:00	13	4	13	16	92	236	128	21	1	0	0	0	0	0	525	36-45	364
17:00	29	6	14	21	135	243	107	11	1	0	0	0	0	0	567	31-40	378
18:00	15	7	17	33	111	147	44	8	0	0	0	0	0	0	382	31-40	258
19:00	19	1	6	17	56	112	61	8	0	1	0	0	0	0	281	35-44	173
20:00	4	1	7	12	31	103	44	5	2	1	0	0	0	0	210	36-45	147
21:00	3	4	4	9	42	63	27	3	1	0	0	0	0	0	156	31-40	105
22:00	1	2	2	5	20	35	18	6	2	0	0	0	0	0	91	31-40	55
23:00	0	0	1	2	10	13	14	6	1	0	0	0	0	0	49	35-44	27
Total	174	61	186	319	1266	2245	1083	187	21	5	3	0	0	0	5550		
Percent	3.1%	1.1%	3.4%	5.7%	22.8%	40.5%	19.5%	3.4%	0.4%	0.1%	0.1%	0.0%	0.0%	0.0%			
AM Peak	08:00	06:00	08:00	07:00	08:00	07:00	10:00	08:00	00:00	06:00	06:00				07:00		
Vol.	11	5	12	28	85	130	59	13	1	1	1				324		
PM Peak	17:00	12:00	15:00	18:00	17:00	17:00	16:00	16:00	12:00	13:00	23:00				17:00		
Vol.	29	7	31	33	135	243	128	21	3	1	2				567		

# SRPEDD

88 Broadway  
Taunton, MA 02780

Weather: FAIR  
Counted by: CC/AR/JJS  
F.C./Counter#: R-5/12679  
Town: MIDDLEBORO

Site Code:  
Station ID:  
WAREHAM STREET  
South of Wood Street  
Latitude: 0' 0.000 Undefined

NB, SB	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Pace	Number
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Speed	in Pace
11/3/10	0	0	0	1	1	8	6	2	2	0	0	0	0	0	35-44	20
01:00	1	0	0	0	2	4	3	2	0	0	0	0	0	0	34-43	12
02:00	0	0	0	0	2	3	1	0	0	0	0	1	0	0	32-41	7
03:00	0	0	0	0	2	3	0	0	0	0	0	0	0	0	29-38	5
04:00	1	0	1	0	5	13	5	2	0	1	0	0	0	0	31-40	28
05:00	4	2	1	3	27	35	23	8	0	0	0	0	0	0	31-40	103
06:00	12	5	5	16	45	76	36	8	0	2	0	0	0	0	31-40	205
07:00	22	2	14	30	104	149	61	6	0	0	0	0	0	0	31-40	388
08:00	29	9	10	30	82	122	59	12	1	0	0	0	0	0	31-40	354
09:00	5	5	7	14	31	101	60	17	1	1	0	0	0	0	36-45	242
10:00	8	7	11	12	47	89	52	16	1	0	0	0	0	0	34-43	243
11:00	5	3	2	14	53	120	68	14	5	0	0	0	0	0	36-45	284
12 PM	11	4	3	10	47	108	88	24	2	0	1	0	0	0	36-45	298
13:00	6	0	14	13	67	107	71	25	1	1	0	0	0	0	34-43	305
14:00	10	1	5	24	75	150	87	19	1	0	0	0	0	0	36-45	372
15:00	32	3	18	42	128	142	98	16	2	0	0	0	0	0	31-40	481
16:00	19	0	12	24	93	223	108	20	2	0	0	0	0	0	36-45	501
17:00	31	6	13	26	138	217	104	15	0	0	0	0	0	0	31-40	550
18:00	30	14	19	35	111	221	63	8	0	0	0	0	0	0	31-40	501
19:00	14	2	13	22	49	103	70	7	1	0	0	0	0	0	31-40	281
20:00	4	4	6	9	32	84	40	7	2	0	0	0	0	0	36-45	188
21:00	6	0	5	8	23	48	39	12	1	0	0	0	0	0	36-45	142
22:00	2	4	7	4	13	20	20	5	2	0	0	0	0	0	36-45	77
23:00	2	3	4	3	6	21	11	6	2	0	0	0	0	0	35-44	58
Total	254	74	170	340	1183	2167	1173	251	26	5	1	1	0	0		5645
Percent	4.5%	1.3%	3.0%	6.0%	21.0%	38.4%	20.8%	4.4%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%		
AM Peak	08:00	08:00	07:00	07:00	07:00	07:00	11:00	09:00	11:00	06:00	02:00	02:00	07:00	07:00		
Vol.	29	9	14	30	104	149	68	17	5	2	1	388	17:00	550		
PM Peak	15:00	18:00	18:00	15:00	17:00	16:00	16:00	13:00	12:00	13:00	12:00	17:00	17:00	17:00		
Vol.	32	14	19	42	138	223	108	25	2	1	1	388	550			

# SRPEDD

88 Broadway  
Taunton, MA 02780

Weather: FAIR  
Counted by: CC/AR/JS  
F.C./Counter#: R-5/12679  
Town: MIDDLEBORO

Site Code:  
Station ID:  
WAREHAM STREET  
South of Wood Street  
Latitude: 0' 0.000 Undefined

NB, SB	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Pace	Number	
Start	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Speed	in Pace	
11/4/10	0	0	0	1	4	11	5	0	0	0	0	0	0	0	21	32-41	16
01:00	0	0	1	0	2	4	3	1	0	0	0	0	0	0	11	34-43	9
02:00	0	0	0	0	0	2	4	1	0	0	1	0	0	0	8	37-46	7
03:00	0	0	0	0	1	3	5	0	1	0	0	0	0	0	10	35-44	8
04:00	0	0	0	0	10	9	5	1	0	0	0	0	0	0	25	31-40	19
05:00	2	2	2	1	23	29	21	5	1	0	0	0	0	0	86	32-41	53
06:00	8	6	7	15	44	93	31	8	2	0	0	0	0	0	214	31-40	137
07:00	11	3	16	35	94	134	52	6	2	1	0	1	1	0	356	31-40	228
08:00	20	7	11	23	90	136	64	9	0	0	0	0	0	0	360	31-40	226
09:00	15	3	11	15	59	88	60	10	0	0	0	0	0	0	261	32-41	148
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	56	21	48	90	327	509	250	41	6	1	1	1	1	0	1352		
Percent	4.1%	1.6%	3.6%	6.7%	24.2%	37.6%	18.5%	3.0%	0.4%	0.1%	0.1%	0.1%	0.1%	0.0%			
AM Peak	08:00	08:00	07:00	07:00	07:00	08:00	08:00	09:00	06:00	07:00	02:00	07:00	07:00	08:00			
Vol.	20	7	16	35	94	136	64	10	2	1	1	1	1	360			
PM Peak																	

Vol.	613	217	548	982	3593	6388	3186	587	69	11	6	2	1	0	16203
Percent	3.8%	1.3%	3.4%	6.1%	22.2%	39.4%	19.7%	3.6%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	
Stats	10 MPH Pace Speed : 31-40 MPH														
	Number in Pace : 9981														
	Percent in Pace : 61.6%														
	Number of Vehicles > 55 MPH : 20														
	Percent of Vehicles > 55 MPH : 0.1%														
	Mean Speed(Average) : 36 MPH														

# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/AR/JS  
 F.C./Counter#: R-5/19443  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 North of Katie Drive  
 Latitude: 0' 0.000 Undefined

Start Time	01-Nov-10		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	18	20	11	18	7	29	*	*	*	*	*	*	12	22
01:00	*	*	2	9	8	14	4	12	*	*	*	*	*	*	5	12
02:00	*	*	2	9	5	13	8	15	*	*	*	*	*	*	5	12
03:00	*	*	10	15	9	10	14	17	*	*	*	*	*	*	11	14
04:00	*	*	33	19	28	14	29	18	*	*	*	*	*	*	30	17
05:00	*	*	124	41	134	40	130	40	*	*	*	*	*	*	129	40
06:00	*	*	229	96	215	87	89	40	*	*	*	*	*	*	219	91
07:00	*	*	339	171	306	144	311	155	*	*	*	*	*	*	319	157
08:00	*	*	286	192	273	143	254	145	*	*	*	*	*	*	271	160
09:00	*	*	244	181	186	151	190	131	*	*	*	*	*	*	207	154
10:00	*	*	225	219	165	181	*	*	*	*	*	*	*	*	195	200
11:00	*	*	213	221	171	160	*	*	*	*	*	*	*	*	192	190
12:00 PM	187	190	232	238	173	182	*	*	*	*	*	*	*	*	197	203
01:00	178	191	244	248	193	204	*	*	*	*	*	*	*	*	205	214
02:00	202	218	233	283	206	240	*	*	*	*	*	*	*	*	214	247
03:00	215	310	237	346	209	267	*	*	*	*	*	*	*	*	220	308
04:00	223	333	307	402	238	345	*	*	*	*	*	*	*	*	256	360
05:00	221	325	307	462	206	304	*	*	*	*	*	*	*	*	245	364
06:00	142	266	243	343	159	308	*	*	*	*	*	*	*	*	181	306
07:00	86	148	155	261	112	161	*	*	*	*	*	*	*	*	118	190
08:00	64	109	105	108	88	141	*	*	*	*	*	*	*	*	86	119
09:00	53	88	64	84	61	109	*	*	*	*	*	*	*	*	59	94
10:00	36	42	35	55	31	62	*	*	*	*	*	*	*	*	34	53
11:00	15	36	10	40	21	31	*	*	*	*	*	*	*	*	15	36
Lane	1622	2256	3897	4063	3208	3329	1159	651	0	0	0	0	0	0	3425	3563
Day	3878	7960	7960	7960	6537	6537	1810	1810	0	0	0	0	0	0	6988	6988
AM Peak	07:00	11:00	07:00	10:00	07:00	10:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00	07:00	10:00
Vol.	339	221	306	181	155	155	311	155	319	319	319	319	319	319	319	200
PM Peak	16:00	17:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	16:00	17:00
Vol.	223	307	307	462	238	345	345	345	256	256	256	256	256	256	256	364

Comb. Total 3878 7960 6537 1810 1810 0 0 0 0 0 0 0 0 0 0 6988

ADT 7,248  
 ADT 7,248  
 AADT 7,248

*AVTD = 6922*  
*FAE = 1.02(MA)*  
*FST = 7100*

# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/AR/JJS  
 F.C./Counter#: R-5/19443  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 North of Katie Drive  
 Latitude: 0' 0.000 Undefined

NB	Start Time	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	4 Axle Single	5 Axle Single	6 Axle Single	5 Axle Multi	6 Axle Multi	7 Axle Multi	Total
	11/2/10	12	4	0	1	0	0	0	1	0	0	0	0	18
	01:00	0	1	0	1	0	0	0	0	0	0	0	0	2
	02:00	0	1	0	0	0	0	0	0	0	0	0	0	2
	03:00	0	2	0	0	0	0	0	2	0	0	0	0	10
	04:00	0	12	1	0	0	0	0	2	0	0	0	0	33
	05:00	0	39	0	9	2	0	0	2	0	0	0	0	124
	06:00	1	68	1	15	3	0	0	6	0	0	0	0	229
	07:00	0	62	5	13	2	0	0	9	1	0	0	0	339
	08:00	0	63	3	8	2	1	0	10	1	0	0	0	286
	09:00	0	64	3	11	3	0	0	7	0	0	0	0	244
	10:00	0	54	5	9	5	0	0	5	1	0	0	1	225
	11:00	2	48	1	12	6	1	2	4	0	0	0	0	213
	12 PM	1	57	1	16	5	0	1	7	3	0	0	1	232
	13:00	2	45	2	16	4	0	0	9	0	0	0	0	244
	14:00	1	59	4	11	3	0	0	6	0	0	0	0	233
	15:00	0	63	1	17	2	0	0	6	0	0	0	0	237
	16:00	1	75	0	17	3	0	0	9	0	0	1	0	307
	17:00	1	66	1	11	2	0	0	2	0	0	0	0	307
	18:00	1	59	1	13	0	0	0	3	0	0	0	0	243
	19:00	2	37	0	6	0	0	0	2	0	0	0	0	155
	20:00	0	24	0	5	1	0	0	3	0	0	1	0	105
	21:00	0	17	1	2	0	0	0	0	0	0	0	0	64
	22:00	0	6	0	0	0	0	0	0	0	1	0	0	35
	23:00	0	3	0	0	0	0	0	0	0	0	1	0	10
Day Total		12	2549	30	193	43	2	31	95	6	2	3	2	3897
Percent		0.3%	65.4%	0.8%	5.0%	1.1%	0.1%	0.8%	2.4%	0.2%	0.1%	0.1%	0.1%	
AM Peak		11:00	07:00	07:00	06:00	11:00	08:00	09:00	08:00	07:00	08:00	07:00	10:00	07:00
Vol.		2	244	5	15	6	1	5	10	1	10	1	1	339
PM Peak		13:00	17:00	14:00	15:00	12:00	17:00	12:00	13:00	12:00	17:00	16:00	12:00	16:00
Vol.		2	218	4	17	5	5	5	9	3	1	1	1	307

# SRPEDD

88 Broadway  
Taunton, MA 02780

Weather: FAIR  
Counted by: CC/AR/JJS  
F.C./Counter#: R-5/19443  
Town: MIDDLEBORO

Site Code:  
Station ID:  
WAREHAM STREET  
North of Katie Drive  
Latitude: 0' 0.000 Undefined

NB Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	4 Axle Single	5 Axle Single	6 Axle Single	6 Axle Multi	7 Axle Multi	Total
01:00	0	3	0	0	0	0	0	0	0	0	0	0	4
02:00	0	7	1	0	0	0	0	0	0	0	0	0	8
03:00	0	9	1	1	0	0	0	0	3	0	0	0	14
04:00	0	15	10	1	0	0	0	0	3	0	0	0	29
05:00	0	73	39	0	14	0	0	0	4	0	0	0	130
06:00	1	134	53	2	10	1	1	0	9	1	0	0	212
07:00	1	230	54	4	15	1	0	3	2	1	0	0	311
08:00	3	159	60	2	13	7	4	0	3	1	0	0	254
09:00	3	116	44	1	13	2	0	1	9	1	0	0	190
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*
Day Total	8	751	264	11	66	11	5	4	33	4	0	2	1159
Percent	0.7%	64.8%	22.8%	0.9%	5.7%	0.9%	0.4%	0.3%	2.8%	0.3%	0.0%	0.2%	
AM Peak	08:00	07:00	08:00	07:00	07:00	08:00	08:00	07:00	06:00	06:00	08:00	08:00	07:00
Vol.	3	230	60	4	15	7	4	3	9	1	2	2	311
PM Peak													
Vol.													
Grand Total	53	6436	2272	77	567	108	14	76	247	20	8	4	9886
Percent	0.5%	65.1%	23.0%	0.8%	5.7%	1.1%	0.1%	0.8%	2.5%	0.2%	0.1%	0.0%	

# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/AR/JJS  
 F.C./Counter#: R-5/19443  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 North of Katie Drive  
 Latitude: 0' 0.000 Undefined

SB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	4 Axle Single	5 Axle Single	6 Axle Single	5 Axle Multi	6 Axle Multi	7 Axle Multi	Total
	11/2/10	0	15	3	0	1	0	0	0	1	0	0	0	0	20
	01:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
	02:00	0	8	1	0	0	0	0	0	0	0	0	0	0	9
	03:00	0	13	1	0	0	0	0	0	1	0	0	0	0	15
	04:00	0	10	4	0	2	0	0	0	1	0	1	0	0	19
	05:00	0	23	11	0	3	1	0	0	1	0	0	2	0	41
	06:00	0	46	32	0	4	2	0	0	12	0	0	0	0	96
	07:00	1	101	41	2	11	5	0	0	9	0	0	0	0	171
	08:00	1	117	46	1	13	6	0	0	7	0	0	0	0	192
	09:00	0	107	45	2	12	5	0	3	7	0	0	0	0	181
	10:00	0	139	49	2	13	7	0	3	6	0	0	0	0	219
	11:00	0	147	47	0	13	4	0	0	10	0	0	0	0	221
	12 PM	1	156	38	3	15	2	4	4	15	0	0	0	0	238
	13:00	0	154	60	2	13	7	0	1	11	0	0	0	0	248
	14:00	2	187	62	4	9	4	2	0	13	0	0	0	0	283
	15:00	1	251	55	3	12	4	0	6	13	1	0	0	0	346
	16:00	1	286	87	1	13	1	0	4	9	0	0	0	0	402
	17:00	0	352	78	0	18	5	0	1	8	0	0	0	0	462
	18:00	1	254	72	1	11	1	0	0	3	0	0	0	0	343
	19:00	0	205	43	0	11	0	0	0	2	0	0	0	0	261
	20:00	0	83	19	0	4	1	0	0	1	0	0	0	0	108
	21:00	0	79	4	0	0	0	0	0	0	0	1	0	0	84
	22:00	0	43	9	0	2	0	0	0	0	0	0	1	0	55
	23:00	0	29	9	0	2	0	0	0	0	0	0	0	0	40
Day	Total	8	2813	817	21	182	55	6	24	130	1	2	4	0	4063
Percent		0.2%	69.2%	20.1%	0.5%	4.5%	1.4%	0.1%	0.6%	3.2%	0.0%	0.0%	0.1%	0.0%	
AM Peak		07:00	11:00	10:00	07:00	08:00	10:00	09:00	09:00	06:00	04:00	04:00	05:00	11:00	11:00
Vol.		1	147	49	2	13	7	3	3	12	1	1	2	2	221
PM Peak		14:00	17:00	16:00	14:00	17:00	13:00	15:00	15:00	12:00	21:00	21:00	22:00	17:00	17:00
Vol.		2	352	87	4	18	7	4	6	15	1	1	1	1	462

# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/ARJS  
 F.C./Counter#: R-5/19443  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 North of Katie Drive  
 Latitude: 0' 0.000 Undefined

SB	Start Time	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	4 Axle Single	5 Axle Single	6 Axle Single	6 Axle Multi	7 Axle Multi	Total
11/4/10		24	5	0	0	0	0	0	0	0	0	0	29
01:00		11	1	0	0	0	0	0	0	0	0	0	12
02:00		11	1	0	0	1	0	0	0	0	1	0	15
03:00		14	2	0	0	0	0	0	0	0	1	0	17
04:00		8	3	0	2	0	1	3	0	1	0	0	18
05:00		25	8	0	3	0	0	3	0	1	0	0	40
06:00		44	27	0	7	1	0	7	0	1	0	0	89
07:00		90	36	1	14	4	0	10	0	0	0	0	155
08:00		87	25	0	18	3	1	9	0	0	0	0	145
09:00		81	29	4	10	1	0	4	0	0	0	0	131
10:00		*	*	*	*	*	*	*	*	*	*	*	*
11:00		*	*	*	*	*	*	*	*	*	*	*	*
12 PM		*	*	*	*	*	*	*	*	*	*	*	*
13:00		*	*	*	*	*	*	*	*	*	*	*	*
14:00		*	*	*	*	*	*	*	*	*	*	*	*
15:00		*	*	*	*	*	*	*	*	*	*	*	*
16:00		*	*	*	*	*	*	*	*	*	*	*	*
17:00		*	*	*	*	*	*	*	*	*	*	*	*
18:00		*	*	*	*	*	*	*	*	*	*	*	*
19:00		*	*	*	*	*	*	*	*	*	*	*	*
20:00		*	*	*	*	*	*	*	*	*	*	*	*
21:00		*	*	*	*	*	*	*	*	*	*	*	*
22:00		*	*	*	*	*	*	*	*	*	*	*	*
23:00		*	*	*	*	*	*	*	*	*	*	*	*
Day Total		395	137	5	54	10	1	4	36	3	2	0	651
Percent		60.7%	21.0%	0.8%	8.3%	1.5%	0.2%	0.6%	5.5%	0.5%	0.3%	0.0%	
AM Peak		07:00	07:00	09:00	08:00	07:00	08:00	08:00	07:00	04:00	02:00	02:00	07:00
Vol.		90	36	4	18	4	1	2	10	1	1	1	155
PM Peak													
Vol.													
Grand Total		27	7044	2045	61	523	23	71	336	14	13	0	10299
Percent		0.3%	68.4%	19.9%	0.6%	5.1%	0.2%	0.7%	3.3%	0.1%	0.1%	0.0%	

**SRPEDD**

**88 Broadway  
Taunton, MA 02780**

Weather: FAIR  
Counted by: CC/AR/JS  
F.C./Counter#: R-5/19443  
Town: MIDDLEBORO

Site Code:  
Station ID:  
WAREHAM STREET  
North of Katie Drive  
Latitude: 0 0.000 Undefined

Start Time	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	4 Axle Single	5 Axle Single	6 Axle Single	5 Axle Multi	6 Axle Multi	7 Axle Multi	Total
11/2/10	27	7	0	2	0	0	0	2	0	0	0	0	38
01:00	8	2	0	1	0	0	0	0	0	0	0	0	11
02:00	9	2	0	0	0	0	0	0	0	0	0	0	11
03:00	19	3	0	0	0	0	0	3	0	0	0	0	25
04:00	27	16	1	2	0	0	0	3	0	1	1	0	52
05:00	95	50	0	12	3	0	0	3	0	0	2	0	165
06:00	178	100	1	19	5	0	0	18	0	0	0	0	325
07:00	345	103	7	24	7	0	0	17	1	0	0	0	510
08:00	314	109	4	21	8	1	0	14	0	0	0	0	478
09:00	258	109	5	23	8	0	0	11	0	0	0	0	425
10:00	282	103	7	22	12	0	0	14	1	0	0	0	444
11:00	284	95	1	25	10	1	2	14	0	0	0	0	434
12 PM	296	95	4	31	7	4	5	22	3	0	0	1	470
13:00	316	105	4	29	11	0	0	20	0	0	0	0	492
14:00	334	121	8	20	7	2	2	19	0	0	0	0	516
15:00	398	118	4	29	6	0	0	19	1	0	0	0	583
16:00	486	162	1	30	4	0	0	18	0	0	1	0	709
17:00	570	144	1	29	7	0	0	10	0	1	0	0	769
18:00	420	131	2	24	1	0	0	6	0	0	0	0	586
19:00	313	80	0	17	0	0	0	4	0	0	0	0	416
20:00	154	43	0	9	2	0	0	4	0	0	1	0	213
21:00	123	21	1	2	0	0	0	0	0	1	0	0	148
22:00	71	15	0	2	0	0	0	0	0	1	1	0	90
23:00	35	12	0	2	0	0	0	0	0	0	1	0	50
Day Total	5362	1746	51	375	98	8	55	225	7	4	7	2	7960
Percent	0.3%	21.9%	0.6%	4.7%	1.2%	0.1%	0.7%	2.8%	0.1%	0.1%	0.1%	0.0%	
AM Peak	07:00	08:00	07:00	11:00	10:00	08:00	09:00	06:00	07:00	04:00	05:00	10:00	07:00
Vol.	2	345	7	25	12	1	8	18	1	1	2	1	510
PM Peak	14:00	17:00	14:00	12:00	13:00	12:00	15:00	12:00	12:00	17:00	16:00	12:00	17:00
Vol.	3	570	8	31	11	4	7	22	3	1	1	1	769



# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/AR/JS  
 F.C./Counter#: R-5/19443  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 North of Katie Drive  
 Latitude: 0' 0.000 Undefined

NB	Start Time	15	16	20	21	26	31	36	41	46	51	56	61	66	71	75	76	999	Total	Pace Speed	Number in Pace	
	11/11/10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 PM	0	3	0	1	0	0	17	72	65	24	4	1	0	0	0	0	0	187	41-50	137	
	13:00	2	1	0	1	0	0	12	57	71	27	4	2	1	0	0	0	0	178	41-50	128	
	14:00	3	1	0	2	0	4	31	63	66	29	2	1	0	0	0	0	0	202	41-50	129	
	15:00	7	3	1	2	1	9	32	55	72	32	2	0	0	0	0	0	0	215	41-50	127	
	16:00	9	3	1	2	1	9	25	65	82	26	2	1	0	0	0	0	0	223	41-50	147	
	17:00	8	0	0	0	0	6	14	86	76	25	5	0	1	0	0	0	0	221	41-50	162	
	18:00	6	0	0	0	0	1	20	51	50	12	2	0	0	0	0	0	0	142	41-50	101	
	19:00	2	0	0	0	0	3	8	25	39	9	0	0	0	0	0	0	0	86	41-50	64	
	20:00	1	0	0	0	0	1	5	26	21	8	2	0	0	0	0	0	0	64	41-50	47	
	21:00	1	0	0	0	0	0	6	17	21	4	4	0	0	0	0	0	0	53	41-50	38	
	22:00	0	0	0	0	0	2	3	11	12	7	1	0	0	0	0	0	0	36	41-50	23	
	23:00	0	0	0	0	0	0	0	6	7	2	0	0	0	0	0	0	0	15	41-50	13	
	Total	39	11	2	6	2	35	173	534	582	205	28	5	2	0	0	0	0	1622			
	Percent	2.4%	0.7%	0.1%	0.4%	0.1%	2.2%	10.7%	32.9%	35.9%	12.6%	1.7%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%				
	AM Peak																					
	Vol.																					
	PM Peak	16:00	12:00	15:00	14:00	15:00	15:00	15:00	17:00	16:00	15:00	17:00	13:00	13:00	16:00	16:00	16:00	16:00	16:00			
	Vol.	9	3	1	2	9	9	32	86	82	32	5	2	1	223	223	223	223				

# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/ARJS  
 F.C./Counter#: R-5/19443  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 North of Katie Drive  
 Latitude: 0' 0.000 Undefined

NB	Start Time	15	16	20	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number in Pace
	11/21/10	0	0	0	0	0	0	2	6	7	2	1	0	0	0	0	18	39-48	13
	01:00	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2	32-41	1
	02:00	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	38-47	2
	03:00	0	0	0	0	0	0	1	2	3	4	0	0	0	0	0	10	44-53	8
	04:00	1	0	0	1	0	1	1	6	13	10	1	0	0	0	0	33	45-54	23
	05:00	1	0	0	0	0	0	15	33	55	17	1	0	0	0	0	124	41-50	88
	06:00	4	0	0	1	0	4	17	76	86	37	4	0	0	0	0	229	41-50	162
	07:00	12	0	0	0	0	2	38	107	130	45	4	1	0	0	0	339	41-50	237
	08:00	7	0	0	1	0	1	10	114	101	46	6	0	0	0	0	286	41-50	215
	09:00	6	1	0	0	0	0	30	86	88	29	3	1	0	0	0	244	41-50	174
	10:00	6	0	0	1	0	8	34	87	68	17	4	0	0	0	0	225	41-50	155
	11:00	3	1	0	1	0	6	18	82	80	17	5	0	0	0	0	213	41-50	162
	12 PM	6	1	0	2	0	7	29	82	80	22	3	0	0	0	0	232	41-50	162
	13:00	5	2	1	2	2	2	34	82	94	20	2	0	0	0	0	244	41-50	176
	14:00	9	0	1	0	1	0	15	83	93	28	4	0	0	0	0	233	41-50	176
	15:00	8	0	0	1	0	1	15	73	114	23	2	0	0	0	0	237	41-50	187
	16:00	12	0	0	0	0	0	20	98	132	40	4	1	0	0	0	307	41-50	230
	17:00	14	2	1	0	0	0	27	102	125	31	5	0	0	0	0	307	41-50	227
	18:00	10	0	0	0	0	1	20	113	82	16	1	0	0	0	0	243	41-50	195
	19:00	5	1	0	1	0	2	18	69	46	12	1	0	0	0	0	155	41-50	115
	20:00	0	0	0	0	0	1	17	43	33	10	0	1	0	0	0	105	41-50	76
	21:00	1	0	0	0	0	1	6	19	21	12	3	1	0	0	0	64	41-50	40
	22:00	0	0	0	0	0	2	0	9	12	9	2	1	0	0	0	35	42-51	22
	23:00	0	0	0	0	0	0	0	2	7	1	0	0	0	0	0	10	42-51	10
	Total	110	8	10	3	3	39	367	1375	1472	448	57	8	0	0	0	3897		
	Percent	2.8%	0.2%	0.3%	0.1%	0.1%	1.0%	9.4%	35.3%	37.8%	11.5%	1.5%	0.2%	0.0%	0.0%	0.0%			
	AM Peak	07:00	09:00	06:00	06:00	10:00	10:00	07:00	08:00	07:00	08:00	08:00	05:00				07:00		
	Vol.	12	1	1	1	8	8	38	114	130	46	6	2				339		
	PM Peak	17:00	13:00	12:00	12:00	13:00	12:00	13:00	18:00	16:00	16:00	17:00	16:00				16:00		
	Vol.	14	2	2	2	7	7	34	113	132	40	5	1				307		

# SRPEDD

88 Broadway  
Taunton, MA 02780

Weather: FAIR  
Counted by: CC/ARJS  
F.C./Counter#: R-5/19443  
Town: MIDDLEBORO

Site Code:  
Station ID:  
WAREHAM STREET  
North of Katie Drive  
Latitude: 0' 0.000 Undefined

NB	Start Time	15	16	20	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number in Pace
	11/3/10	0	0	0	0	0	0	1	5	2	1	0	0	1	0	1	11	38-47	8
	01:00	0	0	0	0	0	0	1	6	0	0	1	0	0	0	0	8	36-45	7
	02:00	0	0	0	0	0	0	0	1	1	2	0	0	0	0	0	5	43-52	4
	03:00	0	0	0	0	0	0	0	1	4	3	1	0	0	0	0	9	44-53	8
	04:00	0	0	0	1	0	1	4	8	5	8	1	0	0	0	0	28	37-46	13
	05:00	0	1	0	0	0	2	10	39	55	23	3	0	1	0	0	134	41-50	94
	06:00	6	0	0	0	0	0	20	71	79	33	5	1	0	0	0	215	41-50	150
	07:00	11	0	1	3	3	14	27	105	38	38	2	0	0	0	0	306	41-50	210
	08:00	15	6	4	4	4	15	25	68	111	20	5	0	0	0	0	273	41-50	179
	09:00	1	0	0	2	0	1	12	60	78	24	7	1	0	0	0	186	41-50	138
	10:00	3	0	0	0	0	2	14	67	54	23	2	0	0	0	0	165	41-50	121
	11:00	6	0	0	2	1	5	19	56	59	20	2	1	0	0	0	171	41-50	115
	12 PM	3	0	0	2	1	2	12	60	64	25	2	3	0	0	0	173	41-50	124
	13:00	5	0	0	1	1	2	10	83	62	26	4	0	0	0	0	193	41-50	145
	14:00	5	0	0	2	2	1	23	69	76	25	4	1	0	0	0	206	41-50	145
	15:00	10	0	0	1	0	3	20	71	73	25	6	0	0	0	0	209	41-50	144
	16:00	19	8	1	2	2	7	30	68	70	28	5	0	0	0	0	238	41-50	138
	17:00	8	0	0	1	1	3	11	56	85	32	8	2	0	0	0	206	41-50	141
	18:00	7	1	0	3	0	3	25	59	45	16	2	0	0	0	0	159	41-50	104
	19:00	1	0	0	3	0	3	10	39	46	11	2	0	0	0	0	112	41-50	85
	20:00	4	1	0	0	0	0	8	37	29	7	2	0	0	0	0	88	41-50	66
	21:00	0	0	0	1	0	1	6	20	25	7	1	0	0	0	0	61	41-50	45
	22:00	0	0	0	0	1	0	3	9	13	2	1	2	0	0	0	31	41-50	22
	23:00	0	0	0	0	1	0	0	7	8	3	2	0	0	0	0	21	41-50	15
	Total	104	17	14	18	18	65	292	1065	1149	402	68	11	2	0	1	3208		
	Percent	3.2%	0.5%	0.4%	0.6%	0.6%	2.0%	9.1%	33.2%	35.8%	12.5%	2.1%	0.3%	0.1%	0.0%	0.0%			
	AM Peak	08:00	08:00	08:00	08:00	08:00	08:00	07:00	07:00	08:00	07:00	09:00	06:00	00:00	00:00	00:00	07:00		
	Vol.	15	6	4	4	4	15	27	105	111	38	7	1	1	1	1	306		
	PM Peak	16:00	16:00	15:00	12:00	12:00	16:00	16:00	13:00	17:00	17:00	17:00	12:00	16:00	16:00	16:00	238		
	Vol.	19	8	1	2	2	7	30	83	85	32	8	3	3	3	3	238		

# SRPEDD

88 Broadway  
Taunton, MA 02780

Weather: FAIR  
Counted by: CC/AR/JS  
F.C./Counter#: R-5/19443  
Town: MIDDLEBORO

Site Code:  
Station ID:  
WAREHAM STREET  
North of Katie Drive  
Latitude: 0' 0.000 Undefined

NB	Start Time	16	21	26	31	36	41	46	51	56	61	66	71	76	999	Total	Pace Speed	Number in Pace
	11/4/10	0	0	0	0	0	4	1	1	1	0	0	0	0	0	7	41-50	5
	01:00	0	0	0	0	0	3	1	0	0	0	0	0	0	0	4	37-46	4
	02:00	1	0	0	0	1	3	2	1	0	0	0	0	0	0	8	38-47	6
	03:00	0	0	0	0	1	3	4	5	0	1	0	0	0	14	43-52	9	
	04:00	0	0	0	0	0	5	11	11	2	0	0	0	0	29	46-55	22	
	05:00	0	0	0	1	7	35	59	18	8	0	1	1	0	130	41-50	94	
	06:00	5	0	0	4	18	65	90	23	5	2	0	0	0	212	41-50	155	
	07:00	4	3	4	15	35	98	118	30	2	2	0	0	0	311	41-50	216	
	08:00	11	3	2	61	73	58	26	4	1	0	0	0	0	254	31-40	134	
	09:00	10	1	1	1	19	58	61	32	6	1	0	0	0	190	41-50	119	
	10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Total	31	7	3	19	82	332	373	125	25	6	1	1	0	1159			
	Percent	2.7%	0.6%	0.3%	1.6%	7.1%	28.6%	32.2%	10.8%	2.2%	0.5%	0.1%	0.1%	0.0%				
	AM Peak	08:00	07:00	08:00	08:00	08:00	07:00	07:00	09:00	05:00	06:00	05:00	05:00	07:00				
	Vol.	11	3	2	15	73	98	118	32	8	2	1	1	311				

PM Peak Vol.	284	43	33	42	221	986	3306	3576	1180	178	30	5	1	9886
Total	284	43	33	42	221	986	3306	3576	1180	178	30	5	1	9886
Percent	2.9%	0.4%	0.3%	0.4%	2.2%	10.0%	33.4%	36.2%	11.9%	1.8%	0.3%	0.1%	0.0%	

15th Percentile : 40 MPH  
50th Percentile : 46 MPH  
85th Percentile : 50 MPH  
95th Percentile : 54 MPH

Stats  
10 MPH Pace Speed : 41-50 MPH  
Number in Pace : 6882  
Percent in Pace : 69.6%  
Number of Vehicles > 55 MPH : 215  
Percent of Vehicles > 55 MPH : 2.2%  
Mean Speed(Average) : 44 MPH



# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
Counted by: CC/ARJS  
F.C./Counter#: R-5/19443  
Town: MIDDLEBORO

Site Code:  
Station ID:  
WAREHAM STREET  
North of Katie Drive  
Latitude: 0' 0.000 Undefined

SB	Start Time	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	66	70	71	75	76	999	Total	Pace	Speed	Number in Pace
	11/2/10	0	0	0	0	0	0	0	1	1	0	0	6	6	12	12	1	1	0	0	0	0	0	0	0	0	0	0	20	41-50	18	
	01:00	0	0	0	0	0	0	0	0	0	0	0	1	1	5	5	1	1	1	1	0	0	0	0	0	1	0	9	41-50	6		
	02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	8	8	0	0	1	1	0	0	0	0	0	0	0	9	41-50	8		
	03:00	0	0	0	0	0	0	0	0	0	1	1	4	4	5	5	2	2	2	2	1	1	0	0	0	0	0	15	40-49	9		
	04:00	0	0	0	0	0	0	0	1	1	4	4	4	4	6	6	4	4	0	0	0	0	0	0	0	0	0	19	42-51	11		
	05:00	0	0	0	0	0	1	1	0	0	2	2	16	16	14	14	7	7	1	1	0	0	0	0	0	0	0	41	41-50	30		
	06:00	1	0	0	0	0	3	3	2	2	15	15	40	40	27	27	7	7	1	1	0	0	0	0	0	0	0	96	41-50	67		
	07:00	7	0	0	0	1	1	1	2	2	21	21	55	55	66	66	17	17	2	2	0	0	0	0	0	0	0	171	41-50	121		
	08:00	5	0	0	0	0	1	1	1	1	9	9	67	67	77	77	26	26	6	6	0	0	0	0	0	0	0	192	41-50	144		
	09:00	6	0	0	0	0	1	1	2	2	10	10	60	60	74	74	22	22	6	6	1	1	0	0	0	0	0	181	41-50	134		
	10:00	6	0	0	0	0	1	1	2	2	12	12	79	79	88	88	28	28	3	3	0	0	0	0	0	0	0	219	41-50	167		
	11:00	6	0	0	0	0	0	0	1	1	17	17	90	90	78	78	23	23	5	5	1	1	0	0	0	0	0	221	41-50	168		
	12 PM	2	0	0	0	0	0	0	1	1	20	20	96	96	97	97	17	17	3	3	1	1	0	0	0	0	0	238	41-50	193		
	13:00	4	0	0	0	1	2	2	3	3	26	26	83	83	96	96	30	30	2	2	0	0	1	1	0	0	0	248	41-50	179		
	14:00	9	0	0	0	0	0	0	2	2	25	25	89	89	121	121	31	31	4	4	2	2	0	0	0	0	0	283	41-50	210		
	15:00	6	0	0	0	2	0	0	1	1	27	27	109	109	166	166	31	31	3	3	1	1	0	0	0	0	0	346	41-50	275		
	16:00	13	0	0	0	3	0	0	4	4	23	23	122	122	170	170	60	60	3	3	4	4	0	0	0	0	0	402	41-50	292		
	17:00	16	3	0	0	3	0	0	0	0	32	32	167	167	187	187	48	48	6	6	0	0	0	0	0	0	0	462	41-50	354		
	18:00	8	0	0	0	0	0	0	14	14	66	66	142	142	102	102	11	11	0	0	0	0	0	0	0	0	0	343	41-50	244		
	19:00	3	0	0	0	1	1	1	3	3	53	53	104	104	90	90	6	6	1	1	0	0	0	0	0	0	0	261	41-50	194		
	20:00	0	0	0	0	0	0	0	3	3	13	13	44	44	42	42	5	5	1	1	0	0	0	0	0	0	0	108	41-50	86		
	21:00	1	0	0	0	0	0	0	0	0	13	13	39	39	21	21	8	8	1	1	0	0	0	0	0	0	0	84	41-50	60		
	22:00	0	0	0	0	0	0	0	1	1	2	2	22	22	20	20	6	6	4	4	0	0	0	0	0	0	0	55	41-50	42		
	23:00	0	0	0	0	0	0	0	0	0	3	3	11	11	14	14	8	8	2	2	0	0	0	0	0	0	0	40	41-50	25		
	Total	93	3	3	8	13	0.3%	0.2%	1.1%	44	394	1450	1586	1586	399	58	11	1	1	2	2	11	1	1	1	1	2	4063				
	Percent	2.3%	0.1%	0.1%	0.2%	0.3%	0.3%	0.2%	1.1%	1.1%	9.7%	35.7%	39.0%	39.0%	9.8%	1.4%	0.3%	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%					
	AM Peak	07:00	7	0	0	0	06:00	06:00	07:00	07:00	21	88	90	11:00	10:00	08:00	03:00	01:00	01:00	01:00	03:00	1	1	1	1	1	11:00					
	PM Peak	17:00	16	3	3	3	16:00	16:00	18:00	18:00	66	187	167	17:00	16:00	17:00	13:00	23:00	23:00	23:00	16:00	4	4	1	1	2	17:00					
	Vol.	16	3	3	3	3	16	16	14	14	66	187	167	170	160	60	6	6	6	6	4	4	1	1	2	2	462					

# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/ARJS  
 F.C./Counter#: R-5/19443  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 North of Katie Drive  
 Latitude: 0' 0.000 Undefined

SB	Start Time	15	16	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	66	70	71	75	76	99	Total	Pace Speed	Number in Pace
	11/3/10	1	0	0	0	0	0	0	0	0	0	0	6	6	6	6	3	3	1	1	1	0	0	1	0	0	0	0	18	41-50	12
	01:00	0	0	0	0	0	0	0	1	7	1	1	7	7	5	5	0	0	0	0	0	0	0	0	0	0	0	0	14	40-49	12
	02:00	0	0	0	0	0	0	0	0	5	0	4	5	5	4	3	3	3	1	1	1	0	0	0	0	0	0	0	13	40-49	9
	03:00	0	0	0	0	0	0	0	0	5	0	0	5	5	3	3	1	1	1	1	1	0	0	0	0	0	0	10	39-48	8	
	04:00	0	0	0	0	0	0	0	2	5	0	4	5	5	4	4	2	2	1	1	1	0	0	0	0	0	0	14	40-49	9	
	05:00	1	0	0	0	0	0	0	1	7	6	6	7	7	16	16	8	8	0	0	1	1	0	0	0	0	0	40	44-53	26	
	06:00	5	0	0	0	0	0	0	0	33	13	13	33	33	32	32	4	4	0	0	2	2	0	0	0	0	0	87	41-50	65	
	07:00	5	1	1	2	2	1	1	4	41	12	12	41	41	56	56	20	20	2	2	0	0	0	0	0	0	0	144	41-50	97	
	08:00	7	0	0	0	0	3	3	13	48	11	11	48	48	47	47	11	11	3	3	0	0	0	0	0	0	0	143	41-50	95	
	09:00	4	0	0	0	0	1	1	1	34	6	6	34	34	68	68	27	27	6	6	1	1	0	0	0	0	0	151	41-50	102	
	10:00	1	0	0	0	0	0	0	3	43	14	14	43	43	91	91	25	25	4	4	0	0	0	0	0	0	0	181	41-50	134	
	11:00	5	0	0	0	0	0	0	2	57	13	13	57	57	58	58	20	20	4	4	1	1	0	0	0	0	0	160	41-50	115	
	12 PM	4	1	1	1	1	0	0	4	55	5	5	55	55	82	82	29	29	6	6	1	1	0	0	0	0	0	182	41-50	137	
	13:00	4	0	0	0	0	0	0	1	57	6	6	57	57	98	98	29	29	6	6	0	0	0	0	0	0	0	204	41-50	155	
	14:00	9	3	3	2	2	5	2	2	69	12	12	69	69	104	104	27	27	5	5	1	1	0	0	0	0	0	240	41-50	173	
	15:00	4	0	0	0	0	2	2	4	66	22	22	66	66	118	118	41	41	8	8	1	1	0	0	0	0	0	267	41-50	184	
	16:00	28	3	3	2	2	2	2	14	98	49	49	98	98	118	118	31	31	1	1	1	1	0	0	0	0	0	345	41-50	216	
	17:00	10	2	2	2	2	2	2	2	84	13	13	84	84	131	131	48	48	9	9	1	1	0	0	0	0	0	304	41-50	215	
	18:00	8	0	0	0	0	3	3	4	105	8	8	105	105	105	105	23	23	2	2	0	0	0	0	0	0	0	308	41-50	210	
	19:00	2	0	0	0	0	1	1	1	65	8	8	65	65	62	62	22	22	0	0	0	0	0	0	0	0	0	161	41-50	127	
	20:00	4	0	0	0	0	0	0	1	59	14	14	59	59	55	55	6	6	2	2	0	0	0	0	0	0	0	141	41-50	114	
	21:00	0	0	0	0	0	0	0	1	43	15	15	43	43	38	38	10	10	1	1	0	0	0	0	0	0	0	109	41-50	81	
	22:00	0	0	0	0	0	0	0	0	19	9	9	19	19	23	23	9	9	1	1	0	0	0	0	0	0	0	62	41-50	42	
	23:00	1	0	0	0	0	0	0	2	6	2	2	6	6	15	15	5	5	0	0	0	0	0	0	0	0	0	31	41-50	21	
	Total	103	10	10	13	13	21	21	63	1017	289	289	1017	1017	1339	1339	404	404	59	59	6	6	3	3	2	2	0	3329			
	Percent	3.1%	0.3%	0.3%	0.4%	0.4%	0.6%	0.6%	1.9%	30.5%	8.7%	8.7%	30.5%	30.5%	40.2%	40.2%	12.1%	12.1%	1.8%	1.8%	0.2%	0.2%	0.1%	0.1%	0.1%	0.1%	0.0%				
	AM Peak	08:00	07:00	07:00	09:00	09:00	08:00	08:00	08:00	11:00	10:00	10:00	11:00	11:00	10:00	10:00	09:00	09:00	09:00	09:00	05:00	05:00	00:00	00:00	00:00	00:00	00:00	10:00			
	Vol.	7	1	1	3	3	3	3	13	57	14	14	57	57	91	91	27	27	6	6	1	1	1	1	1	1	181				
	PM Peak	16:00	14:00	14:00	13:00	13:00	14:00	14:00	16:00	18:00	18:00	18:00	18:00	18:00	17:00	17:00	17:00	17:00	17:00	17:00	14:00	14:00	15:00	15:00	13:00	13:00	16:00				
	Vol.	28	3	3	2	2	5	5	14	105	58	58	105	105	131	131	48	48	9	9	1	1	1	1	1	1	345				

# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/ARJS  
 F.C./Counter#: R-5/19443  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 North of Katie Drive  
 Latitude: 0' 0.000 Undefined

SB	Start Time	1	15	20	21	25	26	30	31	35	36	40	41	45	46	50	51	55	56	60	61	65	66	70	71	75	76	999	Total	Pace	Number in Pace		
	11/4/10	0	0	0	0	0	0	0	0	0	4	4	12	45	9	5	3	3	1	1	0	0	0	0	0	0	0	0	29	40-49	21		
	01:00	0	0	0	0	0	0	0	0	0	1	4	4	4	5	2	2	2	0	0	0	0	0	0	0	0	0	0	12	42-51	10		
	02:00	0	0	0	0	0	0	0	0	0	1	9	9	9	0	0	5	5	0	0	0	0	0	0	0	0	0	15	36-45	10			
	03:00	0	0	0	0	0	0	0	0	0	0	8	8	8	5	5	3	3	0	0	1	1	0	0	0	0	0	17	41-50	13			
	04:00	0	0	0	0	0	0	0	1	1	2	3	3	3	6	6	5	5	1	1	0	0	0	0	0	0	0	18	43-52	11			
	05:00	1	0	0	0	0	0	0	1	1	4	4	13	13	13	13	5	5	2	2	0	0	1	0	0	0	0	40	41-50	26			
	06:00	2	1	0	0	0	0	0	2	2	8	8	31	31	34	6	6	6	4	4	1	1	0	0	0	0	0	89	41-50	65			
	07:00	5	0	0	1	0	0	9	9	21	21	49	49	53	53	16	16	16	1	1	0	0	0	0	0	0	0	155	41-50	102			
	08:00	20	12	25	22	17	17	8	17	19	19	38	38	25	25	3	3	3	1	1	1	1	0	0	0	0	0	145	21-30	47			
	09:00	8	0	0	0	0	0	0	0	4	4	4	51	51	38	8	8	8	4	4	1	1	0	0	0	0	0	131	41-50	89			
	10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
	11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
	12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*		
	13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
	14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	Total	36	13	27	26	22	22	30	30	64	64	197	171	171	73	14	14	4	4	1	1	0	0	0	0	0	0	651					
	Percent	5.5%	2.0%	4.0%	4.0%	3.4%	3.4%	4.6%	4.6%	9.8%	9.8%	30.3%	26.3%	26.3%	11.2%	2.2%	2.2%	0.6%	0.6%	0.2%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%						
	AM Peak	08:00	08:00	08:00	08:00	08:00	08:00	08:00	08:00	07:00	07:00	09:00	07:00	07:00	09:00	06:00	06:00	03:00	03:00	05:00	05:00							07:00					
	Vol.	20	12	25	25	22	22	17	17	21	21	51	53	53	25	4	4	1	1	1	1	0	0	0	0	0	0	155					

PM Peak	Vol.	281	27	53	70	186	924	3393	4002	1152	173	27	2	10299
Total	Percent	2.7%	0.3%	0.5%	0.7%	1.8%	9.0%	32.9%	38.9%	11.2%	1.7%	0.3%	0.0%	0.0%
	15th Percentile :	41 MPH												
	50th Percentile :	46 MPH												
	85th Percentile :	50 MPH												
	95th Percentile :	54 MPH												

Stats

- 10 MPH Pace Speed : 41-50 MPH
- Number in Pace : 7395
- Percent in Pace : 71.8%
- Number of Vehicles > 55 MPH : 211
- Percent of Vehicles > 55 MPH : 2.0%
- Mean Speed(Average) : 45 MPH

# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/ARJS  
 F.C./Counter#: R-5/19443  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 North of Katie Drive  
 Latitude: 0' 0.000 Undefined

NB, SB	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	Pace	Number
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Speed	in Pace	
11/11/10	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	7	3	2	0	2	31	131	142	48	10	1	0	0	0	377	41-50	273
13:00	6	1	1	0	1	35	111	146	54	11	2	1	0	0	369	41-50	257
14:00	8	1	3	3	25	42	120	145	63	8	2	0	0	0	420	41-50	265
15:00	14	4	4	4	13	55	154	188	75	12	2	0	0	0	525	41-50	342
16:00	25	3	0	5	13	41	162	225	73	6	3	0	0	0	556	41-50	387
17:00	13	0	0	0	10	27	187	238	62	8	0	1	0	0	546	41-50	425
18:00	9	0	0	0	7	64	166	126	31	5	0	0	0	0	408	41-50	292
19:00	3	0	2	4	8	19	67	108	23	0	0	0	0	0	234	41-50	175
20:00	2	0	0	0	2	14	71	62	19	3	0	0	0	0	173	41-50	133
21:00	1	0	0	0	1	10	46	63	15	5	0	0	0	0	141	41-50	109
22:00	0	0	0	0	2	9	26	27	13	1	0	0	0	0	78	41-50	53
23:00	0	0	0	0	0	3	22	18	5	1	1	1	0	0	51	41-50	40
Total	88	12	12	16	84	350	1263	1488	481	70	11	3	0	0	3878		
Percent AM Peak	2.3%	0.3%	0.3%	0.4%	2.2%	9.0%	32.6%	38.4%	12.4%	1.8%	0.3%	0.1%	0.0%	0.0%			
Vol.																	
PM Peak	16:00	15:00	15:00	16:00	14:00	18:00	17:00	17:00	15:00	15:00	16:00	13:00		16:00			
Vol.	25	4	4	5	25	64	187	238	75	12	3	1		556			

# SRPEDD

88 Broadway  
Taunton, MA 02780

Weather: FAIR  
Counted by: CC/AR/JS  
F.C./Counter#: R-5/19443  
Town: MIDDLEBORO

Site Code:  
Station ID:  
WAREHAM STREET  
North of Katie Drive  
Latitude: 0' 0.000 Undefined

NB, SB	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Pace	Number	
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Speed	in Pace	
11/2/10	0	0	0	0	1	2	12	19	3	1	0	0	0	0	38	41-50	31
01:00	0	0	0	0	0	0	2	5	1	2	0	0	1	0	11	41-50	7
02:00	0	0	0	0	0	0	0	10	0	1	0	0	0	0	11	41-50	10
03:00	0	0	0	0	0	2	6	8	6	2	1	0	0	0	25	42-51	15
04:00	1	0	0	0	2	5	10	19	14	1	0	0	0	0	52	45-54	33
05:00	1	0	0	1	0	17	49	69	24	2	2	0	0	0	165	41-50	118
06:00	5	0	1	3	6	32	116	113	44	5	0	0	0	0	325	41-50	229
07:00	19	0	0	1	4	59	162	196	62	6	1	0	0	0	510	41-50	358
08:00	12	0	1	1	2	19	181	178	72	12	0	0	0	0	478	41-50	359
09:00	12	1	0	0	2	40	146	162	51	9	2	0	0	0	425	41-50	308
10:00	12	0	1	1	10	46	166	156	45	7	0	0	0	0	444	41-50	322
11:00	9	1	1	0	7	35	172	158	40	10	1	0	0	0	434	41-50	330
12 PM	8	1	3	0	8	49	178	177	39	6	1	0	0	0	470	41-50	355
13:00	9	2	2	4	5	60	165	190	50	4	0	1	0	0	492	41-50	355
14:00	18	0	0	1	2	40	172	214	59	8	2	0	0	0	516	41-50	386
15:00	14	0	3	0	2	42	182	280	54	5	1	0	0	0	583	41-50	462
16:00	25	0	0	3	4	43	220	302	100	7	5	0	0	0	709	41-50	522
17:00	30	5	4	0	4	59	269	312	79	11	0	0	0	0	769	41-50	581
18:00	18	0	0	0	15	86	255	184	27	1	0	0	0	0	586	41-50	439
19:00	8	1	1	1	5	71	173	136	18	2	0	0	0	0	416	41-50	309
20:00	0	0	0	0	4	30	87	75	15	1	1	0	0	0	213	41-50	162
21:00	2	0	1	0	1	19	58	42	20	4	1	0	0	0	148	41-50	100
22:00	0	0	0	0	3	2	31	32	15	6	1	0	0	0	90	41-50	63
23:00	0	0	0	0	0	3	13	21	9	2	0	0	0	2	50	41-50	34
Total	203	11	18	16	83	761	2825	3058	847	115	19	1	1	2	7960		
Percent	2.6%	0.1%	0.2%	0.2%	1.0%	9.6%	35.5%	38.4%	10.6%	1.4%	0.2%	0.0%	0.0%	0.0%			
AM Peak	07:00	09:00	06:00	06:00	10:00	07:00	08:00	07:00	08:00	08:00	05:00		01:00		07:00		
Vol.	19	1	1	3	10	59	181	196	72	12	2		1		510		
PM Peak	17:00	17:00	17:00	13:00	18:00	18:00	17:00	17:00	16:00	17:00	16:00	13:00		23:00	17:00		
Vol.	30	5	4	4	15	86	269	312	100	11	5	1		2	769		





# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/AR/JIS  
 F.C./Counter#: R-5/12679  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 South of Wood Street  
 Latitude: 0' 0.000 Undefined

Start Time	01-Nov-10		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB	NB	SB
12:00 AM	*	*	9	13	6	14	8	13	*	*	*	*	*	*	8	13
01:00	*	*	2	7	3	9	4	7	*	*	*	*	*	*	3	8
02:00	*	*	2	4	3	4	2	6	*	*	*	*	*	*	2	5
03:00	*	*	2	8	4	1	5	5	*	*	*	*	*	*	4	5
04:00	*	*	21	7	23	5	20	5	*	*	*	*	*	*	21	6
05:00	*	*	77	14	79	24	68	18	*	*	*	*	*	*	75	19
06:00	*	*	151	63	144	61	151	63	*	*	*	*	*	*	149	62
07:00	*	*	<b>239</b>	85	<b>271</b>	117	<b>248</b>	108	*	*	*	*	*	*	<b>253</b>	103
08:00	*	*	205	108	234	120	246	114	*	*	*	*	*	*	228	114
09:00	*	*	139	109	142	100	146	<b>115</b>	*	*	*	*	*	*	142	108
10:00	*	*	154	127	125	118	*	*	*	*	*	*	*	*	140	122
11:00	*	*	118	<b>145</b>	144	<b>140</b>	*	*	*	*	*	*	*	*	131	<b>142</b>
12:00 PM	137	162	156	180	133	165	*	*	*	*	*	*	*	*	142	169
01:00	151	168	157	161	146	159	*	*	*	*	*	*	*	*	151	163
02:00	183	216	176	181	176	196	*	*	*	*	*	*	*	*	178	198
03:00	179	281	210	259	<b>225</b>	256	*	*	*	*	*	*	*	*	205	265
04:00	190	311	213	312	211	290	*	*	*	*	*	*	*	*	205	304
05:00	<b>223</b>	<b>327</b>	<b>252</b>	<b>315</b>	220	<b>330</b>	*	*	*	*	*	*	*	*	<b>232</b>	<b>324</b>
06:00	181	246	163	219	220	281	*	*	*	*	*	*	*	*	188	249
07:00	107	147	105	176	112	169	*	*	*	*	*	*	*	*	108	164
08:00	63	121	80	130	64	124	*	*	*	*	*	*	*	*	69	125
09:00	39	71	55	101	53	89	*	*	*	*	*	*	*	*	49	87
10:00	41	66	36	55	32	45	*	*	*	*	*	*	*	*	36	55
11:00	16	30	13	36	27	31	*	*	*	*	*	*	*	*	19	32
Lane	1510	2146	2735	2815	2797	2848	898	454	0	0	0	0	0	0	2738	2842
Day	3656		5550		5645		1352		0	0	0	0	0	0	5580	
AM Peak Vol.	17:00	17:00	07:00	11:00	07:00	11:00	07:00	09:00							07:00	11:00
PM Peak Vol.	17:00	17:00	17:00	17:00	15:00	17:00	17:00	115							253	142
Vol.	223	327	252	315	225	330									232	324

Comb. Total 3656 5550 5645 1352 5645 5580 5580

ADT 3656 5550 5645 1352 5645 5580 5580

ADT 5,598 AADT 5,598

ADT 5,598

ADT 5,598

AWN'D = 5,520  
 FAC = 10.0 (NA)  
 ADT = 5,598



# SRPEDD

## 88 Broadway Taunton, MA 02780

Weather: FAIR  
 Counted by: CC/AR/JS  
 F.C./Counter#: R-5/12679  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 South of Wood Street  
 Latitude: 0' 0.000 Undefined

NB Start Time	Cars &		2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	4 Axle Single	5 Axle Single	6 Axle Single	5 Axle Multi	6 Axle Multi	7 Axle Multi	Total	
	Bikes	Trailers													
11/4/10	0	7	1	0	0	0	0	0	0	0	0	0	0	8	
01:00	0	4	0	0	0	0	0	0	0	0	0	0	0	4	
02:00	0	2	0	0	0	0	0	0	0	0	0	0	0	2	
03:00	0	3	1	0	1	0	0	0	0	0	0	0	0	5	
04:00	0	14	5	0	0	1	0	0	0	0	0	0	0	20	
05:00	0	37	26	0	2	0	0	0	3	0	0	0	0	68	
06:00	2	109	32	0	8	0	0	0	0	0	0	0	0	151	
07:00	0	175	56	1	13	1	0	1	1	0	0	0	0	248	
08:00	0	191	38	0	11	2	0	3	1	0	0	0	0	246	
09:00	1	98	42	0	5	0	0	0	0	0	0	0	0	146	
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Day Total	3	640	201	1	40	4	0	4	5	0	0	0	0	898	
Percent	0.3%	71.3%	22.4%	0.1%	4.5%	0.4%	0.0%	0.4%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
AM Peak	06:00	08:00	07:00	07:00	07:00	08:00	08:00	08:00	05:00	05:00	05:00	05:00	05:00	07:00	07:00
Vol.	2	191	56	1	13	2	3	3	3	3	3	3	3	248	248
PM Peak Vol.															
Grand Total	24	5948	1573	11	257	47	1	34	44	0	0	0	1	7940	7940
Percent	0.3%	74.9%	19.8%	0.1%	3.2%	0.6%	0.0%	0.4%	0.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

**SRPEDD**  
**88 Broadway**  
**Taunton, MA 02780**

Weather: FAIR  
 Counted by: CC/AR/JJS  
 F.C./Counter#: R-5/12679  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 South of Wood Street  
 Latitude: 0' 0.000 Undefined

SB	Start Time	Cats & Trailers	Bikes	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	4 Axle Single	5 Axle Single	6 Axle Single	5 Axle Multi	6 Axle Multi	7 Axle Multi	Total
	11/2/10	9	0	4	0	0	0	0	0	0	0	0	0	0	13
	01:00	5	0	2	0	0	0	0	0	0	0	0	0	0	7
	02:00	2	0	2	0	0	0	0	0	0	0	0	0	0	4
	03:00	5	0	3	0	0	0	0	0	0	0	0	0	0	8
	04:00	5	0	1	0	0	0	1	0	0	0	0	0	0	7
	05:00	9	0	4	0	1	0	0	0	0	0	0	0	0	14
	06:00	33	0	21	2	5	1	0	0	1	0	0	0	0	63
	07:00	41	0	30	0	11	1	0	0	0	0	0	0	0	85
	08:00	62	1	33	0	11	0	0	0	1	0	0	0	0	108
	09:00	61	1	30	1	12	1	2	0	0	0	0	0	0	109
	10:00	71	0	36	0	17	1	1	1	1	0	0	0	0	127
	11:00	92	1	42	0	9	0	0	0	1	0	0	0	0	145
	12 PM	112	0	48	2	15	0	0	3	0	0	0	0	0	180
	13:00	98	0	49	0	10	3	0	1	0	0	0	0	0	161
	14:00	103	0	61	0	14	1	0	1	0	0	0	0	0	181
	15:00	160	0	69	3	25	1	1	1	0	0	0	0	0	259
	16:00	195	1	82	0	31	0	0	3	0	0	0	0	0	312
	17:00	207	1	73	1	29	3	0	1	0	0	0	0	0	315
	18:00	158	0	40	0	20	0	0	1	0	0	0	0	0	219
	19:00	107	1	50	0	18	0	0	0	0	0	0	0	0	176
	20:00	88	0	34	0	8	0	0	0	0	0	0	0	0	130
	21:00	71	0	26	0	4	0	0	0	0	0	0	0	0	101
	22:00	44	0	10	0	1	0	0	0	0	0	0	0	0	55
	23:00	22	0	14	0	0	0	0	0	0	0	0	0	0	36
Day Total		1760	6	764	9	241	12	1	17	5	0	0	0	0	2815
Percent		62.5%	0.2%	27.1%	0.3%	8.6%	0.4%	0.0%	0.6%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	11:00		11:00	06:00	10:00	06:00	09:00	07:00	06:00					11:00
Vol.	1	92		42	2	17	1	1	2	1					145
PM Peak	16:00	17:00		16:00	15:00	16:00	13:00		12:00	14:00					17:00
Vol.	1	207		82	3	31	3		3	1					315

**SRPEDD**  
**88 Broadway**  
**Taunton, MA 02780**

Weather: FAIR  
 Counted by: CC/AR/JJS  
 F.C./Counter#: R-5/12679  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 South of Wood Street  
 Latitude: 0' 0.000 Undefined

SB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	4 Axle Single	5 Axle Single	6 Axle Single	6 Axle Multi	5 Axle Multi	6 Axle Multi	7 Axle Multi	Total
11/4/10		0	10	3	0	0	0	0	0	0	0	0	0	0	0	13
01:00		0	3	3	0	1	0	0	0	0	0	0	0	0	0	7
02:00		0	3	3	0	0	0	0	0	0	0	0	0	0	0	6
03:00		0	4	0	0	0	0	1	0	0	0	0	0	0	0	5
04:00		0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
05:00		0	10	6	0	1	0	0	0	0	0	0	0	0	0	18
06:00		0	39	16	2	4	1	0	0	0	1	0	0	0	0	63
07:00		1	54	35	1	15	2	0	0	0	0	0	0	0	0	108
08:00		0	60	38	1	12	1	0	1	0	0	0	0	0	0	114
09:00		1	61	40	0	9	1	1	1	0	0	0	0	0	0	115
10:00		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Day Total		2	247	146	4	42	6	1	3	2	1	0	0	0	0	454
Percent		0.4%	54.4%	32.2%	0.9%	9.3%	1.3%	0.2%	0.7%	0.4%	0.2%	0.0%	0.0%	0.0%	0.0%	
AM Peak		07:00	09:00	09:00	06:00	07:00	07:00	09:00	03:00	08:00	06:00					09:00
Vol.		1	61	40	2	15	2	1	1	1	1					115
PM Peak																
Vol.																
Grand Total		25	5088	2255	39	740	40	2	42	31	1	0	0	0	0	8263
Percent		0.3%	61.6%	27.3%	0.5%	9.0%	0.5%	0.0%	0.5%	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	

**SRPEDD**  
**88 Broadway**  
**Taunton, MA 02780**

Weather: FAIR  
 Counted by: CC/AR/JJS  
 F.C./Counter#: R-5/12679  
 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 South of Wood Street  
 Latitude: 0' 0.000 Undefined

NB, SB	Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle		4 Axle		5 Axle		6 Axle		7 Axle		Total
							Single	Multi									
	11/2/10	0	16	6	0	0	0	0	0	0	0	0	0	0	0	0	22
	01:00	0	7	2	0	0	0	0	0	0	0	0	0	0	0	0	9
	02:00	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	6
	03:00	0	6	4	0	0	0	0	0	0	0	0	0	0	0	0	10
	04:00	0	18	8	0	0	0	1	1	1	0	0	0	0	0	0	28
	05:00	0	55	28	0	1	3	2	2	2	0	0	0	0	0	0	91
	06:00	2	145	52	4	9	1	0	0	1	0	0	0	0	0	0	214
	07:00	0	213	83	2	21	1	4	0	0	0	0	0	0	0	0	324
	08:00	1	225	64	0	19	2	1	1	1	0	0	0	0	0	0	313
	09:00	1	163	64	1	15	1	2	2	0	0	0	0	0	0	0	248
	10:00	0	188	65	0	22	4	1	1	1	0	0	0	0	0	0	281
	11:00	1	173	73	1	10	1	2	2	2	0	0	0	0	0	0	263
	12 PM	0	235	72	2	20	2	0	4	1	0	0	0	0	0	0	336
	13:00	0	219	79	0	15	3	0	2	0	0	0	0	0	0	0	318
	14:00	1	231	96	1	21	4	0	1	2	0	0	0	0	0	0	357
	15:00	0	318	109	3	30	6	1	1	1	0	0	0	0	0	0	469
	16:00	2	356	127	0	36	0	4	4	0	0	0	0	0	0	0	525
	17:00	1	407	114	1	36	4	0	3	1	0	0	0	0	0	0	567
	18:00	0	288	69	0	23	0	0	2	0	0	0	0	0	0	0	382
	19:00	1	192	68	0	19	1	0	0	0	0	0	0	0	0	0	281
	20:00	0	157	43	0	10	0	0	0	0	0	0	0	0	0	0	210
	21:00	0	119	33	0	4	0	0	0	0	0	0	0	0	0	0	156
	22:00	0	77	13	0	1	0	0	0	0	0	0	0	0	0	0	91
	23:00	0	34	15	0	0	0	0	0	0	0	0	0	0	0	0	49
Day Total		10	3845	1290	15	312	33	2	30	13	0	0	0	0	0	0	5550
Percent		0.2%	69.3%	23.2%	0.3%	5.6%	0.6%	0.0%	0.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	06:00	06:00	08:00	07:00	06:00	10:00	10:00	09:00	07:00	05:00	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	07:00
Vol.	2	225	83	83	4	22	4	1	4	2							324
PM Peak	16:00	17:00	16:00	16:00	15:00	16:00	15:00	15:00	12:00	14:00							17:00
Vol.	2	407	127	127	3	36	6	1	4	2							567

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 Town: MIDDLEBORO

Site Code:  
 Station ID:  
 WAREHAM STREET  
 South of Wood Street  
 Latitude: 0' 0.000 Undefined

NB, SB	Start Time	Cats & Trailers		2 Axle Long	Buses	2 Axle 6 Tire	3 Axle			4 Axle			5 Axle			6 Axle			Total
		Bikes	Trailers				Single	Single	Single	Single	Single	Single	Multi	Multi	Multi	Single	Single	Single	
	11/4/10	0	17	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21
	01:00	0	7	3	0	1	0	0	0	0	0	0	0	0	0	0	0	0	11
	02:00	0	5	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
	03:00	0	7	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0	10
	04:00	0	17	7	0	0	1	0	0	0	0	0	0	0	0	0	0	0	25
	05:00	0	47	32	0	3	1	1	0	3	0	0	0	0	0	0	0	0	86
	06:00	2	148	48	2	12	1	1	0	0	0	0	0	0	0	0	0	0	214
	07:00	1	229	91	2	28	3	1	0	1	0	0	0	0	0	0	0	0	366
	08:00	0	251	76	1	23	3	0	4	2	0	0	0	0	0	0	0	0	360
	09:00	2	159	82	0	14	1	1	1	1	0	0	0	0	0	0	0	0	261
	10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
	23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Day	Total	5	887	347	5	82	10	1	7	7	1	7	7	1	0	0	0	0	1352
Percent		0.4%	65.6%	25.7%	0.4%	6.1%	0.7%	0.1%	0.5%	0.5%	0.1%	0.5%	0.5%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak		06:00	08:00	07:00	06:00	07:00	07:00	09:00	08:00	05:00	06:00	08:00	05:00	06:00					08:00
Vol.		2	251	91	2	28	3	1	4	3	1	4	3	1					360
PM Peak																			
Vol.																			
Grand		49	11036	3828	50	997	87	3	76	75	1	76	75	1	0	0	0	1	16203
Percent		0.3%	68.1%	23.6%	0.3%	6.2%	0.5%	0.0%	0.5%	0.5%	0.0%	0.5%	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	



# Appendix D - Detailed Crash Information

Highway Safety Analysis (HSA) Crash Summary Sheet

Crash Records Summary



# ACCIDENT SUMMARY SHEET

**ROUTE:** Wareham St      **LOCATION:** \_\_\_\_\_  
**MUNICIPALITY:** Middleboro      **COUNTY:** \_\_\_\_\_  
**TIME PERIOD COVERED:** 1/1/2004 - 12/31/2006      **REFERENCE MARKERS / NODES** -  
**REMARKS:** All Accidents      **DATE:** 2/10/2011

TIME OF DAY	# ACC	%	DIRECTION	# ACC	%	DIRECTION	# ACC	%
6 AM - 10 AM	6	20.7%	North	13	44.8%	Northeast	0	0.0%
10 AM - 4 PM	4	13.8%	South	9	31.0%	Northwest	0	0.0%
4 PM - 7 PM	3	10.3%	East	2	6.9%	Southeast	0	0.0%
7 PM - 12 AM	7	24.1%	West	5	17.2%	Southwest	0	0.0%
12 AM - 6 AM	9	31.0%	<b>Total</b>	<b>29</b>		Unspecified	0	0.0%
Unspecified	0	0.0%						
<b>Total</b>	<b>29</b>							

WEATHER	# ACC	%	ACCIDENT TYPE	# ACC	%	ACCIDENT TYPE	# ACC	%
Clear	13	44.8%	Rear End	0	0.0%	Pedestrian	0	0.0%
Cloudy	2	6.9%	Overtake	0	0.0%	Bicycle	0	0.0%
Rain	4	13.8%	Right Angle	0	0.0%	Parked Vehicle	0	0.0%
Snow	7	24.1%	Left Turn	0	0.0%	Backing	0	0.0%
Sleet/Hail/Freezing Rain	0	0.0%	Right Turn	0	0.0%	Run Off The Road	0	0.0%
Fog/Smog/Smoke	1	3.4%	Fixed Object	29	100.0%	Animal	0	0.0%
Unspecified	2	6.9%	Head On	0	0.0%	Other	0	0.0%
			Sideswipe	0	0.0%	Unspecified	0	0.0%
<b>Total</b>	<b>29</b>		<b>Total</b>	<b>29</b>				

SURFACE	# ACC	%	ACCIDENT SEVERITY	# ACC	%
Dry	8	27.6%	Fatal	0	0.0%
Wet	11	37.9%	Injury	10	34.5%
Mud/Slush	0	0.0%	Property Damage	19	65.5%
Snow/Ice	7	24.1%	Non-Reportable	0	0.0%
Unspecified	3	10.3%	<b>Total</b>	<b>29</b>	
<b>Total</b>	<b>29</b>				

TIME OF YEAR	# ACC	%	TYPE OF VEHICLE	# ACC	%
Winter (Dec-Feb)	9	31.0%	Passenger Cars	29	100.0%
Spring (Mar-May)	6	20.7%	Commercial Vehicles	0	0.0%
Summer (Jun-Aug)	6	20.7%	<b>Total</b>	<b>29</b>	
Fall (Sep-Nov)	8	27.6%			
<b>Total</b>	<b>29</b>				

DAY OF WEEK	# ACC	%	LIGHT CONDITION	# ACC	%
Sunday	4	13.8%	Daylight	10	34.5%
Monday	2	6.9%	Dawn/Dusk	1	3.4%
Tuesday	3	10.3%	Night	16	55.2%
Wednesday	3	10.3%	Unspecified	2	6.9%
Thursday	5	17.2%	<b>Total</b>	<b>29</b>	
Friday	4	13.8%			
Saturday	8	27.6%			
<b>Total</b>	<b>29</b>				

SUMMARY OF ACCIDENT SEVERITY BY YEAR:	2004	2005	2006
Fatal Accidents	0	0	0
Injury Accidents	4	2	4
Property Damage Accidents	6	8	5
Non-Reportable Accidents	0	0	0
<b>Total Accidents</b>	<b>10</b>	<b>10</b>	<b>9</b>

Middleborough  
Wareham St  
2004 - 2006 Crash Summaries

Crash Report #	1	2	3	4	5	6
<b>Date</b>	2/6/2004	2/18/2004	4/28/2004	5/30/2004	7/17/2004	8/1/2004
<b>Age of Driver</b>	37	25	24	31	40	27
<b>Driver Address</b>	Middleboro	Bridgewater	New Bedford	Middleboro	Lakeville	Fall River
<b>Time</b>	12:17	8:55	21:14	21:20	6:40	1:48
<b>Location</b>	#566	#286	#699	#59	#611	#62
<b>Direction of Travel</b>	NB	NB	SB	NB	SB	NB
<b>Light Condition</b>	Daylight	Daylight	Dark - Road Lighted	Dark - Road Lighted	Daylight	Dark - Road Lighted
<b>Weather</b>	Snow	Snow	Clear	Clear	Clear	Clear
<b>Road Surface</b>	Snowy	Snowy	Dry	Dry	Dry	Wet
<b>Manner of Collision</b>	Going Straight	Going Straight	Going Straight	Going Straight		
<b>Harmful Event Location</b>						
<b>Event Prior to Collision</b>						
<b>Sequence of Events 1</b>	Hit Pole	Hit Pole	Hit Tree	Hit Pole		
<b>Sequence of Events 2</b>		Split Rail Fence				
<b>Sequence of Events 3</b>						
<b>Sequence of Events 4</b>						
<b>Driver Factor 1</b>			DUI	DUI		
<b>Driver Factor 2</b>			Operating to Endanger	Operating to Endanger		
<b>Citation</b>	None	None	Yes	Yes	Yes	DUI
<b>Seat Belt Use</b>	Yes	Yes	Unknown	No	Yes	
<b>Injury Status</b>	Minor Visible	Complaints of Pain	Unknown	Complaints of Pain	Serious Visible	
<b>Medical</b>	Ambulance	Ambulance	None	None	Ambulance	None
<b>Circumstances</b>	On Snow covered road slid into Pole	On Snow covered road slid into Pole	Crossed over centerline across NB lane & Hit Tree	Veered Right & Hit Curb Traveled across Centerline & Opposite Lane, Struck Pole Went over Sidewalk & Struck Stonewall	Crossed Centerline, Hit Sign Hit Tree <b>Operator believed to suffered Medical Condition</b>	Failed to Negotiate Turn Left Roadway & Hit Curb Traveled over Sidewalk back onto road & Hit Curb Coming to Rest @ #62 Sidewalk
<b>Conclusions</b>	Snowy Road Surface	Snowy Road Surface	DUI	DUI	Medical Condition	DUI
<b>Remedy</b>						

Middleborough  
Wareham St  
2004 - 2006 Crash Summaries

<b>Crash Report #</b>	7	8	9	10	11	12
<b>Date</b>	8/21/2004	9/11/2004	10/19/2004	12/17/2004	1/6/2005	1/16/2005
<b>Age of Driver</b>	?	25	18	37	22	44
<b>Driver Address</b>	Middleboro	New Bedford	Middleboro	Middleboro	Raynham	Middleboro
<b>Time</b>	17:10	2:05	7:14	:25	9:23	22:06
<b>Location</b>	#208	#528	#461	Locust St	#485	#695
<b>Direction of Travel</b>	SB	NB	WB	NB	SB	NB
<b>Light Condition</b>	Daylight	Dark - Road Lighted	Daylight	Dark - Road Lighted	Daylight	Dark - Road Lighted
<b>Weather</b>	Rain	Clear	Rain	Clear	Snow	Snow
<b>Road Surface</b>	Wet	Dry	Wet	Icy	Snowy	Snowy
<b>Manner of Collision</b>				Going Straight	Going Straight	
<b>Harmful Event Location</b>						
<b>Event Prior to Collision</b>						
<b>Sequence of Events 1</b>	Hit Pole				Hit Pole	Hit Stone Wall
<b>Sequence of Events 2</b>						
<b>Sequence of Events 3</b>						
<b>Sequence of Events 4</b>						
<b>Driver Factor 1</b>		DUI				Too Fast for Conditions
<b>Driver Factor 2</b>		Marked Lanes Violation				
<b>Citation</b>	No	DUI				
<b>Seat Belt Use</b>	N/A					
<b>Injury Status</b>	N/A		None			
<b>Medical</b>	N/A	None	None	None	None	None
<b>Circumstances</b>	Vehicle Left Scene Operator Unidentified Reported by Witness	Failed to Negotiate Curve Hit pole, Hit Trees Came to Rest at #528 Garden	Vehicle Hydroplaned, Crossed Roadway & Hit Tree	Around Corner - Hit Ice Patch Slid Across Road & Flipped Over	Slid on snow covered road Hit Pole	Slid Off Road to the Right Hit Stone Wall
<b>Conclusions</b>	Wet Road Surface	DUI	Wet Road Surface	Icy Road Surface	Snowy Road Surface	Speed / Snowy Road Surface
<b>Remedy</b>						

Middleborough  
Wareham St  
2004 - 2006 Crash Summaries

Crash Report #	13	14	15	16	17	18
<b>Date</b>	4/2/2005	5/3/2005	5/11/2005	7/7/2005	8/4/2005	10/22/2005
<b>Age of Driver</b>	26	19	?	39	19	29
<b>Driver Address</b>	Plymouth	Middleboro	?	Bridgewater	Middleboro	Rochester
<b>Time</b>	4:28	4:14	20:52	6:48	1:44	17:19
<b>Location</b>	#290	#296	#290	#299	#352	#340
<b>Direction of Travel</b>	WB	SB	?	SB	WB	SB
<b>Light Condition</b>	Dark - Road Lighted	Dark - Road Lighted	Dark - Road Lighted	?	Dark - Road Lighted	?
<b>Weather</b>	Rain	Clear	Clear	?	Clear	?
<b>Road Surface</b>	Wet	Wet	Dry	?	Dry	?
<b>Manner of Collision</b>						
<b>Harmful Event Location</b>						
<b>Event Prior to Collision</b>						
<b>Sequence of Events 1</b>	Hit Tree					
<b>Sequence of Events 2</b>						
<b>Sequence of Events 3</b>						
<b>Sequence of Events 4</b>						
<b>Driver Factor 1</b>	Driver Inattention	DUI		Speeding		
<b>Driver Factor 2</b>		Operating to Endanger				
<b>Citation</b>		DUI		Exceeding Lawful Speed	None	None
<b>Seat Belt Use</b>				No		
<b>Injury Status</b>				No Visible Complaints of Pain		
<b>Medical</b>	None	None	None	Ambulance	None	None
<b>Circumstances</b>	Drove Off Road @ Bend Hit Tree	Slid Sideways into Tree Performed 3-Point Turn & Hit Mailbox	Veered Off Rd, Hit Pole & Pillar Continued Off Rd Hit Another pillar, Landed on #286 Lawn <b>Unable to Locate Vehicle</b>	Crossed Centerline Struck Mailbox Struck Utility Pole	Driver Fell Asleep Hit Dirt Berm & Went Airborne Landed in Woods	Slowing to allow MV in front to turn Hit Standing H20 & Hydroplaned Hit Pole
<b>Conclusions</b>	Driver Inattention	DUI		Speed	Driver Inattention	Standing Water
<b>Remedy</b>						

Middleborough  
Wareham St  
2004 - 2006 Crash Summaries

<b>Crash Report #</b>	19	20	21	22	23
<b>Date</b>	10/25/2005	12/9/2005	1/8/2006	1/23/2006	4/20/2006
<b>Age of Driver</b>	40	17	41	31	29
<b>Driver Address</b>	Wareham	Middleboro	Middleboro	Middleboro	Rochester
<b>Time</b>	13:34	15:03	20:07	9:18	1:33
<b>Location</b>	#693	#335	Sachem St	#202	#636
<b>Direction of Travel</b>	SB	NB	WB	EB	
<b>Light Condition</b>	Daylight	Dawn or Dusk	Darkness - Road Lighted	Daylight	
<b>Weather</b>	Rain Wet	Snow	Clear	Snow	
<b>Road Surface</b>		Snowy	Wet	Snowy	
<b>Manner of Collision</b>					
<b>Harmful Event Location</b>					
<b>Event Prior to Collision</b>					
<b>Sequence of Events 1</b>	Hit Pole	Hit Pole			
<b>Sequence of Events 2</b>					
<b>Sequence of Events 3</b>					
<b>Sequence of Events 4</b>					
<b>Driver Factor 1</b>					Failure to stay in marked lanes
<b>Driver Factor 2</b>					
<b>Citation</b>	None	None		None	Yes
<b>Seat Belt Use</b>		Yes	Yes		Yes
<b>Injury Status</b>		No Visible Inj Complaint of Pain	Minor Visible Inj		No Visible Inj Complaints of Pain
<b>Medical</b>	None	Ambulance	Yes	None	None
<b>Circumstances</b>	Around Bend felt rear of veh slide Tried to correct and lost control Hit Pole	Slid Off Road Hit Pole	Left Roadway Sideswiped Pole Struck Rock Pile	Skidded on Snowy Roadway Applied Brakes, Skidded Right Hit Fence, Bush & Small Tree	Fell Asleep Hit Pole
<b>Conclusions</b>	Wet Road Surface	Snowy Road Surface	Wet Road Surface	Snowy Road Surface	Driver Inattention
<b>Remedy</b>					

Middleborough  
Wareham St  
2004 - 2006 Crash Summaries

Crash Report #	24	25	26	27	28	29
<b>Date</b>	6/9/2006	10/11/2006	10/14/2006	10/26/2006	10/28/2006	12/2/2006
<b>Age of Driver</b>	18	45	20	21	24	34
<b>Driver Address</b>	Middleboro	Raynham	Middleboro	Taunton	Middleboro	Acushnet
<b>Time</b>	16:03	20:00	3:19	15:23	21:04	1:47
<b>Location</b>	Miller St	Bay State Pipe Dwy	#142	#291	#286	#471
<b>Direction of Travel</b>	NB	EB	NB	EB	NB	SB
<b>Light Condition</b>	Daylight	Dark - Road Lighted	Dark - Road Lighted	Daylight	Dark - Road Unlighted	Dark - Road Unlighted
<b>Weather</b>	Rain	Cloudy	Clear	Clear	Foggy	Cloudy
<b>Road Surface</b>	Wet	Wet	Dry	Dry	Wet	Wet
<b>Manner of Collision</b>	Going Straight	Going Straight	Making Left Turn	Going Straight	Going Straight	Going Straight
<b>Harmful Event Location</b>						
<b>Event Prior to Collision</b>						
<b>Sequence of Events 1</b>	Hit Pole	Hit Pole	Hit Pole	Hit Mailbox	Hit Large Roacks	Hit Pole
<b>Sequence of Events 2</b>				Hit Pole		
<b>Sequence of Events 3</b>				Hit Mailbox		
<b>Sequence of Events 4</b>				Landed in Brush		
<b>Driver Factor 1</b>				Speed		
<b>Driver Factor 2</b>						
<b>Citation</b>						
<b>Seat Belt Use</b>	None	None	90/23, 90/24		Yes	
<b>Injury Status</b>						Yes
<b>Medical</b>					No Visible Inj	Serious Visible Injury
<b>Circumstances</b>	Slid on Roadway & Turned to right to Avoid Hitting Front Veh (taking a left onto Miller St) Struck Pole	Witness saw Veh Swerve & Go off Road	Attempted to turn onto New Water St, Skidded & Hit Pole	Struck a Mailbox Skidded Across the Road Struck a Pole & a Mailbox Came to rest in brush @ #294	Traveling around Sharp Left Turn Went Off Roadway & Struck Large Rocks Rolled Over onto 2 Wheels	Ambulance Veh crossed centerline & Hit Pole Police Officer: Likelihood Motorist Fell Asleep
<b>Conclusions</b>	Wet Road Surface		Vehicle Maneuver	Speed	Sharp Turn & Wet Road Surface	Driver Inattention
<b>Remedy</b>						



# Appendix E - Optical Speed Bar Guidance

Manual on Uniform Traffic Control Devices (MUTCD), Section 3B.22

National Cooperative Highway Research Program (NCHRP)  
Report 613, Section 4.3



## Guidance on Speed Reduction Markings

If speed reduction markings are desired, please consider the following:

- Follow the guidance from the **Manual on Uniform Traffic Control Devices** 2009 edition (MUTCD), section 3B.22, pg 393-394, as it provides the accepted design and layout for these markings and recommendations that worked in previous research. This section has been attached to this handout.
- The **NCHRP Report 613** (National Cooperative Highway Research Program), is a good source, developed by the Transportation Research Board, that provides guidelines for selection of speed reduction treatments. It has a section in reference to the speed reduction markings, although those are referred in this document as transverse pavement markings; refer to section 4.3, page 33. The section on transverse pavement markings is attached as well.
- Although the MUTCD and the NCHRP report 613 provide the guidelines to place these markings, there is little reference as to what the spacing should be. For the spacing, please refer to the research report **“Peripheral Transverse Pavement Markings for Speed Control”** by Bryan Jeffrey Katz, April 26, 2007, Blacksburg, Virginia (easy to be found on the web); it provides the formula used in previous successful research to determine the spacing of the bars and useful pavement marking design tables.
- It is very important to work with your consultants and **SREPEDD** to determine if the speed reduction markings are the best option for your high crash area.

# Manual on Uniform Traffic Control Devices

for Streets and Highways

## PART 3 MARKINGS

### Section 3B.22 Speed Reduction Markings

Support:

- 01 Speed reduction markings (see Figure 3B-28) are transverse markings that are placed on the roadway within a lane (along both edges of the lane) in a pattern of progressively reduced spacing to give drivers the impression that their speed is increasing. These markings might be placed in advance of an unexpectedly severe horizontal or vertical curve or other roadway feature where drivers need to decelerate prior to reaching the feature and where the desired reduction in speeds has not been achieved by the installation of warning signs and/or other traffic control devices.

Guidance:

- 02 *If used, speed reduction markings should be reserved for unexpected curves and should not be used on long tangent sections of roadway or in areas frequented mainly by local or familiar drivers, (e.g., school zones). If used, speed reduction markings should supplement the appropriate warning signs and other traffic control devices and should not substitute for these devices.*

Standard:

- 03 **If used, speed reduction markings shall be a series of white transverse lines on both sides of the lane that are perpendicular to the center line, edge line, or lane line. The longitudinal spacing between the markings shall be progressively reduced from the upstream to the downstream end of the marked portion of the lane.**

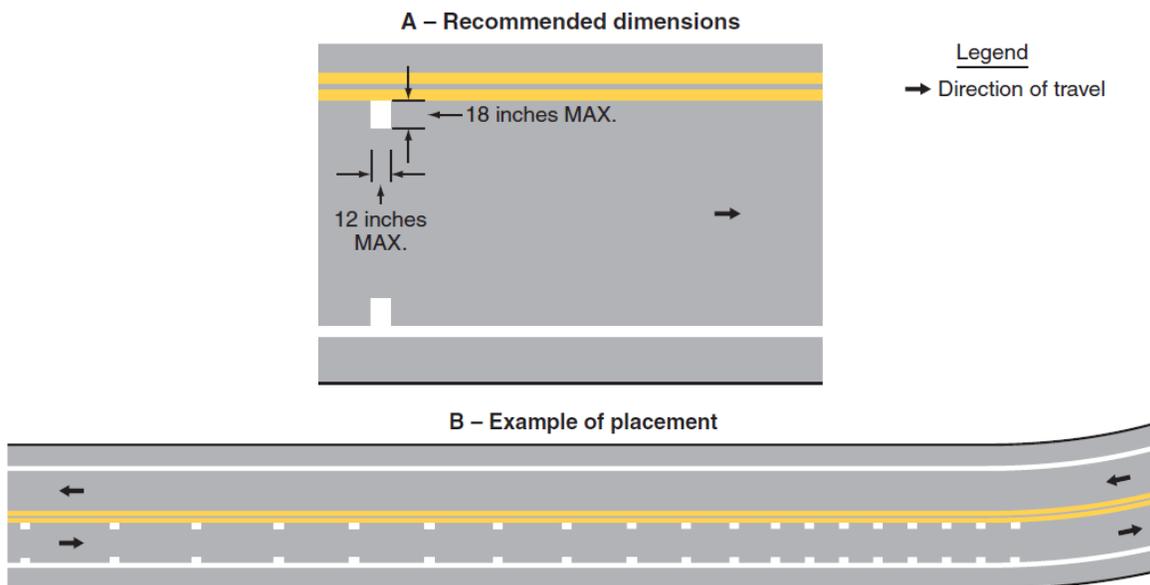
Guidance:

- 04 *Speed reduction markings should not be greater than 12 inches in width, and should not extend more than 18 inches into the lane.*

Standard:

- 05 **Speed reduction markings shall not be used in lanes that do not have a longitudinal line (center line, edge line, or lane line) on both sides of the lane.**

Figure 3B-28. Example of the Application of Speed Reduction Markings



# NCHRP

## REPORT 613

NATIONAL  
COOPERATIVE  
HIGHWAY  
RESEARCH  
PROGRAM

### 4.3 Transverse Pavement Markings

#### 4.3.1 Overview

Five NCHRP Project 3-74 test sites in Oregon provided documented applications for the high-speed intersection treatments discussed in this section. Transverse pavement markings improve visibility and driver attention. These treatments can be applied to provide visual cue reinforcements to changing conditions and the need to reduce speed. Design variations include peripheral or full transverse lines. Long-term effectiveness and driver familiarity should be considered.

#### 4.3.2 Applicability and Considerations

As defined by the *MUTCD*, transverse pavement markings are “pavement markings that are generally placed perpendicular to and across the flow of traffic.” (FHWA, 2003, p. 1A-14) Peripheral transverse lines, as shown in Exhibit 4-4, involve bars only at the edge of a travel lane, instead of bars extending across the travel lane. Transverse chevrons are painted geometric arrows that converge to give the illusion of speed. (Griffin and Reinhardt, 1995) Transverse pavement markings are commonly used in speed management to reinforce the need to reduce speed or to warn drivers of an approaching condition that may require vehicular maneuvers.

Common applications of transverse pavement marking locations include approaches to traffic circles and intersections, horizontal curves, construction areas, bridges, and freeway off-ramps. (Griffin and Reinhardt, 1995) Transverse pavement markings have also been placed at locations

tangency or at a driveway. Appendix B describes and illustrates the treatment layout for one of the NCHRP Project 3-74 research test sites.

The spacing of the transverse bars and transverse chevrons may reflect the desired travel speeds of the vehicles on the roadway. Some applications of transverse bars have used a rate of advancement of two stripes per second. In some applications transverse bars are spaced progressively closer together at an increasing rate as the driver travels along the roadway. When applied in this way, the bars are referred to as *optical speed bars*. The intent is that the reduced spacing gives the driver the perception of acceleration, causing the driver to slow down; however, there are no data to support this claim. (Agent, 1980)

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#### **4.3.4 Speed Effects**

After a 90-day acclimation period, transverse pavement markings were found to reduce speed marginally at four high-speed intersection approaches tested through NCHRP Project 3-74. Overall, the markings reduced mean speeds by 0.6 mph (standard error of 0.3 mph). Additionally, at the perception–response time data collection locations, transverse pavement markings were found to reduce mean speeds by 0.9 mph (standard error of 0.4 mph).

Studies of segment applications of transverse pavement markings have reported reduced mean and 85th-percentile speeds on the order of 20%-30%. (Katz et al., 2003; Griffin and Reinhardt, 1995)

At the Newbridge Roundabout in Scotland, transverse pavement markings resulted in reduced mean and 85th-percentile speeds. The overall mean speed throughout the day was reduced by approximately 23%, and the overall 85th-percentile speed throughout the day was reduced by approximately 30%. (Katz et al., 2003)

In a study conducted on US Highway 60 in Meade County, Kentucky, transverse bar pavement markings were placed prior to a sharp curve with a high crash rate. This study revealed that the treatment became less effective as a speed reduction technique as drivers became familiar with the treatment. Furthermore, the long-term effects during the nighttime were less than the long-term effects during the day. (Agent, 1980)

Research by Godley et al. (2000) using a driving simulator found that transverse lines with both constant and reducing spacing (i.e., optical speed bars) lowered speeds. The research determined that speed perception was not influenced by the decreased spacing of the lines. Additionally, Godley found that the peripheral transverse lines induced speed reduction almost as effectively as full transverse lines.

No studies have been found that evaluate the effectiveness of the transverse chevron markings with respect to speed.

#### **4.3.5 Safety Effects**

No published data were found to address the effects of transverse pavement markings on safety at conventional intersections. Safety improvements associated with segment or roundabout applications of transverse pavement markings were reported by each of the studies referenced below.

In 1993, a study in Osaka, Japan, reported that converging chevron pavement markings on the Yodogawa Bridge were more effective than conventional signing in helping to prevent crashes at a high-crash location. No crashes resulting in injuries occurred in the two years after the chevron markings were installed. In the past, the bridge had a history of crashes causing injuries and fatalities. (Griffin and Reinhardt, 1995)

At the Newbridge Roundabout in Scotland, transverse pavement markings reduced the number of reported crashes from 14 in the year prior to installation to 2 in the 16 months after installation. (Katz et al., 2003)

A study conducted on US Highway 60 in Meade County, Kentucky, found crashes were reduced after transverse pavement markings were installed. During the previous six years, an average of eight crashes occurred at this location each year, and speed was identified as a contributing factor in 75% of those crashes. During the year after installation, three crashes were reported, with one attributed to high speed. (Agent, 1980) Data for additional years after treatment installation were not included in the study.

In another study, transverse lines were applied at 42 approaches to roundabouts. Each approach had a minimum of 3.2 km (2 mi) of uninterrupted road to allow drivers to adapt to the high-speed environment. During the two-year period after the transverse lines were installed on the approaches, speeds were reduced by 57%. The before-and-after studies conducted at all 42 approaches also indicated that the number of crashes decreased from 96 to 47. A follow-up study conducted at seven of the sites four years after installation indicated that the treatment continued to be effective with speed-related crashes showing a significant decline. (Human Factors North, Inc., 2002)

# SPEED REDUCTION MARKINGS (Optical Speed Bars)

